

Culvert Prioritization Fremont National Forest

March 17, 2003

Introduction

There are thousands of road crossings (the intersection of a road and a stream) on public and private land. The obligation to provide for fish passage at road crossings leads one to question which road crossings currently provide for fish passage and which crossings may not provide passage.

The Fremont National Forest was charged with the task of inventorying the status of the road crossings on fish bearing streams. The inventory began with an exercise that determined how many road crossings—bridges, culverts, or low water fords--there are on National Forest land. The number of road crossings was determined through GIS (Geographical Information Systems) by taking the intersection between the roads layer and the stream layer. This method generated several points that were not actually crossing and the method was modified. Road crossings were determined through manually determining road crossing locations on district maps.

As part of the pilot program, the field inventories began in 2000 with 182 road crossings were inventoried. In 2001, 257 crossings were inventoried. The final year of inventories was 2002 when 60 culvert crossings were inventoried.

The status of the crossing reflects whether or not the culvert met the criteria to pass fish. “Green” culverts met the criteria to pass fish, “red” culverts did not meet the criteria to pass fish, and “gray” culverts require additional information in order to determine fish passage status.

The estimated number of miles of upstream length that may be blocked by culverts by specific species is shown in Table 1. There was limited information available regarding habitat quality. The miles of stream length were generated using the Fremont NF streams layer with Geographical Information Systems (GIS) to generate the length of stream (perennial, intermittent, or ephemeral) above the culvert. Total upstream miles include tributary lengths.

Species	Miles of Stream Length Blocked
Bull Trout	46
Redband Trout	1,503

Table 1. Approximate number of miles of stream length (perennial, intermittent, and ephemeral) blocked by culvert barriers according to species.

Forest Prioritization of Assessment Sites

The prioritization of the inventoried culverts was based on a point system. Points were assigned to culvert locations based on **species present or expected, stream length**

upstream, key watersheds, stream type, passage status, and ownership. The number of points reflects the importance placed on a particular characteristic. Therefore, the more points a culvert received, the higher the culvert was placed on the priority list. One must keep in mind that the prioritization system is a systematic way to consider the 399 road crossings. Any action taken at the road crossing must be verified and reviewed by district personnel and the engineering staff.

The species of particular interest on the Fremont National Forest are bull trout (threatened species), shortnose suckers (endangered species), and redband trout (sensitive species). However, the species that are present at any culvert site are bull trout or redband trout. The Lost River sucker (endangered species) and Warner sucker (threatened species) are not known to be at any of the culvert sites that were inventoried. In most cases these suckers are downstream of Forest Service land. Several areas are part of proposed critical habitat but the habitat is downstream of any of the inventoried road crossings. Species presence was physical presence or expected presence at the particular road crossing. At some road crossings it is not clear what fish, if any, reside in them. For this reason, one must consider the specifics of each site with the assistance of a fisheries biologist, hydrologist, and engineer prior to taking any action. Ten points were given to threatened species (bull trout) and 0 points were given to redband trout (sensitive species). Bull trout presence constitutes 2.5% of the road crossing inventoried.

Table 2 illustrates the number of points given for miles of stream length upstream above the culvert.

Miles of Stream Length	Points Assigned	Miles of Stream Length	Points Assigned
<1	0	10-25	15
1-5	5	25-35	30
5-10	10	>35	40

Table 2. Points assigned to miles of stream length above culvert.

Key fifth field watersheds were determined as a priority for various reasons. These reasons include fifth field watersheds where multiple sensitive species exist, existing monitoring agreements, existing cost share agreements, and proposed critical habitat for bull trout.

Watershed Name	HUC	Reason
Thomas Creek	1802000102	Multiple sensitive species
Drews Creek	1802000101	Multiple sensitive species
Upper Chewaucan River	1712000601	Monitoring Priority
Middle Chewaucan River	1712000602	Monitoring Priority
Deep Creek	1712000704	CCS w/ Trout Unlimited
North Fork Sprague River	1801020204	Bull Trout Proposed Critical Habitat
South Fork Sprague River	1801020205	Bull Trout Proposed Critical Habitat
Sprague River above Williamson River	1801020207	Bull Trout Proposed Critical Habitat
Sycan River at Sycan Marsh	1801020202	Bull Trout Proposed Critical Habitat
Sycan River above Sycan Marsh	1801020201	Bull Trout Proposed Critical Habitat

Table 3. Key watersheds.

Each key watershed listed in Table 3 received 30 points. Fifty-nine percent of the road crossings are within a key watershed.

Perennial streams were given 40 points while non-perennial streams were given 0 points. Seventy percent of the inventoried culverts were on perennial streams. Finally, the crossing was given 100 points for “red” passage status, 50 points for “gray” passage status, and 0 points for “green” passage status. Of the 399 culverts inventoried in 2000, 2001 and 2002, 3% were green, 8% were gray, and 89% were red.

There were several culverts (19%) that were inventoried that were located on private land or ownership other than Forest Service land. The priority system assigned 40 points to culverts on Forest Service land and 0 points to other ownerships.

The total number of points assigned to each culvert based on species present or expected, stream length, key watersheds, stream type, passage status, and ownership were summed for each culvert location and sorted. The sorting of the total point with this scheme did not allow for the consideration of the leaping distance and bankfull ratio values. The next two iterations considered leap distance and bankfull ratio values into the prioritization system for further refinement.

A second iteration of the priority system presented above was completed with the addition of assigning point values to the leap distance. The importance of the leap distance to movement of aquatic species is well documented and is particularly important to native trout because of their limited jumping abilities. Of the pipes that were “red”, 89 pipes or 25% of the “red” culverts had leap distances greater than 1.0 foot. Furthermore, 24 pipes or 6.7% of the “red” culverts, had leap distances greater than 2.0 feet.

Leap Distance (ft)	Points Assigned	Leap Distance (ft)	Points Assigned
0-0.32	0	1.0-2.0	20
0.33-1.0	10	>2.0	30

Table 4. Leap distance and points assigned.

The third iteration of the priority system presented above was completed with the addition of assigning point values to the culvert width to bankfull width ratio. This element is important because it dictates how well the culvert handles typical flows and also indicates how well the culvert may handle larger flows. Points were assigned as follows: a ratio less than 0.5 was assigned 10 points, a ratio greater than 0.5 and less than 0.75 was assigned 5 points, and a ratio greater than 0.75 was assigned zero points. Of the pipes that were “red”, 171 pipes, or 48% of the “red” culverts, had culvert width to bankfull width ratios less than 0.5. Furthermore 6% of the “red” culverts had culvert width to bankfull width ratios less than 0.25.

Table 5 shows the culverts sorted by the original prioritization point system (species present, stream length, key watersheds, stream type, and passage status) with the addition of leap distance and the channel width to bankfull width ratio. In case of a tie, the culverts were sorted in order of stream length. This iteration appears to better select the problem culverts weighted by particular species needs better than the original prioritization. For this reason, the entire data set is presented with this prioritization point system. Therefore, the priority list in Table 5 is based on the **species present, stream length upstream, key watersheds, stream type, passage status, ownership, leap distance, and the channel width to bankfull width ratio.**

Proposal for Rehabilitation/Reconstruction

Utilizing the information presented in Tables 5 and 6, one notes there are several ties in the number of points for several road crossings. As stated earlier, in the case of a tie the road crossing was sorted by stream length above the culvert. The top ten culverts according to the prioritization that assigned values for species present, stream length upstream, key watersheds, stream type, passage status, ownership, leap distance, and the channel width to bankfull width ratio are in Table 5.

RANK	TAG NUMBER	ROUTE	Milepost	Stream_Name
1	102-sl	3372	2.7	paradise creek
2	11-eng	3411	4.581	North Fork Sprague River
3	99-eng	1400047	0.237	Drews Creek
4	39-eng	3400018	2.849	deming creek
5	23-eng	3631	3.923	pothole creek
6	111-eng	3719051	1.988	Indigo Creek
7	155-sl	3428	0.4	dairy creek
8	156-sl	3428	1.6	deer creek
9	270-eng	3870	10.54	Tom Young Creek
10	160-sl	3428	5.2	tepee creek

Table 5. Top 10 ranked culverts.

Deming Creek at 3400018 is the only creek in the top 10 that has bull trout presence. The other “red” culverts on perennial streams with Bull trout presence on Forest Service land were rated as number 17 (Coyote Creek at 2700019) and 40 (Brownsouth Creek at 3400000).

The prioritization system presented here is a simple filtering system to get a better idea of what culverts are more problematic than others. The crossings near the top of the list are clearly problem road crossings and would, if replaced, open up several miles of habitat. However, the presence of fish at each crossing must be verified and further reviewed with a zone fisheries biologist, hydrologist, and engineer.

Future Needs

The specific reason behind why particular culverts are “red” is also of interest. Information on the quality of habitat upstream of each culvert would further refine this exercise.

Table 6. Ranked road crossings and location.

RANK	TAG NUMBER	ROUTE	Milepost	Stream_Name	Species	Stream Length (mi)	Fifth Field Watershed	PASSAGE Database_Result	Ownership	LEAP DISTANCE	Bankfull Ratio	POINTS
1	102-sl	3372	2.70	paradise creek	Redband Trout	31.59	1801020201	Red	USDA-FS	1.35	0.59	265.0
2	11-eng	3411	4.58	North Fork Sprague River	Redband Trout	135.94	1801020204	Red	USDA-FS	0.21	0.41	260.0
3	99-eng	1400047	0.24	Drews Creek	Redband Trout	28.65	1802000101	Red	USDA-FS	0.85	0.38	260.0
4	39-eng	3400018	2.85	deming creek	Bull Trout	9.93	1801020207	Red	USDA-FS	1.51	0.48	260.0
5	23-eng	3631	3.92	pothole creek	Redband Trout	12.01	1801020205	Red	USDA-FS	1.44	0.37	255.0
6	111-eng	3719051	1.99	Indigo Creek	Redband Trout	2.36	1801020205	Red	USDA-FS	3.60	0.27	255.0
7	155-sl	3428	0.40	dairy creek	Redband Trout	34.73	1712000601	Red	USDA-FS	0.30	0.48	250.0
8	156-sl	3428	1.60	deer creek	Redband Trout	19.76	1712000601	Red	USDA-FS	1.00	0.53	250.0
9	270-eng	3870	10.54	Tom Young Creek	Redband Trout	2.65	1802000102	Red	USDA-FS	4.67	0.50	250.0
10	160-sl	3428	5.20	tepee creek	Redband Trout	1.83	1712000601	Red	USDA-FS	5.70	0.50	250.0
11	163-sl	3428012	1.50	e. fork spring crk.	Redband Trout	1.62	1712000601	Red	USDA-FS	3.50	0.50	250.0
12	257-eng	3428014	1.93	Deer Creek trib	Redband Trout	1.39	1712000601	Red	USDA-FS	2.34	0.60	250.0
13	170-sl	3428012	6.00	upper spring creek	Redband Trout	0.69	1712000601	Red	USDA-FS	2.30	0.33	250.0
14	176-eng	3870171	0.88	Tributary of Howard Creek	Redband Trout	0.39	1802000101	Red	USDA-FS	2.11	0.42	250.0
15	256-eng	3428014	0.72	Deer Creek	Redband Trout	18.76	1712000601	Red	USDA-FS	1.21	0.79	245.0
16	101-sl	3372	1.50	crazy creek	Redband Trout	10.14	1801020201	Red	USDA-FS	0.75	0.48	245.0
17	297-eng	2700019	2.33	Coyote Creek	Bull Trout	8.23	1801020202	Red	USDA-FS	0.76	0.50	245.0
18	9-eng	3411	16.23	Cold Creek	Redband Trout	7.04	1801020204	Red	USDA-FS	1.03	0.64	245.0
19	179-eng	3870	3.17	Tributary of Howard Creek	Redband Trout	1.59	1802000101	Red	USDA-FS	2.01	0.80	245.0
20	147-sl	3315348	12.81	elder creek	Redband Trout	54.53	1712000601	Red	Private	1.00	0.41	240.0
21	152-sl	3300012	0.60	Dog creek	Redband Trout	12.09	1712000602	Red	USDA-FS	0.35	0.65	240.0
22	136-sl	3315	5.10	bear creek	Redband Trout	6.80	1712000602	Red	USDA-FS	1.45	0.79	240.0
23	206-eng	3628018	6.06	Bauers Creek	Redband Trout	6.14	1802000102	Red	USDA-FS	1.14	0.80	240.0
24	167-sl	3372212	2.50	cougar creek	Redband Trout	5.37	1712000601	Red	USDA-FS	0.50	0.20	240.0
25	172-eng	2800100	4.25	Trib Thomas Creek	Redband Trout	2.32	1802000102	Red	USDA-FS	1.14	0.50	240.0
26	165-sl	3428012	2.10	upper spring crk south	Redband Trout	1.41	1712000601	Red	USDA-FS	1.50	0.57	240.0
27	130-sl	3323	0.70	paradise creek	Redband Trout	1.13	1801020201	Red	USDA-FS	1.20	0.70	240.0
28	164-sl	3428012	2.10	upper spring crk north	Redband Trout	1.05	1712000601	Red	USDA-FS	1.10	0.57	240.0
29	250-eng	3660013	0.01	Pothole Creek trib	Redband Trout	1.02	1801020205	Red	USDA-FS	1.30	0.50	240.0
30	110-eng	3719	2.36	Indigo Creek	Redband Trout	0.81	1801020205	Red	USDA-FS	1.02	0.47	240.0
31	171-sl	3428012	1.50	upperup east spring creek	Redband Trout	0.69	1712000601	Red	USDA-FS	1.20	0.40	240.0
32	29-eng	3400335	0.25	ditch (Deming Creek)	Redband Trout	24.78	1801020207	Red	USDA-FS	0.07	0.38	235.0
33	168-sl	3372212	1.30	dairy creek	Redband Trout	17.36	1712000601	Red	USDA-FS	-0.10	0.20	235.0
34	107-sl	3510	6.00	ben young creek	Redband Trout	16.23	1712000601	Red	USDA-FS	0.75	1.06	235.0
35	108-sl	3623	0.10	ben young creek	Redband Trout	16.03	1712000601	Red	USDA-FS	0.85	0.79	235.0
36	111-sl	3509016	0.00	Swamp Creek	Redband Trout	12.95	1712000601	Red	USDA-FS	-0.80	0.40	235.0
37	208-eng	3613011	0.37	Bauers Creek	Redband Trout	9.47	1802000102	Red	USDA-FS	0.62	0.54	235.0
38	103-sl	3372	7.60	watson creek	Redband Trout	9.04	1801020201	Red	USDA-FS	0.45	0.55	235.0
39	134-sl	3315	2.30	East Witham Crk	Redband Trout	7.83	1712000601	Red	USDA-FS	0.40	0.69	235.0
40	241-eng	3400000	10.60	Brownsworth Creek	Bull Trout	4.66	1801020205	Red	USDA-FS	-0.27	0.45	235.0

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41	121-sl	28	1.50	rock creek	Redband Trout	2.94	180102020 1	Red	USDA-FS	0.70	0.38	235.0
42	173-eng	2800100	3.80	Trib Thomas Creek	Redband Trout	2.09	180200010 2	Red	USDA-FS	0.65	0.36	235.0
43	230-eng	4017	12.54	Trib Dog Creek	Redband Trout	0.57	180200010 1	Red	USDA-FS	1.88	0.50	235.0
44	7-eng	3323	3.26	Paradise Creek	Redband Trout	0.34	180102020 1	Red	USDA-FS	1.13	0.50	235.0
45	27-eng	34	14.31	South Fork sprague river	Redband Trout	9.33	180102020 5	Red	USDA-FS	-0.03	0.44	230.0
46	239-eng	3300000	6.83	Chewaucan River trib	Redband Trout	8.78	171200060 2	Red	USDA-FS	-0.31	0.44	230.0
47	6-eng	3372	8.23	North Fork Sprague River	Redband Trout	8.20	180102020 4	Red	USDA-FS	-0.20	0.46	230.0
48	128-sl	3380	0.30	skull creek	Redband Trout	7.68	180200010 1	Red	USDA-FS	-0.55	0.47	230.0
49	32-eng	34	13.55	camp creek	Redband Trout	6.54	180102020 5	Red	USDA-FS	0.97	0.75	230.0
50	254-eng	3660365	0.89	Deer Creek	Redband Trout	5.44	171200060 1	Red	USDA-FS	0.43	0.81	230.0
51	128-eng	4020	6.65	East Fork McCain Cr.	Redband Trout	5.35	180200010 4	Red	USDA-FS	2.60	0.44	230.0
52	10-eng	3411	9.71	Long Creek	Redband Trout	4.28	180102020 4	Red	USDA-FS	0.60	0.60	230.0
53	291-eng	3315013	0.28	Mill Creek	Redband Trout	3.76	171200060 2	Red	USDA-FS	0.81	0.63	230.0
54	182-eng	3870024	0.52	Cougar Creek	Redband Trout	3.23	180200010 2	Red	USDA-FS	0.94	0.57	230.0
55	109-sl	3623150	0.20	ben young creek	Redband Trout	2.95	171200060 1	Red	USDA-FS	0.60	0.62	230.0
56	253-eng	3660	8.88	pothole Creek trib	Redband Trout	1.97	180102020 5	Red	USDA-FS	0.68	0.67	230.0
57	181-eng	3870	6.21	Grizzly Creek	Redband Trout	1.93	180200010 2	Red	USDA-FS	0.88	0.60	230.0
58	100-eng	1400014	2.57	Trib of Quartz Cr.	Redband Trout	1.57	180200010 1	Red	USDA-FS	0.40	0.58	230.0
59	135-sl	3315	0.00	cofeepot creek	Redband Trout	0.69	171200060 2	Red	USDA-FS	1.20	0.75	230.0
60	251-eng	3660024	1.80	Pothole Creek trib	Redband Trout	0.64	180102020 5	Red	USDA-FS	0.68	0.44	230.0
61	162-sl	3428014	0.70	deer creek	Redband Trout	0.10	171200060 1	Red	USDA-FS	0.90	0.48	230.0

62	9-sl	2804501	0.59	bridge creek	Redband Trout	27.39	171200050 2	Red	USDA-FS	0.80	0.50	225.0
63	113-sl	3509	0.60	shoestring creek	Redband Trout	11.71	171200060 1	Red	USDA-FS	-0.20	1.00	225.0
64	171-eng	2800100	3.97	Thomas Creek	Redband Trout	8.01	180200010 2	Red	USDA-FS	-0.61	0.68	225.0
65	265-eng	3780	3.87	Augur Creek	Redband Trout	7.07	180200010 2	Red	USDA-FS	-0.69	0.56	225.0
66	175-sl	3300014	1.50	little coffeepot crk	Redband Trout	6.55	171200060 2	Red	USDA-FS	0.10	0.54	225.0
67	142-eng	3752068	0.14	Trib Drews Creek	Redband Trout	4.02	180200010 1	Red	USDA-FS	-0.69	0.43	225.0
68	148-sl	3315103	0.40	little bear creek	Redband Trout	3.33	171200060 2	Red	USDA-FS	0.40	0.86	225.0
69	237-eng	3716	2.33	Paradise Creek	Redband Trout	3.23	180200010 2	Red	USDA-FS	-2.81	0.44	225.0
70	1-eng	3411021	0.16	Gold Creek	Redband Trout	3.14	180102020 4	Red	USDA-FS	0.00	0.44	225.0
71	28-eng	3400016	1.53	camp creek	Redband Trout	3.07	180102020 5	Red	USDA-FS	0.44	0.75	225.0
72	126-sl	3380011	0.10	rifle creek	Redband Trout	2.26	180102020 1	Red	USDA-FS	0.45	1.13	225.0
73	36-eng	3372	0.53	dairy creek	Redband Trout	1.99	171200060 1	Red	USDA-FS	0.50	1.20	225.0
74	114-eng	3940	10.15	Trib. of Hay Creek	Redband Trout	1.87	180200010 1	Red	USDA-FS	0.15	0.44	225.0
75	261-eng	3870178	0.17	Antelope Creek	Redband Trout	1.86	180200010 1	Red	USDA-FS	0.00	0.43	225.0
76	166-sl	3428212	3.40	little cougar creek	Redband Trout	1.68	171200060 1	Red	USDA-FS	0.30	0.40	225.0
77	202-eng	3720012	1.21	Second Swale Creek	Redband Trout	1.18	171200070 5	Red	USDA-FS	2.14	0.40	225.0

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78	159-eng	4017	17.06	Green Creek	Redband Trout	1.15	1802000101	Red	USDA-FS	0.44	1.37	225.0
79	8-eng	3323	0.56	Cold Creek	Redband Trout	1.13	1801020204	Red	USDA-FS	0.54	0.88	225.0
80	160-eng	3780	0.11	Trib Thomas Creek	Redband Trout	0.93	1802000102	Red	USDA-FS	0.78	0.50	225.0
81	162-eng	3780	0.55	Trib Thomas Creek	Redband Trout	0.62	1802000102	Red	USDA-FS	0.82	0.50	225.0
82	109-eng	3719	0.88	Trib Ish Tish Creek	Redband Trout	0.46	1801020205	Red	USDA-FS	0.72	0.67	225.0
83	129-sl	3372022	0.90	skull creek	Redband Trout	0.34	1801020201	Red	USDA-FS	0.45	0.66	225.0

84	267-eng	3870	13.00	Tom Young Creek	Redband Trout	0.00	1802000102	Red	USDA-FS	0.82	0.50	225.0
85	25-sl	27	0.20	w. fork silver creek	Redband Trout	27.34	1712000502	Red	USDA-FS	-1.36	0.40	220.0
86	23-sl	3038	1.30	guyer creek	Redband Trout	16.32	1712000502	Red	USDA-FS	1.05	0.51	220.0
87	278-eng	3546	6.80	Boulder Creek	Bull Trout	9.14	1801020204	Red	Private	1.59	0.37	220.0
88	73-eng	4015019	0.43	mid fork deep crk	Redband Trout	5.19	1712000704	Red	USDA-FS	1.15	0.28	220.0
89	112-eng	3940	5.21	Trib. of Dent Creek	Redband Trout	4.78	1802000101	Red	USDA-FS	-0.47	0.50	220.0
90	262-eng	3870102	0.23	Fish Creek	Redband Trout	4.51	1802000101	Red	USDA-FS	0.31	0.67	220.0
91	2-eng	3411021	1.05	Dead Cow Creek	Redband Trout	2.78	1801020204	Red	USDA-FS	0.30	0.67	220.0
92	255-eng	3660063	1.05	Deer Creek trib	Redband Trout	2.49	1712000601	Red	USDA-FS	0.21	0.70	220.0
93	172-sl	2800050	0.01	morgan creek trib.	Redband Trout	2.45	1712000601	Red	USDA-FS	-2.00	0.55	220.0
94	269-eng	3870	11.13	Tom Young Creek	Redband Trout	2.29	1802000102	Red	USDA-FS	0.08	0.67	220.0
95	180-eng	3870	6.21	Grizzly Creek	Redband Trout	1.93	1802000102	Red	USDA-FS	0.25	0.60	220.0
96	115-eng	3940180	0.26	Trib. Hay Creek	Redband Trout	1.71	1802000101	Red	USDA-FS	-0.26	0.52	220.0
97	158-sl	3428	2.00	east spring creek	Redband Trout	1.55	1712000601	Red	USDA-FS	-0.30	0.50	220.0
98	294-eng	2800209	0.08	Pole Creek	Redband Trout	0.95	1712000601	Red	USDA-FS	0.29	0.44	220.0
99	57-eng	3915	8.21	trib. of burnt creek	Redband Trout	0.76	1712000704	Red	USDA-FS	2.85	0.42	220.0
100	248-eng	3631	8.82	Jade Creek	Redband Trout	0.65	1801020205	Red	USDA-FS	-0.24	0.42	220.0
101	91-eng	3715	9.03	Big Swamp Creek	Redband Trout	0.41	1801020206	Red	USDA-FS	6.50	0.25	220.0
102	194-eng	3615019	1.09	Trib Mudd Creek	Redband Trout	0.30	1712000704	Red	USDA-FS	2.08	0.40	220.0
103	53-eng	3915014	0.23	willow creek	Redband Trout	0.10	1712000704	Red	USDA-FS	2.05	0.47	220.0
104	246-eng	3752075	0.47	Strawberry Creek	Redband Trout	8.19	1801020405	Red	USDA-FS	1.04	0.71	215.0
105	11-sl	7645	1.00	bridge creek	Redband Trout	6.06	1712000502	Red	USDA-FS	1.20	0.69	215.0
106	20-eng	3450112	0.10	no-name	Redband Trout	5.24	1801020204	Red	USDA-FS	3.60	0.50	215.0
107	4-eng	3411200	0.19	Dead Cow Creek	Redband Trout	4.61	1801020204	Red	USDA-FS	0.00	0.75	215.0
108	3-eng	3411021	1.56	Dead Cow Creek	Redband Trout	4.41	1801020204	Red	USDA-FS	0.00	0.86	215.0
109	26-eng	3400012	0.25	corral creek	Redband Trout	4.02	1801020205	Red	USDA-FS	-0.41	1.08	215.0
110	104-sl	3323	3.40	crazy creek	Redband Trout	3.68	1801020201	Red	USDA-FS	-0.55	1.00	215.0
111	205-eng	3628017	1.50	Cox Creek	Redband Trout	3.52	1802000102	Red	USDA-FS	-0.02	0.92	215.0

RANK	TAG NUMBER	ROUTE	Milepost	Stream_Name	Species	Stream Length (mi)	Fifth Field Watershed	PASSAGE Database_Result	Ownership	LEAP DISTANCE	Bankfull Ratio	POINT S
112	47-eng	3915028	0.17	burnt creek	Redband Trout	3.51	1712000704	Red	USDA-FS	1.42	0.49	215.0
113	259-eng	2800025	0.00	Shoestring creek	Redband Trout	2.79	1712000601	Red	USDA-FS	-1.64	1.00	215.0
114	103-eng	3631	2.21	Trib of Whitworth Cr.	Redband Trout	2.19	1801020205	Red	Private	3.10	0.44	215.0
115	203-eng	3628	5.16	Fawn Creek	Redband Trout	2.05	1802000102	Red	USDA-FS	3.40	0.43	215.0
116	292-eng	28	41.87	Sycan River trib	Redband Trout	1.92	1801020201	Red	USDA-FS	0.32	0.75	215.0
117	260-eng	3870175	1.45	Antelope Creek	Redband Trout	1.86	1802000101	Red	USDA-FS	-0.15	0.86	215.0
118	101-eng	1400011	2.93	Trib Quartz Cr.	Redband Trout	1.57	1802000101	Red	USDA-FS	0.19	2.00	215.0
119	249-eng	3660024	0.53	Pothole Creek trib	Redband Trout	1.43	1801020205	Red	USDA-FS	-0.25	1.00	215.0
120	80-eng	3790	7.30	trib Fishhole Creek	Redband Trout	1.36	1801020206	Red	USDA-FS	1.73	0.10	215.0
121	189-eng	3615	10.69	So Frk Crooked Cr.	Redband Trout	1.28	1712000603	Red	USDA-FS	1.21	0.43	215.0
122	263-eng	3870386	0.50	Antelope Creek	Redband Trout	1.25	1802000101	Red	USDA-FS	0.00	1.00	215.0
123	158-eng	4017	17.06	Green Creek	Redband Trout	1.15	1802000101	Red	USDA-FS	-0.07	1.37	215.0
124	272-eng	3360	5.87	Hadley Creek TRIB	Redband Trout	1.14	1712000510	Red	USDA-FS	2.21	0.83	215.0
125	268-eng	3870	12.89	Tom Young Cr trib	Redband Trout	1.01	1802000102	Red	USDA-FS	0.03	1.00	215.0
126	161-eng	28	75.65	Trib Thomas Creek	Redband Trout	0.93	1802000102	Red	USDA-FS	0.03	0.50	215.0
127	296-eng	3372022	1.72	Skull Creek	Redband Trout	0.77	1801020201	Red	USDA-FS	0.15	0.67	215.0
128	176-sl	3300014	2.10	coffeepot crk trib.	Redband Trout	0.71	1712000602	Red	USDA-FS	-0.10	0.58	215.0
129	258-eng	3631	8.70	Jade Creek trib	Redband Trout	0.69	1801020205	Red	USDA-FS	0.30	0.67	215.0
130	131-sl	3372	6.70	kingry marsh	Redband Trout	0.45	1801020201	Red	USDA-FS	0.00	0.65	215.0
131	116-eng	3924	1.44	Trib. Hay Creek	Redband Trout	0.43	1802000101	Red	USDA-FS	0.02	0.50	215.0
132	209-eng	3613011	0.88	Trib Bauers Creek	Redband Trout	0.31	1802000102	Red	USDA-FS	0.02	0.50	215.0
133	37-eng	3372	0.85	dairy creek	Redband Trout	0.10	1712000601	Red	USDA-FS	0.00	0.50	215.0
134	106-sl	33	12.60	coffeepot creek	Redband Trout	37.85	1712000602	Grey	USDA-FS	0.55	1.75	210.0
135	102-eng	3631	2.06	Whitworth Creek	Redband Trout	11.76	1801020205	Red	Private	1.45	0.61	210.0
136	130-eng	4020	11.91	trib Dry Creek	Redband Trout	4.81	1802000104	Red	USDA-FS	1.21	0.54	210.0
137	290-eng	3510018	1.60	Newell Creek	Redband Trout	2.19	1712000604	Red	USDA-FS	1.07	0.50	210.0
138	174-eng	3870	2.63	Trib Howard Creek	Redband Trout	2.16	1802000101	Red	USDA-FS	2.29	0.58	210.0
139	145-eng	3720	1.60	Sage Creek	Redband Trout	1.49	1712000705	Red	USDA-FS	1.55	0.60	210.0
140	122-sl	28	1.70	kelly creek	Redband Trout	1.10	1802000103	Red	USDA-FS	1.05	0.53	210.0
141	134-eng	4020	13.05	Trib Dry Creek	Redband Trout	1.06	1802000104	Red	USDA-FS	1.40	0.50	210.0
142	140-eng	3631015	0.84	Trib Ish Tish Crk.	Redband Trout	0.98	1801020205	Red	USDA-FS	2.88	0.36	210.0
143	293-eng	28	42.10	Sycan River trib	Redband Trout	0.85	1801020201	Red	USDA-FS	-0.57	0.75	210.0
144	92-eng	3817	0.25	Fishhole Creek	Redband Trout	0.76	1801020206	Red	USDA-FS	1.27	0.33	210.0
145	147-eng	3720	2.79	Trib Long John Creek	Redband Trout	0.75	1712000705	Red	USDA-FS	1.53	0.42	210.0
146	5-eng	3411039	0.43	Gold Creek	Redband Trout	0.70	1801020204	Red	USDA-FS	0.00	0.86	210.0
147	12-eng	3445	3.41	Huckleberry Draw	Redband Trout	0.69	1801020204	Red	USDA-FS	0.15	0.75	210.0

RANK	TAG NUMBER	ROUTE	Milepost	Stream_Name	Species	Stream Length (mi)	Fifth Field Watershed	PASSAGE Database_Result	Ownership	LEAP DISTANCE	Bankfull Ratio	POINTS
148	295-eng	3372025	0.39	Skull Creek	Redband Trout	0.47	1801020201	Red	USDA-FS	0.25	0.88	210.0
149	168-eng	2800100	0.65	Tributary of Thomas Creek	Redband Trout	0.05	1802000102	Red	USDA-FS	2.81	0.33	210.0
150	18-eng	3450	8.09	no-name	Redband Trout	25.66	1801020204	Red	USDA-FS	-0.91	0.50	205.0
151	13-sl	7645	1.20	buck creek	Redband Trout	19.66	1712000501	Red	USDA-FS	2.00	0.45	205.0
152	204-eng	3628	7.02	Trib Cox Creek	Redband Trout	14.10	1802000102	Red	USDA-FS	1.31	0.77	205.0
153	49-eng	3915	10.13	burnt creek	Redband Trout	11.44	1712000704	Red	USDA-FS	-1.85	0.42	205.0
154	24-sl	3038	4.20	w. fork silver creek	Redband Trout	9.66	1712000502	Red	USDA-FS	0.80	0.53	205.0
155	42-eng	3400028	3.76	boulder creek	Bull Trout	8.91	1801020204	Red	Private	0.37	0.63	205.0
156	284-eng	4015012	0.93	N. fork Deep Creek	Redband Trout	7.64	1712000704	Red	USDA-FS	0.47	0.50	205.0
157	285-eng	4015019	0.97	S. fork Deep Creek	Redband Trout	7.53	1712000704	Red	USDA-FS	0.85	0.60	205.0
158	178-sl	3315348	8.73	coffeepot crk	Redband Trout	4.46	1712000602	Red	Private	1.85	0.33	205.0
159	287-eng	4015019	2.45	Mosquito Creek	Redband Trout	2.99	1712000704	Red	USDA-FS	0.95	0.44	205.0
160	286-eng	4015019	2.45	Mosquito Creek	Redband Trout	2.99	1712000704	Red	USDA-FS	0.82	0.44	205.0
161	282-eng	2900012	0.43	Harvey Creek	Redband Trout	2.46	1712000510	Red	USDA-FS	1.50	0.80	205.0
162	82-eng	3790012	0.08	trib Fishhole Cr.	Redband Trout	2.08	1801020206	Red	USDA-FS	0.85	0.40	205.0
163	217-eng	3752	10.28	Trib Fishhole Cr.	Redband Trout	1.46	1801020206	Red	USDA-FS	0.34	0.43	205.0
164	51-eng	3915014	0.48	willow creek	Redband Trout	1.11	1712000704	Red	USDA-FS	0.36	0.23	205.0
165	21-eng	3445	1.60	no-name	Redband Trout	1.07	1801020204	Red	USDA-FS	1.40	0.38	205.0
166	105-eng	3631061	0.51	Trib Whitworth Cr.	Redband Trout	1.06	1801020205	Red	USDA-FS	1.02	0.40	205.0
167	149-eng	3615018	0.73	Trib Mud Creek	Redband Trout	0.56	1712000704	Red	USDA-FS	1.06	0.50	205.0
168	135-eng	3715015	0.19	Trib fishhole Creek	Redband Trout	0.46	180102020	Red	USDA-FS	1.00	0.60	205.0

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169	276-eng	3360262	0.19	Withers Creek	Redband Trout	0.21	1712000510	Red	USDA-FS	1.80	0.60	205.0
170	27-sl	27	2.60	guyer creek	Redband Trout	36.45	1712000502	Red	Private	0.45	0.41	200.0
171	22-sl	3038024	3.90	Guyer Creek	Redband Trout	8.34	1712000502	Red	USDA-FS	0.46	0.78	200.0
172	86-eng	3790	12.40	Trib Lower Fishhole	Redband Trout	5.51	1801020206	Red	USDA-FS	0.26	0.29	200.0
173	85-eng	3790	12.39	trib Lower Fishhole	Redband Trout	5.51	1801020206	Red	USDA-FS	0.24	0.29	200.0
174	21-sl	3038	1.00	strawberry creek	Redband Trout	5.24	1712000502	Red	USDA-FS	0.40	0.75	200.0
175	150-eng	3615018	6.03	Porcupine Creek	Redband Trout	4.64	1712000704	Red	USDA-FS	0.34	0.50	200.0
176	243-eng	4017	29.27	Wildhorse Creek	Redband Trout	2.79	1801020402	Red	USDA-FS	0.69	0.55	200.0
177	242-eng	4017	29.27	Wildhorse Creek	Redband Trout	2.79	1801020402	Red	USDA-FS	0.54	0.55	200.0
178	288-eng	3546	8.99	Sheepy Creek	Bull Trout	2.75	1801020204	Red	Private	0.87	0.57	200.0
179	119-eng	3615-a	12.37	N.fork Crooked Cr.	Redband Trout	1.81	1712000603	Red	USDA-FS	0.96	0.58	200.0
180	118-eng	3615	12.37	N. Fork Crooked Cr.	Redband Trout	1.81	1712000603	Red	USDA-FS	0.34	0.50	200.0
181	146-eng	3720	2.51	Long John Creek	Redband Trout	1.43	1712000705	Red	USDA-FS	0.93	0.58	200.0
182	14-sl	7645	1.30	buck creek trib.	Redband Trout	1.11	1712000501	Red	USDA-FS	0.60	0.67	200.0
183	279-eng	3546	7.65	Dixon Creek	Bull Trout	1.02	1801020204	Red	Private	0.37	0.53	200.0

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184	72-eng	3915019	1.74	barley camp creek	Redband Trout	0.72	1712000704	Red	USDA-FS	0.90	0.43	200.0
185	148-eng	3720100	0.15	Trib Long John Creek	Redband Trout	0.53	1712000705	Red	USDA-FS	0.59	0.45	200.0
186	190-eng	3615	10.94	Trib So Frk Crooked Cr.	Redband Trout	0.48	1712000603	Red	USDA-FS	0.71	0.25	200.0
187	280-eng	3546	8.05	Dixon Trib.	Bull Trout	0.42	1801020204	Red	Private	0.86	0.46	200.0
188	191-eng	3615	11.55	Mid Frk Crooked Cr.	Redband Trout	0.39	1712000603	Red	USDA-FS	0.84	0.30	200.0
189	178-eng	3870	3.00	Tributary of Howard Creek	Redband Trout	0.33	1802000101	Red	USDA-FS	1.48	0.42	200.0
190	64-eng	3915017	1.55	trib.of camas creek	Redband Trout	0.27	1712000704	Red	USDA-FS	0.52	0.14	200.0
191	127-eng	4020	7.20	East Fork Creek	Redband Trout	0.26	1802000104	Red	USDA-FS	0.76	0.30	200.0
192	153-sl	34	0.00	dairy creek	Redband Trout	34.73	1712000601	Grey	USDA-FS	-0.60	0.68	195.0
193	161-sl	2800047	1.20	augur creek	Redband Trout	18.01	1712000601	Red	Private	-2.80	0.36	195.0
194	139-sl	3315348	2.80	bear creek	Redband Trout	17.43	1712000602	Red	Private	0.00	0.24	195.0
195	48-eng	3915028	3.05	burnt creek	Redband Trout	12.46	1712000704	Red	USDA-FS	-0.26	1.04	195.0
196	117-sl	2800019	4.70	morgan creek	Redband Trout	11.98	1712000601	Red	Private	0.15	0.44	195.0
197	266-eng	3915012	3.25	Crane Creek trib	Redband Trout	5.07	1802000103	Red	USDA-FS	-0.84	0.63	195.0
198	141-sl	28	4.20	bottle creek	Redband Trout	4.68	1712000601	Red	Private	0.60	0.42	195.0
199	94-eng	3752	1.50	fishhole creek trib.	Redband Trout	4.05	1801020206	Red	USDA-FS	-0.08	0.33	195.0
200	93-eng	3752	1.50	fishhole creek trib.	Redband Trout	4.05	1801020206	Red	USDA-FS	-0.33	0.33	195.0
201	50-eng	4011011	0.14	willow creek	Redband Trout	3.40	1712000704	Red	USDA-FS	0.32	0.33	195.0
202	89-eng	3790	18.60	Trib Lapham Creek	Redband Trout	3.30	1801020405	Red	USDA-FS	-1.11	0.28	195.0
203	132-sl	3411	0.90	elder creek	Redband Trout	3.13	1712000601	Red	USDA-FS	0.45	0.26	195.0
204	144-sl	34	1.10	no. fork auger crk	Redband Trout	2.46	1712000601	Red	Private	0.65	0.20	195.0

205	35-eng	3400367	2.48	alder creek	Redband Trout	2.37	180102020 5	Red	USDA-FS	0.77	0.42	195.0
206	81-eng	3790	7.84	Trib Fishhole Cr.	Redband Trout	2.30	180102020 6	Red	USDA-FS	-0.07	0.25	195.0
207	140-sl	3315014	0.01	bear creek	Redband Trout	1.91	171200060 2	Red	Private	1.50	1.00	195.0
208	150-sl	3315348	4.56	puppy dog crk trib.	Redband Trout	1.49	171200060 2	Red	Private	0.80	0.48	195.0
209	74-eng	4015019	0.25	trib.midforkdeep cr	Redband Trout	1.35	171200070 4	Red	USDA-FS	0.14	0.43	195.0
210	131-eng	4020017	0.15	Trib. Dry Creek	Redband Trout	1.22	180200010 4	Red	USDA-FS	-1.27	0.40	195.0
211	183-eng	2800100	3.58	Trib Thomas Creek	Redband Trout	1.12	180200010 2	Red	USDA-FS	0.47	0.29	195.0
212	201-eng	3720	5.62	First Swale Creek	Redband Trout	1.08	171200070 5	Red	USDA-FS	0.10	0.40	195.0
213	106-eng	3715100	1.07	Trib Quartz Creek	Redband Trout	1.02	180200010 1	Red	USDA-FS	0.53	0.33	195.0
214	193-eng	3615280	0.28	Trib Mudd Creek	Redband Trout	0.96	171200070 4	Red	USDA-FS	0.92	0.50	195.0
215	66-eng	3915032	0.84	trib. of burnt creek	Redband Trout	0.73	171200070 4	Red	USDA-FS	0.77	0.60	195.0
216	19-sl	3038025	0.70	guyer trib.	Redband Trout	0.55	171200050 2	Red	USDA-FS	0.80	0.67	195.0
217	43-eng	3400028	2.34	yaden creek	Redband Trout	0.51	180102020 4	Red	Private	1.53	0.50	195.0
218	41-eng	3400028	4.76	boulder creek trib.	Redband Trout	0.48	180102020 4	Red	Private	1.54	0.57	195.0
219	274-eng	3360	5.19	Withers Creek	Redband Trout	0.39	171200051 0	Red	USDA-FS	0.34	0.71	195.0

RAN K	TAG NUMBE R	ROUTE	Milepost	Stream_Name	Species	Stream Length (mi)	Fifth Field Watershed	PASSAGE Database_Result	Ownership	LEAP DISTANC E	Bankfull Ratio	POINT S
220	56-eng	3915013	2.60	willow creek	Redband Trout	0.05	171200070 4	Red	USDA-FS	0.72	0.67	195.0
221	17-sl	3038036	3.90	w. fork silver creek	Redband Trout	8.26	171200050 2	Red	USDA-FS	-0.15	0.75	190.0
222	146-sl	34	2.60	dead horse creek	Redband Trout	7.87	171200060 1	Red	Private	-0.45	0.24	190.0
223	145-sl	34	1.70	auger creek	Redband Trout	7.85	171200060 1	Red	Private	-0.10	0.49	190.0
224	113-eng	3940	5.83	Dent Creek	Redband Trout	7.02	180200010 1	Red	USDA-FS	-0.34	0.25	190.0

225	277-eng	3360	5.05	Withers Creek	Redband Trout	6.10	1712000510	Red	USDA-FS	-0.35	1.00	190.0
226	31-eng	3631273	0.02	buckboard creek	Redband Trout	4.05	1801020205	Red	USDA-FS	0.48	0.55	190.0
227	247-eng	4026018	2.78	Pitch Log Creek	Redband Trout	3.07	1801020405	Red	USDA-FS	-0.05	0.57	190.0
228	16-sl	7645	0.30	bridge creek trib.	Redband Trout	2.19	1712000502	Red	USDA-FS	0.10	0.70	190.0
229	151-sl	3315348	6.21	puppy dog creek	Redband Trout	1.99	1712000602	Red	Private	0.65	0.59	190.0
230	192-eng	3615024	0.44	Porcupine Creek	Redband Trout	1.79	1712000704	Red	USDA-FS	-0.57	0.67	190.0
231	164-eng	28	74.96	Trib Thomas Creek	Redband Trout	1.36	1802000102	Red	USDA-FS	0.88	0.63	190.0
232	33-eng	34	10.61	Brownsworth trib.	Bull Trout	1.28	1801020205	Red	USDA-FS	-0.96	0.50	190.0
233	12-sl	7645	1.90	bridge creek trib.	Redband Trout	1.13	1712000502	Red	USDA-FS	-0.15	0.56	190.0
234	195-eng	3940398	0.01	Dent Creek	Redband Trout	1.10	1802000101	Red	USDA-FS	0.60	0.50	190.0
235	174-sl	2800397	1.60	morgan creek trib.	Redband Trout	1.00	1712000601	Red	USDA-FS	0.90	0.33	190.0
236	90-eng	3715	5.90	Fishhole Creek	Redband Trout	0.64	1801020206	Red	USDA-FS	0.00	0.33	190.0
237	163-eng	3780100	0.47	Trib Thomas Creek	Redband Trout	0.55	1802000102	Red	USDA-FS	0.70	0.30	190.0
238	238-eng	3753024	1.21	Hungry Hollow Cr. Trib.	Redband Trout	0.50	1801020405	Red	USDA-FS	-0.22	0.38	190.0
239	184-eng	2800037	0.49	Trib Thomas Creek	Redband Trout	0.42	1802000102	Red	USDA-FS	0.43	0.43	190.0
240	177-eng	3870171	1.32	Tributary of Howard Creek	Redband Trout	0.22	1802000101	Red	USDA-FS	0.34	0.43	190.0
241	244-eng	3715165	0.25	Lapham Creek trib	Redband Trout	0.20	1801020405	Red	USDA-FS	0.31	0.40	190.0
242	157-sl	3428	2.10	west spring creek	Redband Trout	0.20	1712000601	Red	USDA-FS	0.40	0.21	190.0
243	55-eng	3915013	2.55	willow creek	Redband Trout	0.10	1712000704	Red	USDA-FS	-0.20	0.38	190.0
244	54-eng	3915013	1.86	willow creek	Redband Trout	0.07	1712000704	Red	USDA-FS	0.00	0.28	190.0
245	179-sl	3315348	7.70	little coffeepot	Redband Trout	0.06	1712000602	Red	Private	0.90	0.31	190.0
246	275-eng	3360	5.11	Withers Creek	Redband Trout	0.00	1712000510	Red	USDA-FS	0.08	0.36	190.0
247	32-sl	2800505	0.68	graham creek	Redband Trout	8.72	171200050	Red	USDA-FS	5.37	0.55	185.0

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248	159-sl	3428	2.60	spring creek 3	Redband Trout	5.24	1712000601	Red	Private	0.10	0.60	185.0
249	18-sl	3038024	0.10	guyer creek	Redband Trout	3.90	1712000502	Red	USDA-FS	-0.05	0.76	185.0
250	13-eng	3450122	0.23	Swamp Creek	Redband Trout	3.52	1801020204	Red	USDA-FS	0.00	0.39	185.0
251	124-sl	28	5.10	cummings creek	Redband Trout	3.30	1801020201	Red	USDA-FS	-0.20	0.26	185.0
252	14-eng	3450015	0.05	Swamp Creek	Redband Trout	2.88	1801020204	Red	USDA-FS	-0.15	0.38	185.0
253	5-sl	2804	7.20	buck tributary	Redband Trout	2.80	1712000501	Red	USDA-FS	2.00	0.91	185.0
254	142-sl	28	2.40	tamarack creek	Redband Trout	2.65	1712000601	Red	Private	0.00	0.37	185.0
255	84-eng	3790	11.84	Trib Fishhole Cr.	Redband Trout	2.35	1801020206	Red	Private	2.59	0.25	185.0

RANK	TAG NUMBER	ROUTE	Milepost	Stream_Name	Species	Stream Length (mi)	Fifth Field Watershed	PASSAGE Database_Result	Ownership	LEAP DISTANCE	Bankfull Ratio	POISSON
256	34-eng	3400367	1.15	Brownsworth Trib.	Redband Trout	2.16	1801020205	Red	USDA-FS	-1.41	0.29	185.0
257	22-eng	3631	4.82	north fork pothle crk	Redband Trout	2.10	1801020205	Red	USDA-FS	0.27	0.37	185.0
258	207-eng	3613	0.76	Trib Bauers Creek	Redband Trout	1.51	1802000102	Red	USDA-FS	0.25	0.38	185.0
259	108-eng	1400011	0.39	Trib of Quartz Creek	Redband Trout	1.51	1802000101	Red	USDA-FS	0.06	0.43	185.0
260	107-eng	1400011	0.44	Trib of Quartz Cr.	Redband Trout	1.38	1802000101	Red	USDA-FS	-0.24	0.19	185.0
261	173-sl	2800050	0.30	morgan creek trib.	Redband Trout	1.32	1712000601	Red	USDA-FS	0.05	0.33	185.0
262	169-eng	2800100	2.31	Trib Thomas Creek	Redband Trout	1.06	1802000102	Red	USDA-FS	-1.59	0.29	185.0
263	38-eng	3372	1.02	trapper creek	Redband Trout	1.02	1712000601	Red	Private	0.73	1.00	185.0
264	123-sl	28	2.40	nixon creek	Redband Trout	0.99	1801020201	Red	USDA-FS	0.90	0.60	185.0
265	151-eng	3615018	6.70	Tributary of Porcupine Creek	Redband Trout	0.75	1712000704	Red	USDA-FS	-0.80	0.50	185.0
266	232-eng	4017	12.56	Trib Dog Creek	Redband Trout	0.57	1802000101	Red	USDA-FS	0.45	0.60	185.0
267	52-eng	3915014	0.13	willow creek	Redband Trout	0.05	1712000704	Red	USDA-FS	-0.04	0.69	185.0
268	125-sl	28	1.90	sycan river	Redband Trout	13.14	1801020201	Grey	USDA-FS	0.10	0.67	180.0
269	264-eng	3780	1.85	Augur Creek	Redband Trout	9.73	1802000101	Red	Private	-0.44	0.81	180.0
270	210-eng	3628011	0.28	North Creek	Redband Trout	4.78	1802000102	Red	USDA-FS	0.32	0.74	180.0
271	16-eng	3450	9.50	un-named	Redband Trout	3.37	1801020204	Red	USDA-FS	-0.39	0.50	180.0
272	143-sl	28	1.00	south fork elder crk	Redband Trout	3.13	1712000601	Red	Private	-0.05	0.50	180.0
273	30-eng	34	8.26	Long creek	Redband Trout	2.86	1801020205	Red	Private	-0.11	0.54	180.0
274	138-sl	3315348	1.84	little bear	Redband Trout	2.76	1712000602	Red	Private	-1.40	0.58	180.0
275	240-eng	3400000	9.63	Hammond Creek	Redband Trout	2.11	1801020205	Red	Private	-1.64	0.57	180.0
276	252-eng	3660	7.96	Pothole Creek	Redband Trout	2.02	1801020205	Red	Private	0.30	0.58	180.0

277	137-sl	3315014	0.05	little bear creek	Redband Trout	1.12	1712000602	Red	Private	0.00	0.50	180.
278	186-eng	2800027	4.52	Trib Thomas Creek	Redband Trout	1.12	1802000102	Red	USDA-FS	-0.18	0.58	180.
279	69-eng	3915	13.35	polander tributary	Redband Trout	1.00	1712000704	Red	USDA-FS	2.07	0.33	180.
280	271-eng	3360	6.34	Hadley Creek	Redband Trout	0.96	1712000510	Red	USDA-FS	0.18	0.83	180.
281	273-eng	3360359	0.34	Hadley Creek	Redband Trout	0.91	1712000510	Red	USDA-FS	-0.09	1.00	180.
282	141-eng	3136015	1.82	trib lower s. frk. Sprague R.	Redband Trout	0.58	1801020205	Red	USDA-FS	0.00	0.38	180.
283	231-eng	4017-a	12.54	Trib Dog Creek	Redband Trout	0.57	1802000101	Red	USDA-FS	0.16	0.21	180.
284	175-eng	3870171	0.61	Trib Howard Creek	Redband Trout	0.52	1802000101	Red	USDA-FS	0.17	0.42	180.
285	223-eng	3625111	0.13	Trib Cox Creek	Redband Trout	0.44	1802000102	Red	USDA-FS	-0.11	0.43	180.
286	95-eng	3870	16.34	Cottonwood Resv. Tributary	Redband Trout	0.44	1802000102	Red	USDA-FS	0.00	0.38	180.
287	15-sl	2804019	0.30	road spring	Redband Trout	0.38	1712000502	Red	USDA-FS	0.15	1.00	180.
288	281-eng	3360	4.89	Withers Creek trib	Redband Trout	0.36	1712000510	Red	USDA-FS	0.02	0.83	180.
289	170-eng	2800100	2.78	Trib Thomas Creek	Redband Trout	0.31	1802000102	Red	USDA-FS	-0.55	0.31	180.
290	167-eng	2800100	0.43	Trib Thomas Creek	Redband Trout	0.24	1802000102	Red	USDA-FS	-0.53	0.40	180.
291	154-sl	3372	1.50	trapper creek	Redband Trout	0.10	1712000601	Red	Private	0.45	1.25	180.

RANK	TAG NUMBER	ROUTE	Milepost	Stream_Name	Species	Stream Length (mi)	Fifth Field Watershed	PASSAGE Database_Result	Ownership	LEAP DISTANCE	Bankfull Ratio	POINT
292	169-sl	3372	1.00	dairy creek trib.	Redband Trout	0.10	1712000601	Red	Private	0.85	1.00	180.
293	149-sl	3315348	3.68	Trib. Bear Creek-Dog Creek	Redband Trout	0.00	1712000602	Red	Private	-0.25	0.25	180.
294	289-eng	3546	9.08	Sheepy Creek trib	Redband Trout	0.00	1801020200	Red	Private	0.82	1.33	180.
295	2-sl	2804	10.30	buck creek	Redband Trout	27.56	1712000501	Grey	USDA-FS	0.55	0.59	175.
296	234-eng	4020401	0.01	Dog Creek	Redband Trout	13.58	1802000101	Grey	USDA-FS	-0.79	0.94	175.
297	25-eng	3400012	0.05	South Fork sprague river	Redband Trout	5.32	1801020200	Grey	USDA-FS	0.12	0.60	175.
298	6-sl	2804	6.80	buck creek	Redband Trout	2.84	1712000501	Red	USDA-FS	1.80	0.40	175.
299	115-sl	2800019	2.20	south crk tributary	Redband Trout	2.41	1712000601	Red	Private	0.05	0.75	175.
300	68-eng	3915	12.84	polander creek	Redband Trout	1.09	1712000704	Red	USDA-FS	1.75	0.35	175.
301	233-eng	4017-b	12.56	Trib Dog Creek	Redband Trout	0.57	1802000101	Red	USDA-FS	0.00	0.67	175.
302	222-eng	3625	0.37	Trib Cox Creek	Redband Trout	0.53	1802000101	Red	USDA-FS	0.31	0.60	175.
303	17-eng	3450	8.13	un-named	Redband Trout	0.00	1801020200	Red	USDA-FS	-0.11	0.50	175.
304	166-eng	28	70.70	Thomas Creek	Redband Trout	27.64	1802000101	Red	Private	-0.97	0.45	170.

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305	114-sl	3509	0.40	west fork shoestring	Redband Trout	7.57	1712000601	Grey	USDA-FS	-0.95	0.92	170.
306	20-sl	3038019	0.06	indian creek	Redband Trout	7.17	1712000502	Red	USDA-FS	0.70	0.29	170.
307	45-eng	3400019	2.93	yaden creek	Redband Trout	6.46	1801020204	Red	Private	1.39	0.32	170.
308	8-sl	2804	4.60	bridge creek	Redband Trout	6.32	1712000502	Red	USDA-FS	0.95	0.42	170.
309	133-sl	28	0.05	elder creek	Redband Trout	5.88	1712000601	Grey	USDA-FS	-0.85	0.79	170.
310	121-eng	3752	2.46	Dry Boulder Creek	Redband Trout	4.45	1801020206	Red	USDA-FS	1.37	0.63	170.
311	122-eng	4020	1.80	Mill Creek	Redband Trout	2.16	1802000104	Red	USDA-FS	1.34	0.52	170.
312	65-eng	3915032	0.70	trib.of burnt creek	Redband Trout	0.73	1712000704	Red	USDA-FS	1.66	0.25	170.
313	129-eng	4020	11.15	Trib Dry Creek	Redband Trout	0.66	1802000104	Red	USDA-FS	1.63	0.20	170.
314	144-eng	3720	0.63	Trib. Sage Crk.	Redband Trout	0.66	1712000705	Red	USDA-FS	1.01	0.30	170.
315	105-sl	33	12.60	coffeepot creek	Redband Trout	0.55	1712000602	Grey	USDA-FS	0.55	1.79	170.
316	196-eng	3615	15.67	Trib Honey Creek	Redband Trout	0.14	1712000705	Red	USDA-FS	1.67	0.23	170.
317	3-sl	2804	10.30	buck creek	Redband Trout	27.56	1712000501	Grey	USDA-FS	0.25	0.64	165.
318	215-eng	3790011	2.91	Trib Robinson Spring Cr.	Redband Trout	6.09	1801020206	Red	USDA-FS	0.37	0.65	165.
319	216-eng	3752	11.26	Robinson Spring Cr.	Redband Trout	4.32	1801020206	Red	Private	1.47	1.20	165.
320	26-sl	2700287	0.20	silver creek trib.	Redband Trout	2.76	1712000502	Red	Private	0.47	0.49	165.
321	83-eng	3790	9.85	trib Fishole Creek	Redband Trout	1.64	1801020206	Red	USDA-FS	0.70	0.19	165.
322	124-eng	4020	2.56	Trib. Mill Creek	Redband Trout	1.53	1802000104	Red	USDA-FS	0.44	0.44	165.
323	123-eng	4020	2.56	Trib. Mill Creek	Redband Trout	1.53	1802000104	Red	USDA-FS	0.65	0.44	165.
324	104-eng	3631	3.11	Trib Whitworth Cr.	Redband Trout	1.41	1801020205	Red	Private	1.62	0.40	165.
325	126-eng	4020	4.42	Trib . South Cannal	Redband Trout	0.18	1802000104	Red	USDA-FS	1.34	0.50	165.
326	112-sl	28	3.30	south creek	Redband Trout	73.38	1712000601	Grey	Private	0.30	1.37	160.

327 29-sl 2916 0.30 benny creek Redband Trout 25.38 171200050 2 Red Private 1.60 0.48 160.

RANK	TAG NUMBER	ROUTE	Milepost	Stream_Name	Species	Stream Length (mi)	Fifth Field Watershed	PASSAGE Database_Result	Ownership	LEAP DISTANCE	Bankfull Ratio	POINTS
328	97-eng	3870	15.00	Cottonwood Res Trib	Redband Trout	16.63	1802000102	Red	Private	0.93	0.58	160.0
329	136-eng	3752	7.00	Trib. of Fishhole Crk	Redband Trout	3.41	1801020206	Red	USDA-FS	0.42	0.50	160.0
330	138-eng	3814	0.74	Trib. Fishhole crk.	Redband Trout	2.05	1801020206	Red	USDA-FS	0.77	0.71	160.0
331	70-eng	3915	17.68	cressler creek	Redband Trout	1.00	1712000704	Red	USDA-FS	0.65	0.53	160.0
332	229-eng	4017	8.31	Scotts Cabin Creek	Redband Trout	0.93	1802000101	Red	Private	1.67	0.22	160.0
333	63-eng	3910	1.34	trib.of camas creek	Redband Trout	0.63	1712000704	Red	USDA-FS	0.68	0.33	160.0
334	125-eng	4020	3.23	Venator Creek	Redband Trout	0.57	1802000104	Red	USDA-FS	0.51	0.30	160.0
335	139-eng	3814011	0.08	Trib fishhole Creek	Redband Trout	2.96	1801020206	Red	USDA-FS	-0.30	0.36	155.0
336	62-eng	3910	2.30	trib.of camas creek	Redband Trout	2.28	1712000704	Red	USDA-FS	0.62	0.33	155.0
337	236-eng	3753	1.86	Trib Dry Boulder Cr.	Redband Trout	2.22	1801020206	Red	USDA-FS	-1.22	0.44	155.0
338	4-sl	2804	8.00	buck creek	Redband Trout	1.77	1712000501	Red	Private	0.70	0.75	155.0
339	228-eng	4017	9.41	Hen Creek	Redband Trout	1.39	1802000101	Red	Private	0.44	0.36	155.0
340	133-eng	4020	13.05	Dry Creek	Redband Trout	1.12	1802000104	Red	USDA-FS	0.30	0.16	155.0
341	188-eng	3615	10.23	Trib S frk Crooked Ck	Redband Trout	0.17	1712000603	Red	USDA-FS	0.47	0.50	155.0
342	165-eng	28	72.85	Thomas Creek	Redband Trout	42.44	1802000102	Green	USDA-FS	0.00	1.57	150.0
343	155-eng	4020	18.69	Willow Creek	Redband Trout	3.44	1801020402	Red	Private	-0.59	0.71	150.0
344	137-eng	3752	7.89	Trib. Fishhole Crk.	Redband Trout	2.70	1801020206	Red	USDA-FS	0.03	0.63	150.0
345	226-eng	4017	10.46	Trib Dog Creek	Redband Trout	2.05	1802000101	Red	Private	0.61	0.50	150.0
346	225-eng	3625171	0.12	Trib Willow Creek	Redband Trout	0.77	1712000604	Red	USDA-FS	0.24	0.38	150.0
347	120-eng	3615	11.75	Trib Crooked Creek	Redband Trout	0.77	1712000603	Red	USDA-FS	-0.22	0.25	150.0
348	132-eng	4020	12.84	Trib, Dry Creek	Redband Trout	0.65	1802000104	Red	USDA-FS	0.00	0.30	150.0
349	199-eng	3615352	0.04	Trib Honey Creek	Redband Trout	0.48	1712000705	Red	USDA-FS	0.03	0.30	150.0
350	71-eng	3915019	1.34	fifteen mile creek	Redband Trout	0.43	1712000704	Red	USDA-FS	0.29	0.36	150.0
351	200-eng	3616	2.28	Trib Honey Creek	Redband Trout	0.38	1712000705	Red	USDA-FS	0.11	0.27	150.0
352	58-eng	3915	6.59	trib. of burnt creek	Redband Trout	0.09	1712000704	Red	USDA-FS	0.21	0.35	150.0
353	61-eng	3915	3.20	trib.of camas creek	Redband Trout	0.00	1712000704	Red	USDA-FS	-0.09	0.26	150.0
354	67-eng	3915	12.44	polander tributary	Redband Trout	0.00	1712000704	Red	USDA-FS	0.13	0.36	150.0
355	152-eng	3615	6.92	Mud Creek	Redband Trout	14.61	1712000704	Grey	USDA-FS	-1.34	1.38	145.0
356	153-eng	3615	6.92	Mud Creek	Redband Trout	14.61	1712000704	Grey	USDA-FS	-1.07	1.25	145.0
357	10-sl	7645025	1.00	bridge creek	Redband Trout	8.27	1712000502	Grey	USDA-FS	0.25	0.65	145.0
358	185-eng	28	70.81	Trib Thomas Creek	Redband Trout	1.10	1802000102	Red	Private	-0.16	0.20	145.0
359	96-eng	3870	15.95	Cottonwood Res Trib	Redband Trout	1.09	1802000102	Red	Private	-0.54	0.40	145.0
360	117-eng	3624	1.86	Loveless Creek	Redband Trout	0.38	1712000603	Red	USDA-FS	0.15	0.67	145.0

361	127-sl	3380023	0.70	harvey creek	Redband Trout	6.52	1712000510	Grey	USDA-FS	-0.65	1.75	140.0
362	46-eng	3915	4.45	burnt creek	Redband Trout	2.96	1712000704	Grey	USDA-FS	-0.13	0.50	140.0
363	283-eng	3915023	0.64	Polander Creek	Redband Trout	1.95	1712000704	Grey	USDA-FS	-1.09	0.67	140.0
RANK	TAG NUMBE R	ROUTE	Milepost	Stream_Name	Species	Stream Length (mi)	Fifth Field Watershed	PASSAGE Database_Result	Ownership	LEAP DISTANCE	Bankfull Ratio	POINT S
365	31-sl	28	0.20	benny creek	Redband Trout	58.91	1712000502	Grey	USDA-FS	0.00	0.59	135.0
366	30-sl	28	0.20	benny creek	Redband Trout	58.91	1712000502	Grey	USDA-FS	0.32	0.59	135.0
367	28-sl	27	2.50	guyer creek	Redband Trout	36.45	1712000502	Grey	Private	-0.85	0.67	135.0
368	119-sl	28	0.10	Long creek	Redband Trout	17.33	1801020202	Grey	Private	0.00	0.97	135.0
369	177-sl	3300014	3.70	real coffeepot crk	Redband Trout	12.73	1712000602	Grey	Private	-0.10	0.81	135.0
370	143-eng	4017	14.77	Dog Creek	Redband Trout	5.12	1802000101	Grey	USDA-FS	0.00	0.56	135.0
371	224-eng	3625	5.16	Willow Creek	Redband Trout	3.69	1712000604	Grey	USDA-FS	0.22	0.78	135.0
372	211-eng	3628020	1.10	Trib Cox Creek	Redband Trout	6.36	1802000102	Grey	USDA-FS	-0.27	1.08	130.0
373	15-eng	3450	3.97	swamp creek	Redband Trout	2.39	1801020204	Grey	USDA-FS	-0.19	0.50	130.0
374	60-eng	3915	1.82	trib.of burnt creek	Redband Trout	0.64	1712000704	Red	Private	1.15	0.40	130.0
375	157-eng	4020	23.03	North Fork Willow Creek	Redband Trout	11.73	1801020402	Red	Private	-0.73	0.39	125.0
376	19-eng	3450	3.21	un-named	Redband Trout	4.97	1801020204	Grey	USDA-FS	-0.13	1.00	125.0
377	214-eng	3790011	2.27	Trib Robinson Spring Cr.	Redband Trout	3.36	1801020206	Red	Private	0.36	0.40	125.0
378	187-eng	3615	10.23	Walker Creek	Redband Trout	0.10	1712000704	Red	Private	1.48	0.63	125.0
379	118-sl	3239	6.00	sycan river trib.	Redband Trout	0.63	1801020201	Grey	USDA-FS	0.05	1.00	120.0
380	59-eng	3915	2.40	trib. of camas creek	Redband Trout	0.53	1712000704	Red	Private	0.34	0.30	120.0
381	120-sl	2901	2.00	Long creek	Redband Trout	3.08	1801020202	Green	USDA-FS	0.10	1.22	115.0
382	235-eng	3752103	0.96	Trib Robinson Spring Cr.	Redband Trout	2.11	1801020206	Red	Private	-0.41	0.20	115.0
383	220-eng	3752103	0.46	Trib Robinson Spring Cr.	Redband Trout	2.07	1801020206	Red	Private	0.06	0.17	115.0
384	24-eng	3631	7.83	Buckboard Creek	Redband Trout	1.97	180102020	Green	USDA-FS	-0.40	1.00	115.0

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385	218-eng	3752	13.15	Trib Robinson Spring Cr.	Redband Trout	1.80	1801020206	Red	Private	-0.16	0.25	115.0
386	219-eng	3752	14.03	Trib Robinson Spring Cr.	Redband Trout	1.08	1801020206	Red	Private	-1.24	0.28	115.0
387	221-eng	3628100	0.70	Trib Mill Flat Creek	Redband Trout	1.07	1712000604	Red	Private	0.26	0.30	115.0
388	116-sl	2800019	2.60	south creek	Redband Trout	36.47	1712000601	Green	Private	0.00	0.77	110.0
389	212-eng	3915	14.99	Deep Creek	Redband Trout	34.83	1712000704	Green	USDA-FS	-0.01	1.39	110.0
390	87-eng	3790030	0.02	Fishhole Creek	Redband Trout	31.46	1801020206	Green	USDA-FS	0.00	1.02	110.0
391	213-eng	3915	15.43	Dismal Creek	Redband Trout	31.01	1712000704	Green	USDA-FS	-0.72	1.24	110.0
392	227-eng	4017	9.98	Dog Creek	Redband Trout	30.43	1802000101	Grey	Private	-0.90	0.88	110.0
393	156-eng	4020	18.95	Tributary of Willow Creek	Redband Trout	0.70	1801020402	Red	Private	-0.20	0.21	110.0
394	40-eng	3400018	2.11	deming creek	Bull Trout	10.81	1801020207	Green	Private	-0.36	0.64	100.0
395	154-eng	4020	18.68	Willow Creek	Redband Trout	3.44	1801020402	Grey	Private	-0.29	0.71	100.0
396	44-eng	3400028	0.21	yaden creek	Redband Trout	5.89	1801020204	Grey	Private	0.00	0.74	95.0
397	198-eng	3615	20.71	White Pine Creek	Redband Trout	1.62	1712000705	Grey	USDA-FS	-0.02	1.13	95.0
398	245-eng	3790397	1.23	Lapham Creek	Redband Trout	2.03	1801020405	Green	USDA-FS	0.17	1.33	85.0
399	88-eng	3790	15.60	Fishhole Creek	Redband Trout	23.32	1801020206	Green	Private	1.05	1.18	65.0