

FEB 09 1995

Missoula, Montana
February 6, 1995

DEPT. OF FISH AND WILDLIFE
YAKIMA OFFICE

TO: Eric Anderson, WDFW
FROM: Greg Watson, PCTC
SUBJECT: 1994 Washington Bull Trout Survey Results

In compliance with requirements of our 1994 Scientific Collecting Permit, this memo and enclosures are intended to provide you with information concerning fish collected and waters sampled during our 1994 Bull Trout Presence/Absence Survey efforts in Washington. The attached database printout should provide you with the information required. Referring to the printout, please direct your attention to the following columns:

DATE - the date that collection efforts were performed.

STREAM - name of the sampled stream.

REACH - the reach that was sampled - all reaches were 10 kilometers in length or shorter, generally Reach 1 would comprise the first 10 km of any stream sampled, beginning at the mouth and measured upstream. Below, I have provided the location (Section, Township, Range) for each stream mouth.

SITE - transect number - all sampled transects were 100 meters in length with transect 1 being the downstream-most and transect 12 being the upstream-most transect within the reach. I have included information below indicating the location of each numbered transect (distance in meters from the beginning of the reach - measured upstream).

TEMP - water temperature in degrees Fahrenheit. Where TEMP = 0, temperature was not recorded.

SP - the species of fish that were identified and enumerated during surveys of each transect. Species codes are: CT-cutthroat trout, SC-sculpin (*Cottus* sp.), RB-rainbow trout, BK-brook trout, BL-bull trout, WF-whitefish (*Prosopium* sp.), DA - dace, SA - sockeye (kokanee) salmon, LK - bull/brook hybrid, CB - cutthroat/rainbow hybrid.

MIN MAX - the size class (in inches) of fish that were enumerated, where MIN = 12 and MAX = 0, the size class is greater than 12 inches.

A - the abundance code for each species and size class that was

enumerated. The abundance codes are: S-sparse (1 to 10 per 100 meters), M-many (10 to 50 fish per 100 meters), N-numerous (greater than 50 fish per 100 meters).

METH - sampling method used to obtain fish density data. Codes are: S-day snorkel, SH-electrofishing, NS-night snorkel, B-both day snorkel and electrofishing.

You will notice that any given transect can have multiple data for fish density. For example, in transect 3 of reach 1 of the North Fork Teanaway, we observed 1 to 10 rainbow throat trout 0 to 3 inches in length, 1 to 10 rainbow trout 3 to 6 inches in length, and 1 to 10 cutthroat trout 3 to 6 inches in length.

The following tables describe the location of each of the sampled reaches/transects:

Kristina Co

North Fork Teanaway River (mouth - Section 6, Township 20N, Range 16E)

Reach 1 begins at stream mouth

<u>Reach</u>	<u>Transect</u>	<u>Distance from beginning of reach (meters)</u>
1	1	600
1	3	1900
1	4	2600
1	5	3000
1	6	3100
1	7	3600
1	8	4600
1	9	5000
1	10	6600
1	11	7700
1	12	8000

Intake Creek (mouth - Section 21, Township 20N, Range 11E)

Reach 1 begins at stream mouth

<u>Reach</u>	<u>Transect</u>	<u>Distance from beginning of reach (meters)</u>
1	1	200
1	2	300
1	3	600
1	4	800

Sawmill Creek (mouth - Section 24, Township 20N, Range 11E)

Reach 1 begins at stream mouth

<u>Reach</u>	<u>Transect</u>	<u>Distance from beginning of reach (meters)</u>
1	1	200
1	2	600

Kristina Co

Domerie Creek (mouth - Section 11, Township 20N, Range 14E)

Reach 1 begins at mouth

<u>Reach</u>	<u>Transect</u>	<u>Distance from beginning of reach (meters)</u>
1	6	2400

1	7	2500
1	8	2700
1	9	4400.

Kittitas Co.
 Little Creek (mouth - Section 22, Township 20N, Range 14E)
 Reach 1 begins at stream mouth

<u>Reach</u>	<u>Transect</u>	<u>Distance from beginning of reach (meters)</u>
1	4	2600
1	5	3000
1	6	3100
1	7	3600
1	8	4600
1	9	5000
1	10	6000
1	11	7700
1	12	8000

Reach 2 begins 10000 meters upstream from stream mouth

<u>Reach</u>	<u>Transect</u>	<u>Distance from beginning of reach (meters)</u>
2	1	200
2	2	500
2	3	900
2	4	1600
2	5	2200
2	6	2800
2	7	3200
2	8	3800
2	9	4100

Tacoma Creek (mouth - Section 35, Township 20N, Range 11E)
 Reach 1 begins at stream mouth

<u>Reach</u>	<u>Transect</u>	<u>Distance from beginning of reach (meters)</u>
1	1	600
1	2	1600
1	3	1900
1	4	2200
1	5	2600
1	6	3000
1	7	3100
1	8	3600
1	9	4100
1	10	4600
1	11	4800
1	12	5000

Yakima Co.
 Crow Creek (mouth - Section 30, Township 18N, Range 14E)
 Reach 1 begins at stream mouth

<u>Reach</u>	<u>Transect</u>	<u>Distance from beginning of reach (meters)</u>
1	1	500
1	2	1100
1	3	1400
1	4	2400

1	5	2500
1	6	2700
1	7	4400
1	8	6000
1	9	6600
1	10	6800
1	11	7300
1	12	8300

Reach 2 begins 10000 meters upstream from stream mouth

<u>Reach</u>	<u>Transect</u>	<u>Distance from beginning of reach (meters)</u>
2	1	900
2	2	1100
2	3	2500
2	4	2600
2	5	3800
2	6	4200
2	7	5100
2	8	6400
2	9	7700
2	10	8700
2	11	8800
2	12	9900

Yakima Co.
 Indian Creek (mouth - Section 6, Township 13N, Range 13E)
 Reach 1 begins at stream mouth (confluence with Rimrock Lake)

<u>Reach</u>	<u>Transect</u>	<u>Distance from beginning of reach (meters)</u>
1	1	600
1	2	1600
1	3	1900
1	4	2600
1	5	3000
1	6	3100
1	8	4600
1	9	5000
1	10	6600
1	11	7700
1	12	8000

Kittitas Co.
 Box Canyon Creek (mouth - Section 32, Township 22N, Range 13E)
 Reach 1 begins at stream mouth

<u>Reach</u>	<u>Transect</u>	<u>Distance from beginning of reach (meters)</u>
1	1	600
1	2	1600
1	3	1900
1	4	2600
1	5	3000
1	6	3100
1	7	3600
1	8	4600
1	9	5000
1	10	6600
1	11	7700

189	07/18/94	TACOMA	1	5	57.00	RB	0.0	3.0	M	B
190	07/18/94	TACOMA	1	5	57.00	RB	6.0	9.0	M	B
191	07/18/94	TACOMA	1	5	57.00	RB	9.0	12.0	S	B
192	07/19/94	TACOMA	1	6	57.00	RB	0.0	3.0	S	B
193	07/19/94	TACOMA	1	6	57.00	RB	3.0	6.0	S	B
194	07/19/94	TACOMA	1	6	57.00	RB	6.0	9.0	S	B
195	07/19/94	TACOMA	1	6	57.00	RB	9.0	12.0	S	B
196	07/19/94	TACOMA	1	7	55.00	RB	6.0	9.0	S	B
197	07/19/94	TACOMA	1	7	55.00	RB	3.0	6.0	M	B
198	07/19/94	TACOMA	1	7	55.00	RB	0.0	3.0	S	B
199	07/19/94	TACOMA	1	8	61.00	RB	0.0	3.0	S	B
200	07/19/94	TACOMA	1	8	61.00	RB	9.0	12.0	S	B
201	07/19/94	TACOMA	1	8	61.00	RB	3.0	6.0	M	B
202	07/19/94	TACOMA	1	8	61.00	RB	6.0	9.0	S	B
203	07/19/94	TACOMA	1	9	59.00	RB	0.0	3.0	S	B
204	07/19/94	TACOMA	1	9	59.00	RB	3.0	6.0	M	B
205	07/20/94	TACOMA	1	10	50.00	RB	0.0	3.0	M	B
206	07/20/94	TACOMA	1	10	50.00	RB	3.0	6.0	S	B
207	07/20/94	TACOMA	1	10	50.00	RB	6.0	9.0	S	B
208	07/20/94	TACOMA	1	11	54.00	CT	0.0	3.0	M	B
209	07/20/94	TACOMA	1	11	54.00	CT	3.0	6.0	M	B
210	07/20/94	TACOMA	1	11	54.00	CT	6.0	9.0	S	B
211	07/20/94	TACOMA	1	11	54.00	CT	9.0	12.0	S	B
212	07/20/94	TACOMA	1	12	57.00	CT	0.0	3.0	S	B
213	07/20/94	TACOMA	1	12	57.00	CT	3.0	6.0	S	B
214	07/20/94	TACOMA	1	12	57.00	CT	6.0	9.0	S	B
215	08/24/94	DOMERIE	1	7	52.00	CT	1.0	3.0	M	SH
216	08/24/94	DOMERIE	1	7	52.00	CT	3.0	6.0	S	SH
217	08/24/94	DOMERIE	1	7	52.00	CT	6.0	9.0	S	SH
218	08/24/94	DOMERIE	1	7	52.00	SC	0.0	3.0	S	SH
219	07/27/94	CROW	1	1	0.00	CT	0.0	3.0	M	NS
220	07/27/94	CROW	1	1	0.00	CT	3.0	6.0	M	NS
221	07/27/94	CROW	1	1	0.00	CT	6.0	9.0	S	NS
222	07/27/94	CROW	1	1	0.00	RB	6.0	9.0	S	NS
223	07/27/94	CROW	1	2	0.00	CT	0.0	3.0	S	NS
224	07/27/94	CROW	1	2	0.00	CT	6.0	9.0	S	NS
225	07/27/94	CROW	1	2	0.00	CT	9.0	12.0	S	NS
226	07/27/94	CROW	1	3	0.00	CT	3.0	6.0	M	NS
227	07/27/94	CROW	1	3	0.00	CT	6.0	9.0	S	NS
228	07/27/94	CROW	1	3	0.00	CT	9.0	12.0	S	NS
229	07/27/94	CROW	1	3	0.00	CT	12.0	0.0	S	NS
230	07/27/94	CROW	1	3	0.00	DA	3.0	6.0	S	NS
231	07/27/94	CROW	1	3	0.00	BL	9.0	12.0	S	NS
232	07/27/94	CROW	1	4	0.00	CT	0.0	3.0	S	NS
233	07/27/94	CROW	1	4	0.00	CT	3.0	6.0	M	NS
234	07/27/94	CROW	1	4	0.00	CT	6.0	9.0	S	NS
235	07/27/94	CROW	1	4	0.00	DA	3.0	6.0	S	NS
236	07/27/94	CROW	1	5	0.00	CT	3.0	6.0	M	NS
237	07/27/94	CROW	1	5	0.00	CT	6.0	9.0	S	NS
238	07/27/94	CROW	1	5	0.00	CT	9.0	12.0	S	NS
239	07/27/94	CROW	1	6	0.00	CT	3.0	6.0	M	NS
240	07/27/94	CROW	1	6	0.00	CT	6.0	9.0	S	NS
241	07/27/94	CROW	1	6	0.00	CT	9.0	12.0	S	NS
242	07/27/94	CROW	1	6	0.00	DA	3.0	6.0	S	NS
243	07/27/94	CROW	1	7	0.00	CT	0.0	3.0	S	NS
244	07/27/94	CROW	1	7	0.00	CT	3.0	6.0	M	NS
245	07/27/94	CROW	1	7	0.00	RB	3.0	6.0	S	NS
246	07/27/94	CROW	1	8	0.00	CT	0.0	3.0	S	NS
247	07/27/94	CROW	1	8	0.00	CT	3.0	6.0	S	NS
248	07/27/94	CROW	1	8	0.00	CT	6.0	9.0	S	NS
249	07/27/94	CROW	1	9	0.00	CT	0.0	3.0	S	NS
250	07/27/94	CROW	1	9	0.00	CT	3.0	6.0	M	NS

251	07/27/94	CROW	1	9	0.00	CT	9.0	12.0	S	NS
252	07/27/94	CROW	1	9	0.00	CT	9.0	12.0	S	NS
253	07/27/94	CROW	1	9	0.00	BL	6.0	9.0	S	NS
254	07/27/94	CROW	1	10	0.00	CT	0.0	3.0	M	NS
255	07/27/94	CROW	1	10	0.00	CT	3.0	6.0	M	NS
256	07/27/94	CROW	1	10	0.00	CT	6.0	9.0	S	NS
257	07/27/94	CROW	1	10	0.00	CT	9.0	12.0	S	NS
258	07/27/94	CROW	1	11	0.00	CT	3.0	6.0	S	NS
259	07/27/94	CROW	1	11	0.00	CT	6.0	9.0	S	NS
260	07/27/94	CROW	1	11	0.00	BL	0.0	3.0	S	NS
261	07/27/94	CROW	1	11	0.00	BL	3.0	6.0	S	NS
262	07/27/94	CROW	1	11	0.00	BL	6.0	9.0	S	NS
263	07/27/94	CROW	1	12	0.00	CT	0.0	3.0	S	NS
264	07/27/94	CROW	1	12	0.00	CT	3.0	6.0	S	NS
265	07/27/94	CROW	1	12	0.00	CT	6.0	9.0	S	NS
266	07/27/94	CROW	1	12	0.00	CT	9.0	12.0	S	NS
267	07/27/94	CROW	2	1	0.00	CT	0.0	3.0	S	NS
268	07/27/94	CROW	2	1	0.00	CT	3.0	6.0	M	NS
269	07/27/94	CROW	2	1	0.00	CT	6.0	9.0	M	NS
270	07/27/94	CROW	2	1	0.00	CT	9.0	12.0	S	NS
271	07/27/94	CROW	2	2	0.00	CT	0.0	3.0	M	NS
272	07/27/94	CROW	2	2	0.00	CT	3.0	6.0	M	NS
273	07/27/94	CROW	2	2	0.00	CT	6.0	9.0	M	NS
274	07/27/94	CROW	2	2	0.00	CT	9.0	12.0	S	NS
275	07/27/94	CROW	2	2	0.00	RB	12.0	0.0	S	NS
276	07/27/94	CROW	2	3	0.00	RB	12.0	0.0	S	NS
277	07/27/94	CROW	2	3	0.00	CT	3.0	6.0	M	NS
278	07/27/94	CROW	2	3	0.00	CT	6.0	9.0	S	NS
279	07/27/94	CROW	2	3	0.00	CT	9.0	12.0	S	NS
280	07/27/94	CROW	2	3	0.00	CT	12.0	0.0	S	NS
281	07/27/94	CROW	2	4	0.00	RB	12.0	0.0	S	NS
282	07/27/94	CROW	2	4	0.00	CT	0.0	3.0	S	NS
283	07/27/94	CROW	2	4	0.00	CT	3.0	6.0	M	NS
284	07/27/94	CROW	2	4	0.00	CT	6.0	9.0	M	NS
285	07/27/94	CROW	2	4	0.00	CT	9.0	12.0	S	NS
286	07/27/94	CROW	2	5	0.00	CT	9.0	12.0	S	NS
287	07/27/94	CROW	2	5	0.00	CT	6.0	9.0	S	NS
288	07/27/94	CROW	2	5	0.00	CT	3.0	6.0	M	NS
289	07/27/94	CROW	2	5	0.00	CT	0.0	3.0	S	NS
290	07/27/94	CROW	2	5	0.00	RB	3.0	6.0	S	NS
291	07/27/94	CROW	2	5	0.00	RB	6.0	9.0	S	NS
292	07/27/94	CROW	2	6	0.00	RB	6.0	9.0	S	NS
293	07/27/94	CROW	2	6	0.00	RB	3.0	6.0	S	NS
294	07/27/94	CROW	2	6	0.00	CT	3.0	6.0	M	NS
295	07/27/94	CROW	2	6	0.00	CT	0.0	3.0	S	NS
296	07/27/94	CROW	2	6	0.00	CT	6.0	9.0	S	NS
297	07/27/94	CROW	2	6	0.00	CT	9.0	12.0	S	NS
298	07/27/94	CROW	2	7	0.00	CT	0.0	3.0	M	NS
299	07/27/94	CROW	2	7	0.00	CT	3.0	6.0	M	NS
300	07/27/94	CROW	2	7	0.00	CT	6.0	9.0	S	NS
301	07/27/94	CROW	2	7	0.00	RB	6.0	9.0	S	NS
302	07/27/94	CROW	2	7	0.00	RB	3.0	6.0	S	NS
303	07/27/94	CROW	2	8	0.00	RB	3.0	6.0	S	NS
304	07/27/94	CROW	2	8	0.00	RB	6.0	9.0	S	NS
305	07/27/94	CROW	2	8	0.00	CT	0.0	3.0	M	NS
306	07/27/94	CROW	2	8	0.00	CT	3.0	6.0	M	NS
307	07/27/94	CROW	2	8	0.00	CT	6.0	9.0	S	NS
308	07/27/94	CROW	2	9	0.00	CT	6.0	9.0	S	NS
309	07/27/94	CROW	2	9	0.00	CT	0.0	3.0	S	NS
310	07/27/94	CROW	2	9	0.00	CT	3.0	6.0	M	NS
311	07/27/94	CROW	2	9	0.00	RB	3.0	6.0	M	NS
312	07/27/94	CROW	2	9	0.00	RB	0.0	3.0	S	NS
313	07/27/94	CROW	2	9	0.00	RB	6.0	9.0	S	NS

315	07/27/94	CROW	2	10	0.00	CT	3.0	6.0	M	NS
316	07/27/94	CROW	2	10	0.00	CT	6.0	9.0	M	NS
317	07/27/94	CROW	2	10	0.00	CT	9.0	12.0	S	NS
318	07/27/94	CROW	2	11	0.00	CT	0.0	3.0	S	NS
319	07/27/94	CROW	2	11	0.00	CT	3.0	6.0	M	NS
320	07/27/94	CROW	2	11	0.00	CT	6.0	9.0	S	NS
321	07/27/94	CROW	2	12	0.00	CT	6.0	9.0	M	NS
322	07/27/94	CROW	2	12	0.00	CT	3.0	6.0	M	NS
323	07/27/94	CROW	2	12	0.00	CT	0.0	3.0	S	NS
324	08/04/94	INDIAN	1	1	0.00	BL	0.0	3.0	S	NS
325	08/04/94	INDIAN	1	1	0.00	BL	3.0	6.0	S	NS
326	08/04/94	INDIAN	1	1	0.00	BL	6.0	9.0	S	NS
327	08/04/94	INDIAN	1	1	0.00	BL	9.0	12.0	S	NS
328	08/04/94	INDIAN	1	1	0.00	WF	9.0	12.0	S	NS
329	08/04/94	INDIAN	1	2	0.00	BL	9.0	12.0	S	NS
330	08/04/94	INDIAN	1	2	0.00	BL	0.0	3.0	S	NS
331	08/04/94	INDIAN	1	2	0.00	BL	3.0	6.0	S	NS
332	08/04/94	INDIAN	1	2	0.00	BL	12.0	0.0	S	NS
333	08/04/94	INDIAN	1	3	0.00	BL	12.0	0.0	S	NS
334	08/04/94	INDIAN	1	3	0.00	BL	3.0	6.0	S	NS
335	08/04/94	INDIAN	1	3	0.00	BL	0.0	3.0	S	NS
336	08/04/94	INDIAN	1	4	0.00	BL	0.0	3.0	S	NS
337	08/04/94	INDIAN	1	4	0.00	BL	3.0	6.0	S	NS
338	08/04/94	INDIAN	1	4	0.00	BL	12.0	0.0	S	NS
339	08/04/94	INDIAN	1	5	0.00	BL	12.0	0.0	S	NS
340	08/04/94	INDIAN	1	5	0.00	BL	0.0	3.0	S	NS
341	08/04/94	INDIAN	1	5	0.00	BL	3.0	6.0	S	NS
342	08/04/94	INDIAN	1	6	0.00	BL	3.0	6.0	S	NS
343	08/04/94	INDIAN	1	6	0.00	BL	0.0	3.0	S	NS
344	08/04/94	INDIAN	1	6	0.00	BL	6.0	9.0	S	NS
345	08/04/94	INDIAN	1	6	0.00	BL	12.0	0.0	S	NS
346	08/04/94	INDIAN	1	8	0.00	BL	0.0	3.0	S	NS
347	08/04/94	INDIAN	1	8	0.00	BL	3.0	6.0	S	NS
348	08/04/94	INDIAN	1	8	0.00	BL	6.0	9.0	S	NS
349	08/04/94	INDIAN	1	9	0.00	BL	6.0	9.0	S	NS
350	08/04/94	INDIAN	1	9	0.00	BL	3.0	6.0	S	NS
351	08/04/94	INDIAN	1	10	0.00	BL	3.0	6.0	M	NS
352	08/04/94	INDIAN	1	10	0.00	BL	0.0	3.0	S	NS
353	08/04/94	INDIAN	1	11	0.00	BL	0.0	3.0	S	NS
354	08/04/94	INDIAN	1	11	0.00	BL	3.0	6.0	S	NS
355	08/04/94	INDIAN	1	11	0.00	BL	6.0	9.0	S	NS
356	08/04/94	INDIAN	1	12	0.00	BL	6.0	9.0	S	NS
357	08/04/94	INDIAN	1	12	0.00	BL	3.0	6.0	S	NS
358	08/04/94	INDIAN	1	12	0.00	BL	0.0	3.0	S	NS
359	08/08/94	BOX CANYON	1	1	0.00	CT	6.0	9.0	S	NS
360	08/08/94	BOX CANYON	1	1	0.00	CT	3.0	6.0	S	NS
361	08/08/94	BOX CANYON	1	1	0.00	CT	0.0	3.0	S	NS
362	08/08/94	BOX CANYON	1	1	0.00	CT	12.0	0.0	S	NS
363	08/08/94	BOX CANYON	1	1	0.00	BL	3.0	6.0	S	NS
364	08/08/94	BOX CANYON	1	1	0.00	BL	6.0	9.0	S	NS
365	08/08/94	BOX CANYON	1	1	0.00	BL	9.0	12.0	S	NS
366	08/08/94	BOX CANYON	1	2	0.00	BL	3.0	6.0	S	NS
367	08/08/94	BOX CANYON	1	2	0.00	CT	3.0	6.0	S	NS
368	08/08/94	BOX CANYON	1	2	0.00	CT	0.0	3.0	S	NS
369	08/08/94	BOX CANYON	1	2	0.00	CT	6.0	9.0	S	NS
370	08/08/94	BOX CANYON	1	2	0.00	CT	9.0	12.0	S	NS
371	08/08/94	BOX CANYON	1	3	0.00	CT	9.0	12.0	S	NS
372	08/08/94	BOX CANYON	1	3	0.00	CT	3.0	6.0	S	NS
373	08/08/94	BOX CANYON	1	3	0.00	CT	0.0	3.0	S	NS
374	08/08/94	BOX CANYON	1	4	0.00	CT	0.0	3.0	S	NS
375	08/08/94	BOX CANYON	1	4	0.00	CT	3.0	6.0	S	NS
376	08/08/94	BOX CANYON	1	4	0.00	CT	6.0	9.0	S	NS