

Summary of bull trout spawning surveys (redd counts) in index areas of the Yakima sub-basin, 1984-2014.

(R=Resident, F=Fluvial, F/R=Fluvial/Resident, AD=adfluvial). WDFW Files, Yakima, WA.

	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	
<u>Yakima River (F)</u>																																
Keechelus to Easton Reach *																	2	1		1				3	1					0		
<u>Ahtanum Creek (R)</u>																																
N.F. Ahtanum Cr. (Shellneck Cr.)										9	14	6	5	7	5	7	11	20	17	12	8	6	7	8	1	3	0	1	2	2	1	
M.F. Ahtanum Cr. *												1	1			0	10	1	6	8	11	5	6	5	3	9	15	11	8	7	6	
S.F. Ahtanum Cr. *																5	14	13	7	5	3	4	5	3	6	2	4	2	1	2		
<u>Naches River (F)</u>																																
Rattlesnake Cr. * (L.Wildcat Cr., Shell Cr.)							2				4	26	38	46	53	44	45	57	69	54	32	15	40	13	37	36	64	42	42	32	23	
American R. (Union Cr., Kettle Cr.)												25	24	31	30	44	36	27	30	40	35	55	31	22	29	47	40	54	54	36		
Crow Cr.																19	26	6	9	9	6	4	8	8	2	5	9	7	9	5	2	
<u>Rimrock Lake (AD)</u>																																
S.F. Tieton R. * (Bear Cr.)							32			38	167	95	226	177	142	161	144	158	141	178	178	205	189	152	266	259	194	234	226	151	192	
Indian Cr. * (+spring tribs)	29	69	16	35	25	39	69	123	142	140	179	201	193	193	212	205	226	117	100	101	50	91	106	58	130	200	144	147	174	10	28	
N.F. Tieton (upper)* (Hellbender Cr.)																					1		1	37	28	15	18	11	17	10	19	
<u>Bumping Lake (AD)</u>																																
Deep Cr. *					17	15	84	78	45	12	101	46	126	98	107	147	51	120	57	97	73	95	130	145	178	199	192	169	108	78		
Bumping River (upper)										1	0					0					0			0	0	2	0	0	0	0	0	
<u>N.F. Teanaway River (F/R)</u>																																
NF Teanaway/DeRoux Cr. *													2										2	1	0	0	1	0	0	0	1	0
<u>Kachess Lake (AD)</u>																																
Box Canyon Cr.	5	4	3	0	0	0	5	9	5	4	11	4	8	10	16	17	10	14	15	8	19	8	8	2	8	21	30	31	9	6	10	
Kachess R (upper) *															0		15	14	0	16	8	3	0	22	2	2	15	33	8	13	9	
<u>Keechelus Lake (AD)</u>																																
Gold Cr.	2	2	21	15	12	3	11	16	14	11	16	13	51	31	36	40	19	15	31	9	20	7	8	6	40	29	23	7	7	12	19	
<u>Cle Elum & Waptus Lks (AD)</u>																																
Cle Elum R.(up) & Waptus R*													0	0	0		0	0	0	0			0	0	0	0						
Summary	36	75	40	50	37	59	134	232	239	247	404	446	595	615	593	630	704	504	548	490	475	457	531	478	687	795	760	760	727	412	425	

* Incomplete survey; index area not fully defined or adequately monitored: Yakima R. 2000, 2001, 2003, 2006. M.F. Ahtanum 1996-2001, 2008, 2012. S.F. Ahtanum 2000.

Rattlesnake 1990-1995, 2007, 2008, 2011, 2012. S.F. Tieton 1990-1993, 1995, 2010, 2013, Indian 1984-1987, 2013, Deep 1989-1990, N.F. Teanaway 1996, 2005, 2006, 2008.

Kachess 1998, 2005, 2006, 2012. Cle Elum 1996, 2000-2002, 2006, 2007, Waptus 1997, 1998, N.F. Tieton 2004, 2006, 2010, 2013, 2014. Bumping 1994, 2000, 2004, 2008.

Box 2007, 2012, 2014. Gold 2007, 2012, 2014. Crow 2008, 2010, 2011, 2012, 2013, 2014. (Redds in small tribs (parenthesis) included in total stream count.)

* S.F. Tieton redd counts outside of the standard index area not included in above totals: 1995=0, 1996=7, 1997=1, 1998-2002 not checked, 2003=14, 2004=2, 2005=6,

2006=22, 2007 & 2008 not checked, 2009=30, 2010=6, 2011=19, 2012=33, 2013=11, 2014=4. Exploratory redd survey in lower Bumping in 2014 - 0

* Exploratory redd count surveys conducted in 2009: N.F. Little Naches - 0, Quartz & N.F. Quartz - 0, Nile - 0, upper Crow (above barrier falls) - 0



¹⁴
2013 Bull trout Spawning Ground Survey Form
(Revised August 27, 2013)

Stream: American River

Code # (see Backside): 6

Start/Stop Access road .5 miles above Lodgepole campground to Mesatchee Cr trail crossing
Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Mostly sunny with some clouds

Date: 9 / 2 / 14

Pass # 1

Water Temps / Time 1) 45F / 10:05 2) 47.3F / 12:45 Visibility Good

Investigators: E.Anderson, N.Fenton

Start Time: 10:04

End Time: 12:44

<u>Redds:</u>	New	Old
Definite:	<u>1</u>	_____
Probable:	<u>1</u>	_____
Possible:	<u>1</u>	_____

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 0 Cause? _____

Comments (tagged fish, H2O visibility, etc):



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: American River

Code # (see Backside): 6

Start/Stop Mesatchee Cr. Trail crossing to .5 miles above Lodgepole Campground
 Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear skies, sunny.

Date: 09 / 11 / 14

Pass # 2

Water Temps / Time 1) 7C at 10:05am
2) 8C at 12:21pm Visibility Good

Investigators: Cassandra Anderson

Start Time: 10:05 am End Time: 12:21 pm

<u>Redds:</u>	New	Old
Definite:	<u>1</u>	<u>1</u>
Probable:	<u> </u>	<u>1</u>
Possible:	<u> </u>	<u>1</u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 0 Cause?

Comments (tagged fish, H2O visibility, etc):

I started the survey at 10:05am, walking downstream from Mestachee Creek trailhead to the access road .5 miles above Lodgepole Campground. 1 new redd was identified. Two fish, approximately 6-7 inches in length, were seen in separate locations. I could not identify the fish, as one darted into a pool and the other under a log. No adult bull trout were seen.



¹⁴
2013 Bull trout Spawning Ground Survey Form
(Revised August 27, 2013)

Stream: American River

Code # (see Backside): 6

Start/Stop Access road .5 miles above Lodgepole campground to Mesatchee Cr trail crossing

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Mostly Sunny

Date: 9 / 19 / 14

Pass # 3

Water Temps / Time 1) 10:15 / 9 C 2) 12:40 / 9 C Visibility Good

Investigators: C. Anderson, N, Fenton

Start Time: 10:15 End Time: 12:40

<u>Redds:</u>	New	Old
Definite:	<u>1</u>	<u>2</u>
Probable:	<u> </u>	<u>1</u>
Possible:	<u> </u>	<u> </u>

Bull Trout Observed:

Adults: On Redds Loose

Sub-adults:

Juveniles:

Morts Cause?

Comments (tagged fish, H2O visibility, etc):



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: American River

Code # (see Backside): 1

Start/Stop Lower- Union Creek confluence downstream 0.5 miles

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Sunny and warm

Date: 09 /2 /2014

Pass # 1

Water Temps / Time 1) 7.5 degrees C 2) _____ **Visibility** Excellent

Investigators: Jeff Thomas and Pat Monk (USFWS)

Start Time: 10:05 AM **End Time:** 10:30 PM

Redds:	New	Old
Definite:	<u>0</u>	_____
Probable:	<u>0</u>	_____
Possible:	<u>0</u>	_____

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: _____

Juveniles: None

Morts 0 Cause? _____

Comments (tagged fish, H2O visibility, etc):



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: American River

Code # (see Backside): 1 Union Creek confluence to downstream .5 mile.

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: mostly sunny with Clear Skies.

Date: 09 / 19 / 14

Pass # 3

Water Temps / Time 1) 1055 hrs / 47.2 F 2) 1130 hrs / 47.3 F Visibility clear

Investigators: Eric Anderson (WDFW)

Start Time: 1055 hrs End Time: 1130 hrs

Redds: New

Old

Definite: 1

0

Probable: 0

0

Possible: 0

1 old changed to new def.

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts Cause?

Comments: GPS Redd Waypoint 44 (+/- 21 ft.). No fish observed, spawning appears to be complete.



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Union Creek

Code # (see Backside): 41

Start/Stop Mouth to falls

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Sunny and warm

Date: 09 /2 /2014

Pass # 1

Water Temps / Time 1) 8.0 degrees C 2) _____ **Visibility** Excellent

Investigators: Jeff Thomas and Pat Monk (USFWS)

Start Time: 10:30 AM **End Time:** 11:00 AM

Redds:	New	Old
Definite:	<u>2</u>	_____
Probable:	<u>0</u>	_____
Possible:	<u>0</u>	_____

Bull Trout Observed:

Adults: On Redds 0 Loose 1

Sub-adults: _____

Juveniles: None

Morts 0 Cause? _____

Comments (tagged fish, H20 visibility, etc):



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Union Creek American R.

Code # (see Backside): 41 ✓ code 1
 Start/Stop Mouth to the falls

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear Skies

Date: 9 / 11 / 14
 Pass # 2

Water Temps / Time 1) 11:06 / 6 C 2) 12:06 / 6 C Visibility Good

Investigators: N. Fenton & J. Hubble

Start Time: 11:06 End Time: 12:06

<u>Redds:</u>	New	Old
Definite:	<u>6</u>	<u>2</u>
Probable:	<u>1</u>	<u> </u>
Possible:	<u>1</u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 2 Loose 2

Sub-adults: 0

Juveniles: 0

Morts 0 Cause?

Comments (tagged fish, H2O visibility, etc):

At 10:20am we entered the American River at mile post 79 and walked upstream to the confluence of Union Creek. The starting temperature in the American river was 7 C. 1 possible Redd was observed in the American River downstream of the Union Creek confluence. We continued to survey from the mouth of Union Creek to the falls on Union Creek.



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Union Creek

Code # (see Backside): 41 Mouth to falls.

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: mostly sunny with Clear Skies.

Date: 09 / 19 / 14

Pass # 3

Water Temps / Time 1) 0935 hrs / 46.0 F 2) 1040 hrs / 46.1 F Visibility clear

Investigators: Eric Anderson (WDFW)

Start Time: 0935 hrs

End Time: 1040 hrs

<u>Redds:</u>	New	Old
Definite:	<u>18</u>	<u>8</u>
Probable:	<u> </u>	<u>1 old changed to new def.</u>
Possible:	<u> </u>	<u>0</u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts Cause?

Comments: GPS Redd Waypoints 26 – 43 (+/- 24-27 ft.). No fish observed, spawning appears to be complete, although it may have been delayed due to nearby truck / backhoe work being done on the USFS parking lot adjacent to the stream.



¹⁴
2013 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Kettle Creek

Code # (see Backside): 25

Start/Stop Mouth to steep cascades that are flagged

Weather: Sunny and beautiful!

Date: 9 / 2 / 14

Pass # 1

Water Temps / Time 1) 47.5°F 2) _____ Visibility Very Clear

Investigators: David Child and Cassandra Anderson

Start Time: 10 : 00

End Time: 11 : 40

<u>Redds:</u>	New	Old
Definite:	_____	_____
Probable:	_____	_____
Possible:	_____	_____

Bull Trout Observed:

Adults: On Redds _____ Loose 1 large adult

Sub-adults: _____

Juveniles: _____

Morts _____ Cause? _____

Comments (tagged fish, H2O visibility, etc):

The American River water temperature was 48.4°F. We visited with a YN spring Chinook spawning ground surveyor on his final survey pass. They were done spawning.



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Kettle Creek

Code # (see Backside): 25

Start/Stop Mouth to steep cascade falls (flagged)

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear Skies, Sunny

Date: 09 / 11 / 14

Pass # 2

Water Temps / Time 1) 41.3 F / 1015 Hrs. 2) 41.6 F / 1200 Hrs. Visibility clear

Investigators: Eric Anderson (WDFW)

Start Time: 1000 hrs End Time: 1200 hrs

<u>Redds:</u>	New	Old
Definite:	<u>6</u>	<u> </u>
Probable:	<u>0</u>	<u> </u>
Possible:	<u>0</u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 3 Loose 3

Sub-adults: 0

Juveniles: 0

Morts Cause?

Comments (tagged fish, H2O visibility, etc): Redd GPS Waypoints 14--19 (+/- 38 ft).



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Kettle Creek

Code # (see Backside): 25

Start/Stop Mouth to steep cascade falls (flagged)

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear Skies, Sunny

Date: 09 / 19 / 14

Pass # 3

Water Temps / Time 1) 2) Visibility clear

Investigators: Joel Hubble (Bureau of Reclamation)

Start Time: 0930 hrs End Time: 1200 hrs

<u>Redds:</u>	New	Old
Definite:	<u>0</u>	<u>6</u>
Probable:	<u>0</u>	<u> </u>
Possible:	<u>0</u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts Cause?

Comments (tagged fish, H2O visibility, etc):



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: North Fork Ahtanum & shellneck

Code # (see Backside): 4 ↓ 32

Start/Stop Gray rock trail upstream to confluence at Shellneck creek

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear Skies

Date: 9 / 4 / 14

Pass # 1

Water Temps / Time 1) 10:17 / 7 C 2) 12:15 / 8 C Visibility Good

Investigators: C.Anderson & N.Fenton

Start Time: 10:17

End Time: 12:15

<u>Redds:</u>	New	Old
Definite:	<u>0</u>	<u>0</u>
Probable:	<u>0</u>	<u>0</u>
Possible:	<u>0</u>	<u>0</u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 0 Cause? 0

Comments (tagged fish, H2O visibility, etc):

We surveyed from Gray Rocks trailhead upstream to the confluence at Shellneck Creek. We continued 200ft upstream from the confluence on both Shellneck Creek and North Fork Ahtanum Creek.



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Ahtanum Creek – North Fork

Code # (see Backside): 4

Start/Stop Bridge crossing below Snow Cabin CG upstream to Shellneck Creek

(I did this upper section & David Child did the lower sectionSee Child survey)

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear Skies, Sunny

Date: 09 / 15 / 14

Pass # 2

Water Temps / Time 1) 41.7 F / 1020 Hrs. 2) 41.0 F / 1115 Hrs. **Visibility** clear

Investigators: Eric Anderson (WDFW)

Start Time: 1020 hrs **End Time:** 1115 hrs

Redds:	New	Old
Definite:	<u>0</u>	<u>0</u>
Probable:	<u>0</u>	<u>0</u>
Possible:	<u>0</u>	<u>0</u>

Bull Trout Observed:

Adults: On Redds 0 **Loose** 0

Sub-adults: 0

Juveniles: 0

Morts _____ **Cause?** _____

Comments: Good spawning gravels present, no barriers observed. Continued survey additional 10 minutes past confluence of Shellneck Creek; no bull trout or redds observed. David Child did lower half of section 4, I did upper half (see D. Child survey notes).



¹⁴
2013 Bull trout Spawning Ground Survey Form
(Revised August 27, 2013)

Stream: NF Ahtanum Creek

Code # (see Backside): 4

Start/Stop Gray Rock Trail Crossing to first road bridge upstream

Weather: Sunny and beautiful!

Date: 9 / 15 / 14

Pass # 2

Water Temps / Time 1) 44.0°F 2) _____ Visibility Very Clear

Investigators: David Child, Eric Anderson did the upstream reach to Shellneck Creek

Start Time: 10 : 15

End Time: 12 : 00

<u>Redds:</u>	<u>New</u>	<u>Old</u>
<u>Definite:</u>	<u>_____</u>	<u>_____</u>
<u>Probable:</u>	<u>1</u>	<u>_____</u>
<u>Possible:</u>	<u>1</u>	<u>_____</u>

Bull Trout Observed:

Adults: On Redds _____ Loose 1 around 12 inches, pretty sure it wasn't a cutthroat

Sub-adults: 1, could have been a cutthroat _____

Juveniles: _____

Morts _____ Cause? _____

Comments (tagged fish, H2O visibility, etc):
GPS point taken for probable: N46 31.759 W121 07.931, no GPS waypoint taken for possible
The elk/deer crossing/foot prints can be misleading; it takes careful inspection to determine redds



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: North Fork Ahtanum

Code # (see Backside): N/A – we were downstream of the index area

Start/Stop: Started at bridge crossing at 46.514912, -121.061433 and walked ~1/2 mi upstream and downstream.

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Cloudy, overcast, slight rain at times.

Date: 09 / 23 / 14

Pass # 3

Water Temps / Time 1) 10C at 1pm
2) _____ Visibility Good

Investigators: Cassandra Anderson, Nicole Fenton

Start Time: 12:45 pm End Time: 1:30 pm

<u>Redds:</u>	New	Old
Definite:	_____	_____
Probable:	_____	_____
Possible:	_____	_____

Bull Trout Observed:

Adults: On Redds _____ Loose _____

Sub-adults: 0

Juveniles: 0

Morts _____ Cause? _____

Comments (tagged fish, H2O visibility, etc):

Nicole and Cassandra investigated downstream of the index area for bull trout presence. We started at the bridge crossing located at 46.514912, -121.061433 and Cassandra walked approximately 1/2 mile upstream and Nicole walked approximately 1/2 mile downstream. No redds or fish were observed. It was

North Fork Ahtanum - continued 9-23-14 No code Pass 3

noted that there was not much suitable spawning habitat, as spawning-sized gravel was only seen a few times and it was very compact due to hydraulics. No large log jams were encountered by either surveyor.



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Shellneck Creek

Code # (see Backside): 32

Start/Stop Confluence with N.F. Ahtanum upstream 1/3 mile

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear Skies, Sunny

Date: 09 / 15 / 14

Pass # 2

Water Temps / Time 1) 40.2 F / 1135 Hrs. 2) 40.2 F / 1205 Hrs. Visibility clear

Investigators: Eric Anderson (WDFW)

Start Time: 1120 hrs End Time: 1135 hrs

<u>Redds:</u>	New	Old
Definite:	<u>0</u>	<u>0</u>
Probable:	<u>0</u>	<u>0</u>
Possible:	<u>0</u>	<u>0</u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts Cause?

Comments: Patchy spawning gravels, steeper gradient, potential new barrier for small resident bull trout about 100 yards upstream (3-4 ft. falls). No bull trout or redds observed.



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: North Fork Ahtanum & Shellneck

Code # (see Backside): 4 + 32

Start/Stop Grey Rock trailhead to confluence with Shellneck Creek
 Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Cloudy, overcast, slight rain at times.

Date: 09 / 23 / 14
 Pass # 3

Water Temps / Time 1) 9C at 11:20 am
2) 9.5C at 12:20 pm Visibility Good

Investigators: Cassandra Anderson, Nicole Fenton

Start Time: 11:20 am End Time: 12:20 pm

<u>Redds:</u>	New	Old
Definite:	<u> </u>	<u> </u>
Probable:	<u> </u>	<u> 1 </u>
Possible:	<u> </u>	<u> 1 </u>

Bull Trout Observed:

Adults: On Redds Loose
 Sub-adults: 0
 Juveniles: 0
 Morts Cause?

Comments (tagged fish, H2O visibility, etc):
 Cassandra surveyed upstream from the Grey Rock trailhead to the bridge crossing. Nicole surveyed from the bridge crossing to the NF Ahtanum confluence with Shellneck Creek. Nicole surveyed approximately 200 yards up Shellneck Creek.

N. F. Ahtanum + shellrock Code 4+32 - continued Pass 3 9/23/14

Cassandra found flags where David Child identified 1 probable redd and 1 possible redd on pass 2. Where the probable redd was flagged, Cassandra didn't see anything. The substrate was mostly sand and other fines and a redd should stand out, although Cassandra couldn't see what David was seeing. At the location where the possible redd was flagged it looked like an elk had crossed the stream, not fish activity. Nicole did not find anything upstream of the bridge crossing.

Cassandra found where ATV's have been driving through the channel from a closed access road. A GPS waypoint was taken and this activity will be reported to DNR.

The North Fork Ahtanum experienced a large heavy rain event and very high flows in September 2013. There has been a question about if bull trout were washed downstream and may be residing downstream of the index area in the North Fork Ahtanum. Cassandra and Nicole investigated this by surveying upstream and downstream of the bridge crossing a few miles downstream of the index area. We did not see any fish or redds during the 1 hour investigation.



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Ahtanum Creek – Middle Fork

Code # (see Backside): 2

Start/Stop 1 mile below Tree Phones CG Road bridge crossing / up to road bridge crossing.

(I did upper mile and David Child did lower mile, total 2 miles of index....See child survey)

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear Skies

Date: 09 / 4 / 14

Pass # 1

Water Temps / Time 1) 39.3 F/ 0950 Hrs. 2) 41.6 F/ 1140 Hrs. Visibility clear

Investigators: Eric Anderson (WDFW)

Start Time: 0950 hrs End Time: 1140 hrs

<u>Redds:</u>	New	Old
Definite:	<u>0</u>	<u> </u>
Probable:	<u> </u>	<u> </u>
Possible:	<u>1</u>	<u> </u>

Bull Trout Observed:

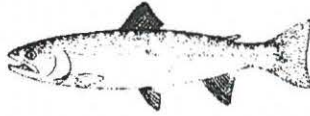
Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts Cause?

Comments (tagged fish, H2O visibility, etc): Good spawning gravels present. No barriers observed. Expanded beaver dam and pond complex at the start of the lower index (see David Child survey for notes / photos).



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: MF Ahtanum Creek

Code # (see Backside): 2

Start/Stop The new beaver dams up to the truck, lower 1 mile

Weather: Sunny and beautiful!

Date: 9 / 4 / 14

Pass # 1

Water Temps / Time 1) 41.9°F 2) _____ Visibility Very Clear

Investigators: David Child, Eric Anderson did the upstream reach to Tree Phones Campground

Start Time: 9 : 35 End Time: 12 : 00

<u>Redds:</u>	New	Old
Definite:	_____	_____
Probable:	<u>1</u>	_____
Possible:	_____	_____

Bull Trout Observed:

Adults: On Redds _____ Loose _____

Sub-adults: _____

Juveniles: 10 trout observed in beaver dam pool

Morts _____ Cause? _____

Comments (tagged fish, H2O visibility, etc):
There are 3 new large beaver dams, and one may be large enough to be a fish passage barrier, though it appears likely paths exist around the structures for passage. I'll provide some pictures in the next pages of this report.



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Middle Fork Ahtanum Creek

Code # (see Backside): 2

Start/Stop Tree Phones Campground downstream to miles to beaver dams

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear skies, sunny.

Date: 09 / 15 / 14

Pass # 2

Water Temps / Time 1) 6C at 11:15am

 2) 7C at 3:40pm

Visibility Good

Investigators: Cassandra Anderson, Nicole Fenton

Start Time: 11:15 am

End Time: 3:40 pm

<u>Redds:</u>	New	Old
Definite:	<u> 4 </u>	<u> </u>
Probable:	<u> </u>	<u> </u>
Possible:	<u> </u>	<u> 1 (upgraded to def) </u>

Bull Trout Observed:

Adults: On Redds 3 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 0 Cause?

Comments (tagged fish, H2O visibility, etc):

This was an exciting survey on the Middle Fork Ahtanum! We started 2 miles downstream of Tree Phones campground and surveyed upstream to the campground. No fish or redds were seen in the lower ~3/4 of the index area.

M.F. Ahtanum - continued Lodez Pass 2 9/15/14

Not far downstream from Tree Phones campground, 2 redds were identified. 1 new definite with a fish on it and 1 old possible that we determined was a definite. We made the decision to upgrade the possible because it looked nearly identical to a nearby redd that had a resident bull trout actively on it.

When we were surveying the braded channels adjacent to the campground we found an additional three definite redds - two redds each had a single fish on it. One female was actively digging. We ended the survey with a total of five redds and saw three adult bull trout. The bull trout were approximately 8 inches in length because they are resident MF Ahtanum fish. We tried capturing a few photos of the fish, but couldn't get in camera range without them spooking. Both surveyors got a close look at the fish and are confident on identification.



14

2013 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Middle Fork Ahtanum

Code # (see Backside): 2

Start/Stop Tree Phones Campground downstream to last old redd

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Cloudy

Date: 2/23/14

Pass # 3

Water Temps / Time 1) 9:29 / 6 C 2) 10:30 / 6 C Visibility Moderate

Investigators: C. Anderson, N. Fenton

Start Time: 9:29

End Time: 10:30

<u>Redds:</u>	<u>New</u>	<u>Old</u>
<u>Definite:</u>	<u>1</u>	<u>5</u>
<u>Probable:</u>	<u> </u>	<u> </u>
<u>Possible:</u>	<u> </u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 2 (old) Loose

Sub-adults:

Juveniles:

Morts Cause?

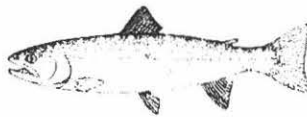
Comments (tagged fish, H2O visibility, etc):

C. Anderson and N. Fenton began surveying downstream at 9:29 from the Tree Phones Campground. 1 new red was found in the braided section of the stream near the campground. We continued surveying downstream to the last redd marked furthest downstream. The section below this redd has not been productive for redds and no fish were seen below this point on the last 2 passes. We ended our survey at 10:30.

Date	Stream Name	Survey Type	Pass Number (1, 2, 3, 4)	Waypoint Number	Waypoint Description
9/4/2014	S.F Ahtanum	Redd		1	1 Redd number 1
9/17/2014	S.F Ahtanum	Redd		2	1 Redd number 2
9/17/2014	S.F Ahtanum	Redd		2	2 Redd number 3
10/2/2014	S.F Ahtanum	Redd		3	

S.F. Ahlstrom - continued

redd Status	Latitude	Longitude	Observer	Agency	Comments
possible			F Flett	YN	not upgraded on subsequent passes
Definite	46.46712	-121.02609	F Flett	YN	
Definite	46.46711000	-121.02623000	F Flett	YN	
			F Flett	YN	no redds observed on third pass



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Box Canyon

Code # (see Backside): 8

Start/Stop Kachess Reservoir (high water) to Peek-a-boo falls

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Sunny

Date: 10/3/2014

Pass # 1

Water Temps / Time 1) 1:10 / 9C 2) 3:50 / 9 C Visibility Good

Investigators: A. Bunce, N. Fenton, R. Randall

Start Time: 1:10

End Time: 3:50

Redds:	New	Old
Definite:	<u>1</u>	<u></u>
Probable:	<u>2</u>	<u></u>
Possible:	<u></u>	<u></u>

Bull Trout Observed:

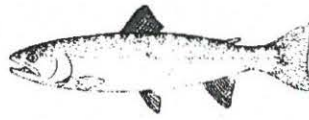
Adults: On Redds Loose

Sub-adults:

Juveniles:

Morts 1 Cause? Likely animal- only head remained

Comments (tagged fish, H2O visibility, etc):



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Box Canyon Creek

Code # (see Backside): 8

Start/Stop Box Canyon Creek up to Falls

Weather: Cloudy and beautiful!

Date: 10 / 14 / 14

Pass # 2

Water Temps / Time 1) 46.7°F 2) _____ **Visibility** Very Clear

Investigators: David Child, Jeff Thomas

Time: 9 : 45

End Time: 12 : 45

Redds:	New	Old
Definite:	<u>8</u>	<u>1</u>
Probable:	<u>_____</u>	<u>1</u>
Possible:	<u>_____</u>	<u>_____</u>

Bull Trout Observed:

Adults: On Redds 0 Loose 1

Sub-adults: _____

Juveniles: _____

Morts _____ Cause? _____

Comments (tagged fish, H2O visibility, etc): We saw a couple kokanee and one redd we marked as a bull trout, we corrected in our notes to be a kokanee redd, being very small.

I can provide the GPS points for this survey later this year with all my points. There are definitely places where the surveyor has to get out on the left bank and scramble over cascades. After doing this survey the last 2 years I'm left wondering why aren't more redds laid closer to the falls. Most of our redds today were in the bottom 1/2 of the survey.



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Box Canyon Creek

Code # (see Backside): 8

Start/Stop _____
 Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Raining heavily

Date: 10 / 23 / 14

Pass # 3

Water Temps / Time 1) 12pm
2) _____

Visibility Poor

Investigators: Cassandra Anderson, Nicole Fenton

Start Time: _____ End Time: _____

Redds:	New	Old
Definite:	_____	_____
Probable:	_____	_____
Possible:	_____	_____

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 0 Cause? _____

Comments (tagged fish, H2O visibility, etc):

The surveyors arrived at Box Canyon Creek at 12pm to determine whether Box Canyon could be surveyed the following day, 10/24/14. We drove up to Peak-A-Boo falls and walked down to the stream. The velocity was dangerously high. We had to call off the survey for 10/24/14.



14 2013 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Box Canyon Creek

Code # (see Backside): 8

Start/Stop

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Light Rain

Date: 10 / 29 / 14

Pass # 3

Water Temps / Time 1) 7C at 9am

2) _____

Visibility Poor

Investigators: Cassandra Anderson, Nicole Fenton

Start Time: _____

End Time: _____

Redds: New

Old

Definite: _____

Probable: _____

Possible: _____

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 0 Cause? _____

Comments (tagged fish, H2O visibility, etc):

Nicole and Cassandra arrived at Box Canyon Creek at 9am with hopes of surveying despite the recent heavy rainfall. We parked at the campground kiosk and walked through the campground to Box Canyon Creek. The water was very high and the velocity was too dangerous to survey. We walked the stream's right bank from the mouth of Box Canyon where it was flowing into the reservoir to where the trail used

Box Canyon - continued code 8, Pass 3 10/29/14

to cross the stream just upstream of the campground. We took a water temperature near the campground, it was 7C. We then drove up to Peak-A-Boo falls to further check things out. We couldn't see the bottom of the stream because of the high flows.

Codes\Descriptions (Sorted by Stream)

Ahtanum Cr - Middle Fk (Ahtanum Cr Trib)

- 2 Tree Phones CG Road bridge crossing - downstream 2 miles

Ahtanum Cr - North Fk (Ahtanum Cr Trib)

- 4 Gray Rock trail upstream to confluence of Shellneck Creek

Ahtanum Cr - South Fk (Ahtanum Cr Trib)

- 5 SF Ahtanum Creek RM 7.7 to RM 10.4 campsite to gate above Reservation Creek

American R (Bumping R Trib)

- 1 Lower - Union Creek confluence to downstream .5 miles
- 6 Upper - Access road .5 miles above Lodgepole campground to Mesatchee Cr trail crossing

Bear Cr (South Fork Tieton R Trib)

- 7 Mouth to Steep Canyon Cascades (Barrier)

Box Canyon Cr (Kachess R Trib)

- 8 Kachess Reservoir (high water) to Peek-a-boo falls

Bumping R (Naches R Trib)

- 9 Bumping Lake confluence to barrier falls

Copper Cr (Deep Cr Trib)

- 10 Confluence Copper Creek to 1808 road crossing

Crow Cr (Little Naches R Trib)

- 11 Beaver pond to large boulders (2008 - current)
- 12 Road 1922 trail crossing to large boulders (1999 - 2007)

Deep Cr (Bumping R Trib)

- 14 Bumping Lake upstream to road 1800 crossing
- 15 Road 1800 (culvert) crossing upstream to Copper Cr confluence
- 16 Copper Cr confluence upstream to Deep Cr falls

DeRoux Cr (North Fk Teanaway Trib)

- 17 Mouth to the 1392 trail crossing

Gold Cr (Yakima R Trib) figure out on Friday

- 18 Gold Creek frontage road, upstream to Trail 1314 Crossing (Bottom of Avalanche)
- 19 Trail 1314 Crossing (Bottom of Avalanche) upstream to Upper Falls

Hellbender Cr (North Fork Tieton R Trib)

- 36 Mouth to 50 yards above trail 1128 crossing.

Indian Cr (North Fork Tieton R Trib)

- 20 Highway 12 bridge upstream to North Spring confluence
- 21 North Spring confluence with Indian Creek, upstream to Trail 1147 crossing
- 22 North Spring confluence with Indian Creek upstream to Beaver Dam in North Spring*
- 23 Upper South Spring confluence with Indian Creek to Upper South Spring*
- 54 Trail 1147 trail crossing to Barrier Falls

Kachess River (Kachess Reservoir Trib)

- 24 Kachess Reservoir to falls

Kettle Cr (American R Trib)

- 25 Mouth to steep cascade falls/flagged

Little Wildcat Cr (Rattlesnake Cr Trib)

- 26 Mouth to rockslide

Rattlesnake Cr (Naches R Trib)

- 27 Trail 1114 crossing upstream to MJB trail crossing
- 28 MJB trail crossing upstream to confluence of Shell Cr
- 29 Confluence of Shell Cr upstream to confluence of Little Wildcat Cr
- 30 Confluence of Little Wildcat Cr upstream to Beaver dam near McNeil Creek

Shell Cr (Rattlesnake Cr Trib)

- 31 Confluence with Rattlesnake Cr upstream to Burnt Mt trail crossing

Shellneck Cr (North Fork Ahtanum Cr Trib)

- 32 Confluence with North Fork Ahtanum Cr to .3 miles upstream

Teanaway R - North Fork (Teanaway R Trib)

- 33 DeRoux Creek campground upstream to barrier falls

Tieton - North Fork (Tieton R Trib)

- 69 From .3 below Hellbender Cr upstream to barrier falls.

Tieton R - South Fork (Tieton R Trib)

- 37 Blue slide to 1050 road
- 38 1050 road to Bear Creek confluence
- 39 Bear Creek confluence to South Fork Tieton falls
- 68 Confluence of Cedar Cr at Bakeoven CG upstream to Blueslide

Union Cr (American R Trib)

- 41 Mouth to falls

Upper Yakima - mainstem Index (Easton Lk upto Powerline&FishPonds)

- 62 Keechelus Dam, downstream to BPA Power-line crossing
- 63 BPA Power-line crossing, downstream to the Quarry
- 64 Quarry to confluence of Easton Lake
- 65 Crystal Springs Bridge, downstream to BPA Power-line crossing



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Mineral Creek

Code # (see Backside): N/A (this is not in the index area, we were just investigating)

Start/Stop Mineral Creek from the confluence with the Kachess River to the fish barrier falls (approximately 1/8 mi).

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Overcast, raining.

Date: 10 / 16 / 14

Pass # 1

Water Temps / Time 1) 8C at 11:40 am

2) _____

Visibility Fair

Investigators: Cassandra Anderson, Nicole Fenton

Start Time: 11:40 am

End Time: 11:55 am

<u>Redds:</u>	New	Old
Definite:	<u>0</u>	<u> </u>
Probable:	<u>0</u>	<u> </u>
Possible:	<u>0</u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 0 Cause?

Comments (tagged fish, H20 visibility, etc):

Mineral Creek is not part of the bull trout index area, but we were instructed to investigate it for adult bull trout. We surveyed upstream from the Mineral Creek and Kachess River confluence to the fish barrier sheet flow/cascading area about 1/8-1/4mi upstream. We did not observe any fish or redds.



14
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Upper Bumping River

Code # (see Backside): 9

Start/Stop The Falls to Bumping Lake

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear, Sunny, Warm

Date: 09 / 04 / 14

Pass # 1

Water Temps / Time 1) 2) Visibility Clear ~ 8ft

Investigators: NL, SS

Start Time: 11:17 End Time: 14:24

<u>Redds:</u>	New	Old
Definite:	<u>0</u>	<u>0</u>
Probable:	<u>0</u>	<u>0</u>
Possible:	<u>0</u>	<u>0</u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: _____

Juveniles: _____

Morts _____ Cause? _____

Comments (tagged fish, H2O visibility, etc):



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Upper Bumping River

Code # (see Backside): 9

Start/Stop Started at mouth into Bumping Lake and finished at the falls

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Overcast with periods of clearing

Date: 09 /17 / 2014

Pass # 2

Water Temps / Time 1) 51°F 2) Visibility 4ft (to bottom in most places)

Investigators: Kline, S., Downes, S., Parks, R., Holcomb, C.

Start Time: 11 : 30

End Time: 14 : 15

<u>Redds:</u>	New	Old
Definite:	<u>0</u>	<u>0</u>
Probable:	<u>1</u>	<u>0</u>
Possible:	<u>0</u>	<u>0</u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 0 Cause?

Comments (tagged fish, H2O visibility, etc):

Probable redd found in central channel; marked with GPS and photographed, no fish associated with this redd. Small redd could be either bull trout or brook trout.

Other animals observed: tree frog, garter snake spp., many cascades frogs and western toads, bald eagle.



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Lower Bumping River

Code # (see Backside): IV/A
 Start/Stop Bridge on FS rd 1050 upstream about 1 mile to Bumping Dam
 Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: About 75°F, some clouds, light breeze

Date: 09 / 03 / 2014
 Pass # 2

Water Temps / Time 1) 2) 60°F Visibility 4ft

Investigators: Kline, S., Holcomb, C.

Start Time: 11 : 00 End Time: 14: 40

<u>Redds:</u>	New	Old
Definite:	<u>0</u>	<u>0</u>
Probable:	<u>0</u>	<u>0</u>
Possible:	<u>0</u>	<u>0</u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 0 Cause?

Comments (tagged fish, H2O visibility, etc):

Sparse Bull Trout habitat usually in portion of Chinook habitat / old Chinook redds.

Other wildlife observed: Belted kingfisher, American dipper.



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Lower Bumping River

Code # (see Backside): N/A

Start/Stop Face of Dam to Bridge

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: overcast, drizzle, cool

Date: 09 / 18 / 14

Pass # 2

Water Temps / Time 1) 2) Visibility Clear ~ 8ft

Investigators: NL, SS

Start Time: 10:30 End Time: 13:15

Redds:	New	Old
Definite:	<u>0</u>	<u>0</u>
Probable:	<u>0</u>	<u>0</u>
Possible:	<u>0</u>	<u>0</u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: _____

Juveniles: _____

Morts _____ Cause? _____

Comments (tagged fish, H2O visibility, etc): Numerous Chinook Salmon were seen spawning during the survey. 23 Live Chinook were observed while 14 Dead Chinook were also observed.



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Crow Creek

Code # (see Backside): 11
 Start/Stop Road 1922 trail crossing to large boulders

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Steady light rain and fog all day

Date: 09 / 24 / 14
 Pass # 1 and only pass

Water Temps / Time 1) 08:30 10 C 2) 12:30 9.5 C Visibility Good

Investigators: Pat Monk, Nicole Fenton

Start Time: 08 : 00 End Time: 16 : 15

<u>Redds:</u>	<u>New</u>	<u>Old</u>
<u>Definite:</u>	<u>2</u>	<u> </u>
<u>Probable:</u>	<u> </u>	<u> </u>
<u>Possible:</u>	<u> </u>	<u> </u>

Bull Trout Observed:

Adults: On Redds Loose 2

Sub-adults:

Juveniles:

Morts Cause?

Comments (tagged fish, H2O visibility, etc): We left Ellensburg at 05:30 and were at the end of the 1922 Road by about 08:00. We geared up and were down to the creek to start the survey by 08:30. We had a light, steady rain for almost the entire survey. We walked upstream in the creek most of the way, only exiting the creek for short sections of rapids or logjams that were difficult to wade. We found two redds, both were within the upper mile of the survey area. We made it to the large boulders at about noon, my gps showed we had traveled 4.8 miles from the trail crossing. While going up through the

Crow - continued code 11 Pass 1 (only) 9/24/14

large boulders there was a blockage area I was unable to find a way to cross through. We headed back downstream at about 12:30. We were able to make good time traveling through the forest on some sections. We reached the truck at about 4:15 p.m.

Pat Monk has GPS waypoints for the redds, #1: N 47.02149, W 121.28654, 3774' elevation, #2: N 47.02110, W 121.29269, 3688' elev.

Elevation data is suspect because redd #2 was upstream, and higher elevation than redd #1.



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Deep Creek

Code # (see Backside): 14

Start/Stop 1800 bridge to Bumping Lake

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Sunny and clear skies at the beginning, slightly cloudy at the end.

Date: 08 / 29 / 14

Pass # 1

Water Temps / Time 1) 50F 12:05am

2) _____

Visibility Good

Investigators: Nathan Longoria

Start Time: 10:28 am

End Time: 11:30 am

<u>Redds:</u>	New	Old
Definite:	<u>0</u>	_____
Probable:	_____	_____
Possible:	_____	_____

Bull Trout Observed:

Adults: On Redds 0 Loose 1

Sub-adults: 0

Juveniles: 0

Morts 0 Cause? _____

Comments (tagged fish, H2O visibility, etc):

Weather conditions were sunny and clear. The survey began at 10:28AM. Nathan Longoria surveyed downstream from the 1800 bridge to the mouth of Deep Creek. No redds were identified but one adult Bull Trout was seen holding half way up a riffle, in the upper 2/3 of the survey.



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Deep Creek

Code # (see Backside): 14

Start/Stop start at 1800 road, stop at lake

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: clear

Date: 9 / 16 / 14

Pass # 2

Water Temps / Time 1) 43F 2) Visibility Clear

Investigators: Torretta/Monsanto

Start Time: 10 :00

End Time: 11 :40

<u>Redds:</u>	New	Old
Definite:	<u>4</u>	<u>0</u>
Probable:	<u>0</u>	<u>0</u>
Possible:	<u>0</u>	<u>0</u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: _____

Juveniles: _____

Morts _____ Cause? _____

Comments (tagged fish, H2O visibility, etc): Eric said that this segment had only one prior pass conducted this year. No fish observed, so assumed spawning activity completed.



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Deep Creek

Code # (see Backside): 15
 Start/Stop 1800 bridge to Copper Creek
 Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Sunny and clear skies at the beginning, slightly cloudy at the end.

Date: 08 / 29 / 14
 Pass # 1

Water Temps / Time 1) 45F 10:28am
2) 46.4F 12:52am Visibility Good

Investigators: Eric Anderson, Jeff Thomas, Cassandra Anderson

Start Time: 10:28 am End Time: 12:52 pm

<u>Redds:</u>	New	Old
Definite:	<u>20</u>	<u> </u>
Probable:	<u> </u>	<u> </u>
Possible:	<u> </u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0
 Sub-adults: 0
 Juveniles: 0
 Morts 0 Cause?

Comments (tagged fish, H2O visibility, etc):
 Weather conditions were sunny and clear. The survey began at 10:28AM. Eric A., Jeff Thom., and Cassandra A. walked upstream, surveying from the 1800 bridge to the Copper Creek confluence. Eric and Cassandra surveyed the braided channels. 20 redds were identified, 6 redds were in the braided channels off the mainstem. No fish were seen during the survey. The survey was completed at

Deep - continued code 15, Pass 1, 8/29/14

12:52PM.

Eric, Jeff and Cassandra traveled up to the 1808 bridge to wait for the folks completing the upper survey reach. Jeff and Cassandra were standing just downstream of the 1808 bridge when they saw a sub-adult bull trout, approximately 6 inches in length, tucked up by a downed log.



14

2013 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Deep Creek

Code # (see Backside): 15

Start/Stop 1800 Rd crossing upstream to Copper Cr confluence

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear Skies

Date: 9 / 5 / 14

Pass # 2

Water Temps / Time 1) 10:10 / 7 C 2) 12:53 / 8 C Visibility Good

Investigators: C. Anderson, E. Anderson, N.Fenton

Start Time: 10:10

End Time: 12:53

<u>Redds:</u>	New	Old
Definite:	<u>12</u>	<u>20</u>
Probable:	<u>0</u>	<u>0</u>
Possible:	<u>0</u>	<u>0</u>

Bull Trout Observed:

Adults: On Redds 2 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 0 Cause? _____

Comments (tagged fish, H2O visibility, etc):

We surveyed upstream from the 1800 Rd. to Copper Creek. At the braided section we divided up and 2 fish were observed on a redd. 2 of the 12 new redds were found in the braided section of the stream.



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Deep Creek

Code # (see Backside): 15 Rd 1800 (culvert) crossing upstream to Copper Cr confluence

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: mostly Clear Skies

Date: 09 / 16 / 14

Pass # 3

Water Temps / Time 1) 1000 hrs / 7 C 2) 1225 hrs / 8 C Visibility clear

Investigators: Eric Anderson (WDFW) & Cassandra Anderson (Mid-Columbia Fisheries)

Start Time: 1000 hrs End Time: 1225 hrs

<u>Redds:</u>	New	Old
Definite:	<u>6</u>	<u>32</u>
Probable:	<u> </u>	<u> </u>
Possible:	<u> </u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts Cause?

Comments: GPS Redd Waypoints 20-24 (+/- 21-33 ft.). Cassandra has GPS WP for one additional redd. No fish observed, spawning appears to be complete.



14
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Deep Creek

Code # (see Backside): 16
 Start/Stop Copper Ck Bridge to Falls

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Overcast, warm

Date: 8 / 29 / 14
 Pass # 1

Water Temps / Time 1) start 8.0 C 2) end 9.0 c Visibility clear

Investigators: Pat Monk, Nicole Fenton

Start Time: 10 : 25 End Time: 14 : 00

<u>Redds:</u>	New	Old
Definite:	<u>24</u>	<u> </u>
Probable:	<u> </u>	<u> </u>
Possible:	<u>1</u>	<u> </u>

Bull Trout Observed:

Adults: On Redds Loose 1

Sub-adults: 1 sub adult associated with a redd

Juveniles:

Morts 1 Cause? Otter kill

Comments (tagged fish, H2O visibility, etc):
The stream had a long, perhaps 1,000 feet stretch that was de-watered about 3/4 of the way up the survey reach. 8 of the 24 redds were above the dewatered stretch, indicating that bull trout had migrated up the stream earlier in the season while there was still water flow. One mort carcass was found on the survey and only one loose adult fish was seen.



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Deep Creek

Code # (see Backside): 16

Start/Stop Copper Creek confluence upstream to Deep Creek falls

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Sunny and warm

Date: 09 / 5 / 2014

Pass # 2

Water Temps / Time 1) 42 degrees C (Copper Creek and Deep Creek at confluence)

2) 45 degrees F at bridge Visibility Excellent

Investigators: Jeff Thomas (USFWS)

Start Time: 10:15 AM

End Time: 2:20 PM (at bridge, see notes)

Redds: New

Old

Definite: 7

23

Probable: 1

Possible: 0

1 (changed to def- see notes)

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults:

Juveniles: None

Morts 1 Cause: Otter kill

Comments (tagged fish, H2O visibility, etc): The one possible redd was changed to a definite (see above). The original flagging was not changed. GPS coordinates were recorded for all redds up to the bridge by Jeff. Eric surveyed from the bridge to the falls and only found the five redds noted on the first pass (no new). He took the coordinates for those five redds with his GPS.



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Deep Creek

Code # (see Backside): 16 (upper section of code 16 -- 1808 Rd bridge to falls).

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: mostly Clear Skies

Date: 09 / 5 / 14

Pass # 2

Water Temps / Time 1) 2) Visibility clear

Investigators: Eric Anderson (WDFW)

Start Time: 1345 hrs End Time: 1400 hrs

<u>Redds:</u>	New	Old
Definite:	<u>0</u>	<u>5 -included in J. Thomas survey total</u>
Probable:	<u> </u>	<u> </u>
Possible:	<u> </u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts Cause?

Comments (tagged fish, H2O visibility, etc): **GPS Waypoints 9-13 for these 5 redds taken on Eric Anderson's Garmin etrex (accuracy +/- 27 ft). These 5 redds were included in Jeff Thomas's total count (see his survey notes for this section).**



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Deep Creek + Copper Creek

Code # (see Backside): 16 + Code 10

Start/Stop Copper Creek confluence upstream to Deep Creek Falls

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear Skies

Date: 9/16/14

Pass # 3

Water Temps / Time 1) 10:20 AM / 8 degrees C 2) 1:30 / 8.5 degrees C Visibility Good

Investigators: C. Anderson, N. Fenton, C. Holcomb

Start Time: 10:20

End Time: 1:30

Redds:	New	Old
Definite:	<u>4</u>	<u>31</u>
Probable:	<u> </u>	<u>1</u>
Possible:	<u> </u>	<u>1</u>

Bull Trout Observed:

Adults: On Redds 1 (old) Loose

Sub-adults:

Juveniles:

Morts Cause?

Comments (tagged fish, H2O visibility, etc):

No Redds in Copper Cr. SA.

N. Fenton and C. Holcomb began surveying in Copper Creek at 10:20 and observed a starting temperature of 8 degrees C. They surveyed downstream Copper Creek to the confluence at Deep Creek and then began surveying upstream Deep Creek at 10:30 AM with a starting temperature of 7 degrees C in Deep Creek. N. Fenton and C. Holcomb ended their survey at 1:30 PM at the bridge downstream of the Deep Creek falls. An ending temperature of 8.5 degrees C was recorded. 25 old

Deep + Copper - continued, Codes 16 + 10, Pass 3 9/16/14

definite redds, 1 old probable redd, 1 old possible redd, 1 old fish on a redd, and 3 new definite redds were observed in this section of Deep Creek.

C. Anderson surveyed from the bridge upstream on Deep Creek to the Falls. She observed 6 old definite redds and 1 new definite redd.



¹⁴
2013 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Copper Deep Creek

Code # (see Backside): 10
Start/Stop Copper Ck Bridge to confluence with Deep CK

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Overcast, warm

Date: 8 / 29 / 14
Pass # 1

Water Temps / Time 1) start 8.0 C 10:15 am 2) end 10:30 a.m. Visibility clear

Investigators: Pat Monk, Nicole Fenton

Start Time: 10 : 25 End Time: 14 : 00

<u>Redds:</u>	New	Old
Definite:	<u>0</u>	<u> </u>
Probable:	<u>0</u>	<u> </u>
Possible:	<u>0</u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0
Sub-adults: 0
Juveniles: 0
Morts 0

Comments (tagged fish, H2O visibility, etc):
We walked downstream from the bridge to the Copper Ck confluence, no redds or fish were observed.



2014 Bull Trout Spawning Ground Survey Form

Stream: Gold Creek

Code # (see Backside): 18

Start/Stop frontage road, upstream to Trail 1314 Crossing (Bottom of Avalanche)

Weather: Sunny, clear

Date: 10 / 02 / 14

Pass # 1

Water Temps / Time 1) 1015 Hrs. 9.4 C. 2) 1350 Hrs 8.0 C. Visibility Crystal Clear

Investigators: Eric Anderson (WDFW) & Dr. Paul James (CWU)

Start Time: 1015 Hrs

End Time: 1350 Hrs

<u>Redds:</u>	New	Old
Definite:	<u>6</u>	<u> </u>
Probable:	<u>0</u>	<u> </u>
Possible:	<u>0</u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 0 Loose 2

Sub-adults: 0

Juveniles: 0

Morts 0 Cause?

Comments (tagged fish, H2O visibility, etc):
GPS accuracy +/- 20-25 ft. Hundreds of kokanee schooling and spawning in the lower reach from the frontage road bridge upstream to an area near the cabins. Although the stream was connected throughout the reach and barely passable for bull trout on this date, it looked like a section had been dry and unpassable recently. We found 1 adult bull trout mortality in a stranded pool that was going dry in this reach at N47.40656 W121.37560.



2014 Bull Trout Spawning Ground Survey Form

Stream: Gold Creek

Code # (see Backside): 18

Start/Stop frontage road, upstream to Trail 1314 Crossing (Bottom of Avalanche)

Weather: Cloudy, foggy in the morning and then sun in the afternoon.

Date: 10 / 13 / 14

Pass # 2

Water Temps / Time 1) 0935 Hrs. 9.4 C. 2) 1315 Hrs 8.1 C. Visibility Crystal Clear

Investigators: Eric Anderson (WDFW)

Start Time: 0935 Hrs

End Time: 1315 Hrs

<u>Redds:</u>	New	Old
Definite:	<u>3</u>	<u>6</u>
Probable:	<u>0</u>	<u> </u>
Possible:	<u>0</u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 4 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 0 Cause?

Comments (tagged fish, H2O visibility, etc):

GPS accuracy +/- 22-38 ft. Low flow & subsurface (dry) passage barrier for approx... 100 meters near a split channel N47.40377 W121.37833....cabins nearby & a staff gage below this dry area. There were many kokanee spawning in the area downstream of this split to the frontage road bridge. There were no adult bull trout observed below this split (dry area) on this survey. There was an adult bull trout mort (stranded in pool) at N47.40544 W121.37492this was near the new house/cabin being built on the bank of the creek! There was another subsurface (dry) area further upstream (dry area approx. 200 meters long) at N47.40630 W121.37420. Picked up surface flow again at N47.40880 W121.37253.

Gold continued, Code 14, Pass 2

10/13/14

1 old redd from 1st pass at N47.41528 W121.36267 located in side (split) channel near undercut bank & overhead vegetation cover.

2 old redds at N47.41686 W121.36138 with gravel pockets immediately up & downstream of LWD structure with nearby pool upstream.

1 old redd & 1 new redd at N47.41849 W121.36184 with gravel pockets immediately downstream of LWD & a large pool nearby.

1 new redd at N47.42161 W121.36154 with gravel pockets immediately downstream of LWD, pocket gravel along bank & overhead vegetative cover.

1 new redd at N47.42196 W121.36180 with gravel pockets immediately downstream of LWD.

1 old redd at N47.42209 W121.36176 with gravel pockets immediately upstream of LWD & downstream of large boulders & pool (4 adults in pool near redd).

1 old redd at N47.42793 W121.35451 with gravel pockets surrounded by obstructions (LWD & boulders).



14
2014 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Gold Creek

Code # (see Backside): 19
 Start/Stop Trail 1314 crossing to upper falls

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: bright sun

Date: 10 / 02 / 2014
 Pass # 1

Water Temps / Time 1) 8C/ 11:34 2) _____ Visibility very clear

Investigators: Paul Huffman, Cassandra Anderson, Nicole

Start Time: 11:34 End Time: 13:40

<u>Redds:</u>	New	Old
Definite:	<u>6</u>	_____
Probable:	_____	_____
Possible:	_____	_____

Bull Trout Observed:

Adults: On Redds 2 Loose 5

Sub-adults: _____

Juveniles: _____

Morts _____ Cause? _____

1 Old Definite redd at 47.43240, 121.35139. HHU: **gravel pockets surrounded by obstructions (LWD structures)**

1 Old Definite redd at 47.43591, 121.34981. HHU: **gravel pockets immediately downstream of one or more obstructions (LWD structures), gravel pockets surrounded by obstructions (LWD structures, boulders), lateral gravel bars.**

1 New Definite redd at 47.43694, 121.35088. HHU: **gravel pockets immediately downstream of one or more obstructions (LWD structures, boulders).** Boulders in a wide cascade area

1 New Definite redd at 47.43777, 121.35106. HHU: **gravel pockets immediately downstream of one or more obstructions (LWD structures, boulders), riffle crests in gravel riffles.** The redd was downstream of an LWD structure.

1 Old Definite redd at 47.44105, 121.34898. HHU: **gravel pockets immediately downstream of one or more obstructions (LWD structures, boulders).** The redd was downstream of boulders.

1 New Definite redd at 47.44848, 121.34505. HHU: **gravel pockets immediately downstream of one or more obstructions (LWD structures, boulders), lateral gravel bars.** The redd was downstream of boulders.

1 Old Definite redd at 47.44902, 121.3455. HHU: **gravel pockets immediately upstream of one or more obstructions, gravel pockets immediately downstream of one or more obstructions (LWD structures, boulders), riffle crests in gravel riffles.** The redd was downstream of an LWD structure and upstream of boulders.

1 Old Definite redd at 47.44941, 121.34267. HHU: **gravel pockets surrounded by obstructions (LWD structures, boulders), lateral gravel bars.**

1 Old Definite redd at 47.44968, 121.34278. HHU: **gravel pockets immediately upstream of one or more obstructions (LWD structures, boulders).** The redd was under an overhanging bank as well.



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Gold Creek

Code # (see Backside): 18 & 19

Start/Stop _____

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Raining heavily

Date: 10 / 23 / 14

Pass # 3

Water Temps / Time 1) 9:30am

2) _____

Visibility Poor

Investigators: Eric Anderson, Cassandra Anderson, Nicole Fenton

Start Time: _____

End Time: _____

Redds:	New	Old
Definite:	_____	_____
Probable:	_____	_____
Possible:	_____	_____

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 0 Cause? _____

Comments (tagged fish, H2O visibility, etc):

The surveyors arrived at Gold Creek at 9:30am with hopes of surveying despite the recent days of steady rainfall. It was down pouring rain when we arrived. We stopped at the Frontage Road bridge to view the stream conditions. Gold Creek had extremely high water and high velocity. We couldn't see the bottom of the stream. We drove into the Gold Creek Pond parking lot and walked over to get a view

Gold- continued code 18+19 Pass 3 10/23/14

of the stream from there. Gold Creek's riffles were white water rapids. We decided survey conditions were unsafe and visibility was too poor to see anyway. We called the survey off.

Codes\Descriptions (Sorted by Stream)

Ahtanum Cr - Middle Fk (Ahtanum Cr Trib)

- 2 Tree Phones CG Road bridge crossing - downstream 2 miles

Ahtanum Cr - North Fk (Ahtanum Cr Trib)

- 4 Gray Rock trail upstream to confluence of Shellneck Creek

Ahtanum Cr - South Fk (Ahtanum Cr Trib)

- 5 SF Ahtanum Creek RM 7.7 to RM 10.4 campsite to gate above Reservation Creek

American R (Bumping R Trib)

- 1 Lower - Union Creek confluence to downstream .5 miles
- 6 Upper - Access road .5 miles above Lodgepole campground to Mesatchee Cr trail crossing

Bear Cr (South Fork Tieton R Trib)

- 7 Mouth to Steep Canyon Cascades (Barrier)

Box Canyon Cr (Kachess R Trib)

- 8 Kachess Reservoir (high water) to Peek-a-boo falls

Bumping R (Naches R Trib)

- 9 Bumping Lake confluence to barrier falls

Copper Cr (Deep Cr Trib)

- 10 Confluence Copper Creek to 1808 road crossing

Crow Cr (Little Naches R Trib)

- 11 Beaver pond to large boulders (2008 - current)
- 12 Road 1922 trail crossing to large boulders (1999 - 2007)

Deep Cr (Bumping R Trib)

- 14 Bumping Lake upstream to road 1800 crossing
- 15 Road 1800 (culvert) crossing upstream to Copper Cr confluence
- 16 Copper Cr confluence upstream to Deep Cr falls

DeRoux Cr (North Fk Teanaway Trib)

- 17 Mouth to the 1392 trail crossing

Gold Cr (Yakima R Trib) figure out on Friday

- 18 Gold Creek frontage road, upstream to Trail 1314 Crossing (Bottom of Avalanche)
- 19 Trail 1314 Crossing (Bottom of Avalanche) upstream to Upper Falls

Hellbender Cr (North Fork Tieton R Trib)

- 36 Mouth to 50 yards above trail 1128 crossing.

Indian Cr (North Fork Tieton R Trib)

- 20 Highway 12 bridge upstream to North Spring confluence
- 21 North Spring confluence with Indian Creek, upstream to Trail 1147 crossing
- 22 North Spring confluence with Indian Creek upstream to Beaver Dam in North Spring*
- 23 Upper South Spring confluence with Indian Creek to Upper South Spring*
- 54 Trail 1147 trail crossing to Barrier Falls

Kachess River (Kachess Reservoir Trib)

- 24 Kachess Reservoir to falls

Kettle Cr (American R Trib)

- 25 Mouth to steep cascade falls/flagged

Little Wildcat Cr (Rattlesnake Cr Trib)

- 26 Mouth to rockslide

Rattlesnake Cr (Naches R Trib)

- 27 Trail 1114 crossing upstream to MJB trail crossing
- 28 MJB trail crossing upstream to confluence of Shell Cr
- 29 Confluence of Shell Cr upstream to confluence of Little Wildcat Cr
- 30 Confluence of Little Wildcat Cr upstream to Beaver dam near McNeil Creek

Shell Cr (Rattlesnake Cr Trib)

- 31 Confluence with Rattlesnake Cr upstream to Burnt Mt trail crossing

Shellneck Cr (North Fork Ahtanum Cr Trib)

- 32 Confluence with North Fork Ahtanum Cr to .3 miles upstream

Teanaway R - North Fork (Teanaway R Trib)

- 33 DeRoux Creek campground upstream to barrier falls

Tieton - North Fork (Tieton R Trib)

- 69 From .3 below Hellbender Cr upstream to barrier falls.

Tieton R - South Fork (Tieton R Trib)

- 37 Blue slide to 1050 road
- 38 1050 road to Bear Creek confluence
- 39 Bear Creek confluence to South Fork Tieton falls
- 68 Confluence of Cedar Cr at Bakeoven CG upstream to Blueslide

Union Cr (American R Trib)

- 41 Mouth to falls

Upper Yakima - mainstem Index (Easton Lk upto Powerline&FishPonds)

- 62 Keechelus Dam, downstream to BPA Power-line crossing
- 63 BPA Power-line crossing, downstream to the Quarry
- 64 Quarry to confluence of Easton Lake



14
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Indian Creek

Code # (see Backside): 20

Start/Stop Highway 12 bridge upstream to N. Spring confluence
 Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear skies, sunny

Date: 09 / 10 / 14

Pass # 1

Water Temps / Time 1) 7C at 9:43 am
2) 8C at 11:35 am

Visibility Fair

Investigators: Cassandra Anderson, Nicole Fenton

Start Time: 9:43 am

End Time: 11:35 am

<u>Redds:</u>	New	Old
Definite:	<u>0</u>	<u> </u>
Probable:	<u>0</u>	<u> </u>
Possible:	<u>0</u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 0 Cause?

Comments (tagged fish, H2O visibility, etc):
 Cassandra and Nicole surveyed walking upstream from the HWY 12 bridge to the North Spring confluence. The water was slightly cloudy in areas, causing visibility to be fair. There were a few new large log jams in the stream from the 2013 and 2014 landslides. It seemed there was quite a bit of new sediment and fine material in the stream, most likely also from the landslides. We did not see any redds

ortfish



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Indian Creek

Code # (see Backside): 20

Start/Stop Highway 12 bridge upstream to N. Spring confluence

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Cloudy

Date: 9/18/14

Pass # 2

Water Temps / Time 1) 9:55 / 8 C 2) 12:10 / 8 C Visibility Good

Investigators: N. Fenton, C. Krider

Start Time: 9:55

End Time: 12:10

<u>Redds:</u>	New	Old
Definite:	_____	_____
Probable:	_____	_____
Possible:	<u>1</u>	_____

Bull Trout Observed:

Adults: On Redds _____ Loose _____

Sub-adults: _____

Juveniles: _____

Morts _____ Cause? _____

Comments (tagged fish, H2O visibility, etc):

N. Fenton and C. Krider entered Indian Creek at 9:55am and observed a starting water temperature of 8 degrees Celsius. We began surveying downstream to the dispersed campsite on the right back of Indian Creek to look for recreation rock dams. An old non-channel spanning dam was removed. We then proceeded back upstream to continue our survey. Kokanee were seen in many of the pools in the first half of our stream section. One redd was observed but was marked possible due to the large school of Kokanee in the pool next to the redd. We ended our survey just downstream of the N. Spring

Indian-continued code 20, Pass 2, 9/18/14

confluence at 12:10 with an ending water temperature of 8 degrees Celsius.



14
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Indian Creek

Code # (see Backside): 22 *confluence in Indian Cr. upstream to Beaver Dam*
 Start/Stop North Spring from Indian Creek road to the confluence with Indian Creek

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

+ additional above beaver dam Eff.

Weather: Cloudy and overcast.

Date: 09 / 18 / 14

Pass # 2

Water Temps / Time 1) 6C at 12:15pm
2) _____

Visibility Good

Investigators: Cassandra Anderson, Joel Hubble

Start Time: 12:15 pm

End Time: 1 pm

<u>Redds:</u>	New	Old
Definite:	<u>1</u>	_____
Probable:	_____	_____
Possible:	_____	_____

Bull Trout Observed:

Adults: On Redds _____ Loose _____

Sub-adults: 0

Juveniles: 0

Morts 0 Cause? _____

Comments (tagged fish, H2O visibility, etc):

We surveyed the North Spring after surveying the mainstem Indian Creek. After ending the Indian Creek survey where the 1147 trail crosses the stream, we hiked up to the road and walked down to where the North Spring flows under the road. We started our survey there. We surveyed walking downstream until we got to the confluence with Indian Creek. 1 definite redd was identified and no fish

were seen,



14
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Indian Creek

Code # (see Backside): 21

Start/Stop N. Spring to campground trail crossing

Weather: Sunny and beautiful!

Date: 9 / 10 / 14

Pass # 1

Water Temps / Time 1) 46.9°F 2) Visibility Very Clear

Investigators: David Child, (Cassandra Anderson and Nicole did the lower section, Eric the upper)

Start Time: 11 : 00 End Time: 12 : 00

<u>Redds:</u>	New	Old
Definite:	<u>0</u>	<u> </u>
Probable:	<u> </u>	<u> </u>
Possible:	<u> </u>	<u> </u>

Bull Trout Observed:

Adults: On Redds Loose

Sub-adults:

Juveniles:

Morts Cause?

Comments (tagged fish, H2O visibility, etc):
 That landslide zone is/was horrible for this system! Mud, silt, new channels and debris littered the bottom half of this survey. No fish or redds were observed.



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Indian Creek

Code # (see Backside): 21

Start/Stop N. Spring to campground trail crossing

Weather: Sunny and beautiful!

Date: 9 / 29 / 14

Pass # 3

Water Temps / Time 1) 45.4°F 2) _____ Visibility Very Clear

Investigators: David Child, Jeff Trammell, Eric Anderson did the lower reach, Cassandra, Nicole, upper

Time: 9 : 35 End Time: 10 : 50

<u>Redds:</u>	New	Old
Definite:	<u>2 EA</u>	<u>3 EA</u>
Probable:	_____	_____
Possible:	_____	_____

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: _____

Juveniles: _____

Morts _____ Cause? _____

Comments (tagged fish, H2O visibility, etc):

That landslide zone is/was horrible for this system! Mud, silt, new channels and debris littered the bottom half of this survey. It works best to hike down the Indian Creek Reach, so that you can survey upstream on the N. Spring.



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Indian Creek

Code # (see Backside): 54

Start/Stop Trail 1147 trail crossing to barrier falls

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear Skies, Sunny

Date: 09 / 10 / 14

Pass # 1

Water Temps / Time 1) 43 F / 1015 Hrs. 2) 39.3 F / 1215 Hrs. Visibility clear

Investigators: Eric Anderson (WDFW)

Start Time: 1015 – 1055 & 1140 – 1215 hrs End Time: 1215 hrs

<u>Redds:</u>	New	Old
Definite:	<u>0</u>	<u> </u>
Probable:	<u>0</u>	<u> </u>
Possible:	<u>0</u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 0 Loose 1 adult above S.Spring

Sub-adults: 0

Juveniles: 0

Morts Cause?

Comments (tagged fish, H2O visibility, etc): **Considerable amount of new gravel, fine sand and sediment input from slides that occurred during the spring throughout much of this reach.**



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Indian Creek

Code # (see Backside): 54

Start/Stop Trail 1147 crossing to barrier falls

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: cloudy, scattered light showers

Date: 9 / 18 / 2014

Pass # 2

Water Temps / Time 1) 2) Visibility very clear

Investigators: Paul Huffman

Start Time: 10:41

End Time: 13:34

<u>Redds:</u>	New	Old
Definite:	<u>2</u>	<u> </u>
Probable:	<u> </u>	<u> </u>
Possible:	<u> </u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults:

Juveniles:

Morts Cause?

Comments (tagged fish, H2O visibility, etc): fancy electronic stream thermometer dead. Apparently you can't get them wet. What kind of design is that?
 The South Spring section was completed at the same time on the way to the upper barrier falls and reported on a separate sheet.



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Indian Creek

Code # (see Backside): 54 23
Start/Stop Upper S. Spring confluence with Indian Creek to Upper S. Spring

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear Skies, Sunny

Date: 09 / 10 / 14

Pass # 1

Water Temps / Time 1) 40.5 F / 1055 Hrs. 2) 40.5 F / 1215 Hrs. Visibility clear

Investigators: Eric Anderson (WDFW)

Start Time: 1055 hrs End Time: 1125 hrs

<u>Redds:</u>	New	Old
Definite:	<u>2</u>	<u> </u>
Probable:	<u>0</u>	<u> </u>
Possible:	<u>0</u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts Cause?

Comments (tagged fish, H2O visibility, etc): Compared to the mainstem, this appears to be the only area with any spawning activity. This is off the main channel, stable spring flow, with no major sediment deposition or affects from recent landslides. Walked steady for 1/2 hour upstream before ending survey (marked with flag). This S. Spring section intersects in the middle of the code 54 section.



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Indian Creek

Code # (see Backside): 23

Start/Stop Upper South Spring confluence with Indian Creek to Upper South Spring

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Partly Cloudy

Date: 9/29/14

Pass # 3

Water Temps / Time 1) 11:18 / 5 C 2) 11:40 / 5 C Visibility Good

Investigators: C. Anderson, N. Fenton

Start Time: 11:18

End Time: 11:40

<u>Redds:</u>	New	Old
Definite:	<u>1</u>	<u>18</u> ¹³
Probable:	<u> </u>	<u> </u>
Possible:	<u> </u>	<u>1</u>

GA.

Bull Trout Observed:

Adults: On Redds 3 (old) Loose

Sub-adults:

Juveniles:

Morts Cause?

Comments (tagged fish, H2O visibility, etc):

¹⁹/₁₃ - old from previous survey, (some flags from last yr. GA.)

C. Anderson and N. Fenton began surveying the South Spring on Indian Creek at 11:18 and observed 19 redd flags. 6 of the 19 redds marked by P. Huffman on the South Spring were not distinguishable by C. Anderson and N. Fenton. The redd marked "possible" by P. Huffman was identified as a "definite" redd by C. Anderson and N. Fenton. We saw 2 redd flags by P. Huffman upstream of E. Anderson's "stop" flag on the South Spring, 1 of these two was visible to us while the other redd was not found.

Kachess - continued code 24, Pass 1

10/15/14

kokanee spawning channel in the spring brook in the lake bed. We walked to the lake and it was drizzly to rainy. The river was dry on its lower half (from Lake to halfway to trail). There was a very small amount of intermittent flow within the last few hundred feet of the Kachess River into the lake (lake level gps: 47.40008 121.23823 +/- 14 ft WGS 84), but not enough to migrate up for adult bull trout. The lake is high compared to other years. Surface temperature on the lake was 12°C, air temp was 12.6°C at 12:20p.m. It appears from the debris line in the channel that the system has not watered up yet this season. The debris was in the bottom of the channel suggesting it settled as the lake drained, but not showing any signs of stream flow type debris lines. We picked up several Western Floater mussels near the lake and put them into the lake as they appeared to be alive, but just above the lake level. We walked up the Kokanee spawning channel, and it was flowing very little on the bottom end, soon going completely dry for ¾ of its length! I believe this is the first time I have witnessed this channel so dry. We did notice some great blue heron tracks, and some coyote tracks, but no whitewash on the stumps, or any sign of kokanee carcasses or redds yet – I think it is just too low flow. Kachess River was dry from the lake to around halfway to the trail, a spot near the multiple cedars fallen into channel on left bank 47.40917 121.23816), temperature of first flow was 9.5°C at 1 p.m. Noticed a new recently recruited green cedar tree at this location. The channel has moved about in several areas from last year, as typical. End of survey ~2pm, still raining. The upper crew (Cassandra and Nichole finished up about a half hour earlier see their notes below).

Observers: Nicole Fenton, Cassandra Anderson

Reach: Kachess River from trail crossing to falls

Weather: Overcast, raining

Visibility: Fair, the rain made it difficult to see at times

Start: 11:10am, temp: 8C

End: 12:45pm, temp: 7C

No fish or redds were observed

Notes: A rock dam was removed where the trail crosses the Kachess River. The dam was comprised of large rocks and a few small trees. One tree had been freshly cut (this summer) from the bank. The BTTF hasn't seen a dam of the magnitude there in the past, but will closely monitor this site in future summers. Coordinate of the dam: 47.41685, -121.24026.



14
2013 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Kachess River

Code # (see Backside): 24

Start/Stop Lake to falls

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Overcast, drizzly, calm, cool

Date: 10 /27 / 2014

Pass # 2

Water Temps / Time 1) 5.5 °C Trail xing @ 11:21 2) 8°C upper Visibility Excellent

Investigators: Judy Neibaur USFWS, William Meyer WDFW

Start Time: 11 : 21

End Time: 16 :30

<u>Redds:</u>	<u>New</u>	<u>Old</u>
<u>Definite:</u>	<u> 5 </u>	<u> </u>
<u>Probable:</u>	<u> 2 </u>	<u> </u>
<u>Possible:</u>	<u> 2 </u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 2 Loose 12

Sub-adults: 2

Juveniles: 0

Morts 0 Cause?

Comments (tagged fish, H2O visibility, etc): Weather was overcast, broken clouds, sunny at times and cool. Water was very clear, cold, well connected to reservoir. Excellent survey conditions. We all walked to the trail crossing and the user-built rock dam we removed from last week had excellent passage. Flows are good and well connected to the lake, with clear water. Many new mushrooms this week, and more alder leaves in the stream. We walked to the lake bed and the flow was well connected through the reservoir bed, but quite braided on the lower end of the river. We took photos of this condition. Judy observed what initially looked like a large redd in the reservoir, and she took a gps of this site, but after we looked at the kokanee aggregated redds, we think it was a larger

Kachess - continued code 24, Pass 2 10/27/14

aggreage kokanee redd in the lower mainstem . We walked up the kokanee spring brook channel and it was flowing well and had ~100 kokanee in it actively spawning. Water in the Kokanee spring brook was ~8°C. 47.40148 121.23795. There was fresh whitewash from avian predators and we observed raccoon tracks, otter tracks, great blue heron tracks in the mud. We used Judy's GPS and the datum was WGS 84.

Next we walked up the channel to the high water mark of the reservoir and observed a few more kokanee there spawning. About halfway back to the trail we observed a single adult bull trout near the large cedar log jam. We walked upstream to the confluence with Mineral Creek but didn't see any more adults until we got ~100 meters up Kachess River (upper) and observed 2 adults holding. Water temperature in Kachess River is ~6 °C @ 2:55.

2nd GPS point was 1 Probable redd, 0 fish near first bedrock wall river left in pool with glide 47.42056 121.24012.

Upstream 1 adult holding

3rd GPS point was 1 Probable redd, 0 fish 7.5°C near redd Gps 47.42150 121.23844

4th GPS point was 1 Definite redd, 2 fish spawning (22-24") gps 47.42198 121.23826 mid channel redd ~ 4ft long and 2.5 ft wide 0.8 ft water clean pit and mound pocket pool, minimum cover. H2O temp 7.5 C and Air 10.5 C. We took some nice GoPro videos of the pair from behind and side.

Upstream 1 adult holding

5th GPS point 1 Possible redd, 0 fish. GPS 47.4222 121.23692

6th GPS point 1 Definite redd, 0 fish; and 1 Possible redd, 0 fish GPS 47.42232 121.23694 for both

7th GPS point 1 Probable redd, 0 fish; gps 47.42264 121.23633

8th GPS point 1 Probable redd, 5 adults (3 females and 2 males) plus one sub-adult sneaker male, GPS 47.42269 121.23579 redd is mid-channel by stick at pool tail water temp is 7.5 C air is 12.3 C. We took some nice GoPro video of the school.

1 Fish holding, 0 redd

2 Fish holding, 1 adult female and 1 sub-adult male not far below falls on the right bank in shallow water – her fins were out of the water, and we took some nice GoPro video of her.

9th GPS 1 Probable, 0 fish ~150 feet below the falls on left bank. GPS 47.42379 and 121.23481.

Finish at truck ~4:30?



14
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Kachess River

Code # (see Backside): 24

Start/Stop Kachess reservoir to just below barrier falls (GPS point in notes)

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear skies, sunny.

Date: 11 / 10 / 14

Pass # 3

Water Temps / Time 1) 6C at 12:58pm 2)

Visibility Clear; high flows made it difficult to see in the thalweg of the channel at times.

Investigators: Cassandra Anderson, Rebecca Wassell

Start Time: 12:45pm at the reservoir

End Time: 3:50pm

<u>Redds:</u>	New	Old
Definite:	<u>4</u>	<u>5</u>
Probable:	<u>0</u>	<u>2 - upgraded to def on 3rd pass</u>
Possible:	<u>0</u>	<u>2</u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 1 Cause? _____

Comments (tagged fish, H2O visibility, etc):

We walked to the trail crossing and crossed the Kachess River, which had high flows but was manageable for surveying. We hiked on the trail down to the reservoir to begin the survey. We arrived at the reservoir at 12:45pm. Flows were good. The river braided through the dry lakebed and connected

to the lake at several locations. The water was clear and visibility was good. We walked up the spring where kokanee spawn and observed ~50 kokanee actively spawning. The temperature of the spring was 7C at 12:45pm. We then started at the reservoir edge and walked the braided mainstem Kachess channels through the dry lakebed. We identified two large redds that Cassandra was confident were bull trout redds. NO kokanee or signs of kokanee were seen in the mainstem Kachess. The temperature of the Kachess River was 6C at 12:58pm. We started our survey trek upstream. As we got out of the braided area and the channel became more confined, flows increased. We could clearly see the gravels on the river's edges, but couldn't see the substrate in the thalweg of the channel. We found all 9 of William and Judy's flags from the second pass. The two probable redds that they identified on were definite redds. We identified 4 new redds total. We encountered one mort that was very decomposed - there was a head and some skin left, no fins or meat. We did not encounter any live fish. We had to stop just below the barrier falls because the flow was too high to cross and the large rocks along the channel were really wet and slippery and it was hazardous to try to climb over them. We could see the lower section of the falls and nearly see the large falls when we stopped. The GPS point of where we ended is 47.42304, -121.32538. Although we stopped just short of the falls and flows were high during the third survey pass, I feel that we accurately captured majority of the spawning.

Codes\Descriptions (Sorted by Stream)

Ahtanum Cr - Middle Fk (Ahtanum Cr Trib)

- 2 Tree Phones CG Road bridge crossing - downstream 2 miles

Ahtanum Cr - North Fk (Ahtanum Cr Trib)

- 4 Gray Rock trail upstream to confluence of Shellneck Creek

Ahtanum Cr - South Fk (Ahtanum Cr Trib)

- 5 SF Ahtanum Creek RM 7.7 to RM 10.4 campsite to gate above Reservation Creek

American R (Bumping R Trib)

- 1 Lower - Union Creek confluence to downstream .5 miles
- 6 Upper - Access road .5 miles above Lodgepole campground to Mesatchee Cr trail crossing

Bear Cr (South Fork Tieton R Trib)

- 7 Mouth to Steep Canyon Cascades (Barrier)

Box Canyon Cr (Kachess R Trib)

- 8 Kachess Reservoir (high water) to Peek-a-boo falls

Bumping R (Naches R Trib)

- 9 Bumping Lake confluence to barrier falls

Copper Cr (Deep Cr Trib)

- 10 Confluence Copper Creek to 1808 road crossing

Crow Cr (Little Naches R Trib)

- 11 Beaver pond to large boulders (2008 - current)
- 12 Road 1922 trail crossing to large boulders (1999 - 2007)

Deep Cr (Bumping R Trib)

- 14 Bumping Lake upstream to road 1800 crossing
- 15 Road 1800 (culvert) crossing upstream to Copper Cr confluence
- 16 Copper Cr confluence upstream to Deep Cr falls

Indian Cr (North Fork Tieton R Trib)

- 20 Highway 12 bridge upstream to North Spring confluence
- 21 North Spring confluence with Indian Creek, upstream to Trail 1147 crossing
- 22 North Spring confluence with Indian Creek upstream to Beaver Dam in North Spring*
- 23 Upper South Spring confluence with Indian Creek to Upper South Spring*
- 54 Trail 1147 trail crossing to Barrier Falls

Kachess River (Kachess Reservoir Trib)

- 24 Kachess Reservoir to falls

Kettle Cr (American R Trib)

- 25 Mouth to steep cascade falls/flagged

Little Wildcat Cr (Rattlesnake Cr Trib)

- 26 Mouth to rockslide

Rattlesnake Cr (Naches R Trib)

- 27 Trail 1114 crossing upstream to MJB trail crossing
- 28 MJB trail crossing upstream to confluence of Shell Cr
- 29 Confluence of Shell Cr upstream to confluence of Little Wildcat Cr
- 30 Confluence of Little Wildcat Cr upstream to Beaver dam near McNeil Creek

Shell Cr (Rattlesnake Cr Trib)

- 31 Confluence with Rattlesnake Cr upstream to Burnt Mt trail crossing

Shellneck Cr (North Fork Ahtanum Cr Trib)

- 32 Confluence with North Fork Ahtanum Cr to .3 miles upstream

Teanaway R - North Fork (Teanaway R Trib)

- 33 DeRoux Creek campground upstream to barrier falls

Tieton - North Fork (Tieton R Trib)



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: South Fork Tieton

Code # (see Backside): 38

Start/Stop Bear Creek confluence with SFT to 1050 bridge

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear skies

Date: 9/12/14

Pass # 1

Water Temps / Time 1)

2)

Visibility Good

Investigators: Joel Hubble (BOR)

Start Time: 1205 pm

End Time: 1400 pm

<u>Redds:</u>	New	Old
Definite:	<u>6</u>	<u> </u>
Probable:	<u> </u>	<u> </u>
Possible:	<u> </u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 0 Loose 6

Sub-adults: 0

Juveniles: 0

Morts 0 Cause?

Comments (tagged fish, H2O visibility, etc):



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: South Fork Tieton

Code # (see Backside): 38

Start/Stop Bear Creek confluence to 1050 bridge crossing

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear and sunny.

Date: 09 / 22 / 14

Pass # 2

Water Temps / Time 1)
2)

Visibility Good

Investigators: Cassandra Anderson, Rachel Parks, Jeff Burnham

Start Time: 12:10 pm

End Time: 2 pm

Redds:	New	Old
Definite:	<u>8</u>	<u>6</u>
Probable:	<u>1</u>	<u> </u>
Possible:	<u> </u>	<u> </u>

Bull Trout Observed:

Adults: On Redds Loose 4

Sub-adults: 0

Juveniles: 0

Morts 2 Cause?

Comments (tagged fish, H2O visibility, etc):

I forgot my thermometer in the vehicle. Unfortunately, neither one of the other surveyors had a thermometer either. Therefore, we're lacking temperature data for this survey – sorry!
 We identified eight new definite redds and one probable redd. We saw two adult bull trout morts. We got a close look at one of the morts and did not see any obvious signs of trauma so cause of death could

S. F. Tieton - continued code 38 Pass 2 9/22/14

not be determined. The second mort was in the bottom of a deep pool so we could not get a close look at it.



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: South Fork Tieton

Code # (see Backside): 38

Start/Stop Bear Creek confluence with SFT to 1050 bridge
 Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear skies, few clouds, sunny.

Date: 10 / 1 / 14

Pass # 3

Water Temps / Time 1) 7C at 10:10am

2) 7C at 11:31am

Visibility Good

Investigators: Cassandra Anderson, Jeff Trammell

Start Time: 10:10 am

End Time: 11:31 am

<u>Redds:</u>	New	Old
Definite:	<u>5</u>	<u>15</u>
Probable:	<u> </u>	<u>1</u>
Possible:	<u> </u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 0 Cause?

Comments (tagged fish, H2O visibility, etc):

We started the survey at 10:10am, surveying downstream from the South Fork Tieton and Bear Creek confluence to the 1050 bridge crossing. The old probable redd looks like a definite. We found 5 new definite redds and did not see any bull trout. One sub-adult cutthroat was seen.



14
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: South Fork Tieton

Code # (see Backside): 37

Start/Stop Blue Slide upstream to FS 1050 Bridge

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear Skies

Date: 9/12 /14

Pass # 1

Water Temps / Time 1) 10:06 / 5 C 2) 12:20 / 41 F Visibility Excellent

Investigators: E. Anderson, N. Fenton, K. Prengaman, G. Torretta, J. Thomas

Start Time: 10:06

End Time: 12:20

Redds:	<u>New</u>	<u>Old</u>
Definite:	<u>59</u>	_____
Probable:	_____	_____
Possible:	<u>1</u>	_____

Bull Trout Observed:

Adults: On Redds 6 Loose 47

Sub-adults: _____

Juveniles: _____

Morts 1 Cause? Likely animal kill- bear or otter

Comments (tagged fish, H2O visibility, etc):

E. Anderson, N. Fenton and K. Prengaman entered the South Fork Tieton River upstream of Blue Slide at 10:06 and recorded a starting water temperature of 5 degrees C. They surveyed upstream to where the river splits, slightly downstream from Minnie Meadows Campground. 22 definite redds, 2 fish on redds, 1 carcass and 34 loose fish were observed in this stream section. E. Anderson and N. Fenton ended their survey in the right channel (looking downstream) where the river splits into two channels

S.F. Tieton - continued code 37 Pass 1 9/12/14

just downstream from Minnie Meadows. The ending time and temperature was 12:50 pm and 7 degrees C.

G. Torretta and J. Thomas began surveying at 10:10 AM downstream from Minnie Meadows Campground in the left (looking downstream) river channel and surveyed upstream to the FS 1050 Bridge. The starting water temperature was 38 degrees F and the clarity was excellent. They arrived at the FR 1050 bridge at 12:20 PM; ending water temperature was 41 degrees F. 37 definite redds, 1 possible red, 4 bull trout on redds and 13 loose bull trout were observed in this section of the SF Tieton River.



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: South Fork Tieton River

Code # (see Backside): 37

Start/Stop Blue Slide to 1050 Road

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear, Sunny

Date: 09 / 22 / 14

Pass # 2

Water Temps / Time 1) 10 C / 1010 Hrs. 2) 11 C / 1350 Hrs. Visibility clear

Investigators: Eric Anderson (WDFW), Nicole Fenton (Mid-Columbia Fisheries)

Alex Conley (YBFWRB), Obie O'Brien (Kittitas Co. Commissioner)

Start Time: 1010 hrs

End Time: 1350 hrs

<u>Redds:</u>	<u>New</u>	<u>Old</u>
<u>Definite:</u>	<u>42</u>	<u>59</u>
<u>Probable:</u>	<u>1</u>	<u>0</u>
<u>Possible:</u>	<u>0</u>	<u>1</u>

Bull Trout Observed:

Adults: On Redds 13 Loose 15

Sub-adults: 0

Juveniles: 0

Morts 2 (Carcass remnants) Cause? Unknown

Comments: Eric's GPS Redd Way Points 45 - 71 (+/- 22-28 ft.). Nicole has additional way points for this section.



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: South Fork Tieton River

Code # (see Backside): 37

Start/Stop Blue Slide to 1050 Road

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear, Sunny

Date: 10 / 01 / 14

Pass # 3

Water Temps / Time 1) 42.7 F / 0940 Hrs. 2) 41.9 F / 1222 Hrs. Visibility clear

Investigators: Eric Anderson (WDFW)

Start Time: 0940 hrs

End Time: 1222 hrs

Redds: New

Old

Definite: 11

101

Probable: 0

1 changed to new def.

Possible: 0

1 eliminated

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: _____

Morts _____ Cause? _____

Comments: Eric's GPS Redd Way Points 90 - 100(+/- 22-30 ft.). No redds or fish observed, spawning appears to be complete.



¹⁴
2013 Bull trout Spawning Ground Survey Form
(Revised August 27, 2013)

Stream: South Fork Tieton

Code # (see Backside): 39

Start/Stop **Fish barrier falls to confluence of Bear Creek**

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear skies, sunny.

Date: 09 / 12 / 14

Pass # 1

Water Temps / Time 1) 4C at 10:37am

2) 7C at 2:02pm

Visibility Good

Investigators: Cassandra Anderson, Rob Randall

Start Time: 10:37 am

End Time: 2:02 pm

Redds:	New	Old
Definite:	<u>18</u>	<u> </u>
Probable:	<u> </u>	<u> </u>
Possible:	<u>1</u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 2 Loose 8

Sub-adults: 0

Juveniles: 0

Morts 0 Cause?

Comments (tagged fish, H2O visibility, etc):

We started the survey at the falls and worked downstream to the confluence of Bear Creek. 18 new definite redds were identified and one new possible. We saw intestines from a large fish on the bank, but never saw the carcass. We presume they are from a bull trout because of the size, but can't say for certain.



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: SF Tieton River

Code #: 39

Start/Stop SF Teiton Falls down to Bear Creek

Weather: Clear Skies a few clouds

Date: 90 / 22 / 14

Pass # 2

Water Temps / Time 1) _____ 2) _____ Visibility Clear

Investigators: Joel Hubble (BOR)

Time: 1015 Hrs End Time: 1300 Hrs

<u>Redds:</u>	New	Old
Definite:	<u>4</u>	<u>18</u>
Probable:	_____	_____
Possible:	_____	_____

Bull Trout Observed:

Adults: On Redds 6 Loose 6

Sub-adults: _____

Juveniles: _____

Morts _____ Cause? _____

Comments (tagged fish, H2O visibility, etc):



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: SF Tieton River

Code # (see Backside): 39

Start/Stop SF Teiton Falls down to Bear Creek

Weather: Cloudy and beautiful!

Date: 10 / 1 / 14

Pass # 3

Water Temps / Time 1) 39.9°F 2) _____ Visibility Very Clear

Investigators: David Child, Joel Hubble

Time: 10 : 00 End Time: 11 : 35

<u>Redds:</u>	New	Old
Definite:	<u>4</u>	<u>22</u>
Probable:	<u>_____</u>	<u>_____</u>
Possible:	<u>1</u>	<u>_____</u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: _____

Juveniles: _____

Morts _____ Cause? _____

Comments (tagged fish, H2O visibility, etc): Joel has the GPS points on his unit.



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Bear Creek

Code # (see Backside): 7

Start/Stop Mouth to steep canyon cascades

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Sunny

Date: 09 / 12 / 14

Pass # 1

Water Temps / Time 1)

2)

Visibility Clear

Investigators: Joel Hubble (BOR)

Start Time: 10:00 am

End Time: 11:30 a.m.

<u>Redds:</u>	New	Old
Definite:	<u>13</u>	<u> </u>
Probable:	<u> </u>	<u> </u>
Possible:	<u> </u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 3 Loose

Sub-adults: 0

Juveniles: 0

Morts 0 Cause?

Comments:



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Bear Creek

Code # (see Backside): 7

Start/Stop Confluence with South Fork Tieton to steep cascade

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear and sunny.

Date: 09 / 22 / 14

Pass # 2

Water Temps / Time 1)

2)

Visibility Good

Investigators: Cassandra Anderson, Rachel Parks, Jeff Burnham

Start Time: 9:45 am

End Time: 11:40 pm

<u>Redds:</u>	New	Old
Definite:	<u>9</u>	<u>13</u>
Probable:	<u>2</u>	<u> </u>
Possible:	<u> </u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 3 Loose 9

Sub-adults: 0

Juveniles: 0

Morts 0 Cause?

Comments (tagged fish, H2O visibility, etc):

We surveyed Bear Creek upstream from the confluence with the South Fork Tieton to the steep cascades. When we got to Bear Creek I realized I forgot my thermometer in the vehicle. Unfortunately, neither one of the other surveyors had a thermometer either. Therefore, we're lacking temperature data for this survey - sorry! We identified nine new definite redds and two probable redds.



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Bear Creek

Code # (see Backside): 7

Start/Stop Bear Creek Mouth to Falls

Weather: Sunny and beautiful!

Date: 10 / 1 / 14

Pass # 3

Water Temps / Time 1) 44.5.9°F 2) _____ Visibility Very Clear

Investigators: David Child, Joel Hubble

Time: 11 : 35 End Time: 12 : 45

<u>Redds:</u>	New	Old
Definite:	<u> 4 </u>	<u> 26 </u>
Probable:	<u> 1 </u>	<u> 2 </u>
Possible:	<u> _____ </u>	<u> _____ </u>

Bull Trout Observed:

Adults: On Redds 0 Loose 1

Sub-adults: _____

Juveniles: _____

Morts _____ Cause? _____

Comments (tagged fish, H2O visibility, etc):
 Joel has the GPS Points for this survey.



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: ~~SF Tieton and Spruce Creek~~ (SF Tieton Trib.)

Code # (see Backside): 68 (sub code?) - trib to code 68 E.H.

Start/Stop * I only surveyed Spruce Creek from mouth to log jam falls, marked with orange flagging. I checked above here a ways, and no redds or fish seen in likely spots

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: partly sunny

Date: 9 / 30 / 14

Pass # 1

Water Temps / Time 1) 2) Visibility clear

Investigators: Torretta

Start Time: 11 : 00

End Time: 11 : 25

<u>Redds:</u>	<u>New</u>	<u>Old</u>
<u>Definite:</u>	<u>4</u>	<u> </u>
<u>Probable:</u>	<u> </u>	<u> </u>
<u>Possible:</u>	<u> </u>	<u> </u>
<u>Bull Trout Observed:</u>		

Adults: On Redds 0 Loose 0
 Sub-adults: 0
 Juveniles: 0
 Morts 1 Cause? Head of large male found. Although starting to decompose, it appears that the head was cut off with knife, likely a poaching mort

Comments (tagged fish, H2O visibility, etc): I did not survey the mainstem SF Tieton this year, due to 2013 storm that activated large deposition event from Blue Slide. I think that sediment/deposition disturbance probably put off mainstem spawning in this reach.

Here are the GPS points of the redds in Spruce Creek.
 46.59033; 121.21967 (2 def redds at this location)
 46.59023; 121.21934 (1 def redd)
 46.59002; 121.21913 (1 def redd)



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Rattlesnake Creek

Code # (see Backside): 27

Start/Stop Trail 1114 crossing upstream to MJB trail crossing

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Cloudy

Date: 9 /25/14

Pass # 1

Water Temps / Time 1) 11:00 / 9 C 2) 1:00 / 9 C Visibility Good

Investigators: Eric Anderson (WDFW), Nicole Fenton (Mid-Columbia Fisheries)

Start Time: 11:00

End Time: 1:00

<u>Redds:</u>	New	Old
Definite:	<u>15</u>	<u> </u>
Probable:	<u> </u>	<u> </u>
Possible:	<u> </u>	<u> </u>

Bull Trout Observed:

Adults: On Redds Loose 1

Sub-adults:

Juveniles:

Morts Cause?

Comments (tagged fish, H2O visibility, etc): Comments: Eric's GPS Redd Waypoints 73 – 87 (+/- 20-29 ft). E. Anderson and N. Fenton left the trailhead at 8:30 and headed down the MJB trail. We arrived at the junction of Rattlesnake and MJB at 10:30. At 11:00 we arrived at the trail 1114 crossing and began our survey upstream the Rattlesnake. Conditions were good and there were several sections of great spawning habitat. We ended our survey at 1:00 when we arrived at the MJB trail crossing.



14 2013 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Rattlesnake Creek

Code # (see Backside): 29

Start/Stop Confluence with Shell Creek upstream to confluence with Little Wildcat Creek

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Overcast, sprinkling rain at times

Date: 09 / 25 / 14

Pass # 1

Water Temps / Time 1) 7C at 11:10 am

2) 5.5C at 12:20 pm

Visibility Clear, good.

Investigators: Cassandra Anderson and Joel Hubble

Start Time: 11:10 am

End Time: 12:20 pm

<u>Redds:</u>	New	Old
Definite:	<u>0</u>	<u> </u>
Probable:	<u>0</u>	<u> </u>
Possible:	<u>0</u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 0 Cause?

Comments (tagged fish, H20 visibility, etc):

Jeff Trammell, Joel Hubble and Cassandra Anderson hiked in Burnt Mountain Trail and arrived at Shell Creek at 10:30am. Jeff surveyed Rattlesnake down to the MJB trail crossing and Joel and Cassandra surveyed upstream. Joel and Cassandra surveyed Rattlesnake from the Shell Creek confluence upstream to the Little Wildcat Creek confluence together. No redds or fish were identified. It was surprising to not

Rattlesnake - continued, code 29, Pass 1 9/25/14

find any redds in this section. Visibility was good, flows seemed normal and no barriers were encountered.

Codes\Descriptions (Sorted by Stream)

Ahtanum Cr - Middle Fk (Ahtanum Cr Trib)

- 2 Tree Phones CG Road bridge crossing - downstream 2 miles

Ahtanum Cr - North Fk (Ahtanum Cr Trib)

- 4 Gray Rock trail upstream to confluence of Shellneck Creek

Ahtanum Cr - South Fk (Ahtanum Cr Trib)

- 5 SF Ahtanum Creek RM 7.7 to RM 10.4 campsite to gate above Reservation Creek

American R (Bumping R Trib)

- 1 Lower - Union Creek confluence to downstream .5 miles
- 6 Upper - Access road .5 miles above Lodgepole campground to Mesatchee Cr trail crossing

Bear Cr (South Fork Tieton R Trib)

- 7 Mouth to Steep Canyon Cascades (Barrier)

Box Canyon Cr (Kachess R Trib)

- 8 Kachess Reservoir (high water) to Peek-a-boo falls

Bumping R (Naches R Trib)

- 9 Bumping Lake confluence to barrier falls

Copper Cr (Deep Cr Trib)

- 10 Confluence Copper Creek to 1808 road crossing

Crow Cr (Little Naches R Trib)

- 11 Beaver pond to large boulders (2008 - current)
- 12 Road 1922 trail crossing to large boulders (1999 - 2007)

Deep Cr (Bumping R Trib)

- 14 Bumping Lake upstream to road 1800 crossing
- 15 Road 1800 (culvert) crossing upstream to Copper Cr confluence
- 16 Copper Cr confluence upstream to Deep Cr falls

DeRoux Cr (North Fk Teanaway Trib)

- 17 Mouth to the 1392 trail crossing

Gold Cr (Yakima R Trib) figure out on Friday

- 18 Gold Creek frontage road, upstream to Trail 1314 Crossing (Bottom of Avalanche)
- 19 Trail 1314 Crossing (Bottom of Avalanche) upstream to Upper Falls

Hellbender Cr (North Fork Tieton R Trib)

- 36 Mouth to 50 yards above trail 1128 crossing.

Indian Cr (North Fork Tieton R Trib)

- 20 Highway 12 bridge upstream to North Spring confluence
- 21 North Spring confluence with Indian Creek, upstream to Trail 1147 crossing
- 22 North Spring confluence with Indian Creek upstream to Beaver Dam in North Spring*
- 23 Upper South Spring confluence with Indian Creek to Upper South Spring*
- 54 Trail 1147 trail crossing to Barrier Falls

Kachess River (Kachess Reservoir Trib)

- 24 Kachess Reservoir to falls

Kettle Cr (American R Trib)

- 25 Mouth to steep cascade falls/flagged

Little Wildcat Cr (Rattlesnake Cr Trib)

- 26 Mouth to rockslide

Rattlesnake Cr (Naches R Trib)

- 27 Trail 1114 crossing upstream to MJB trail crossing
- 28 MJB trail crossing upstream to confluence of Shell Cr
- 29 Confluence of Shell Cr upstream to confluence of Little Wildcat Cr
- 30 Confluence of Little Wildcat Cr upstream to Beaver dam near McNeil Creek

Shell Cr (Rattlesnake Cr Trib)

- 31 Confluence with Rattlesnake Cr upstream to Burnt Mt trail crossing

Shellneck Cr (North Fork Ahtanum Cr Trib)

- 32 Confluence with North Fork Ahtanum Cr to .3 miles upstream

Teanaway R - North Fork (Teanaway R Trib)

- 33 DeRoux Creek campground upstream to barrier falls

Tieton - North Fork (Tieton R Trib)

- 69 From .3 below Hellbender Cr upstream to barrier falls.

Tieton R - South Fork (Tieton R Trib)

- 37 Blue slide to 1050 road
- 38 1050 road to Bear Creek confluence
- 39 Bear Creek confluence to South Fork Tieton falls
- 68 Confluence of Cedar Cr at Bakeoven CG upstream to Blueslide

Union Cr (American R Trib)

- 41 Mouth to falls

Upper Yakima - mainstem Index (Easton Lk upto Powerline&FishPonds)

- 62 Keechelus Dam, downstream to BPA Power-line crossing



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Rattlesnake Creek

Code # (see Backside): 29

Start/Stop Confluence with Shell Creek upstream to confluence with Little Wildcat Creek
 Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear skies, sunny.

Date: 10 / 07 / 14

Pass # 2

Water Temps / Time 1) 6C at 10:26 am
2) 5C at 11:15 am

Visibility Clear, good.

Investigators: Cassandra Anderson, Joel Hubble, Nicole Fenton

Start Time: 10:26 am

End Time: 11:15 am

<u>Redds:</u>	New	Old
Definite:	<u>0</u>	<u>0</u>
Probable:	<u>0</u>	<u>0</u>
Possible:	<u>0</u>	<u>0</u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 0 Cause? _____

Comments (tagged fish, H2O visibility, etc):

Cassandra Anderson, Joel Hubble and Nicole Fenton hiked in Burnt Mountain Trail and arrived at Shell Creek at 10am. Cassandra, Joel and Nicole surveyed Rattlesnake from the Shell Creek confluence upstream to the Little Wildcat Creek confluence together. No redds or fish were identified. Joel then continued up Little Wildcat Creek and Cassandra and Nicole surveyed Rattlesnake to the flagged *endpoint.*



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Rattlesnake Creek

Code # (see Backside): 30

Start/Stop Confluence with Little Wildcat Creek upstream to flagged end point
 Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Overcast, sprinkling rain at times

Date: 09 / 25 / 14

Pass # 1

Water Temps / Time 1) 5.5C at 12:20 pm
2) 6C at 1:30 pm

Visibility Clear, good.

Investigators: Cassandra Anderson

Start Time: 12:20 pm

End Time: 1:30 pm

<u>Redds:</u>	New	Old
Definite:	<u>1</u>	<u> </u>
Probable:	<u>0</u>	<u> </u>
Possible:	<u>0</u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 0 Cause?

Comments (tagged fish, H2O visibility, etc):

Surveying upstream, Joel Hubble and Cassandra Anderson split up at the confluence of Little Wildcat Creek and Rattlesnake Creek. Cassandra surveyed upstream on Rattlesnake. One redd was identified shortly after beginning the survey, which turned out to be the only redd identified. It was very surprising to only see one redd – flows seemed normal, visibility was good and no barriers were seen. It may be

Rattlesnake - continued, code 30, Pass 1

9/25/14

worth doing a second pass on this section to see if spawning was delayed.

Codes\Descriptions (Sorted by Stream)

Ahtanum Cr - Middle Fk (Ahtanum Cr Trib)

- 2 Tree Phones CG Road bridge crossing - downstream 2 miles

Ahtanum Cr - North Fk (Ahtanum Cr Trib)

- 4 Gray Rock trail upstream to confluence of Shellneck Creek

Ahtanum Cr - South Fk (Ahtanum Cr Trib)

- 5 SF Ahtanum Creek RM 7.7 to RM 10.4 campsite to gate above Reservation Creek

American R (Bumping R Trib)

- 1 Lower - Union Creek confluence to downstream .5 miles
- 6 Upper - Access road .5 miles above Lodgepole campground to Mesatchee Cr trail crossing

Bear Cr (South Fork Tieton R Trib)

- 7 Mouth to Steep Canyon Cascades (Barrier)

Box Canyon Cr (Kachess R Trib)

- 8 Kachess Reservoir (high water) to Peek-a-boo falls

Bumping R (Naches R Trib)

- 9 Bumping Lake confluence to barrier falls

Copper Cr (Deep Cr Trib)

- 10 Confluence Copper Creek to 1808 road crossing

Crow Cr (Little Naches R Trib)

- 11 Beaver pond to large boulders (2008 - current)
- 12 Road 1922 trail crossing to large boulders (1999 - 2007)

Deep Cr (Bumping R Trib)

- 14 Bumping Lake upstream to road 1800 crossing
- 15 Road 1800 (culvert) crossing upstream to Copper Cr confluence
- 16 Copper Cr confluence upstream to Deep Cr falls

DeRoux Cr (North Fk Teanaway Trib)

- 17 Mouth to the 1392 trail crossing

Gold Cr (Yakima R Trib) figure out on Friday

- 18 Gold Creek frontage road, upstream to Trail 1314 Crossing (Bottom of Avalanche)
- 19 Trail 1314 Crossing (Bottom of Avalanche) upstream to Upper Falls

Hellbender Cr (North Fork Tieton R Trib)

- 36 Mouth to 50 yards above trail 1128 crossing.

Indian Cr (North Fork Tieton R Trib)

- 20 Highway 12 bridge upstream to North Spring confluence
- 21 North Spring confluence with Indian Creek, upstream to Trail 1147 crossing
- 22 North Spring confluence with Indian Creek upstream to Beaver Dam in North Spring*
- 23 Upper South Spring confluence with Indian Creek to Upper South Spring*
- 54 Trail 1147 trail crossing to Barrier Falls

Kachess River (Kachess Reservoir Trib)

- 24 Kachess Reservoir to falls

Kettle Cr (American R Trib)

- 25 Mouth to steep cascade falls/flagged

Little Wildcat Cr (Rattlesnake Cr Trib)

- 26 Mouth to rockslide

Rattlesnake Cr (Naches R Trib)

- 27 Trail 1114 crossing upstream to MJB trail crossing
- 28 MJB trail crossing upstream to confluence of Shell Cr
- 29 Confluence of Shell Cr upstream to confluence of Little Wildcat Cr
- 30 Confluence of Little Wildcat Cr upstream to Beaver dam near McNeil Creek

Shell Cr (Rattlesnake Cr Trib)

- 31 Confluence with Rattlesnake Cr upstream to Burnt Mt trail crossing

Shellneck Cr (North Fork Ahtanum Cr Trib)

- 32 Confluence with North Fork Ahtanum Cr to .3 miles upstream

Teanaway R - North Fork (Teanaway R Trib)

- 33 DeRoux Creek campground upstream to barrier falls

Tieton - North Fork (Tieton R Trib)

- 69 From .3 below Hellbender Cr upstream to barrier falls.

Tieton R - South Fork (Tieton R Trib)

- 37 Blue slide to 1050 road
- 38 1050 road to Bear Creek confluence
- 39 Bear Creek confluence to South Fork Tieton falls
- 68 Confluence of Cedar Cr at Bakeoven CG upstream to Blueslide

Union Cr (American R Trib)

- 41 Mouth to falls

Upper Yakima - mainstem Index (Easton Lk upto Powerline&FishPonds)

- 62 Keechelus Dam, downstream to BPA Power-line crossing



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Rattlesnake Creek

Code # (see Backside): 30

Start/Stop Confluence with Little Wildcat Creek upstream to flagged end point
 Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear skies, sunny.

Date: 10 / 7 / 14

Pass # 2

Water Temps / Time 1) 5C at 11:15 am
2) 7C at 12:25 pm

Visibility Clear, good.

Investigators: Cassandra Anderson, Nicole Fenton

Start Time: 11:15am

End Time: 12:25pm

<u>Redds:</u>	New	Old
Definite:	<u>0</u>	<u>1</u>
Probable:	<u>0</u>	<u> </u>
Possible:	<u>0</u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 0 Cause?

Comments (tagged fish, H2O visibility, etc):

We surveyed walking upstream. We did not see any new redds or fish. On the first pass, Cassandra identified one redd and took a GPS point. Since we were not planning to do a second pass, the redd was not flagged. After only finding one redd during the first pass, we decided to conduct a second pass. On the second pass, the redd identified on the first pass was not as obvious. If the redd had looked like that

Rattlesnake - continued, Code 30, Pass 2

10/7/14

on the first pass, we may have questioned if it was from 2013.

Codes\Descriptions (Sorted by Stream)

Ahtanum Cr - Middle Fk (Ahtanum Cr Trib)

- 2 Tree Phones CG Road bridge crossing - downstream 2 miles

Ahtanum Cr - North Fk (Ahtanum Cr Trib)

- 4 Gray Rock trail upstream to confluence of Shellneck Creek

Ahtanum Cr - South Fk (Ahtanum Cr Trib)

- 5 SF Ahtanum Creek RM 7.7 to RM 10.4 campsite to gate above Reservation Creek

American R (Bumping R Trib)

- 1 Lower - Union Creek confluence to downstream .5 miles
- 6 Upper - Access road .5 miles above Lodgepole campground to Mesatchee Cr trail crossing

Bear Cr (South Fork Tieton R Trib)

- 7 Mouth to Steep Canyon Cascades (Barrier)

Box Canyon Cr (Kachess R Trib)

- 8 Kachess Reservoir (high water) to Peek-a-boo falls

Bumping R (Naches R Trib)

- 9 Bumping Lake confluence to barrier falls

Copper Cr (Deep Cr Trib)

- 10 Confluence Copper Creek to 1808 road crossing

Crow Cr (Little Naches R Trib)

- 11 Beaver pond to large boulders (2008 - current)
- 12 Road 1922 trail crossing to large boulders (1999 - 2007)

Deep Cr (Bumping R Trib)

- 14 Bumping Lake upstream to road 1800 crossing
- 15 Road 1800 (culvert) crossing upstream to Copper Cr confluence
- 16 Copper Cr confluence upstream to Deep Cr falls

DeRoux Cr (North Fk Teanaway Trib)

- 17 Mouth to the 1392 trail crossing

Gold Cr (Yakima R Trib) figure out on Friday

- 18 Gold Creek frontage road, upstream to Trail 1314 Crossing (Bottom of Avalanche)
- 19 Trail 1314 Crossing (Bottom of Avalanche) upstream to Upper Falls

Hellbender Cr (North Fork Tieton R Trib)

- 36 Mouth to 50 yards above trail 1128 crossing.

Indian Cr (North Fork Tieton R Trib)

- 20 Highway 12 bridge upstream to North Spring confluence
- 21 North Spring confluence with Indian Creek, upstream to Trail 1147 crossing
- 22 North Spring confluence with Indian Creek upstream to Beaver Dam in North Spring*
- 23 Upper South Spring confluence with Indian Creek to Upper South Spring*
- 54 Trail 1147 trail crossing to Barrier Falls

Kachess River (Kachess Reservoir Trib)

- 24 Kachess Reservoir to falls

Kettle Cr (American R Trib)

- 25 Mouth to steep cascade falls/flagged

Little Wildcat Cr (Rattlesnake Cr Trib)

- 26 Mouth to rockslide

Rattlesnake Cr (Naches R Trib)

- 27 Trail 1114 crossing upstream to MJB trail crossing
- 28 MJB trail crossing upstream to confluence of Shell Cr
- 29 Confluence of Shell Cr upstream to confluence of Little Wildcat Cr
- 30 Confluence of Little Wildcat Cr upstream to Beaver dam near McNeil Creek

Shell Cr (Rattlesnake Cr Trib)

- 31 Confluence with Rattlesnake Cr upstream to Burnt Mt trail crossing

Shellneck Cr (North Fork Ahtanum Cr Trib)

- 32 Confluence with North Fork Ahtanum Cr to .3 miles upstream

Teanaway R - North Fork (Teanaway R Trib)

- 33 DeRoux Creek campground upstream to barrier falls

Tieton - North Fork (Tieton R Trib)

- 69 From .3 below Hellbender Cr upstream to barrier falls.

Tieton R - South Fork (Tieton R Trib)

- 37 Blue slide to 1050 road
- 38 1050 road to Bear Creek confluence
- 39 Bear Creek confluence to South Fork Tieton falls
- 68 Confluence of Cedar Cr at Bakeoven CG upstream to Blueslide

Union Cr (American R Trib)

- 41 Mouth to falls

Upper Yakima - mainstem Index (Easton Lk upto Powerline&FishPonds)

- 62 Keechelus Dam, downstream to BPA Power-line crossing



2014 Bull trout Spawning Ground Survey Form

Stream: Shell Creek, & Rattlesnake Creek

Code # (see Backside): 31 (Shell Creek) & 28 (MJB Trail crossing to confluence of Shell Cr).

Start/Stop Shell Creek to MJB trail

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: foggy in the morning, calm and cool in the afternoon

Date: 9 / 25 / 14

Pass # 1

Water Temps / Time 1) 9°C & 7°C 2) 10:59am Visibility Good

Investigators: Jeff Trammell

Start Time: 10:59 End Time: :

<u>Redds:</u>	New	Old
Definite:	<u>1 S.C./ 6 R.C.</u>	_____
Probable:	_____	_____
Possible:	_____	_____

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: _____

Juveniles: _____

Morts _____ Cause? _____

Comments (tagged fish, H2O visibility, etc):
Big Logjam, probable barrier. Pictures sent via e-mail.

shell + Rattlesnake - continued, Code 31+28 ^{Pass 1} 9/25/14

Comments Continued:

GPS Coordinates:

Shell Creek

1. 46.73432 N, 121.21413 W

Rattlesnake Creek

1. 46.74085 N, 121.20921 W
2. 46.74710 N, 121.18876 W
3. 46.74711 N, 121.18782 W
4. 46.74784 N, 121.18138 W
5. 46.74779 N, 121.18081 W
6. 46.74978 N, 121.17881 W



¹⁴
2013 Bull trout Spawning Ground Survey Form
 (Revised August 27, 2013)

Stream: Shell Creek

Code # (see Backside): 31

Start/Stop Burnt Mountail Trail crossing downstream to confluence with Rattlesnake Cr.
 Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Clear skies, sunny.

Date: 10 / 7 / 14

Pass # 2

Water Temps / Time 1) 8C at 10:15 am
2) _____

Visibility Clear, good.

Investigators: Cassandra Anderson, Nicole Fenton, Joel Hubble

Start Time: 10:15 am

End Time: 10:25 am

<u>Redds:</u>	New	Old
Definite:	<u>0</u>	_____
Probable:	<u>0</u>	_____
Possible:	<u>0</u>	_____

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 0 Cause? _____

Comments (tagged fish, H2O visibility, etc):

We arrived at Shell Creek at 10:15am. The water temperature 8C; two degrees warmer than Rattlesnake. No redds or fish were seen in Shell.



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: NF Tieton River

Code # (see Backside): 69

Start/Stop 0.3 mile below Hellbender Creek to barrier falls

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Cool and partly cloudy

Date: 09 /10 /2014

Pass # 1

Water Temps / Time 1) 7.0 degrees C 2) _____ Visibility Slightly turbid

Investigators: Jeff Thomas (USFWS), Gary Torretta and Bill Zimmer (USFS)

Start Time: Noon End Time: 1:40 PM

<u>Redds:</u>	<u>New</u>	<u>Old</u>
<u>Definite:</u>	<u>1</u>	<u>_____</u>
<u>Probable:</u>	<u>0</u>	<u>_____</u>
<u>Possible:</u>	<u>0</u>	<u>_____</u>

Bull Trout Observed:

Adults: On Redds 0 Loose 1

Sub-adults: _____

Juveniles: None

Morts 0 Cause? _____

Comments (tagged fish, H2O visibility, etc): The turbidity did not preclude successfully surveying. It was surprising only seeing one redd (which was within a couple hundred meters from the falls). Not surprisingly, the river was not the same as last year.



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Hellbender Creek

Code # (see Backside): NA 36
Start/Stop Mouth to ~~barrier falls~~ 50 yds above trail 1124 crossing

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Cool and partly cloudy

Ed.

Date: 09 /10 /2014

Pass # 1

Water Temps / Time 1) 7.0 degrees C 2) _____ Visibility Excellent

Investigators: Jeff Thomas (USFWS), Gary Torretta and Bill Zimmer (USFS)

Start Time: 10:45 AM End Time: Noon

<u>Redds:</u>	<u>New</u>	<u>Old</u>
<u>Definite:</u>	<u>12</u>	<u>_____</u>
<u>Probable:</u>	<u>0</u>	<u>_____</u>
<u>Possible:</u>	<u>0</u>	<u>_____</u>

Bull Trout Observed:

Adults: On Redds 6 Loose 1

Sub-adults: _____

Juveniles: None

Morts 0 Cause? _____

Comments (tagged fish, H2O visibility, etc): Six redds were found above the trail crossing and six below. Unable to obtain GPS coordinates (no signal).



2014 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: Hellbender Creek

Code # (see Backside): ~~NA~~ 36

Start/Stop Mouth to barrier falls 50 yds above trail 1126 crossing

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Cool, partly cloudy, light rain

Date: 09 /18 /2014

Pass # 2

Water Temps / Time 1) 7.0 degrees C 2) _____ Visibility Excellent

Investigators: Jeff Thomas (USFWS)

Start Time: 1:15 PM

End Time: 2:15 PM

<u>Redds:</u>	New	Old
Definite:	<u>6</u>	<u>12</u>
Probable:	<u>0</u>	<u> </u>
Possible:	<u>0</u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults:

Juveniles: None

Morts 0 Cause?

Comments (tagged fish, H2O visibility, etc): Three new redds were found above the trail crossing and three below. Unable to obtain GPS coordinates (no signal). Flags were hung for new redds. The NF Tieton river was high and turbid.



2013 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: North Fork Teanaway

Code # (see Backside): 33

Start/Stop DeRoux Creek Campground to barrier falls

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Overcast

Date: 09 / 08 / 14

Pass # 1

Water Temps / Time 1) 8C at 9:25am

2) 8C at 10:39am

Visibility Good

Investigators: Cassandra Anderson, Nicole Fenton, Eric Winford

Start Time: 9:25am

End Time: 10:39 am

<u>Redds:</u>	New	Old
Definite:	<u>0</u>	<u> </u>
Probable:	<u>0</u>	<u> </u>
Possible:	<u>0</u>	<u> </u>

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 0 Cause?

Comments (tagged fish, H2O visibility, etc):

The surveyors hiked upstream on the NF Teanaway from DeRoux Creek Campground to the fish barrier falls. The weather was overcast and visibility was good. One of the log jams in this reach looked challenging for fish to pass. Six fish approximately 5-6 inches in length were observed darting in and out of pools. They were quick and couldn't be identified.



2013 Bull trout Spawning Ground Survey Form

(Revised August 27, 2013)

Stream: DeRoux Creek

Code # (see Backside): 17

Start/Stop Confluence with NF Teanaway upstream to DeRoux trail crossing bridge

Example: "Gray Rk Trail Xing to first Road bridge crossing upstream"

Weather: Overcast

Date: 09 / 08 / 14

Pass # 1

Water Temps / Time 1) 9C at 11:25am
2) 10C at 12:47pm

Visibility Good

Investigators: Cassandra Anderson, Nicole Fenton

Start Time: 11:25am

End Time: 12:47pm

<u>Redds:</u>	New	Old
Definite:	<u>0</u>	_____
Probable:	<u>0</u>	_____
Possible:	<u>0</u>	_____

Bull Trout Observed:

Adults: On Redds 0 Loose 0

Sub-adults: 0

Juveniles: 0

Morts 0 Cause? _____

Comments (tagged fish, H2O visibility, etc):

Cassandra and Nicole surveyed from the DeRoux Creek confluence with the North Fork Teanaway upstream ~1 mile to the DeRoux trail bridge crossing over DeRoux Creek. No bull trout or redds were observed.