APPENDIX K

Yankee Fork Stream Survey

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YANKEE FORK

OF THE SALMON RIVER

2010 Stream Survey Report
Salmon-Challis National Forest
Yankee Fork Ranger District

Prepared by: United State Department of Agriculture, Forest Service
Stream Survey
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Cover Photo: Near start of reach 2, River Mile 4.4, sequence order number 45 (approximately), photo orientation downstream (Photo courtesy of Bureau of Reclamation)

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CHAPTER 1: STREAM SURVEY

OVERVIEW

Dates Surveyed: September 13th – 19th, 2010
Survey Type: Region 6 Stream Inventory Methodology, Version 2.10, Level II
Mouth Location: 044º 16' 12" N, 114º 44' 5.999" W
Headwater Location: 044º 31' 4.8" N, 114º 36' 7.2" W
USGS Quadrangle: Sunbeam, Custer, Elevenmile Creek
Subbasin (4th field): Upper Salmon
Watershed (5th field): Yankee Fork
Subwatershed (6th field): Lower Yankee Fork, Middle Yankee Fork, Upper Yankee Fork
Tributary To: Salmon River
NFS Watershed No.: 170602010505, 170602010502, 170602010501
Stream Class at Mouth: I
Distance Surveyed: 14.4 miles
Stream Length: 29.8
Surveyors: Chris Mello, Sam Fiorito and Andrew Flynn

SUMMARY

The Yankee Fork flows approximately 30 miles from its headwaters to the confluence of the Salmon River at State Highway 75. The section of river surveyed in September of 2010 was a mix of private land and National Forest Land administered by the Salmon-Challis National Forest. The survey began at a pullout on National Forest Road 013 just downstream of the confluence with Polecamp Creek near river mile (RM) 2.9. The channel was surveyed upstream over 14 miles and ended at an unnamed tributary (RM 17.1) on the right bank less than two miles upstream of the confluence with Eightmile Creek. National Forest Road 013/Yankee Fork Road follows the river on the lower half of the survey and it changes to National Forest Road 070 upstream of the West Fork Yankee Fork confluence through the end of the survey. Developed and dispersed recreation sites are along the Yankee Fork and adjacent to National Forest Road 013. The East Basin Fire of 1985, the Rankin Fire of 2000, and the Potato Fire of 2006 burned approximately 26,500 acres within the Yankee Fork watershed. The Yankee Fork currently contains rearing habitat for juvenile spring Chinook salmon (*Oncorhynchus tshawytscha)*, spawning and rearing habitat for summer steelhead (*Oncorhynchus mykiss),* cutthroat trout (*Oncorhynchus clarki lewisi*) plus fluvial and resident bull trout (*Salvelinus confluentus)* populations.

The mainstem Yankee Fork was dredge mined starting at about RM 3.2 and ended about 60 meters above where Jordan Creek enters the river near RM 9.2. The dredge began operating in the summer of 1940 and ceased work for the final

time in 1952. The dredge resides near the confluence with Jordan Creek and is now open to the public for tours (Stephens 1991).

The survey began at the downstream end (of reach 1) near RM 2.9 and continued upstream continuously through reach 10 near RM 17.1. The channel and floodplain was re-walked after the survey was complete to locate possible missed side channels and special cases such as off channel habitat and manmade structures not on the main channel of the Yankee Fork.

We conducted a Level II stream habitat survey protocol which is part of the Pacific Northwest Stream Inventory Program (USDA 2010). Many parameters were added to the basic Level II protocol for this survey. Bank orientation in the data is all facing downstream, except in some photographs and the orientation is captioned. Global Positioning System (GPS) coordinates were saved for numerous points throughout the survey including the start and end of reaches, measured habitat units, pools greater than three feet deep, side channels, large pieces of wood and Wolman Pebble Counts. GPS points are displayed on the survey maps (see Appendix B). Each habitat unit (fast water, slow water, etc.) is designated a sequence order (SO) number during the survey. Those numbers are used to reference specific habitat units throughout this report.

The riparian management objectives (RMOs) derived from PACFISH (although some were modified and added by the biological opinions) were not met for pool frequency, large woody debris. The width/depth ratio RMO was met in designated Rosgen stream type C reaches 5, 6, 9 and 10, with a ratio of less than 28. Reach 7, which is a Rosgen stream type B, met the RMO for width/depth ratio being less than 27. All other reaches did not meet the RMO for width/depth ratio. The RMO for bank stability was met with the banks being greater than 90% stable in every reach except for reach 8 which exceeded this standard. The RMO for temperature was not addressed because the temperature readings taken on this survey were instantaneous and are not applicable to be used toward state water quality standards. The RMO for lower bank angle and sediment were also not addressed because bank angle information is not collected as part of the NR9 Stream Inventory protocol.

A discharge measurement was taken at the beginning of the survey (RM 2.9) and was calculated to be 83.46 ft^3/second on September 13, 2010. A Marsh McBernie Flowmate was the instrument used to collect the data.

The Yankee Fork stream survey is within three sixth field hydrologic unit codes (HUC). Level one (i.e. 17) is the region level and level six (i.e. 05) is the subwatershed level. The start of the survey through the confluence with West Fork Yankee Fork (end of reach 3) near RM 7.0 is within the Lower Yankee Fork subwatershed (HUC6# 17,06,02,01,05,05). From there upstream to the confluence with Eightmile Creek (end of reach 9) near RM 16.3 is the Middle Yankee Fork

subwatershed (HUC6# 17,06,02,01,05,02). All of reach 10 and upstream is within the Upper Yankee Fork subwatershed (HUC6# 17,06,02,01,05,01).

Small community of Dredge Camp and dredge tailings, approximately RM 4.3, SO 45, upstream photo orientation (Photo courtesy of Bureau of Reclamation)

BASIN DESCRIPTION

Watershed and Flow Regime

General Characteristics

- **Location:** The Yankee Fork basin is located northeast of Stanley, Idaho, and southwest of Challis, Idaho. The Yankee Fork enters the Salmon River just below the old Sunbeam Dam. From that point, the Yankee Fork runs upstream along National Forest Road 013/Yankee Fork Road and then along National Forest Road 070. The surveyed length runs nearly parallel to the road.

- **Stream Order:** Strahler method (Handbook 2010)

    - Sixth order from the start of the survey through the confluence with West Fork Yankee Fork (the end of reach 3)

- Fifth order from West Fork Yankee Fork through the confluence with Eightmile Creek (end of reach 9)
- Fourth order from Eightmile Creek through the end of the survey

- **Flow:** A discharge measurement was taken at the beginning of the survey with a Marsh McBirney flow meter. The accuracy of the Marsh McBirney Flo-Mate Model 2000 is ± 2% of the reading (Marsh-McBirney 1990).
  - The discharge was calculated to be 83.46 ft^3/second on September 13, 2010.
  - The location of the flow was N 44° 17.892' W 114° 42.954', at the start of the survey.

- **Elevation and General Gradient:** The survey began at 6,102 feet in elevation and ended at 6,83 feet, making the gradient for the entire survey 1.00%.
  - Elevation and length values used to determine gradient were derived from the Digital Elevation Model (DEM) and the measure tool in ArcMap 9.3.1.

- **Sinuosity:** The sinuosity for the length of the survey was 1.08.
  - Mapped channel length and valley length were determined using the measure tool in ArcMap 9.3.1.

- **Rosgen Channel and Valley Type:** Every reach was Rosgen channel type C except for reach 7 which was a B channel. The Rosgen valley type for each reach was type V (moderately steep valley slopes, "U" shaped glacial trough valleys) except for reach 7 which was valley type II (moderately steep, gentle sloping side slopes often in colluvial valleys) (Rosgen 1996).
  - Rosgen channel and valley types were determined using gradient, sinuosity, width/depth ratio and entrenchment ratio for each reach.

<u>Interim Riparian Management Objectives</u>

- Interim Riparian Management Objectives (RMOs) from PACFISH applies to all watersheds with anadromous fish bearing streams. For general habitat conditions to be considered good for anadromous fish the following objectives must be met or exceeded (USDA 1995).

Table 1.1. Summary of interim riparian management objectives (RMOs) (USDA 1995).

Habitat Feature	Interim Objectives								
Pool Frequency (kf) (all systems)	Varies by channel width, see below.								
Wetted Width in Feet	10	20	25	50	75	100	125	150	200
Number of Pools Per Mile	96	56	47	26	23	18	14	12	9
Water Temperature (sf) (all systems)	Compliance with state water quality standards, or maximum <68ºF/20ºC[1]. For steelhead and Chinook salmon, <64° in migration and rearing areas and <60° in spawning areas except in steelhead spawning areas within steelhead priority watersheds during the spawning and incubation period where the RMO is <45°F.[2] For bull trout, maximum water temperatures below 59°F within adult holding habitat and below 48°F within spawning and rearing habitats.[3]								
Large Woody Debris (sf) (forested systems)	East of Cascade Crest in Oregon, Washington and Idaho. >20 pieces per mile; >12 inch diameter; >35 foot length.								
Bank Stability[4] (sf) (non-forested systems)	>90 percent stable (in a priority watershed)								
Lower Bank Angle (sf) (non-forested systems)	>75 percent of banks with <90 degree angle (i.e. undercut)								
Width/Depth Ratio (sf) (all systems)	<10 or by channel type as follows[5] (mean wetted width divided by mean depth): ○ A Channel: 21 ○ B Channel: 27 ○ C Channel: 28								
Sediment[6]	Areas where Chinook salmon, steelhead, and bull trout spawn within priority watersheds, <20% surface fine sediment which is substrate <0.25 in (6.4 mm) in diameter in spawning habitat or <30% cobble embeddedness in rearing habitat. All other areas, no more than a two percent increase over existing levels and where existing levels are at 30% or above new activities that would create additional stream sedimentation would not be allowed (Land Resource Management Plan for the Challis National Forest)								

kf = key feature sf = supporting feature

[1] In this case, maximum water temperature is expressed as the 7-day moving average of daily maximum temperature measured as the average of the maximum daily temperature of the warmest consecutive 7-day period.
[2] The PACFISH environmental assessment established a riparian management objective for water temperature of <64°F in migration and rearing areas and <60°F in spawning areas. However, during consultation this standard was changed to <45°F in steelhead spawning areas within steelhead priority watersheds during the spawning and incubation period.
[3] This standard was established by INFISH and is being applied to areas occupied by bull trout within the area covered by PACFISH.
[4] The PACFISH environmental assessment established a riparian management objective for bank stability of 80%. However, during consultation this standard was increased to 90% within priority watershed.
[5] These values are based on the mean values observed for streams in natural condition within the Salmon River (Overton et al. 1995)
[6] The PACFISH environmental assessment did not include a riparian management objective for sediment was established within Chinook salmon, steelhead, and bull trout spawning areas within priority watersheds. In all other areas, the objective established by the Land Resource Management Plan for the Challis National Forest applies.

Reach Summaries

- **Definition of Stream Classification:** The Blue Mountain Stream Survey Program (Wallowa-Whitman, Malheur and Umatilla National Forests) uses the three-class system.

    - **Classification I =** municipal watershed and/or fish-bearing stream (perennial or intermittent).
    - **Classification III =** non fish-bearing, perennial streams
    - **Classification IV** = non fish-bearing, intermittent streams

- All of the reaches in the Yankee Fork stream survey are Class I streams.

Tributaries

- **Access to Fish out of the Mainstem:** Twenty two tributaries entered Yankee Fork throughout the survey. It is unknown if all of these tributaries contain tributaries or are periodically used by fish.

SO 100-103 (approximately) – Confluence with West Fork Yankee Fork from the right bank (upper left side of photo), RM 6.8, start of reach 4, photo oriented upstream (Photo courtesy of Bureau of Reclamation)

Table 1.2. Tributaries encountered on Yankee Fork.

Tributary Number/ Name	Reach	SO (Sequence Order)	River Miles (RM)	% Flow Contri-bution*	Tributary Temperature ºC**	Downstream Bank Orientation	% Gradient At Mouth+
1 – Polecamp Cr	1	8	2.8	5	Not recorded	LB	15
2	1	17	3.1	2	Not recorded	RB	60
3	1	28	3.5	2	Not recorded	LB	1
4	1	32	3.7	2	10	RB	6
5 – Rankin Cr	1	44	4.3	2	8	RB	3
6	2	49	4.6	5	7	LB	3
7	3	81	6.2	2	8	RB	30
8	3	94	6.5	5	8.5	LB	0
9 – W. Fk. Yankee Fk.	3	102	6.9	50	10.5	RB	3
10 – Jordan Creek	4	143	9.1	10	13	RB	3
11	5	172	10.4	2	7	LB	8
12 – Swift Gulch	5	193	11.2	5	9	RB	20
13	6	212	11.8	2	8	RB	20
14	6	221	12.0	2	6	RB	3
15 – Fourth of July Cr	6	223	No coordinates	5	8	LB	6
16 – Fivemile Cr	7	307	13.2	5	8.5	LB	2
17	8	319	13.4	2	13	LB	1
18 – Greylock Cr	8	358	14.3	5	7.5	LB	3
19 – Sixmile Cr	8	367	14.4	5	8	LB	3
20	9	424	15.9	2	7	LB	1
21 – Eightmile Cr	9	443	16.3	20	9.5	RB	2
22	10	454	16.6	1	6.5	LB	20

* = percent flow contribution for tributaries is determined by the observer estimating the percent of flow contributed by the tributary to the mainstem stream flow below the tributary (Handbook 2010).

** = temperature was measured with a handheld thermometer

+ = gradient was measured with an abney level which is in compliance with the R6 Stream Inventory Protocol

SO 142-144 – Confluence with Jordan Creek from the right bank, RM 9.1 (Photo courtesy of Bureau of Reclamation)

- Fish were observed from above the surface of the water in reaches 1, 2, 4, 5, 6, 8 and 9. No fish were observed in reaches 3, 7 and 10.

SO 355-358 – Confluence with Greylock Creek from the right bank, RM 14.3

Special Cases

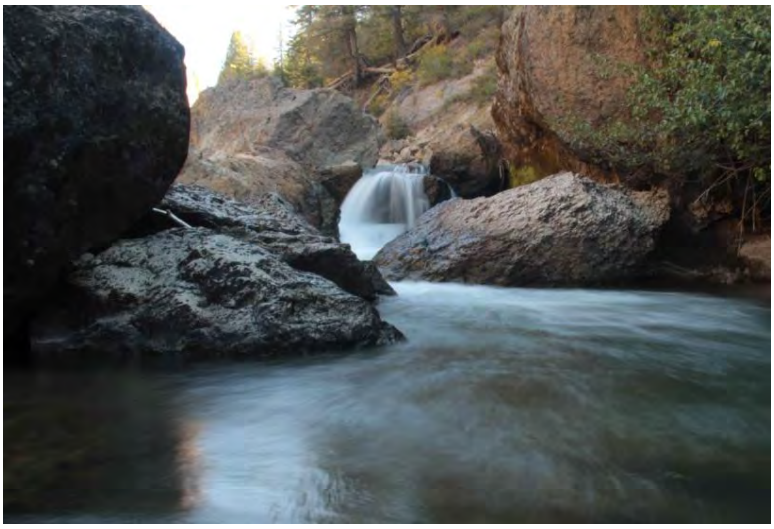
- **Special Cases (culverts, dams, marshlands, waterfalls and chutes):** Special cases are designated as artificial structures for culverts and dams (ARTIF), falls (WF), chutes (CH) and marshlands (CHUNITM). Information is entered both on the channel unit form and the special cases form.

- Special case units comprised 0.5% of the total habitat units on the Yankee Fork survey.

- A total of three special case units were encountered throughout the survey.

Table 1.3. Special case units on Yankee Fork.

Reach #	Sequence Order #	Chan-nel Unit Type	River Mile (RM)	Type of Struc-ture	Length Of Structure (ft)	Diame-ter or Width (ft)	% Gradient	Jump Dis-tance (ft)	Spill Pool Depth (ft)	Height (ft)
7	277	WF1	12.8	Waterfall	6	24	100	6.0	4.0	6.0
7	288	WF2	13.0	Waterfall	12	15	58	7.0	18.0	7.0
7	302	CH1	13.1	Chute	121	20	3	0	6.0	0



- The two waterfalls encountered were not fish barriers due to fluvial bull trout successfully passing them.

SO 277, Waterfall #1, Lat = 44.4021 Long = -114.6605 (time lapsed photo)

SO 288 – Waterfall #2, Lat = 44.40345 Long = -114.657817

IN-CHANNEL HABITAT

Water Temperature

- The temperature was taken at the start of every day and at every measured unit on the main channel. Readings were taken with a handheld thermometer and were submerged for at least one minute to ensure an accurate reading.

- The range of temperatures recorded throughout the Yankee Fork survey was from 5.5°C to 12.5°C.

Table 1.4. Average and maximum temperature readings by reach.

Reach	Average Temp °C	Maximum Temp °C	Date(s) Temperature Collected	Time Range Readings Collected In	Number of Readings
1	10.1	12.5	09/13/2010	1226-1657	7
2	8.6	10.0	09/14/2010	1021-1310	4
3	11.6	12.0	09/14/2010	1437-1844	6
4	7.8	9.5	09/15/2010	0957-1436	7
5	9.8	11	09/15/2010 – 09/16/2010	1300-1758	9
6	8.6	11	09/17/2010	1024-1541	10
7	9.8	11.5	09/17/2010 – 09/18/2010	1052-1743	11
8	10.7	11	09/18/2010	1555-1905	9
9	8.4	10	09/19/2010	1103-1615	14
10	7.4	8.5	09/19/2010	1641-1842	4

- These temperature readings are instantaneous and therefore cannot be used to relate to the RMOs and Idaho Department of Environmental Quality Surface Water Quality Standards.

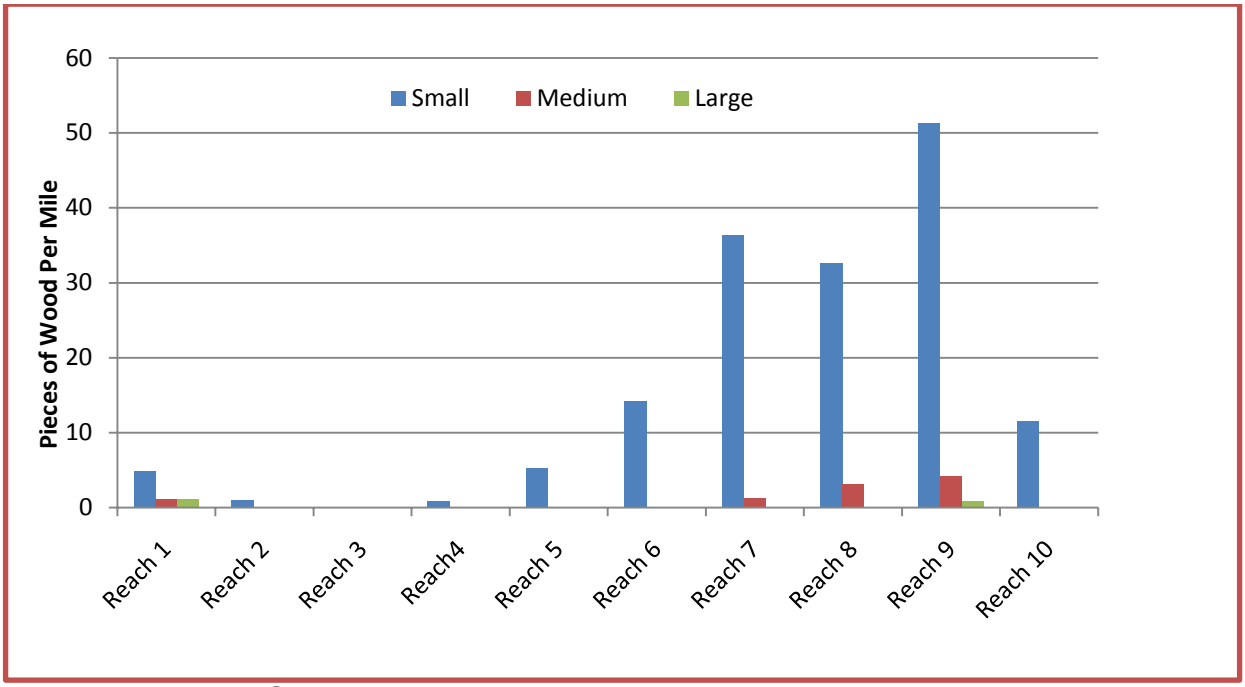
Woody Debris

- Woody debris size categories for the east side of the Cascade Mountains can be found in the table below.

Table 1.5. Definitions of woody debris size categories (Handbook 2010).

Size	Diameter	Length
Small	>6 inches at 20 feet from large end	>20 feet or 2X bankfull width
Medium	>12 inches at 35 feet from large end	>35 feet or 2X bankfull width
Large	>20 inches at 35 feet from large end	>35 feet or 2X bankfull width

SO 370 (approximately) – Debris jams, RM 14.6, photo oriented from north/northeast (Photo courtesy of Bureau of Reclamation)



Graph 1.1. Wood distribution per mile by reach.

- The wood found in Yankee Fork did not meet the criteria for the RMO for large woody debris. To meet the RMO for wood there needed to be greater than twenty pieces of medium and large sized wood combined per mile of stream. See Wood Summary in Chapter 2.

SO 114-116 (approximately) – dredge tailings on left bank and lack of woody debris, RM 7.4, photo oriented upstream (Photo courtesy of Bureau of Reclamation)

SO 374 – Debris jam, reach 9, RM 14.7

- Of the countable wood found throughout this survey, 92% of the wood was small sized, 6% was medium and 2% was large.
    - Note: Wood is not counted in side channels.

Pools

- A pool, or slow water unit, is defined as a portion of the stream that usually has reduced surface turbulence and has an average depth greater than fast water units when observed during low flow conditions. There is a hydraulic control on the downstream end of a pool, better known as the pool tail crest. This hydraulic control functions as a dam which will retain water in the pool even after streamflow has ceased (Handbook 2010).

- **Pool Quality:** The average residual pool depth, which is the difference between the maximum pool depth and the maximum depth along the pool tail crest, for this survey was 2.41 feet. This is the depth of water that would be persisting if water stopped flowing out of the pool.

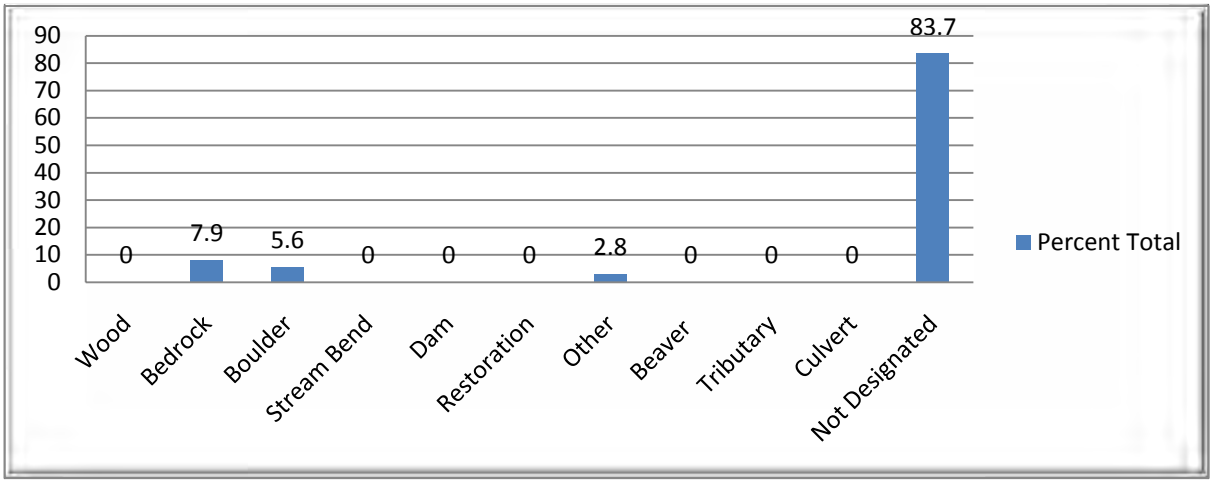
Table 1.6. Pool Quality Data by Reach.

Reach	Pool Count	Pools Per Mile	Average Residual Pool Depth (Ft)	Average Wetted Width (Ft)
1	14	8.46	3.02	47
2	6	6.35	1.82	58
3	13	8.02	2.75	46
4	9	3.98	2.1	39
5	15	7.21	1.77	34
6	29	22.96	1.88	31
7	27	36.4	3.67	29
8	23	18.33	2.7	28
9	35	29.47	2.7	26
10	7	8.94	1.64	29

- The pool per mile criteria varies by channel width, but the RMO was not met for pool frequency. Reaches with an average wetted width of 25'-50' must have at least 47 pools per miles, and reaches with an average wetted width of 50'-75' must have at least 26 pools per mile to meet the RMOs. See Table 1.2 and Table 1.6 or the Pool Summary in Chapter 2.

- **Pool Forming Forces:** For each pool the major pool forming forces were noted, oftentimes with more than one factor playing a part (Graph 1.2). The options for pool forming features are those that most commonly form pools. Options are wood, bedrock, boulder, stream bend, dam, restoration, beaver, tributary, culvert, other and not designated.

    - The survey crews were unable to positively identify the pool forming features on many of the pools within the survey, especially in the dredged areas. This was due to the channel being fairly straight and there being no obvious features (stream bend, wood, boulder, etc.) creating them.



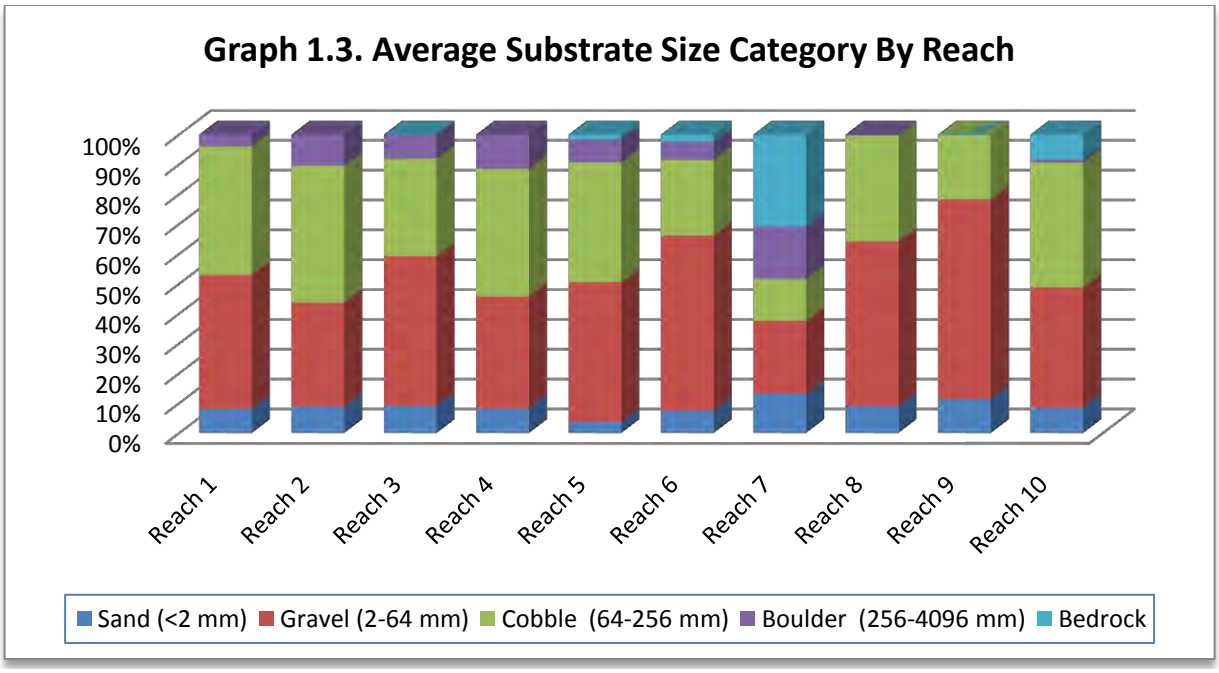
Graph 1.2. Average percent total of pool formation factors for survey.

Pebble Counts

- For each reach two Wolman Pebble Counts were performed, the first being approximately 1/3 and a second 2/3 of the way through each reach. The site chosen was in fast water and representative of what was perceived to be normal conditions for fast water units already observed.

- The procedure for performing a pebble count is that you randomly select at least one hundred pebbles (without bias) from the streambed along a transect that traverses the stream from the edge of the bankfull channel on one bank to that on the opposite bank. The first particle touched is measured and tallied for each sample. (Handbook 2010)

- The D16, D50 and D84 were determined for each reach. At bankfull flow particles smaller then the D50 (50th percentile) will be mobile. Substrate larger than the D84 (84th percentile) are considered immobile during bankfull flow (Handbook 2010). See Appendix 1A for these values.



Graphs representing each reach's pebble counts can be found in Appendix 1A.

The dominant substrate size class for each reach:

- Reach 1 – Gravel (2-64 mm)
- Reach 2 – Cobble (64-256 mm)
- Reach 3 – Gravel (2-64 mm)
- Reach 4 – Cobble (64-256 mm)
- Reach 5 – Gravel (2-64 mm)
- Reach 6 – Gravel (2-64 mm)
- Reach 7 – Bedrock (>4096 mm)
- Reach 8 – Gravel (2-64 mm)
- Reach 9 – Gravel (2-64 mm)
- Reach 10 – Cobble (64-256 mm)

Percent Substrate Composition

- The percent substrate composition is a visual estimate of the makeup of the substrate on measured units of the wetted channel. Size class categories are: sand (<2 mm), gravel (2-64 mm), cobble (64-256 mm) boulder (256 4096 mm) and bedrock (>4096 mm). All estimates were rounded to 10 percent in the raw data and the streambed substrate is to total 100 percent for each unit (Handbook 2010). Averages in the following table are rounded to the nearest tenth.

Table 1.7. Average percent substrate composition per reach.

Reach	Sand <2 mm	Gravel 2-64 mm	Cobble 64-256 mm	Boulder 256-4096 mm	Bedrock >4096 mm
1	36.7	19.2	19.2	13.3	11.7
2	2.5	36.3	58.8	2.5	0
3	8.0	36.2	51.7	4.2	0
4*	9.2	21.8	43.2	23.3	4.2
5	13.1	28.8	31.3	21.9	5.0
6	12.5	29.0	29.5	22.5	6.5
7	10.0	19.1	23.6	22.7	24.5
8	11.1	58.9	29.4	0.6	0
9	10.8	49.6	39.6	0	0
10	10.0	50.0	40.0	0	0

* = There was a surveyor error on SO 119 in reach 4. The streambed substrate estimate totaled more than 100 and therefore made the averages also total more than 100.

Special Habitats

- **Side Channels:** A side channel is a secondary channel that flows roughly parallel to the mainstem channel with an island that will not be breached during bankfull condition between the two. Oftentimes woody plants and/or a well developed soil layer and vegetation are in indicator that an island is stable (Handbook 2010).
    - Side channels comprised 7.5% of the total habitat units on the Yankee Fork stream survey. See the Percent Area Habitat Summary in Chapter 2 for more detailed information by reach.

SO 410 – Side channel with beaver activity, Reach 9, RM 15.6

SO 90 – Side channel located behind dredge tailings, Reach 3, RM 6.5

- **Braided Channels:** A braided channel is a series of three or more roughly parallel channels structured during bankfull flow and separated from each other by unstable islands. Braided channels appear distinct at flows less than bankfull stage. At bankfull stage, the islands separating the multiple channels

are overtopped, and the channel appears to be a single broad channel. Vegetation on these unstable islands is typically non-woody annual plants, very young seedlings, or willow. A braided channel is the result of sediment supply that exceeds the power of the stream to transport all of the sediment through a specific channel segment. (Handbook 2010)

- Braided channel units made up 0.9% of the total habitat units on the survey.

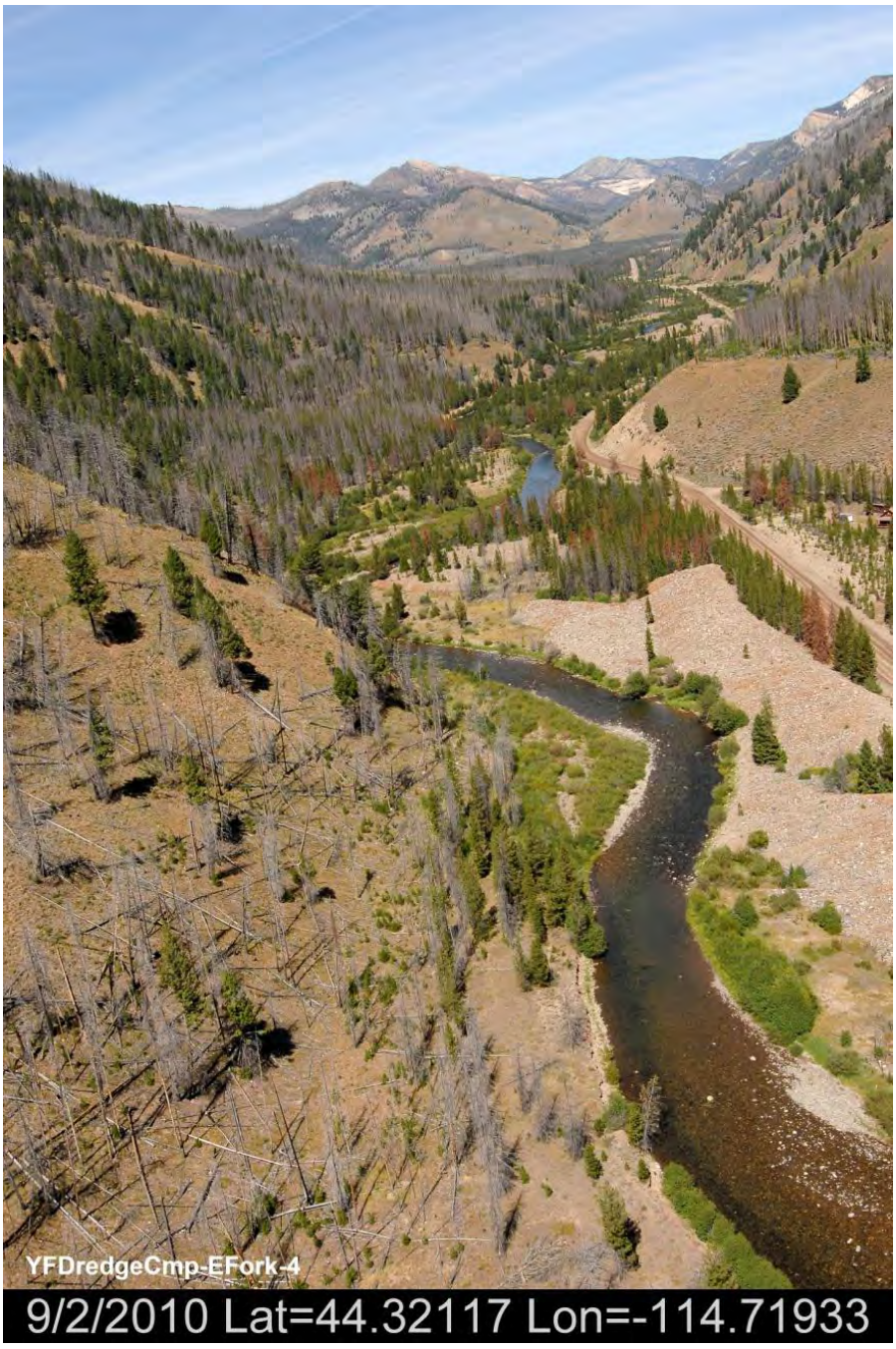
SO 357 – Braid #1, Reach 8, RM 14.3

SO 463 – Braid #3, Reach 10, RM 16.8

RIPARIAN HABITATS

Riparian Vegetation

- The riparian vegetation was noted on measured habitat units for the inner riparian zone only (100 feet on both banks). The class is broken down by diameter at breast height (dbh) and the classes are as follows (Handbook 2010):
  - NV = No Vegetation (bare rock/soil, dbh not applicable)
  - GF = Grassland/Forb Condition (dbh not applicable)
  - SS = Shrub/Seedling Condition (1.0 – 4.9 in. dbh)
  - SP = Sapling/Pole Condition (5.0 – 8.9 in. dbh)
  - ST = Small Trees Condition (9.0 – 20.9 in. dbh)
  - LT = Large Trees Condition (21 – 31.9 in. dbh)
  - MT = Mature Trees Condition (>32 in. dbh)



SO 50 (approximately) – Burnt riparian area and lack of stream side vegetation in areas, RM 4.6, photo oriented upstream (Photo courtesy of Bureau of Reclamation)

- The overstory vegetation is defined by the species that from an overhead view occupies the most overstory area along both banks. It is an average of both banks' condition.

- The understory is denoted by which species are growing in this lower vegetative layer. It too is an average of both banks' condition.

Table 1.8. Riparian vegetation classes and species observed.

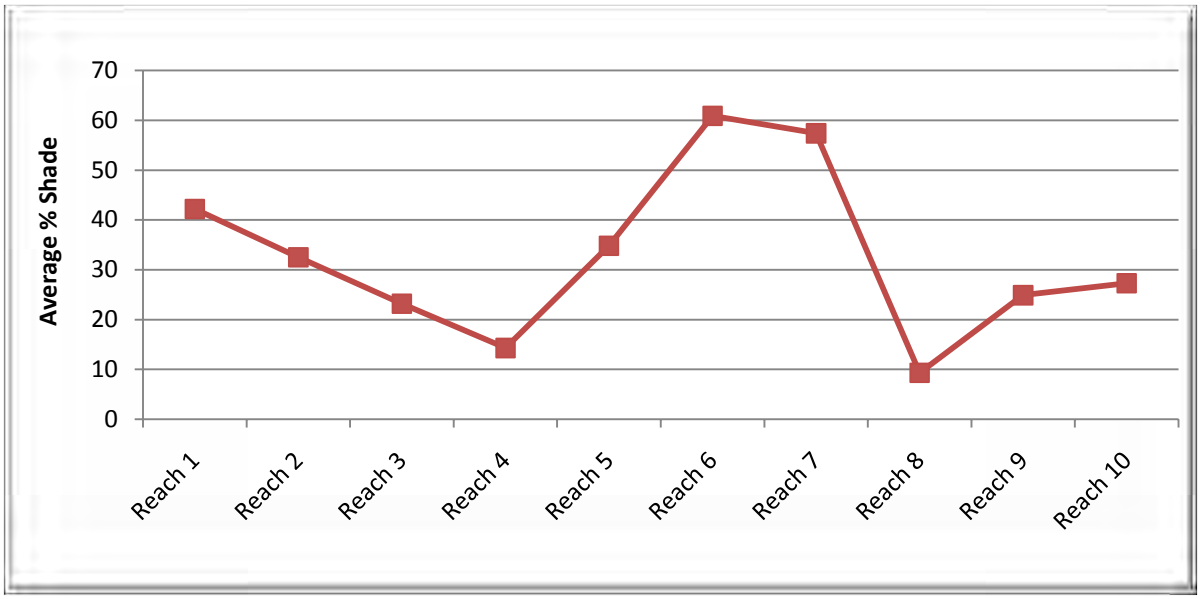
Reach	Riparian Class	Overstory	Understory
1	▪ Large tree ▪ Small tree ▪ Grassland/forbs	▪ Douglas fir (*Pseudotsuga menziesii)* ▪ Alder (*Alnus* sp.) ▪ Grassland/forbs	▪ Douglas fir (*Pseudotsuga menziesii)* ▪ Alder (*Alnus* sp.) ▪ Grassland/forbs
2	▪ Alder (*Alnus* sp.) ▪ Willow (*Salix* sp.)	▪ Sapling pole ▪ Shrub/seedling	▪ Shrub seedling ▪ Grassland/forbs
3	▪ Small tree ▪ Alder (*Alnus* sp.)	▪ Small tree ▪ Sapling pole ▪ Lodgepole pine (*Pinus contorta)*	▪ Shrub seedling ▪ Alder (*Alnus* sp.)
4	▪ Small tree	▪ Alder (*Alnus* sp.)	▪ Lodgepole pine (*Pinus contorta)* ▪ Grassland/forbs
5	▪ Small tree ▪ Grassland/forbs	▪ Lodgepole pine (*Pinus contorta)* ▪ Alder (*Alnus* sp.) ▪ Grassland/forbs	▪ Lodgepole pine (*Pinus contorta)* ▪ Alder (*Alnus* sp.) ▪ Grassland/forbs
6	▪ Small tree	▪ Lodgepole pine (*Pinus contorta)* ▪ Subalpine fir (*Abies lasiocarpa)*	▪ Alder (*Alnus* sp.)
7	▪ Large tree ▪ Small tree	▪ Douglas fir (*Pseudotsuga menziesii)* ▪ Lodgepole pine (*Pinus contorta)* ▪ Subalpine fir (*Abies lasiocarpa)*	▪ Alder (*Alnus* sp.) ▪ Grassland/forbs
8	▪ Shrub/seedling	▪ Willow (*Salix* sp.)	▪ Lodgepole pine (*Pinus contorta)* ▪ Grassland/forbs
9	▪ Small tree ▪ Shrub/seedling	▪ Lodgepole pine (*Pinus contorta)* ▪ Willow (*Salix* sp.)	▪ Lodgepole pine (*Pinus contorta)* ▪ Subalpine fir (*Abies lasiocarpa)* ▪ Willow (*Salix* sp.) ▪ Grassland/forbs
10	▪ Small tree ▪ Shrub/seedling	▪ Lodgepole pine (*Pinus contorta)* ▪ Willow (*Salix* sp.)	▪ Lodgepole pine (*Pinus contorta)* ▪ Willow (*Salix* sp.)

Solar Radiation

- Solar radiation was taken at every measured unit with a solar pathfinder to determine the percent of shade and was normalized for the latitude in which it was used and the month of September. The surveyor stood in the middle of the channel while assessing the shade.

- The average percent of shade for the whole survey was 34.7%.

SO 58 (approximately) - Lack of shade on stream, RM 5.1, photo oriented upstream (Photo courtesy of Bureau of Reclamation)



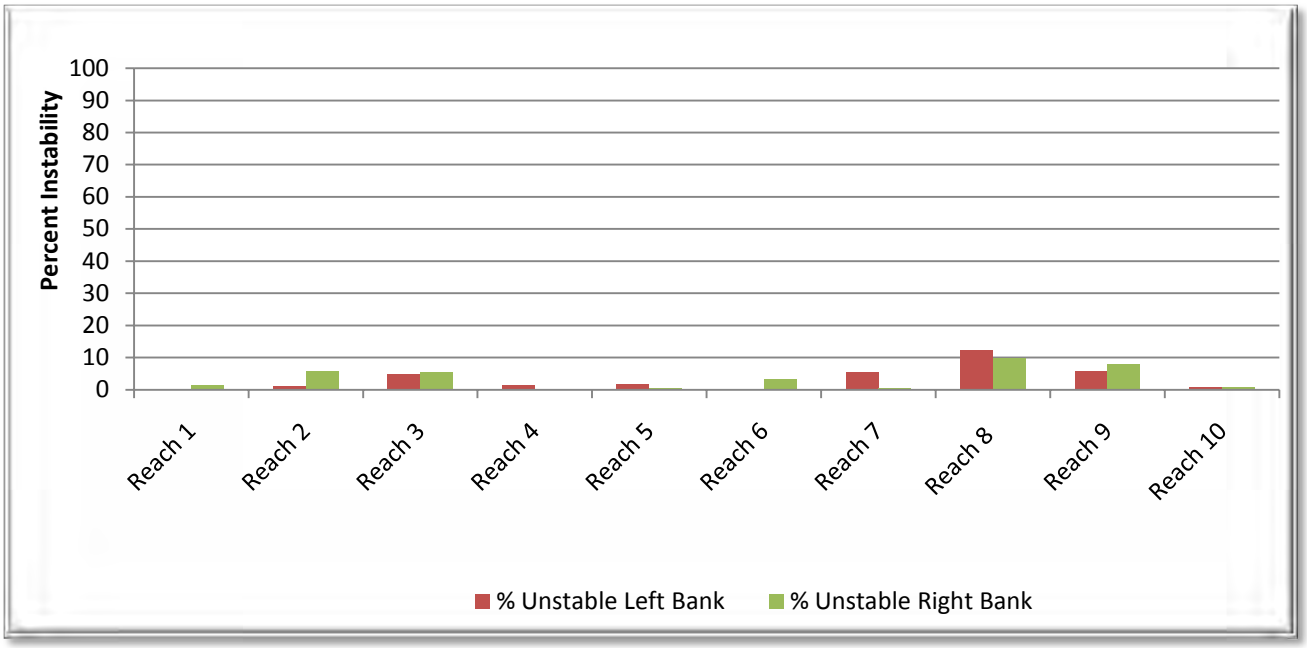
Graph 1.4. Average percent shade on the channel for each reach.

Bank Stability

- The banks on the Yankee Fork survey met the RMO for bank stability in all reaches except for reach 8, being more than 90% stable.
    - The average percent of instability for the entire survey was 3.3% of the left bank and 3.5% of the right bank.

SO 84 – Unstable right bank, Reach 3, RM 6.3

- For more detailed information by reach see Graph 1.5 and the Unstable Bank Summary in Chapter 2.
- Since the Yankee Fork watershed is a priority watershed, the RMO differs from the standard of 80% from PACFISH.



Graph 1.5. Percent of unstable banks observed by reach.

- Note: Unstable banks were not measured on side channels.

MANAGEMENT ACTIVITIES / IMPACTS

Roads

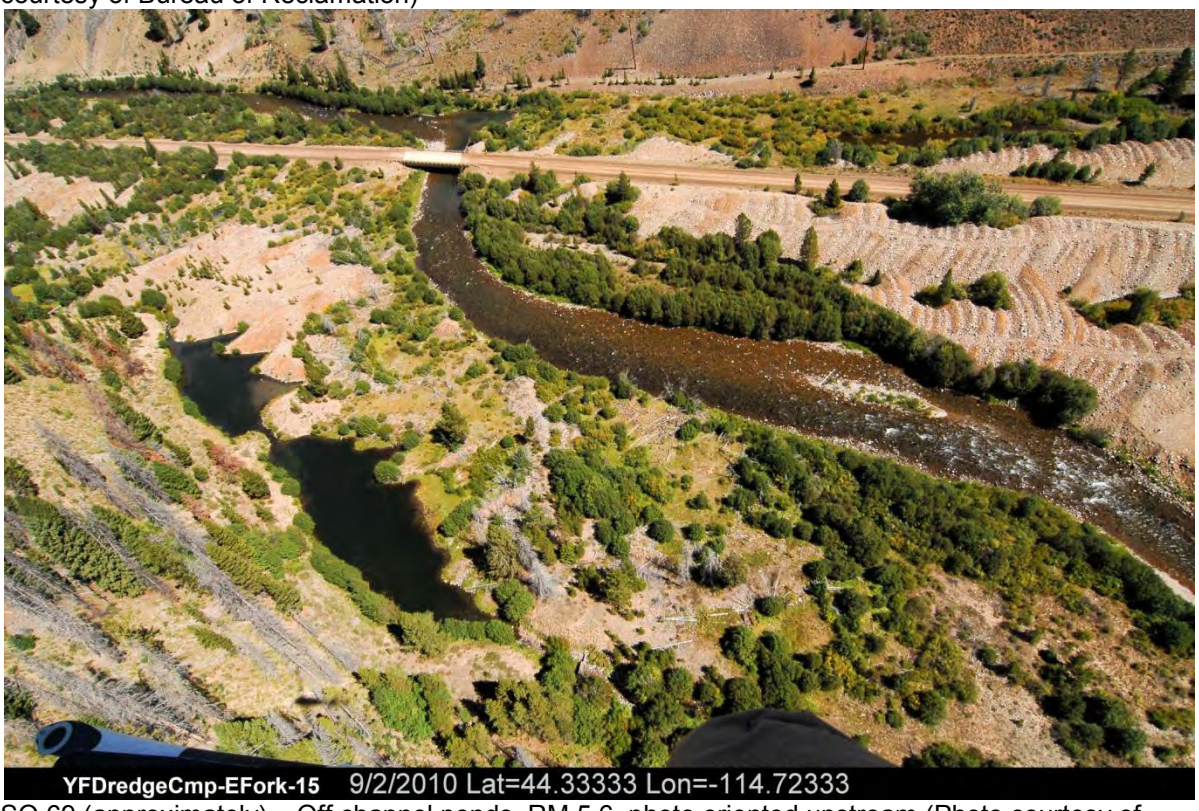
- National Forest Road 013 runs nearly parallel to the Yankee Fork for the lower half of the survey and then National Forest Road 070 runs near the channel for the upper end of the survey.

- All of the road crossings over the Yankee Fork throughout the survey were in the form of bridges and not culverts.

Mining

- Historically parts of the Yankee Fork were dredged for gold intermittently from 1940 to 1952. This dredging re-routed, straightened, and entrenched the channel and has confined the river between dredge piles. Therefore, at high flows in many areas, stream power and sediment transport capacity is increased. The dredge tailings have also disconnected or limited access to tributaries as well as disturbed historic fish habitat.

SO 139 (approximately) – Dredge tailings and stream, RM 8.9, photo oriented downstream (Photo courtesy of Bureau of Reclamation)



SO 69 (approximately) – Off channel ponds, RM 5.6, photo oriented upstream (Photo courtesy of Bureau of Reclamation)

Stream Enhancement Projects

- No restoration has been attempted on the main stem surveyed portion of Yankee Fork. The Shoshone-Bannock Tribes, with funding from Bonneville Power Administration, increased rearing habitat by adding several off-channel holding ponds. Four series of dredge/settling ponds were added into the dredged portion of the Yankee Fork. These ponds now provide effective rearing habitat to hatchery out-planted and naturally produced juvenile Chinook salmon and steelhead. Implementation of this work began in the fall of 1987 and was completed in the fall of 1988, with some re-vegetation work finalized in the spring of 1989. (Vacirca 2006).

SO 31 (approximately) – Off channel ponds and dredge tailings, RM 3.6, photo oriented upstream (Photo courtesy of Bureau of Reclamation)

Grazing

- The Garden Creek Allotment contains the Yankee Fork within its boundary from approximately Fivemile Creek upstream through the end of the survey. However, the portion of the allotment within the Yankee Fork watershed currently is not grazed and has not been grazed for several years.

CHAPTER 2: STREAM SURVEY SUMMARY REPORTS

Hydrology Summary

Stream Name: Yankee Fork

Hydrologic Unit Code: 170602010505, 170602010502

Protocol Name: R6 Eastside Aquatic Inventory

Date: 09/13/2010-09/19/2010

Reach	Valley Form	Mapped Gradient	Mapped Sinuosity	Average Width/Depth Ratio	Average Entrench-ment Ratio	Dominant Substrate Size Class	Rosgen Stream Class	Remarks
1	9	0.8	1.03	33.4	1.3	Gravel (2-64 mm)	C4	Survey begins at a pullout on County Road 013 just downsteam of the Shoban Tribes screw trap and ends at the confluence with Rankin Creek on the right bank
2	9	0.6	1.11	41.0	1.5	Cobble (64-256 mm)	C3	Reach 2 ends where Jerry's Creek would enter from the left bank, but does not connect to the main channel
3	9	0.7	1.14	30.2	1.5	Gravel (2-64 mm)	C4	Reach 3 ends at the confluence with West Fork Yankee Fork from the right bank.
4	9	1.0	1.04	30.2	1.5	Cobble (64-256 mm)	C3	The fourth reach ends at the confluence with Jordan Creek from the right bank. The dredge tailings end just upstream of the end of this reach and the valley floor narrows.
5	9	1.1	1.07	20.7	1.3	Gravel (2-64 mm)	C4	Reach 5 ends at the confluence with Swift Gulch from the right bank.
6	8	1.4	1.08	16.6	1.5	Gravel (2-64 mm)	C4	The sixth reach ends at the confluence with a small tributary from the left bank that was dry at the time of the survey. Upstream of the reach break the valley floor becomes more confined and the gradient increases.
7	5	3.0	1.00	18.2	1.5	Bedrock (>4096 mm)	B1	Reach 7 ends at the confluence with Fivemile Creek from the left bank. This reach had a very confined valley floor with lots of bedrock and deeps pools.
8	9	1.0	1.07	40.6	2.6	Gravel (2-64 mm)	C4	Reach 8 ends at the confluence with Sixmile Creek from the left bank.
9	9	0.5	1.27	26.8	2.3	Gravel (2-64 mm)	C4	Reach 9 ends at the confluence with Eightmile Creek from the right bank.
10	9	1.1	1.12	15.5	1.3	Cobble (64-256 mm)	C3	The tenth reach ends at the confluence with a tributary from the right bank that was dry at the time of the survey.
Average		**1.1**	**1.09**	**27.3**	**1.6**			

Hydrology Summary (continued)

Stream Name: Yankee Fork

Hydrologic Unit Code: 170602010505, 170602010502

Protocol Name: R6 Eastside Aquatic Inventory

Date: 09/13/2010-09/19/2010

Reach	Surveyed Length in Feet	Mapped Channel Length in Feet	Mapped Minimum Elevation in Feet	Mapped Maximum Elevation in Feet	Stream Order	Discharge Cubic Feet per Second	Average Corrected Wetted Width	Average Bankfull Depth in Feet	Average Bankfull Max Depth in Feet	Average Bankfull Width in feet	Average Floodprone Width in Feet	Mapped Valley Width in Feet	Mapped Valley Length in Feet
1	8,740	8,773	6102	6174	6	83.46	47.3	2.58	3.10	72.0	92	316	8,539
2	4,988	5,998	6174	6203	6	-	57.7	2.23	2.55	92.0	140	507	5,383
3	8,563	7,585	6203	6253	6	-	46.3	2.20	2.63	66.3	100	510	6,652
4	11,930	11,935	6253	6368	5	-	39.8	1.88	2.15	54.3	90	457	11,477
5	10,980	11,066	6368	6493	5	-	34.0	2.25	2.43	46.3	58	346	10,391
6	6,670	6,793	6493	6588	5	-	31.0	2.64	3.27	41.0	59	293	6,267
7	3,916	3,988	6588	6706	5	-	29.4	2.17	2.55	38.5	57	108	3,969
8	6,626	6,667	6706	6772	5	-	28.0	1.89	2.23	54.3	128	360	6,211
9	9,598	9,731	6772	6818	5	-	25.8	2.12	2.45	56.0	121	417	7,670
10	4,135	4,145	6818	6863	4	-	28.6	1.93	2.10	30.0	38	457	3,702
Average	**76,147**	**76,681**				**83.46**	**36.8**	**2.19**	**2.55**	**55.1**	**88**	**377.1**	**70,261**

Percent Habitat Area Summary

Stream Name: Yankee Fork

Hydrologic Unit Code: 170602010505, 170602010502

Protocol Name: R6 Eastside Aquatic Inventory

Date: 09/13/2010-09/19/2010

Reach	% Slow Water	Number of Slow Water Units	% Fast Water	Number of Fast Water Units	Fast Water/Slow Water Ratio	% Side Channel	Number of Side Channel Units	% Special Case	Number of Special Cases	% Braided Units	Number Braided Units	% Tributary	Number of Tributaries
1	29.5	13	50.0	22	1.69	9.1	4	0.0	0	0.0	0	11.4	5
2	28.6	6	66.7	14	2.33	0.0	0	0.0	0	0.0	0	4.8	1
3	35.1	13	51.4	19	1.46	5.4	2	0.0	0	0.0	0	8.1	3
4	22.0	9	65.9	27	3.00	9.8	4	0.0	0	0.0	0	2.4	1
5	30.0	15	54.0	27	1.80	12.0	6	0.0	0	0.0	0	4.0	2
6	50.9	29	43.9	25	0.86	0.0	0	0.0	0	0.0	0	5.3	3
7	47.4	27	42.1	24	0.89	3.5	2	5.3	3	0.0	0	1.8	1
8	38.3	23	48.3	29	1.26	6.7	4	0.0	0	1.7	1	5.0	3
9	46.1	35	38.2	29	0.83	13.2	10	0.0	0	0.0	0	2.6	2
10	26.9	7	46.2	12	1.71	15.4	4	0.0	0	7.7	2	3.8	1
Total / Average	**35.5**	**177**	**50.7**	**228**		**7.5**	**36**	**0.5**	**3**	**0.9**	**3**	**4.9**	**22**

Slow water (pool) = A habitat unit with a hydraulic control, usually with reduced surface turbulence and has an average depth greater than riffles when viewed during low flow conditions.

Fast Water = A habitat unit without a hydraulic control, usually with relatively fast velocity and usually relatively shallow.

Side Channel = A lateral (i.e., secondary) channel with an axis of flow roughly parallel to the mainstem channel. This secondary channel transports water from an upstream confluence with the mainstem channel to a downstream confluence with the mainstem channel.

Special Habitats = A category for other habitats, waterfalls, chutes, culverts, marshes, braids, dry sections, man-made dams and structures.

Braid = A braided channel is a series of three or more roughly parallel channels structured during bankfull flow and separated from each other by unstable islands. Vegetation on these unstable islands is typically non-woody annual plants, very young seedlings, or willow.

Tributary = A secondary channel system that occupies a distinct drainage basin and has a unique headwater origin. The drainage basin of a tributary is a portion of the larger drainage basin of the mainstem channel.

Wood Summary

Stream Name: Yankee Fork

Hydrologic Unit Code: 170602010505, 170602010502

Protocol Name: R6 Eastside Aquatic Inventory

Date: 09/13/2010-09/19/2010

			Number of Pieces of Wood per Mile				
Reach	Miles		Large	Medium	Small	Total	Frequency of Large Pieces of Wood*
1	1.66		1.21	1.21	4.83	7.25	0.011
2	0.94		0	0	1.06	1.06	0
3	1.62		0	0	0	0	0
4	2.26		0	0	0.89	0.89	0
5	2.08		0	0	5.29	5.29	0
6	1.26		0	0	14.25	14.25	0
7	0.74		0	1.35	36.4	37.75	0
8	1.26		0	3.19	32.67	35.86	0
9	1.81		0.84	4.21	51.36	56.41	0.003
10	0.78		0	0	11.49	11.49	0
Total	**14.41**	**Average**	**0.205**	**1.0**	**15.824**	**170.25**	**0.0014**

* Frequency of Wood = Number of Large Pieces of Wood/(Corrected Channel Length/Average Corrected Wetted Channel Width).

Pool Summary

Stream Name: Yankee Fork

Hydrologic Unit Code: 170602010505, 170602010502

Protocol Name: R6 Eastside Aquatic Inventory

Date: 09/13/2010-09/19/2010

								Percentage of Pools Formed By										
Reach	Miles	Number of Pools	Number of Pools/Surveyed Mile of Stream	Frequency of Pools*	Number of Pools > 3 feet Deep/Surveyed Mile of Stream	Frequency of Pools > 3 Feet Deep *	Average Residual Pool Depth**	Beaver	Wood	Bedrock	Boulder	Stream Bend	Tributary	Culvert	Dam	Restoration	Other	Not Designated
1	1.66	14	8.5	0.076	7.83	0.07	3.02				57							43
2	0.94	6	6.4	0.069	5.32	0.058	1.82											100
3	1.62	13	8.0	0.07	7.41	0.065	2.75											100
4	2.26	9	4.0	0.03	1.33	0.01	2.1											100
5	2.08	15	7.2	0.046	2.4	0.015	1.77											100
6	1.26	29	23.0	0.135	11.9	0.07	1.88			3.5	7						3.5	86
7	0.74	27	36.4	0.203	32.43	0.18	3.67			44							15	41
8	1.26	23	18.3	0.097	11.9	0.063	2.7											100
9	1.81	35	19.3	0.094	11.6	0.056	2.7											100
10	0.78	7	8.9	0.048	3.85	0.021	1.64											100
Total/ Average	**14.41**	**178**	**14.0**	**0.0868**	**9.597**	**0.0608**	**2.41**	**0**	**0**	**24**	**32**	**0**	**0**	**0**	**0**	**0**	**9.3**	**87**

* Frequency of Pools = Number of Pools/(Corrected Channel Length/Average Corrected Wetted Channel Width).

** Residual Pool Depth = Maximum Depth – Depth at Pools Tail Crest

Unstable Bank Summary

Stream Name: Yankee Fork

Hydrologic Unit Code: 170602010505, 170602010502

Protocol Name: R6 Eastside Aquatic Inventory

Date: 09/13/2010-09/19/2010

Reach	Miles	Sum Unstable Left Bank	% Unstable Left Bank	Sum Unstable Right Bank	% Unstable Right Bank	% Unstable Both Banks
1	1.66	0	0.0	125	1.4	1.4
2	0.94	50	1.0	280	5.6	6.6
3	1.62	400	4.7	460	5.4	10.0
4	2.26	170	1.4	20	0.2	1.6
5	2.08	180	1.6	50	0.5	2.1
6	1.26	0	0.0	218	3.3	3.3
7	0.74	212	5.4	20	0.5	5.9
8	1.26	806	12.2	656	9.9	22.1
9	1.81	541	5.6	763	8.0	13.6
10	0.78	30	0.7	30	0.7	1.5
Total/Average	**14.41**	**2389**	**3.3**	**2622**	**3.5**	**6.8**

Count of Special Habitat Units

Stream Name: Yankee Fork

Hydrologic Unit Code: 170602010505, 170602010502

Protocol Name: R6 Eastside Aquatic Inventory

Date: 09/13/2010-09/19/2010

Reach	Number of Waterfalls	Maximum Height of Waterfalls (ft)	Number of Chutes	Number of Braids	Number of Marshes	Number of Dams	Number of Dry Channels	Total Length of Dry Channels	Number of Culverts
1	0		0	0	0	0	0	0	0
2	0		0	0	0	0	0	0	0
3	0		0	0	0	0	0	0	0
4	0		0	0	0	0	0	0	0
5	0		0	0	0	0	0	0	0
6	0		0	0	0	0	0	0	0
7	2	7	1	0	0	0	0	0	0
8	0		0	1	0	0	0	0	0
9	0		0	0	0	0	0	0	0
10	0		0	2	0	0	0	0	0
Total	**2**		**1**	**3**	**0**	**0**	**0**	**0**	**0**

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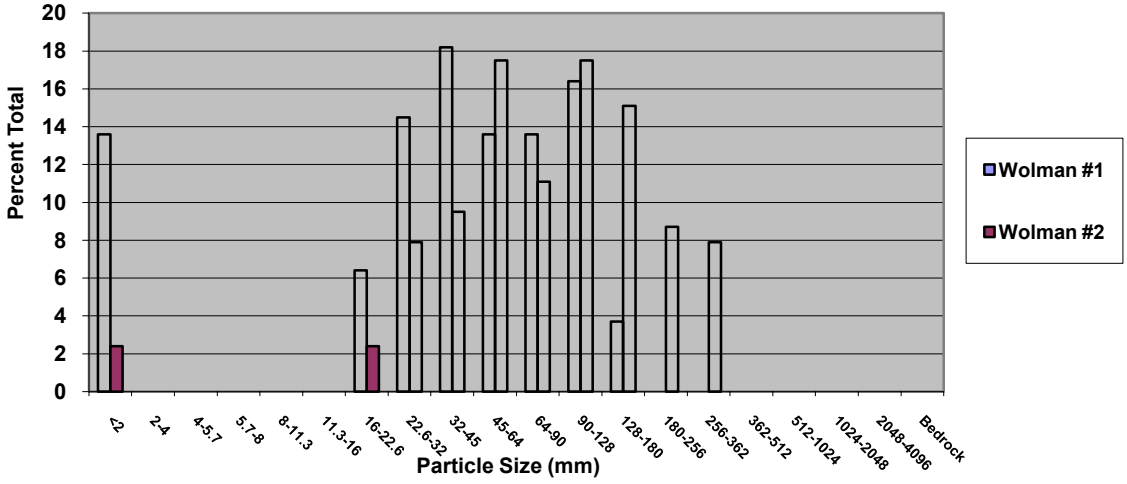
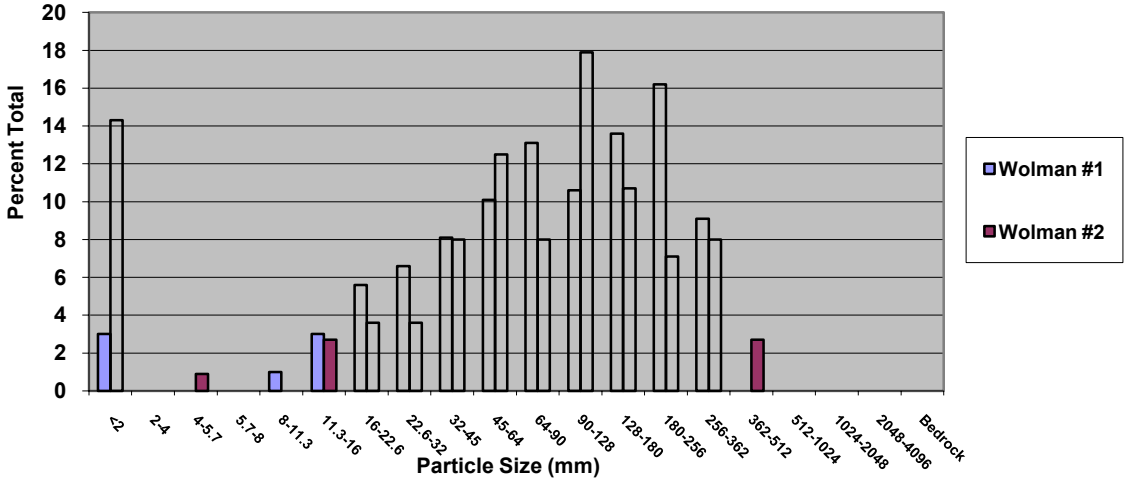
APPENDICES

APPENDIX A: Wolman Pebble Count Graphs by Reach

Reach 1
D16 – 27 mm
D50 – 65.5 mm
D84 – 141.5 mm

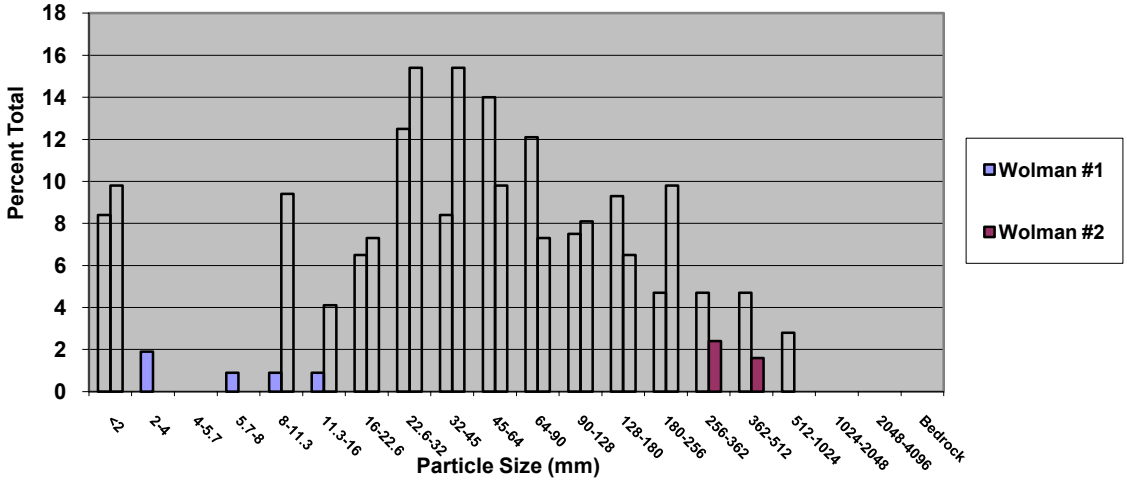


Reach 2
D16 – 19 mm
D50 – 77 mm
D84 – 190.5 mm

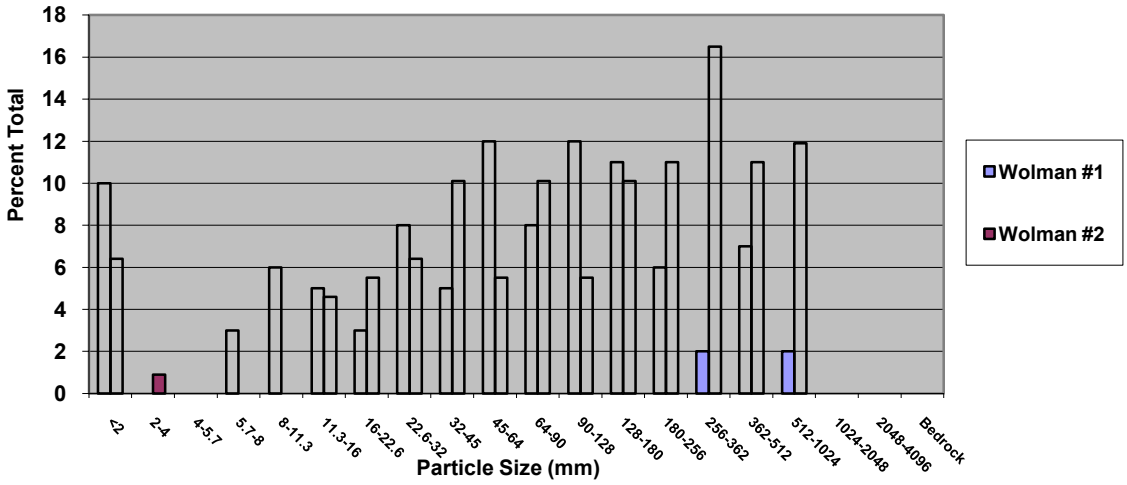


APPENDIX A (Continued)

Reach 3
D16 – 17.5 mm
D50 – 49.5 mm
D84 – 176.5 mm

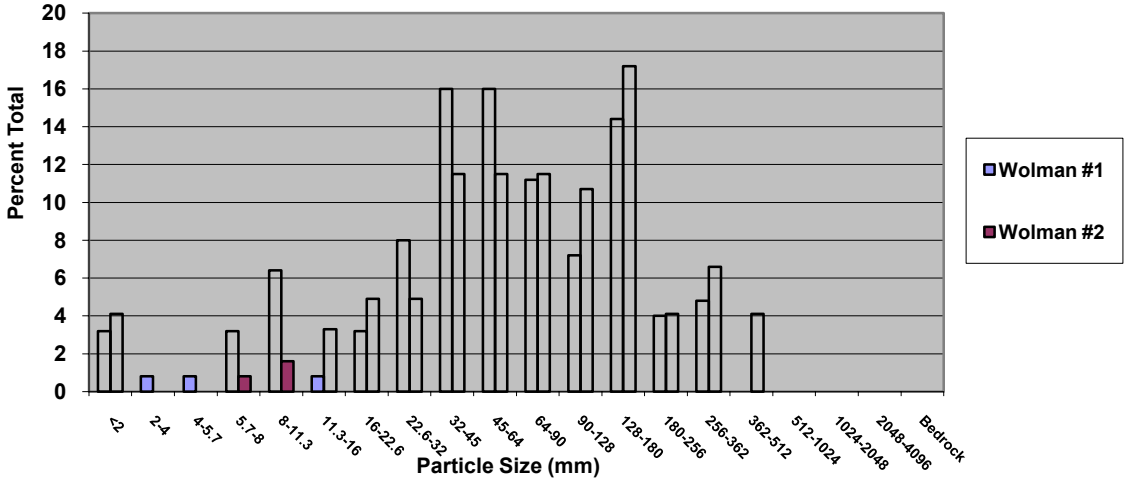


Reach 4
D16 – 15.5 mm
D50 – 75.5 mm
D84 – 208 mm

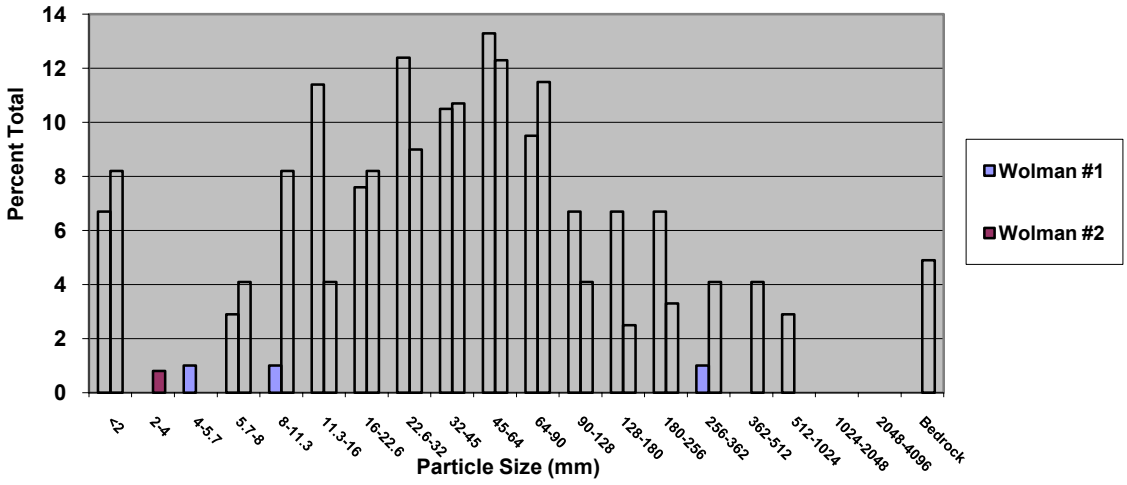


APPENDIX A (Continued)

Reach 5
D16 – 20.5 mm
D50 – 64.5 mm
D84 – 164.5 mm

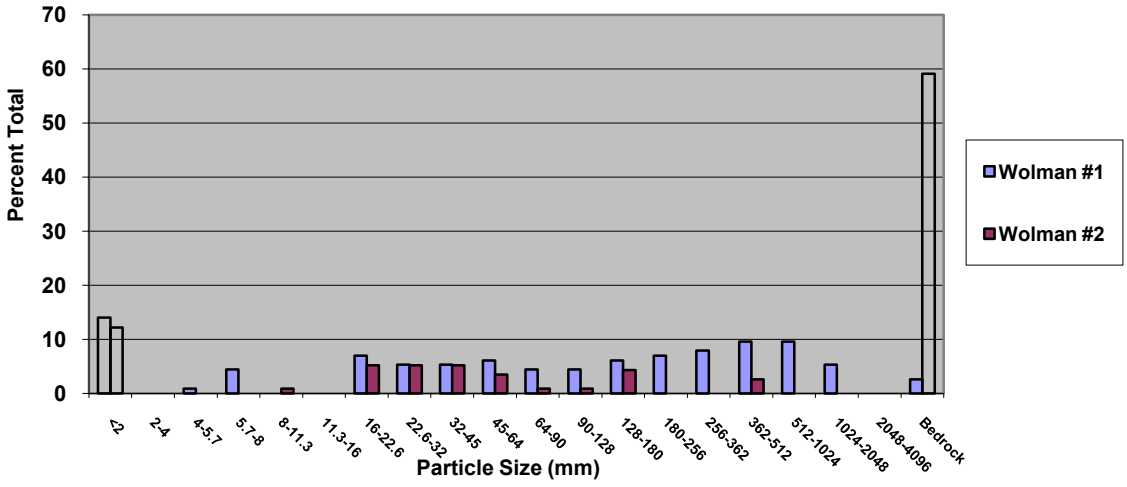


Reach 6
D16 – 11 mm
D50 – 38.5 mm
D84 – 125.5 mm

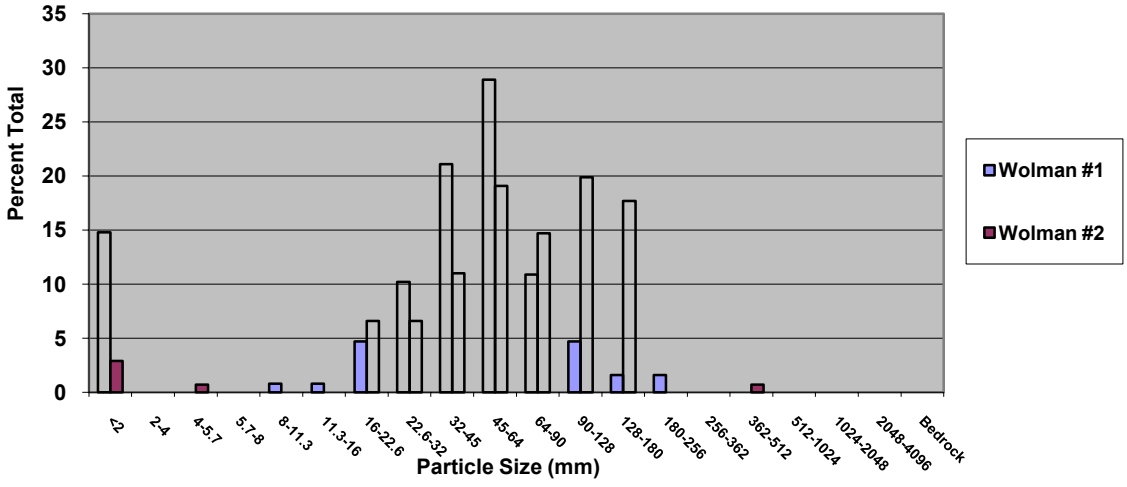


APPENDIX A (Continued)

Reach 7
D16 – 3.5 mm
D50 – 63 mm
D84 – 316 mm

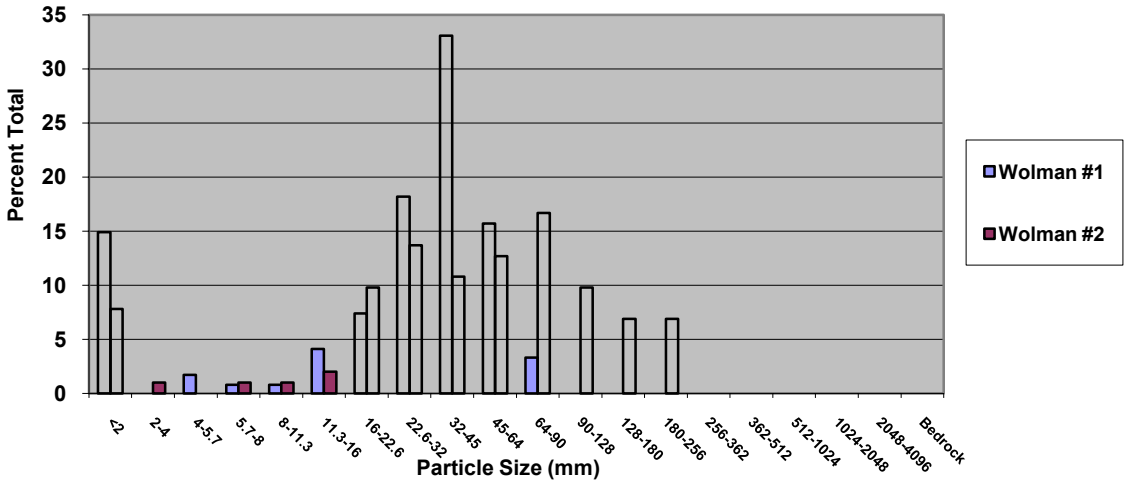


Reach 8
D16 – 22 mm
D50 – 56 mm
D84 – 102 mm

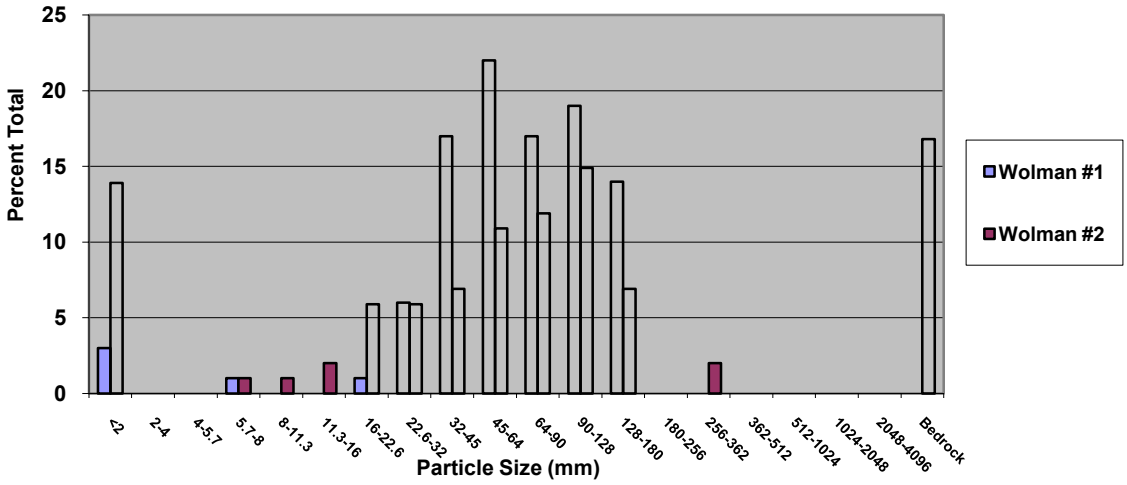


APPENDIX A (Continued)

Reach 9
D16 – 11.5 mm
D50 – 41 mm
D84 – 83 mm

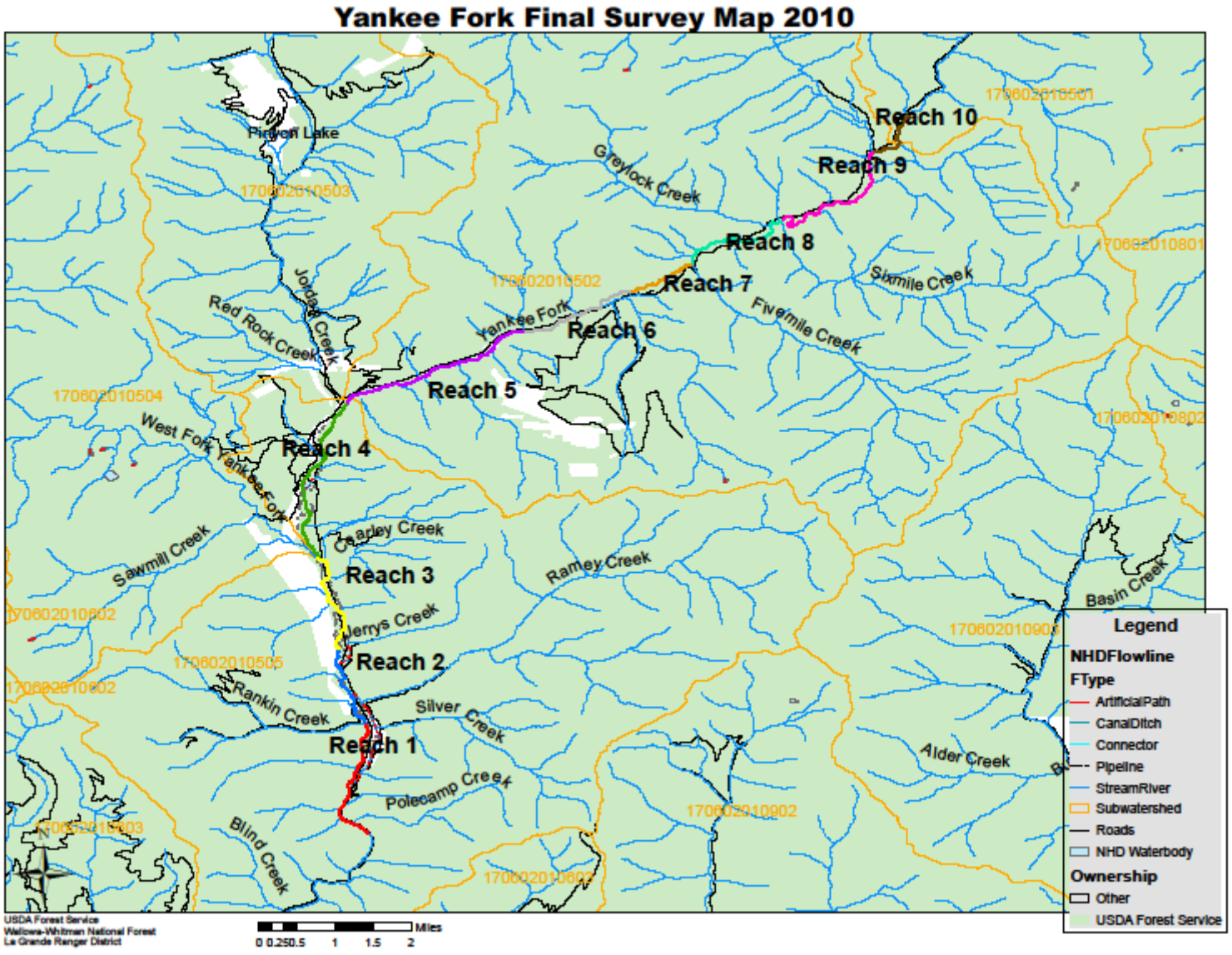


Reach 10
D16 – 18.5 mm
D50 – 58.5 mm
D84 – 119 mm

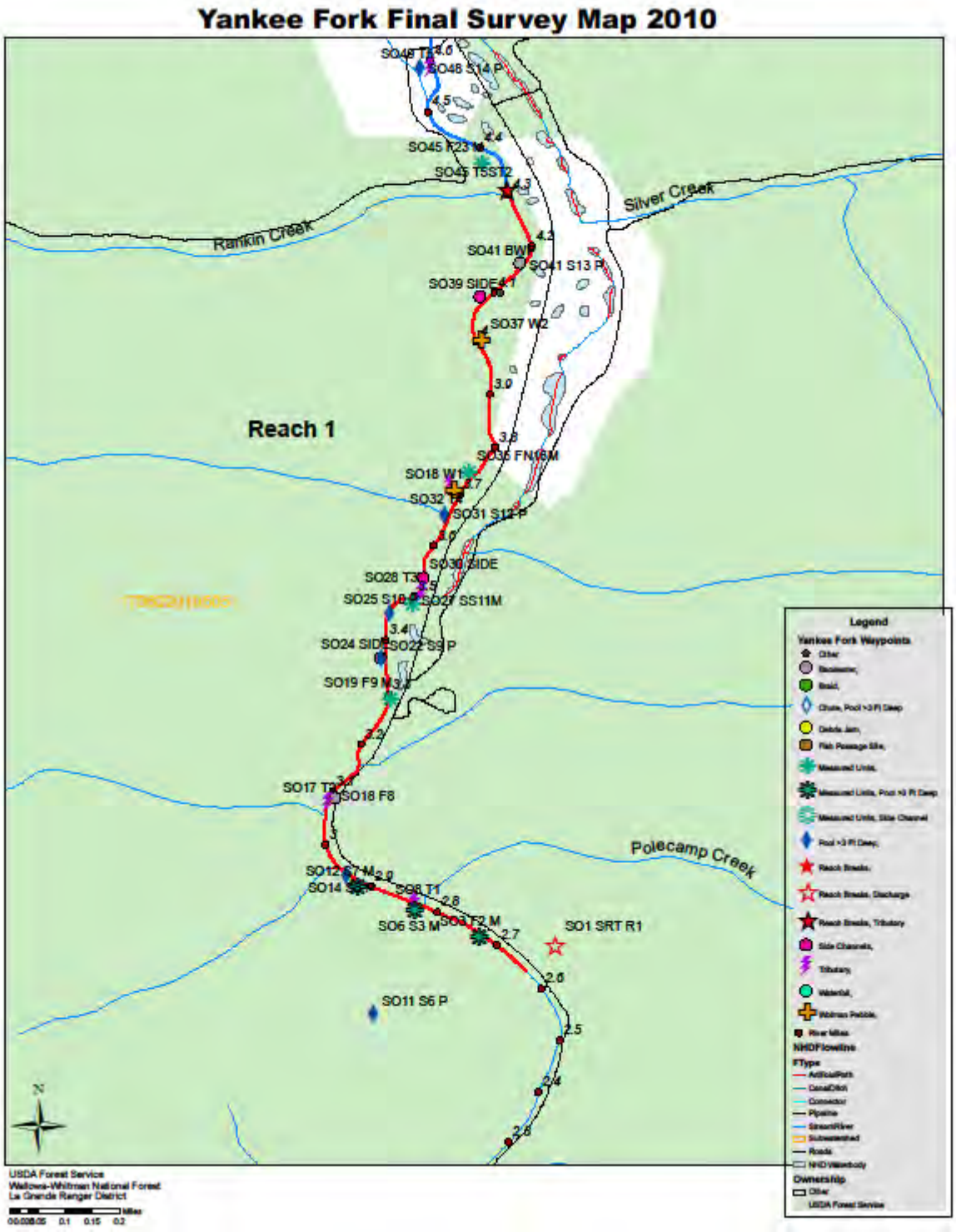


APPENDIX B - Maps

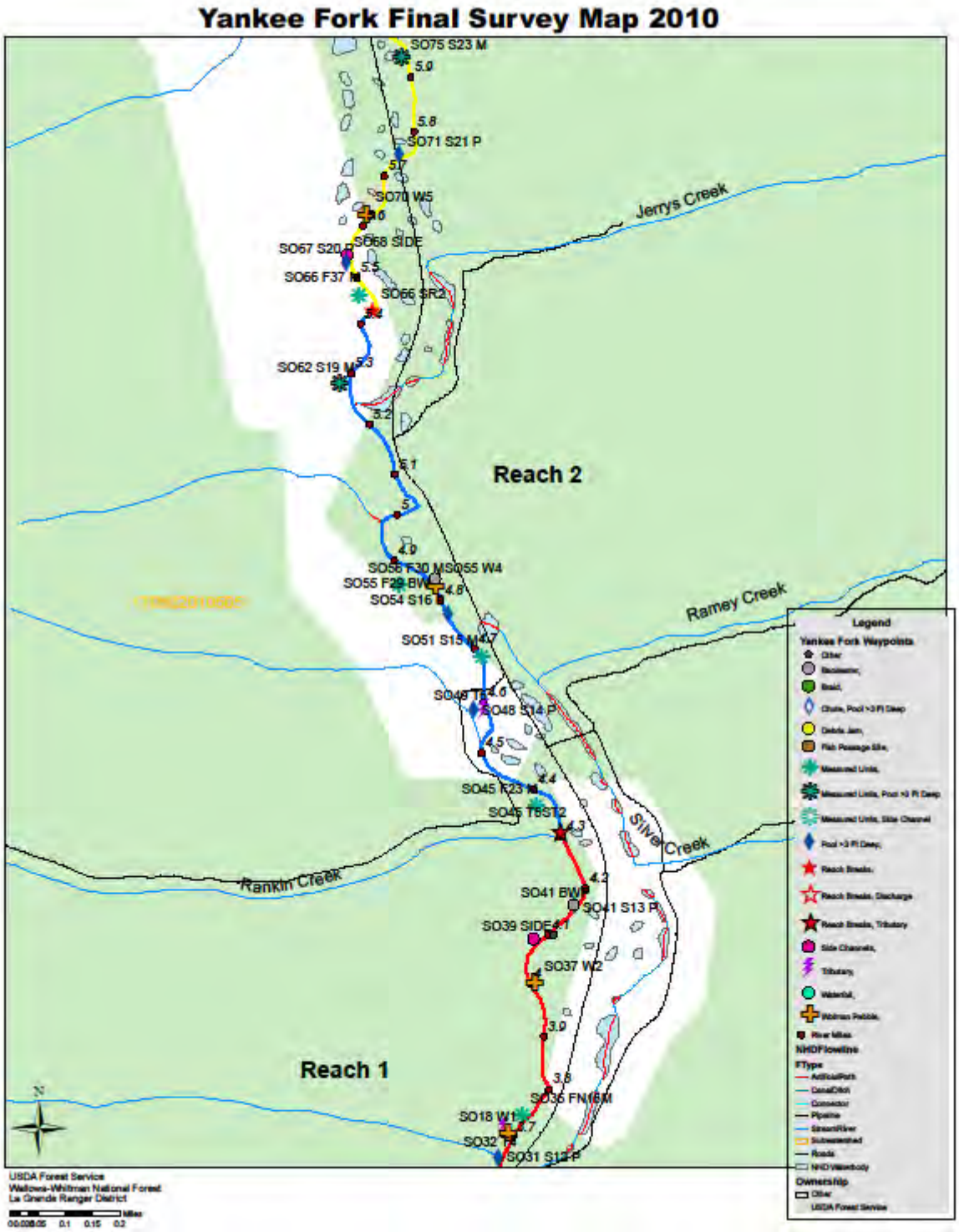
Map 1. Yankee Fork Stream Survey – Final Survey Map



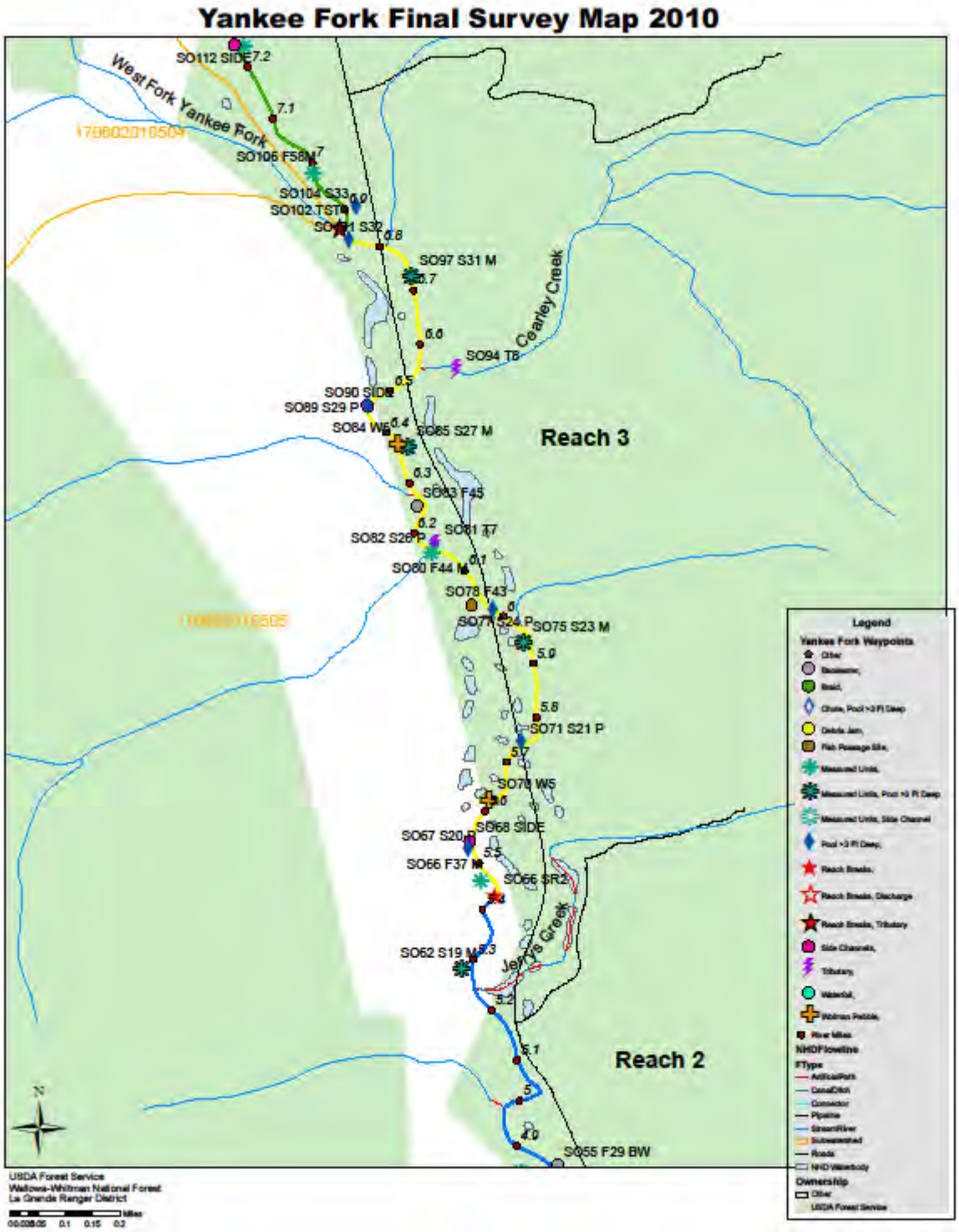
Map 2. Yankee Fork Stream Survey – Reach 1



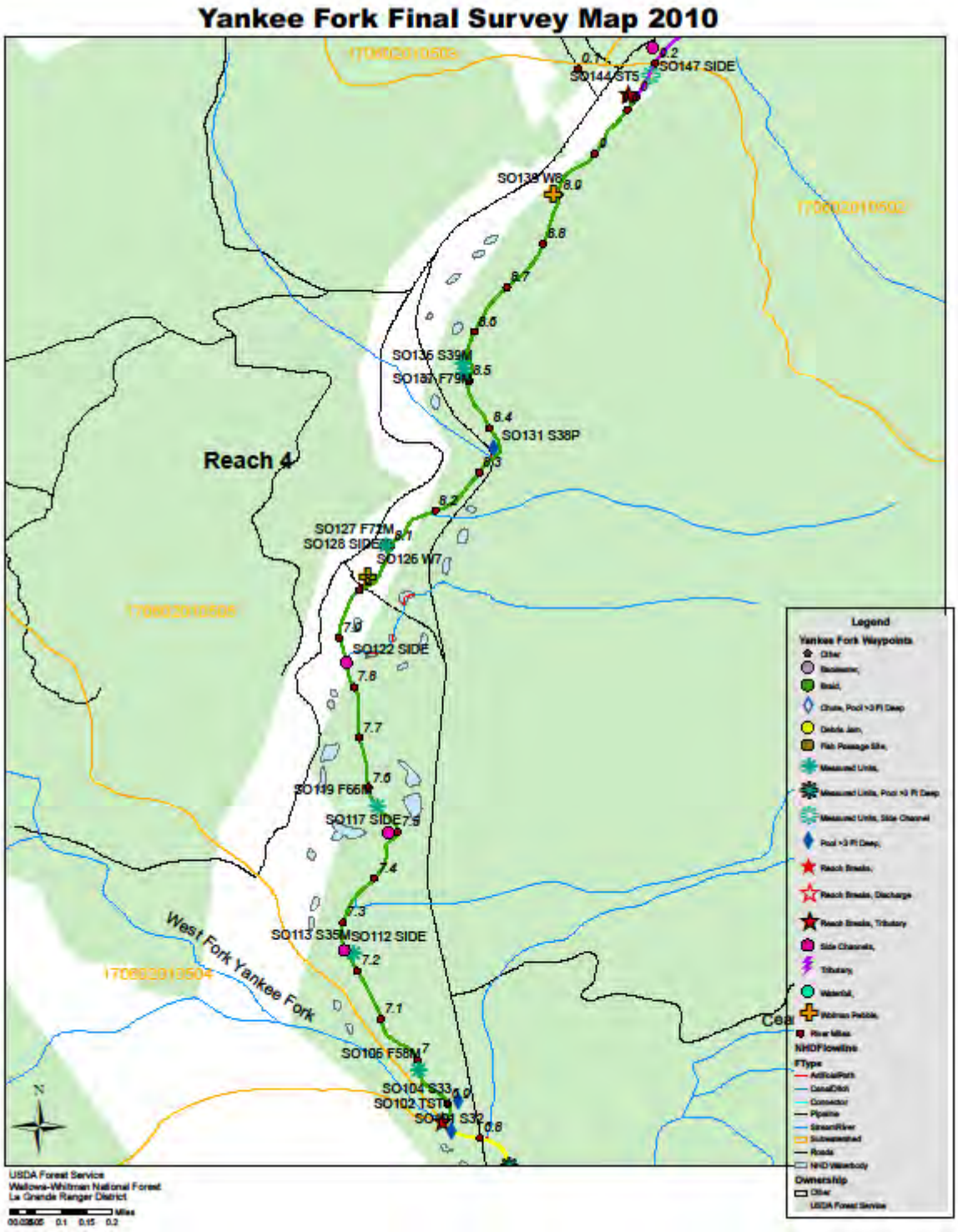
Map 3. Yankee Fork Stream Survey – Reach 2



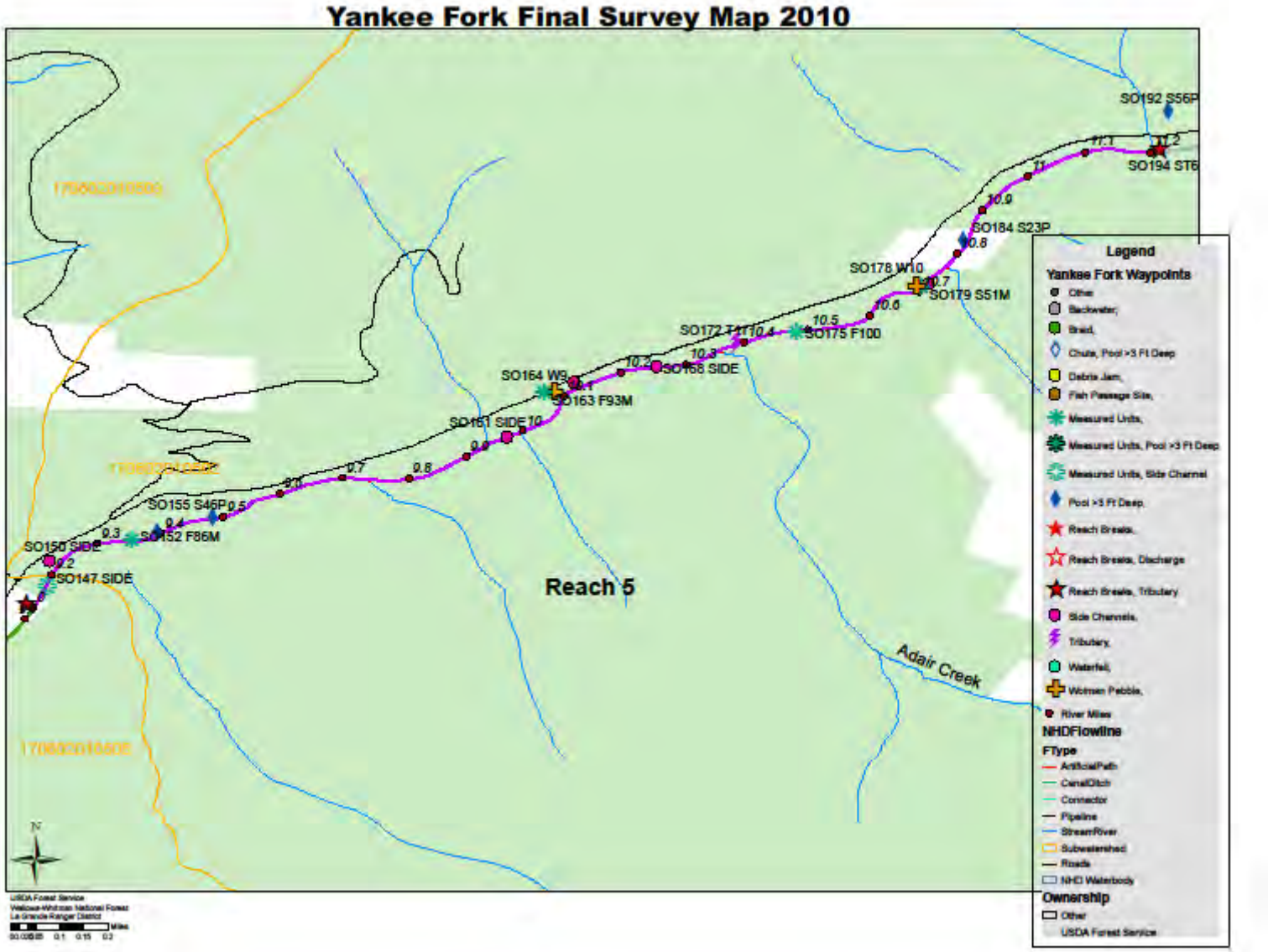
Map 4. Yankee Fork Stream Survey – Reach 3



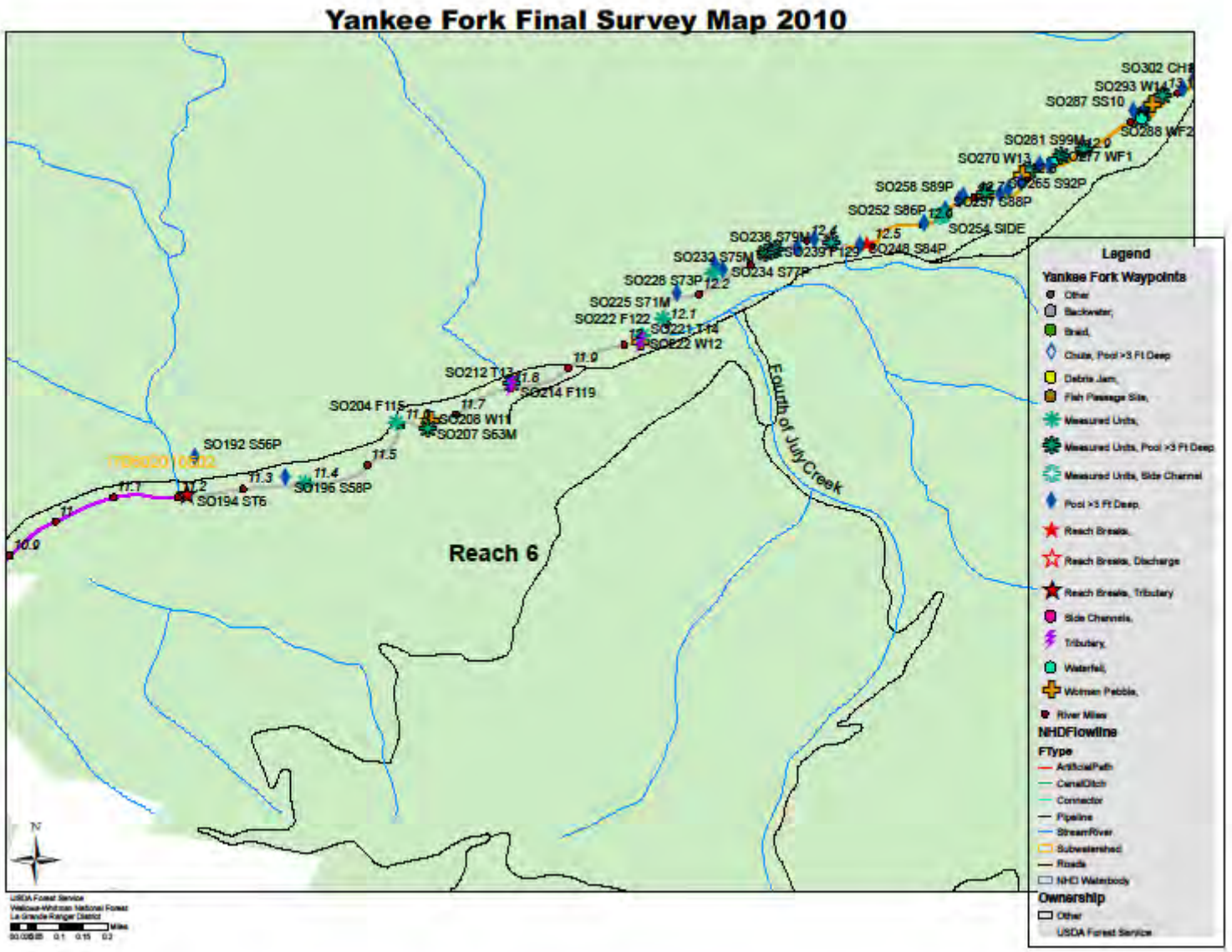
Map 5. Yankee Fork Stream Survey – Reach 4



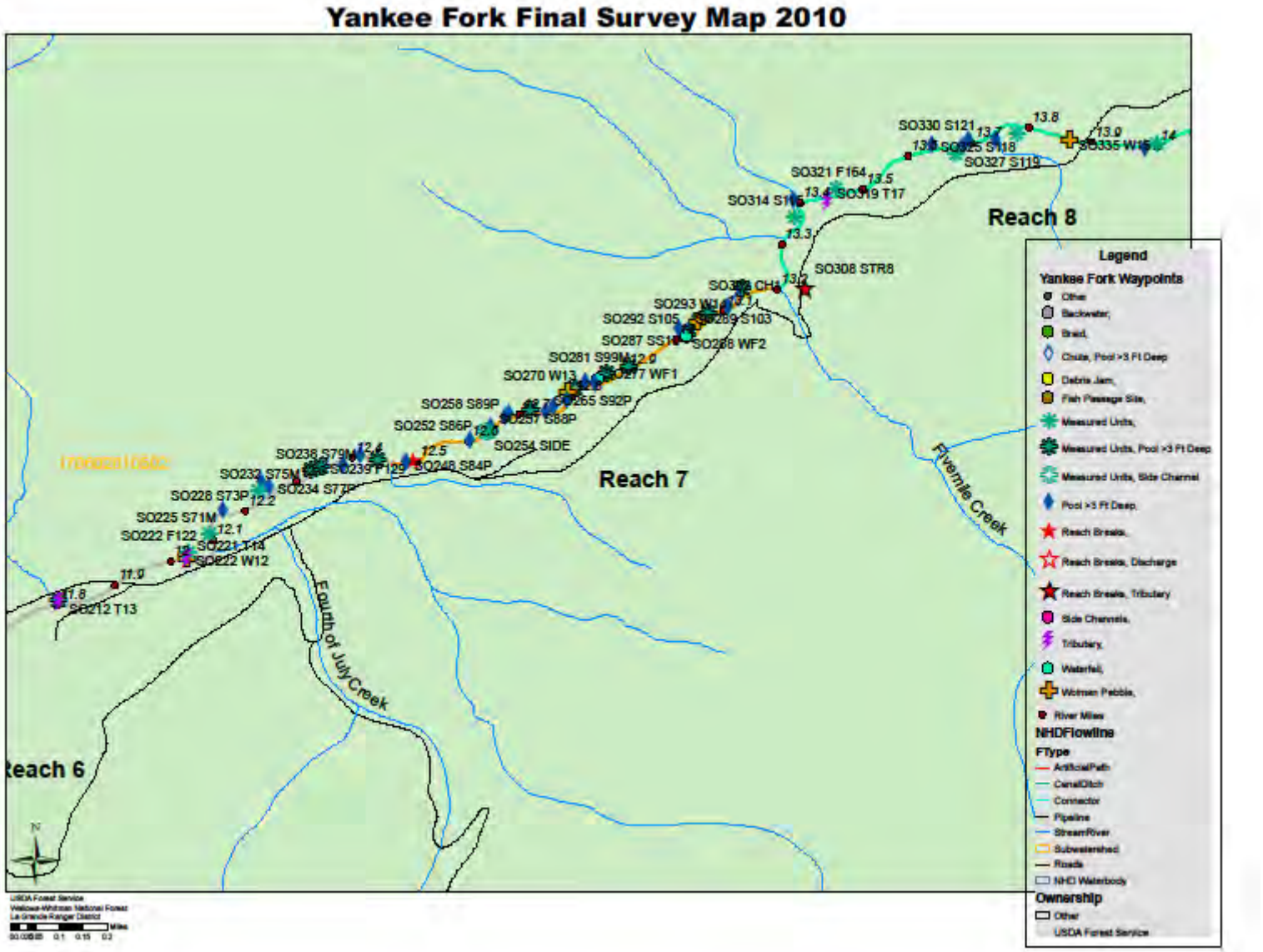
Map 6. Yankee Fork Stream Survey – Reach 5



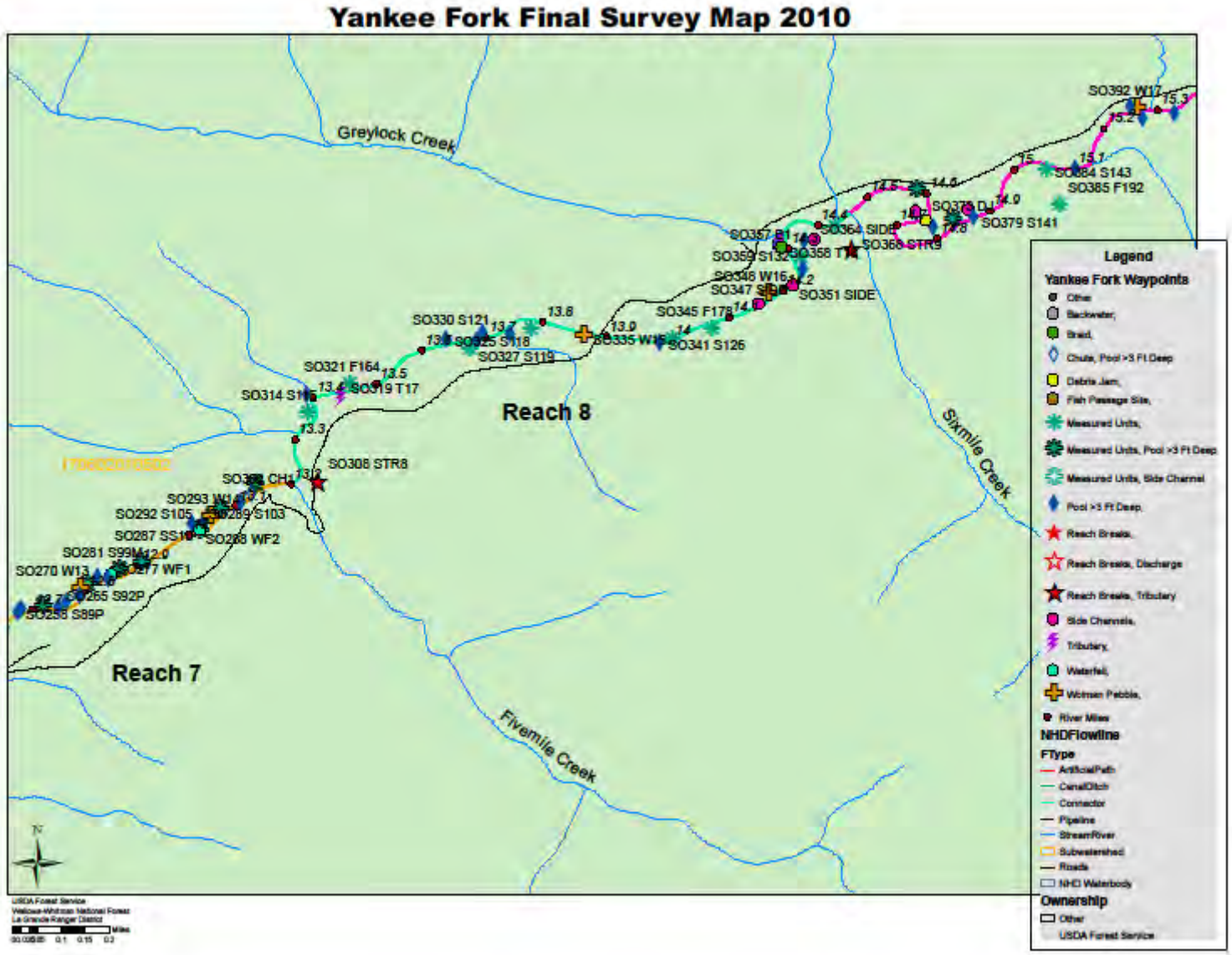
Map 7. Yankee Fork Stream Survey – Reach 6



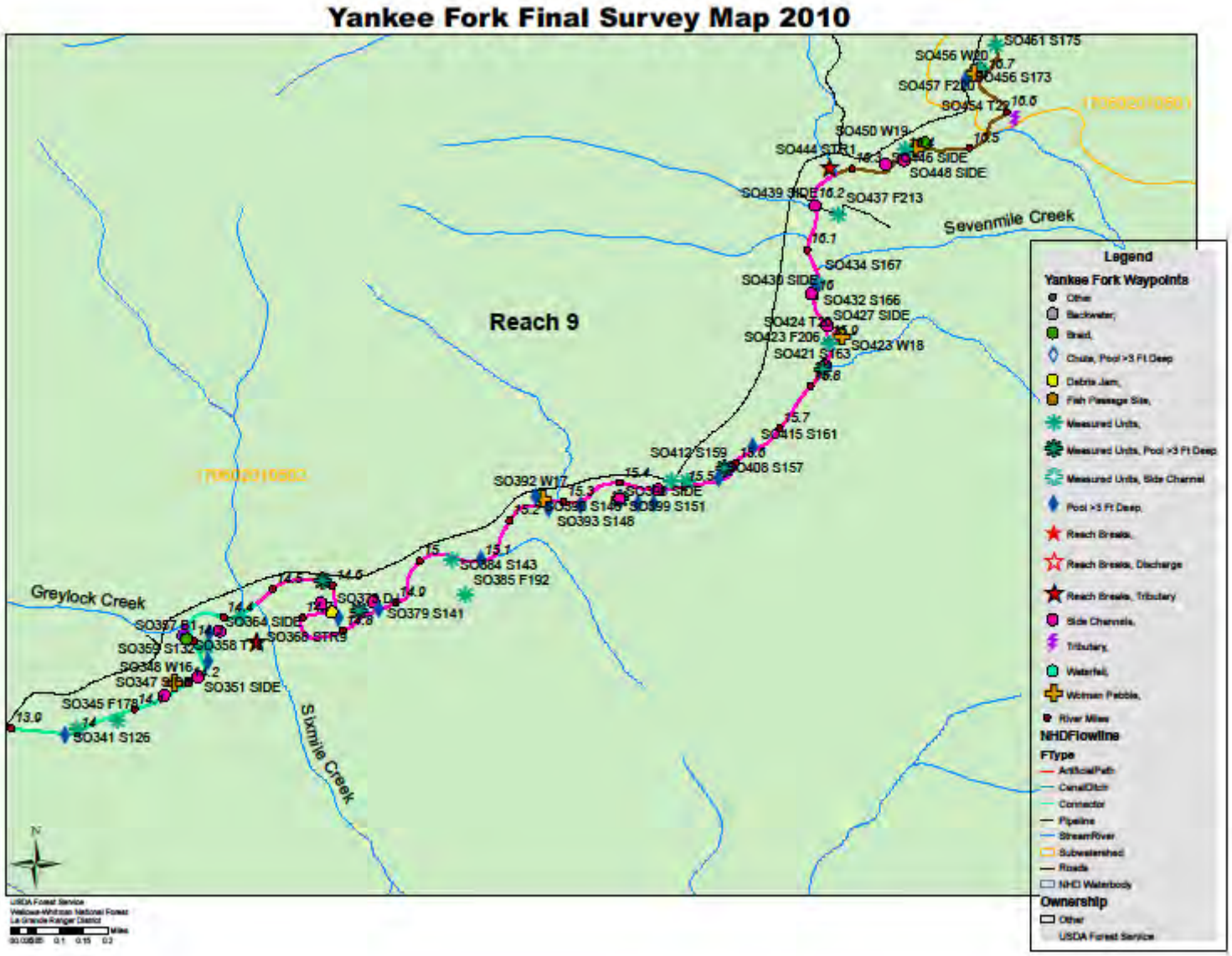
Map 8. Yankee Fork Stream Survey – Reach 7



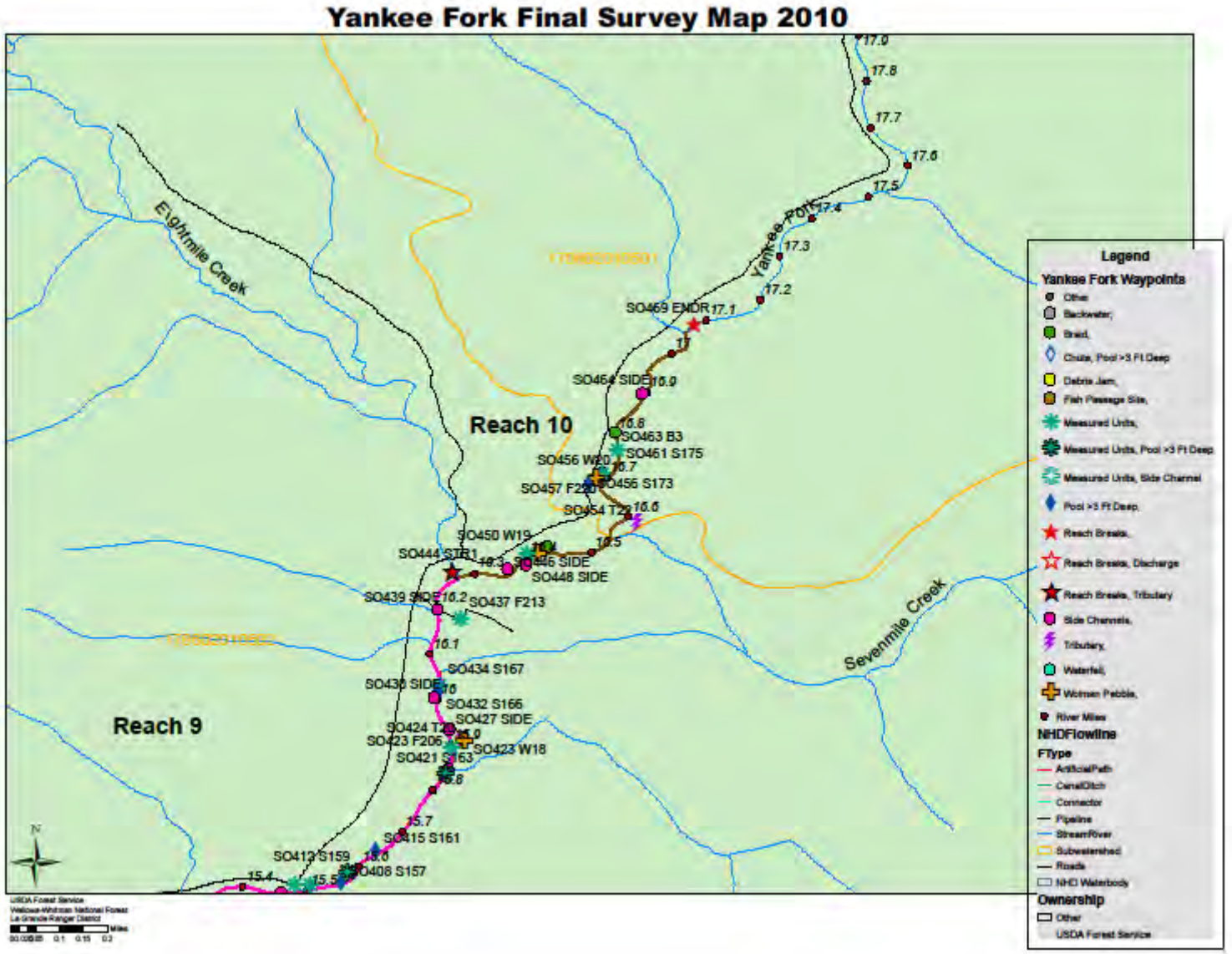
Map 9. Yankee Fork Stream Survey – Reach 8



Map 10. Yankee Fork Stream Survey – Reach 9



Map 11. Yankee Fork Stream Survey – Reach 10



APPENDIX C – Photos & Raw Data Sheets

Appendix C

YANKEE FORK

STREAM SURVEY PHOTOS

September 13th – 19th, 2010

SO 1 – Start of survey, upstream

SO 1 – Start of survey, downstream

SO 8 – Tributary #1, left bank

SO 9 – Pool, 3’ deep

SO 17 – Tributary #2, right bank (downstream)

SO 27, 28 – Tributary #4, flows from culvert on left bank

SO 28 – Tributary #3, LB, looking upstream at culvert

SO 28 – Tributary #3, looking downstream at culvert

SO 28 – Tributary #3, passage is available for first 3000’

SO 28 – Up tributary #3, fish passage site

SO 32 – Tributary #4, right bank

SO 45 – Start of reach 2

SO 46 – Unstable, right bank

SO 49 – Tributary #6, left bank

SO 66 – Start of reach 3

SO 68 – Of side channel, downstream below fish passage site

SO 68 – Side channel, downstream near exit at SO 78

SO 68 – Of side channel, downstream at ponds and fish passage site

SO 68 – Of side channel, downstream at ponds below passage site

SO 68 – Of side channel, downstream immediately below fish passage site

SO 68 – Of side channel, upstream at passage site

SO 76 – side channel, exits SO 93, with beaver activity

SO 76 – Side channel

SO 81 – Tributary #7, right bank

SO 90 – Debris jam in side channel

SO 90 – Side channel on other side of dredge tailings near SO 101

SO 90 – Of side channel, fish passage site downstream

SO 90 – Of side channel, intermittent flow upstream

Side channel, exits SO 93

SO 94 – Tributary #8, flows into side channel on left bank

SO 102 – Tributary #9, right bank, West Fork Yankee Fork, fish trap

SO 103 – Start of reach 4

SO 142, 143 – Pool and tributary #10, right bank, and end of reach 4

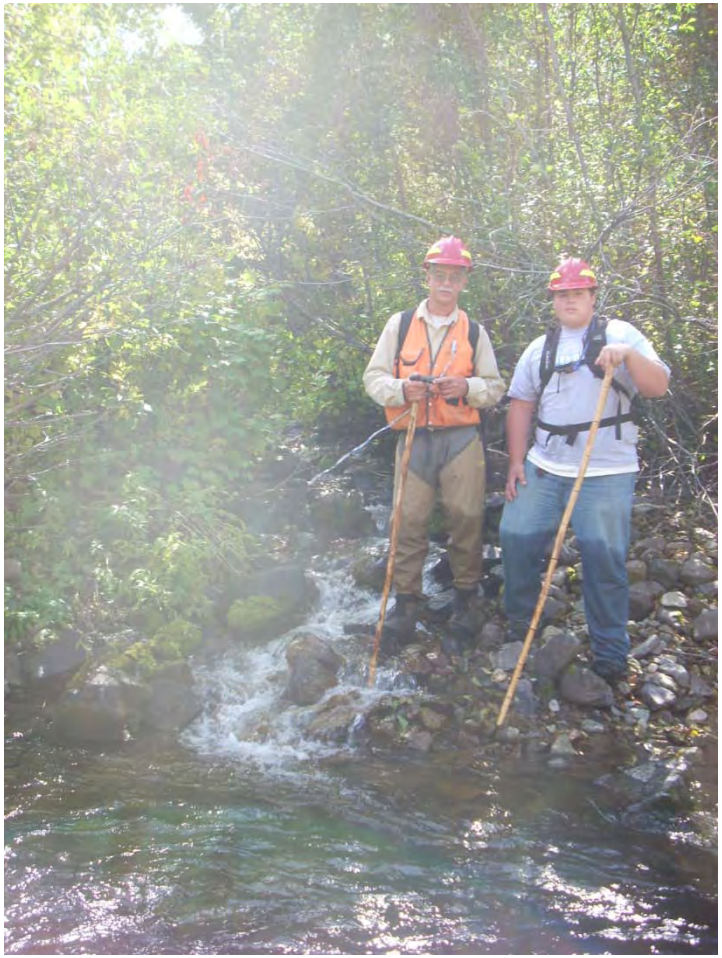
SO 144 – Start of reach 5

SO 146 – Debris jam

SO 148 – Debris, looking downstream

SO 165 – Heavy equipment crossing

SO 172 – Tributary #11, left bank



SO 192 - Pool

SO 192, 193 – End of reach 5, downstream

SO 193 – Tributary #12, right bank, end of reach 5

SO 194 – Start of reach 6

SO 195, 196

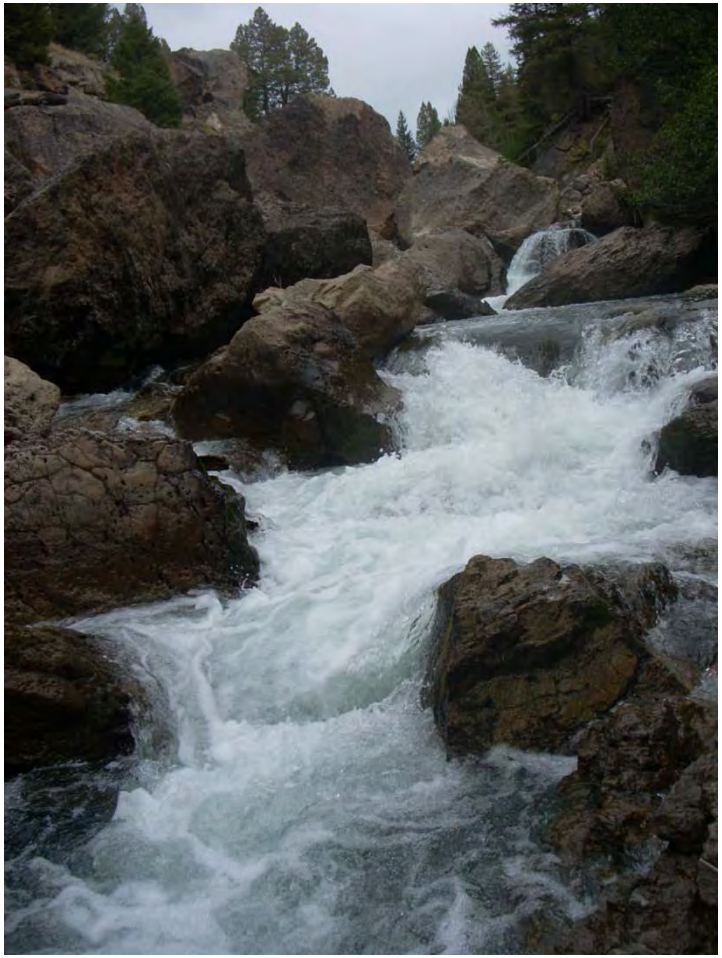
SO 212 – Tributary #13, right bank

SO 223 – Tributary #15, left bank, Fourth of July Creek

SO 250 – Dry tributary, left bank, end of reach 6

SO 251 – Start of reach 7

SO 274 – Cascade



SO 287 – 18’ deep pool

SO 288 – Waterfall #2 plunges in to 18’ pool

SO 295 - Pool

SO 296 – Cascade, view from above

SO 298 - Pool

SO 306, 307 – Tributary, left bank, end of reach

SO 308 – Start of reach 8

SO 319 – tributary #17, left bank

SO 355 – Greylock Creek washout

SO 357 – Greylock Creek washout and unstable banks (downstream)

SO 357 – Braid #1

SO 357 – Greylock washout, downstream

SO 358 – Tributary #18, Greylock Creek

SO 358 – Tributary #18, Greylock Creek

SO 359, 360 – debris jam and washouts

SO 366, 367 – Tributary #19, left bank, Sixmile Creek, end of reach 8

SO 368 – Start of reach 9

SO 370 – Washed out channel and debris

SO 370 – Debris jam

SO 371 – Backwater, left bank

SO 373 – Debris jam

SO 373 – Unstable banks and washout, right bank

SO 374 – Old river channel, left bank

SO 374 – Debris, downstream

SO 374 – Unstable banks, left bank

SO 376 – Unstable, right bank

SO 378 – Debris jam and washout

SO 394 – Dry side channel, right bank

SO 403 – At exit of large dry side channel, right bank, would enter SO 395, (downstream)

SO 403, 404, 405 – stream and side channel

SO 410 – Side channel with beaver activity

SO 424 – Tributary #20, left bank

SO 424 – Tributary #20, left bank

SO 437, 438 – Fast water and side channel

SO 438, 439 – Side channels

SO 442, 443 – Tributary #21, right bank, Eightmile Creek, end of reach 9

SO 443 – Tributary #21, right bank, Eightmile Creek

SO 444 – Start of reach 10

SO 452 – Braid #2

SO 454 – Tributary #22, left bank

SO 463 – Braid #3

SO 469 – Dry tributary, right bank

SO 469 – End of 10 and survey, downstream

SO 469 – End of reach 10 and survey, upstream

SO 403 – Dry side channel, would exit from SO 403

SO 395 – dry side channel

FINAL REACH FORM Page: 1 of 5
R6-2500/2600-21

A. State ID B. County Custer C. Forest Salmon-Challis D. District Yankee Fork
E. Stream Name Yankee Fork
F. 4th HUC Code 17 . 06 . 02 . 01 5th 05 6th 05/02/01
G. USGS Quad Sunbeam, Custer, Elevenmile Creek
* Indicates a Forest Option

1 Reach Number	2 SO From	3 SO To	4 Start Date	5 End Date	6 Protocol	7 Observer	8 Recorder	9 Elevation Min (ft)	10 Elevation Max (ft)
1	1	44	9/13/10	9/13/10	R6 eastside AI	C. Mello	A. Flynn	6102	6174
11 *Stream Order	12 *Valley Type	13 *Flow Regime	14 Rosgen Class	15 Reach Length (ft)	16 Mapped Valley Width (ft)	17 *Discharge Type	18 Discharge (cfs)	19 Start Distance (RM From)	20 End Distance (RM To)
6	9	perennial	C	8773'	316'	metered	83.46	2.6	4.26
21 Mapped Valley Length (ft)	22 Mapped Channel Gradient (%)	23 Mapped Sinuosity Value	24. Reason for Reach Break: tributary enters, change in flow 25.*Inner Riparian Zone Width: 26. Remarks: Reach 1 ends at the confluence with Rankin Creek from the right bank						
8539'	0.8%	1.03							

1 Reach Number	2 SO From	3 SO To	4 Start Date	5 End Date	6 Protocol	7 Observer	8 Recorder	9 Elevation Min (ft)	10 Elevation Max (ft)
2	45	65	9/14/10	9/14/10	R6 eastside AI	C. Mello	S. Fiorito	6174	6203
11 *Stream Order	12 *Valley Type	13 *Flow Regime	14 Rosgen Class	15 Reach Length (ft)	16 Mapped Valley Width (ft)	17 *Discharge Type	18 Discharge (cfs)	19 Start Distance (RM From)	20 End Distance (RM To)
6	9	perennial	C	5998'	507	—	—	4.26	5.21
21 Mapped Valley Length (ft)	22 Mapped Channel Gradient (%)	23 Mapped Sinuosity Value	24. Reason for Reach Break: tributary enters (dry) 25.*Inner Riparian Zone Width: 26. Remarks: Reach 2 ends where Jerry's Creek would enter from the left bank						
5383'	0.6%	1.11							

FINAL REACH FORM Page: 2 of 5
R6-2500/2600-21

A. State ID B. County Custer C. Forest Salmon-Challis D. District Yankee Fork
E. Stream Name Yankee Fork
F. 4th HUC Code 17.06.02.01 5th 05 6th 05/02/01
G. USGS Quad Sunbeam, Custer, Elevenmile Creek
* Indicates a Forest Option

1 Reach Number	2 SO From	3 SO To	4 Start Date	5 End Date	6 Protocol	7 Observer	8 Recorder	9 Elevation Min (ft)	10 Elevation Max (ft)
3	66	102	9/14/10	9/14/10	R6 eastside AT	C. Mello	S. Fiorito	6203	6253
11 *Stream Order	12 *Valley Type	13 *Flow Regime	14 Rosgen Class	15 Reach Length (ft)	16 Mapped Valley Width (ft)	17 *Discharge Type	18 Discharge (cfs)	19 Start Distance (RM From)	20 End Distance (RM To)
6	9	perenial	C	7585'	510'	—	—	5.21	6.82
21 Mapped Valley Length (ft)	22 Mapped Channel Gradient (%)	23 Mapped Sinuosity Value	24. Reason for Reach Break: tributary enters, change in flow 25.*Inner Riparian Zone Width: 26. Remarks: Reach 3 enters at the confluence with West Fork Yankee Fork from the right bank						
6652'	0.7%	1.14							

1 Reach Number	2 SO From	3 SO To	4 Start Date	5 End Date	6 Protocol	7 Observer	8 Recorder	9 Elevation Min (ft)	10 Elevation Max (ft)
4	103	143	9/15/10	9/15/10	R6 eastside AT	C. Mello	A. Flynn	6253	6308
11 *Stream Order	12 *Valley Type	13 *Flow Regime	14 Rosgen Class	15 Reach Length (ft)	16 Mapped Valley Width (ft)	17 *Discharge Type	18 Discharge (cfs)	19 Start Distance (RM From)	20 End Distance (RM To)
5	9	perenial	C	11.935	457'	—	—	6.82	9.08
21 Mapped Valley Length (ft)	22 Mapped Channel Gradient (%)	23 Mapped Sinuosity Value	24. Reason for Reach Break: tributary enters, change in flow 25.*Inner Riparian Zone Width: 26. Remarks: Reach 4 ends at the confluence with Jordan Creek from the right bank. The dredge tailings end just upstream of the end of this reach & the valley floor narrows.						
11,477	1.0%	1.04							

FINAL REACH FORM
R6-2500/2600-21

A. State ID B. County Custer C. Forest Salmon-Challis D. District Yankee Fork

E. Stream Name Yankee Fork

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02/01

G. USGS Quad Sunbeam, Custer, Elevenmile Creek

* Indicates a Forest Option

1 Reach Number	2 SO From	3 SO To	4 Start Date	5 End Date	6 Protocol	7 Observer	8 Recorder	9 Elevation Min (ft)	10 Elevation Max (ft)
5	144	193	9/15/10	9/16/10	R6 eastside AI	C. Mello	A. Flynn	6368	6493

11 *Stream Order	12 *Valley Type	13 *Flow Regime	14 Rosgen Class	15 Reach Length (ft)	16 Mapped Valley Width (ft)	17 *Discharge Type	18 Discharge (cfs)	19 Start Distance (RM From)	20 End Distance (RM To)
5	9	perennial	C	11,066'	346'	—	—	9.08	11.18

21 Mapped Valley Length (ft)	22 Mapped Channel Gradient (%)	23 Mapped Sinuosity Value	24. Reason for Reach Break: tributary enters, change in flow 25.*Inner Riparian Zone Width: 26. Remarks: Reach 5 ends where Swift Gulch enters from the right bank
10,391	1.3%	1.06	

1 Reach Number	2 SO From	3 SO To	4 Start Date	5 End Date	6 Protocol	7 Observer	8 Recorder	9 Elevation Min (ft)	10 Elevation Max (ft)
6	194	250	9/17/10	9/17/10	R6 eastside AI	C. Mello	S. Fiorito	6493	6588

11 *Stream Order	12 *Valley Type	13 *Flow Regime	14 Rosgen Class	15 Reach Length (ft)	16 Mapped Valley Width (ft)	17 *Discharge Type	18 Discharge (cfs)	19 Start Distance (RM From)	20 End Distance (RM To)
5	8	perenial	C	6793	293'	—	—	11.18	12.47

21 Mapped Valley Length (ft)	22 Mapped Channel Gradient (%)	23 Mapped Sinuosity Value	24. Reason for Reach Break: tributary enters (dry at time of survey) & valley floor becomes confined by rock 25.*Inner Riparian Zone Width: 26. Remarks: Reach 6 ends at the confluence with a small tributary from the left bank that was dry at the time of the survey. Upstream the valley floor becomes more confined & the gradient increases
6267'	1.3%	1.08	

FINAL REACH FORM Page: 4 of 5
R6-2500/2600-21

A. State ID B. County Custer C. Forest Salmon-Challis D. District Yankee Fork
E. Stream Name Yankee Fork
F. 4th HUC Code 17.06.02.01 5th 05 6th 05/02/01
G. USGS Quad Sunbeam, Custer, Elevenmile Creek
* Indicates a Forest Option

1 Reach Number	2 SO From	3 SO To	4 Start Date	5 End Date	6 Protocol	7 Observer	8 Recorder	9 Elevation Min (ft)	10 Elevation Max (ft)
7	251	307	9/17/10	9/18/10	R6 eastside AI	C. Mello	S. Fiorito	6588	6706
11 *Stream Order	12 *Valley Type	13 *Flow Regime	14 Rosgen Class	15 Reach Length (ft)	16 Mapped Valley Width (ft)	17 *Discharge Type	18 Discharge (cfs)	19 Start Distance (RM From)	20 End Distance (RM To)
5	5	perennial	B	3988	108'	—	—	12.47	13.23
21 Mapped Valley Length (ft)	22 Mapped Channel Gradient (%)	23 Mapped Sinuosity Value	24. Reason for Reach Break: tributary enters & valley floor opens up, change in flow 25.*Inner Riparian Zone Width: 26. Remarks: Reach 7 ends at the confluence with Fivemile Creek from the left bank. This reach had a very confined valley floor with lots of bedrock & deep pools						
3969	2.9%	1.0							

1 Reach Number	2 SO From	3 SO To	4 Start Date	5 End Date	6 Protocol	7 Observer	8 Recorder	9 Elevation Min (ft)	10 Elevation Max (ft)
8	308	367	9/18/10	9/18/10	R6 eastside AI	C. Mello	A. Flynn	6706	6772
11 *Stream Order	12 *Valley Type	13 *Flow Regime	14 Rosgen Class	15 Reach Length (ft)	16 Mapped Valley Width (ft)	17 *Discharge Type	18 Discharge (cfs)	19 Start Distance (RM From)	20 End Distance (RM To)
5	9	perennial	C	6,667	360'	—	—	13.23	14.49
21 Mapped Valley Length (ft)	22 Mapped Channel Gradient (%)	23 Mapped Sinuosity Value	24. Reason for Reach Break: tributary enters, change in flow 25.*Inner Riparian Zone Width: 26. Remarks: Reach 8 ends at the confluence with Sixmile Creek from the left bank						
6211	0.9%	1.07							

FINAL REACH FORM
R6-2500/2600-21

Page: 5 of 5

A. State ID B. County Custer C. Forest Salmon-Challis D. District Yankee Fork
E. Stream Name Yankee Fork
F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02/01
G. USGS Quad Sunbeam, Custer, Elevenmile Creek

* Indicates a Forest Option

1 Reach Number	2 SO From	3 SO To	4 Start Date	5 End Date	6 Protocol	7 Observer	8 Recorder	9 Elevation Min (ft)	10 Elevation Max (ft)
9	368	443	9/19/10	9/19/10	R6 eastside AI	C. Mello	A. Flynn	6772	6818

11 *Stream Order	12 *Valley Type	13 *Flow Regime	14 Rosgen Class	15 Reach Length (ft)	16 Mapped Valley Width (ft)	17 *Discharge Type	18 Discharge (cfs)	19 Start Distance (RM From)	20 End Distance (RM To)
5	9	perennial	C	9731	417	—	—	14.49	16.29

21 Mapped Valley Length (ft)	22 Mapped Channel Gradient (%)	23 Mapped Sinuosity Value	24. Reason for Reach Break: tributary enters, change in flow 25.*Inner Riparian Zone Width: 26. Remarks: Reach 9 ends at the confluence with Eightmile Creek from the right bank
7670	0.5%	1.23	

1 Reach Number	2 SO From	3 SO To	4 Start Date	5 End Date	6 Protocol	7 Observer	8 Recorder	9 Elevation Min (ft)	10 Elevation Max (ft)
10	444	469	9/19/10	9/19/10	R6 eastside AI	C. Mello	A. Flynn	6818	6863

11 *Stream Order	12 *Valley Type	13 *Flow Regime	14 Rosgen Class	15 Reach Length (ft)	16 Mapped Valley Width (ft)	17 *Discharge Type	18 Discharge (cfs)	19 Start Distance (RM From)	20 End Distance (RM To)
4	9	perennial	C	4,145	457'	—	—	16.29	17.08

21 Mapped Valley Length (ft)	22 Mapped Channel Gradient (%)	23 Mapped Sinuosity Value	24. Reason for Reach Break: tributary enters (dry at time of survey) 25.*Inner Riparian Zone Width: 26. Remarks: Reach 10 ends at the confluence with a tributary from the right bank that was dry at the time of the survey. This was the end of the survey.
3,702'	1.3%	1.20	

Reach: 1

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 09/13/2010

Stream Name: Yankee Fork Sampling Frequency: F [illegible] S 1/4 Contacts: REC: A. Flynn OBS: C. Mello

Channel Units								Woody Material			Unstable Banks			Undercut Banks				
Seq	Channel Unit Type & No.	Max Depth	Avg Depth	Pool Crest Depth	Formed By	Wet Width	Length	S	M	L	Length Left	Length Right	Total Length	Length Left	Length Right	Total Length	Picture	Comments:
	Start Survey				Yankee		Fork		9/13/10								① upstream	time: 1226
																	② dnstrm surveyors	temp: 9°C
					GPS	N	44° 17.837		W	114°	42.954		±54 ft					
1	S1	3.5		1.4	BO	33	302		'	"								
2	F1	3.5	2.0			30	163											pp 3.5 large granite slabs
3	F2	3.0	2.2		MEASURED		+150	ON BACK			<39 ft wide				N 44° 17.853 W 114 43.876			pp 3.0
4	S2	4.5		1.5	BO	32	156											large Boulder
5	F3	3.3	2.2			42	284											fish-small pp 3.3
6	S3	5.0		1.4	BO	40	90											fish
	MS3							N 44°	17.892		W	114°	43.179	±21 ft				
7	S4	5.0		1.5	BO	40	147											
8	T1	LB	Coords		N 44°	17.904		W 114°	43.179		Contrib:			<5%		time 1320	① A @ trib ② C @ bzol	Gradient 15%
9	S5	3.0		2.0	BO	27	134											
10	F4	2.8	2.2			30	100											
11	S6	3.3		2.0	BO	32	102	N 44°	17.726'	W	114°	43	245'	±	19 ft			
12	S7	5.5		2.0	BO	34	105											large granite slabs
	MS7							N 44°	17.930'	114	43.270	±	18 ft					
13	F5	2.4	1.5			28	78											
14	S8	4.0		1.0	BO	26	82		N 44°	17.949'		W	114°	43.289'		±54 ft		pp 2.4
15	F6	3.2	2.0			35	400											
16	F7	2.4	1.3			33	263											pp 3.2
* 17	T2	RB	Contrib.	<2%	Gradient		60%			N 44°	18.066	W 114°		43.318			① pic of trib	
18	~~F8~~ FN8	2.0	1.2			64	500		N 44° 18.[illegible]	114° 43.[illegible]		30	30		Backwater RB			fish trap wolmann
19	FN9	1.5	.7			66	500				±[illegible]							trail crossing
	MFN9						N 44° 18.230	W 114° 43.218'			±31 ft							
20	F10	1.7	1.0			63	450	1141										fish
21	SIDES	.6		RB		15	75		enters SO#20, exits SO# ~~20~~ 22									

Channel Unit Codes: FT = fast turbulent, FN = fast non-turbulent, SS = scour (plunge) pool, SD = dam pool, SIDES = side channel slow, SIDEF = side channel fast, D = dry channel
Special Cases: ARTIF = culvert or dam, WF = waterfall, CH = chute M = marshland
Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

N 44° 18.270' W 114° 43.233' ±22 ft

MF16

Reach 1

	Bankfull Measurements						Riparian Vegetation			Shade	Streambed Substrate = 100%					GPS	Water Temp		N 44° 17.850 + 23 W 114° 43.076
Seq	BF Width	1	2	3	Max BF Depth	FPW	Class	Over story	Under story	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
3	48	4.4	3.7	3.6	4.4	62	GF	GF	CD	84	40	10	20	20	10		9°	~~1226~~	Stream alongside HWY
6							LT	CD	HA	73	35	15	20	20	10		9°	1310	
12							ST	HA	GF	62	5	0	5	40	50		9°	1346	
19	81	1.2	2.1	2.5	2.5	102	~~ST~~ SS	HA	GF	10	50	30	20	0	0		11	1507	

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large trees, MT = mature trees
Hardwood: HA = alder, HC = cottonwood, HD = dogwood, HQ = quaking aspen, HW = willow, HR = rocky mountain maple, HH = black hawthorn, HS = sagebrush, HW = wild rose, HSB = service berry, HHB = huckleberry, HM = mock orange, HCU = currant, HX = other/unknown
Conifer: CD = Douglas fir, CW = white fir, grand fir, CA = subalpine fir, CP = ponderosa pine, CL = lodgepole pine, CJ = juniper, CWL = western larch, CX = other/unknown

Reach: 1/2 * indicates edit by C. Mello

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 9/13/2010

Stream Name: Yankee Fork Sampling Frequency: F 1/7 S 1/4 Contacts: REC: A. Flynn OBS: C. Mello

Channel Units								Woody Material			Unstable Banks			Undercut Banks				Pictures have ⊕
Seq	Channel Unit Type & No.	Max Depth	Avg Depth	Pool Crest Depth	Formed By	Wet Width	Length	S	M	L	Length Left	Length Right	Total Length	Length Left	Length Right	Total Length	~~Picture~~ Comments	Comments:
22	S9	3.3		1.0		60	85		N 44°	18.295°		W 114°	43.233'	±18			water seeping LB	big side RB
23	F11	3.0	1.0			51	257				—	75	75				big pool LB	backwater RB pp3
24	SIDES	.6				6	20	~~enters~~	exits SO#23					enters SO#23				fish present
25	S10	4.0		1.2		55	120		N 44 18.368°		W 114° 43.220'		±23ft				→ N 44 18.295° W114 43.233'	
26	F12	2.2	1.0	~~1.0~~		63	157											dredge tailings
27	SS11	8.0		1.0		150	100	MEASURED!			ON BACK						① pool w/ cnv. picture	dead beaver STINKS
28	T3	LB	Contrib.	<2%		Gradient 1%			N 44°	18.402		W114°	43.168				picture	
29	F13	3.0	1.5			45	520			*big split in channel/gravel bar							pp3.0	pond LB & across road
30	SIDEF	LB	Flows from under dredge piles – no numbers											enters SO# 29				contributes w/ SC
31	S12	4.0		.7		57	455		N 44° 18.524'		W 114 43.132'		±91 ft					→ N44° 18.423' W114° 43.1
32	T4	RB	Contribution			<2%	Gradient 6%			Temp 10°	1610 N 44°		18.571	W114° 43.122			① chris	→ backwater RB
33	FN14	2.3	1.2			22	200											
34	F15	1.0	.7			48	100											
35	FN16	~~1.8~~	1.0			53	500											
	MFN16		On back						N 44°	18.593'		W 114° 43.093'		±20ft				
36	FN17	2.2	1.5			48	400											
37	F18	2.0	1.2			50	500										→ in SO# 41	→ N 44° 18.879' W 114° 43.042' ±7
38	F19	6.0	2.0			57	500		(backwater pond)			N 44° 18.924' W 114° 43.010'	±9 ft					pocket ~6ft dp ~~backwater~~ pool LB
39	SIDEF	.6				20	90		enters SO# 38			flows	underground				~~next fast~~	N44° 18.872' ↑ beaver dam
40	F20	1.5	1.0			50	161		→ exits SO#43			and T9					→ SO# 42	W114° 43.074' ±13
41	S13	4.2		1.3		45	100		N 44°	18.926'		W 114° 43.010'	±9ft					
42	F21	2.1	1.5			72	400		Silver Creek flows into pools on LB									dry side RB
43	FN22	1.5	.8			69	164											
44	T45	RB	Contrib.	<2%		Gradient 3%					N 44° 19.044		W114° 43.031				① pic of trib.	8°C
—	END SURVEY FOR EVENING —								1754		10.5°C			9/13/2010			End of Reach 1	
	Start	Reach 2							9/14/2010								10:00 am	① Pic up stream 7°C
45	F23	3.5	1.8			70	407											pp. 3.5

Channel Unit Codes: FT = fast turbulent, FN = fast non-turbulent, SS = scour (plunge) pool, SD = dam pool, SIDES = side channel slow, SIDEF = side channel fast, D = dry channel
Special Cases: ARTIF = culvert or dam, WF = waterfall, CH = chute M = marshland
Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

Reach 1/2

	Bankfull Measurements						Riparian Vegetation			Shade	Streambed Substrate = 100%					GPS	Water Temp		
Seq	BF Width	1	2	3	Max BF Depth	FPW	Class	Over story	Under story	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
27							GF	GF	HA	10	70	20	10	0	0				
35	87	2.2	2.4	1.1	2.4	113	ST	CD	HA	14	20	40	40	0	0		11	1537	N44°18.382' W114°43182'
																	12.5	1657	

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large trees, MT = mature trees
Hardwood: HA = alder, HC = cottonwood, HD = dogwood, HQ = quaking aspen, HW = willow, HR = rocky mountain maple, HH = black hawthorn, HS = sagebrush, HW = wild rose, HSB = service berry, HHB = huckleberry, HM = mock orange, HCU = current, HX =other/unknown
Conifer: CD = Douglas fir, CW = white fir, grand fir, CA = subalpine fir, CP = ponderosa pine, CL = lodgepole pine, CJ = juniper, CWL = western larch, CX = other/unknown

Reach: 2 | 3

Channel Unit Form -- BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 9/13/2010

Stream Name: Yankee Fork Sampling Frequency: F 1/7 S 1/4 Contacts: REC: S. Fortino OBS: C. Mellin

Channel Units								Woody Material			Unstable Banks			Undercut Banks				
Seq	Channel Unit Type & No.	Max Depth	Avg Depth	Pool Crest Depth	Formed By	Wet Width	Length	S	M	L	Length Left	Length Right	Total Length	Length Left	Length Right	Total Length	~~Comment's Picture~~	Comments:
/	M F23			On Beaver				N	44°	19.087'	W	114°	43.0	74'	± 46	4		
46	FN 24	2.5	1.5			54	320											
47	F25	1.8	1.0			67	489										PP, 2.5	Cabin stream
48	S 14	3.2		.8		47	296		N 44°	19.238'	W 114°	43.171'	± 17					
49	~~T 26~~	N 44°	19.240'	W 114°	43.159'												OPIC tr'b	
50	F26	1.5	1.0			60	300										7°C Less 5%	LB 3% Gradient 1100
51	S15	3		1		51	200											
/	MS15		On	Back					N 44° 19.	324'	W 114°	43.158'	± 28ft					Fish
52	F27	1	.7			75	168											
53	FN 28	2	1.4			45	121				0	30ft	30	0	30ft	30		
54	S 16	3.2		2.0		49	183		fresh beaver activity			50ft	50	0	50ft	50	N 44° 19.391'	W 114° 43.212'
55	F29	2.0	1.2			57	500	PP	3.5	b/w ✓	beaver activity					LB	N 44° 19.446'	W 114° 43.231' ± 7ft
56	F30	2.6	1.3			70	168				0	50ft	50					
/	MF30		On	Back				N	44° 19.	477'	W	114°	43.290'	± 21ft				
57	S17	~~2m~~ 24		1.3		50	77				0	50ft	50					
58	F31	2.0	1.3			75	500											
59	S18	3.0		1.0		48	494											PP, tr'b LB
60	F32	2.0	1.5			35	500											Cable in stream
61	F33	2.0	1.2			75	163				5ft	0	50					Cable
62	S19	3.5		1.3		50	215	N 44° 19.758' W 114° 43.384'			0	100ft	100	N 44° 19.691'		W 114° 43.352'		Fish Post 1.6 ft Reference Point
/	MS19			Ba	Back						± 1 Eff							
63	F34	2.0	1.5			60	251											Several masks
64	FN 35	2.0	1.5			55	152											
65	F36	1.7	1.2			63	200											
	End	Reach 2																@ Pic ur Stream
	Start	Reach 3		N 44°	19.875'	W 114°	43.351'											
66	F37	5.0	2.0			60	400										9/14/10	
											0	150ft	150					PP, 5.0

Channel Unit Codes: FT = fast turbulent, RN = fast non-turbulent, SS = scour (plunge) pool, SD = dam pool, SIDES = side channel slow, SIDEF = side channel fast, D = dry channel
Special Cases: ARTIF = culvert or dam, WF = waterfall, CH = chute M = marshland
Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

~~MF 29~~ ~~MF30~~ MF 37 Reach 2 / 3

	Bankfull Measurements						Riparian Vegetation			Shade	Streambed Substrate = 100%					GPS	Water Temp		
Seq	BF Width	1	2	3	Max BF Depth	FPW	Class	Over story	Under story	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
48	105	2.2	2.5	2.2	2.5	150	HA	SS	SS	15%	0	40	60	0	0		7	10:21	
51							HW	SS	GF	8%	10	50	40	0	0		8	11:21	
56	79	1.3	2.3	2.6	2.6	129	HW	SS	GF	77%	0	25	70	5	0		9.5	12:31	
62							HW	SS	GF	30%	0	30	65	5	0		10	13:10	

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large trees, MT = mature trees
Hardwood: HA = alder, HC = cottonwood, HD = dogwood, HQ = quaking aspen, HW = willow, HR = rocky mountain maple, HH = black hawthorn, HS = sagebrush, HW = wild rose, HSB = service berry, HHB = huckleberry, HM = mock orange, HCU = currant, HX =other/unknown
Conifer: CD = Douglas fir, CW = white fir, grand fir, CA = subalpine fir, CP = ponderosa pine, CL = lodgepole pine, CJ = juniper, CWL = western larch, CX = other/unknown

Next F38 MF ~~F44~~ F51

Reach: 3

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 9/13/2010

Stream Name: Yankee Fork Sampling Frequency: F 1/7 S 1/4 Contacts: REC: Florito OBS: [illegible]

Channel Units								Woody Material			Unstable Banks			Undercut Banks				
Seq	Channel Unit Type & No.	Max Depth	Avg Depth	Pool Crest Depth	Formed By	Wet Width	Length	S	M	L	Length Left	Length Right	Total Length	Length Left	Length Right	Total Length	Comments ~~Picture~~	Comments:
/	MF37			On	Back								N44°19.900'			W	114°43.354'	±27ft
67	S20	4.2		1.3		50	167		Beaver activity			60ft	60	N	44°	19.951'	W	114°43.374' ±35ft
68	Side F	.8ft		RB		5	1625	Enters	(S20)	Exits	Cd	# 78				N	44°19.962'	W 114°43.371' ±7ft
69	F38	2.0	1.3			45	500	SO#	67		100	0	100				See	* SO#65 on Back
70	F39	2.0	1.3			52	495											
71	S21	8.0		1.7		45	300			N 44°	20.122'		W114	43.290'		±35ft	bridge crossing	
72	F40	1.5	1			43	335											
73	S22	2.5		1.2		45	300											
74	F41	1.8	1			60	194											
75	S23	3.3		1.5		38	178											
/	MS23		On	Back					N44°20.278'				W114°43.285'			±10ft		
76	F42	1.5	1			54	220			*	SC	*	flows	in	here	exits	SO#93 *	
77	S24	5.0		1.2		30	231		Bridge crossing					N 44°20.333'		W	114°43.335'	±14
78	F43	2.2	1.5			25	291		fish passage		Site	RB		dry	channel		N44°20.338'	W114°43.358' ±14ft
79	S25	3.0		1.3		36	207											
80	F44	2.2	1.5			61	165											
/	MF44			On	Back			N44°20.425'					W114	43.432'		±14ft		
81	Trib 67	N 44°	20.436	W	114°	43.428		flows	into SO#82		30%	gradient		Less	than 2%		8°C 16:50	OPC Trib
82	S26	3.5		1.5		38	153				50ft	0	50		N	44°	20.436'	W 114°43.428'
83	F45	2.1	1.3			60	500	Pond	LB		50ft	100ft	150		N 44°	20.496'	W44°	43.455' ±14ft
84	F46	2.0	1.2			54	360				200ft	150ft	350	0	150ft	150	OPC of Banks	
85	S27	3.5		1.5		45	200											
/	MS27		On	Back				N	44°	20.590'		W114°	43.471'		±25			
86	F47	2	1.5			42	95											
87	S28	3		1.5		30	34											
88	F48	3	1.5			45	72											
89	S29	4	4	1.5		50	173		N 44	20.656'		~~W43~~	W	114°	43.	534	±98	PP 3.0

Channel Unit Codes: FT = fast turbulent, FN = fast non-turbulent, SS = scour (plunge) pool, SD = dam pool, SIDES = side channel slow, SIDEF = side channel fast, D = dry channel
Special Cases: ARTIF = culvert or dam, WF = waterfall, CH = chute M = marshland
Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

Reach 3

SO #68 Side F dries up runs from several Backwater ponds a hundred feet from where it enters SO #20

exits SO #78

GPS N 44° 20.089' W 114° 43.376' ±9

Seq	Bankfull Measurements: BF Width	1	2	3	Max BF Depth	FPW	Riparian Vegetation: Class	Over story	Under story	Shade %	Streambed Substrate = 100%: SA	GR	CO	BO	BR	GPS: Name of Point	Water Temp: °C	Time	Comments
66	68	3.0	2.8	4.5	3.0	120	HA	ST	SS	60	0	60	35	5	0		12	14:37	
75							HA	SP	SS	13	0	38	60	2	0		12	15:43	
80	65	2.3	2.5	1.8	2.5	85	ST	CL	HA	8	10	35	55	0	0		12	16:54	
85							ST	CL	HA	34	15	30	50	5	0		11.5	17:51	

Trib flows into SO #68 Side F

DO RB

GPS N 44° 20.815' W 114° 43.404' ±

Temp: 7°C

Contribution: < 2%

Gradient: 3%

Marsh around Trib

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large trees, MT = mature trees
Hardwood: HA = alder, HC = cottonwood, HD = dogwood, HQ = quaking aspen, HW = willow, HR = rocky mountain maple, HH = black hawthorn, HS = sagebrush, HW = wild rose, HSB = service berry, HHB = huckleberry, HM = mock orange, HCU = currant, HX = other/unknown
Conifer: CD = Douglas fir, CW = white fir, grand fir, CA = subalpine fir, CP = ponderosa pine, CL = lodgepole pine, CJ = juniper, CWL = western larch, CX = other/unknown

S 30 mF = ~~FST~~ F 58

Reach: 3/4

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 09/13/2010

Stream Name: Yankee Fork Sampling Frequency: F 7 S 4 Contacts: REC: Fiorito & Flynn OBS: Mello

Seq	Channel Unit Type & No.	Max Depth	Avg Depth	Pool Crest Depth	Formed By	Wet Width	Length	Woody Material S	Woody Material M	Woody Material L	Unstable Banks Length Left	Unstable Banks Length Right	Unstable Banks Total Length	Undercut Banks Length Left	Undercut Banks Length Right	Undercut Banks Total Length	Picture	Comments:
90	Side F	1.0				3		Enters	SO#89	Exits SO#101	N	44°	20.6	56'	W	114° 43.5	34 ± 96 RB
91	F49	2.5	2.0			36	300											
92	S30	3.0		1.5		36	100					Bridge	Crossing					Road Crossing
93	F50	2.0	1.0			53	100					Bridge	Crossing				N44°20.7	19' W114° 43.471' ± 13ft
94	Trib 8																	
					* ~~Temp~~			Temp 8.5°C	Contrib	5% or less	/ Gradient is		0%	/ Time	18:18			(@ Trib) Cable
95	F51	1.8	1.0			43	500											N 44°20.717' W 114° 43.461'
/	MF51			On	Back				N	44°	20.	737'	W	114°	43.	457'	±9 ft	edit: Coordinates
96	F52	2.0	1.0			60	300		Ponds	RB	and	across	road					Cable N44°20.715'
97	S31	4.5		1.1		45	220											W114° 43.393'
/	MS31			On	Back					N44°	20.8	61'	W 114°	43.	465'	±23ft		
98	F53	1.5	1.			50	~~430~~											
99	FN54	2.7	1.7			45	233			Bridge	Crosses		N44°	20.913'		W114° 43.525'	±12	Road Crossing
100	F55	4.0	2.5			60	208											PP. 3, PP4
101	S32	6.0		1.0		45	167				N44°	20.	921'	W	114°	43.	564' ± 17ft	
102	Trib 8 9			RB	Contrib 50%	/	Gradient 3%	/	N44°	20.939	W114	43.579	/	19:00	/	Temp 10.5		
	END SURVEY for night				Temp 11°			END	Reach	3				9/	14/	2010		
	Start Survey for 9/15/10					time	0957	temp	6°	START	REACH	4						
103	F56	1.5	.8			36	145										① pic of	Yankee F. maybe 2 pics upstream
104	S33	4.5		1.0		25	66		N	44°20.974	W	114	43.5	53	±18 ft			
105	FN57	2.0	1.5	~~#~~		24	191						0	50	50			
106	F58	1.7	1.2			42	500		N	44°21.027'	W	114°	43.621'		±16ft			Cable / Fish
/	MF58		On	Back														
107	F59	1.3	.8			45	173											
108	FN60	1.8	1.4			45	106											
109	F61	1.5	1.0			42	354											
110	S34	2.0		1.0		42	85											

*Possible side channel that was not noted * RB maybe flowing from backpools

N 44° 21.152' ± 23ft

W 114° 43.[illegible]

Channel Unit Codes: FT = fast turbulent, FN = fast non-turbulent, SS = scour (plunge) pool, SD = dam pool, SIDES = side channel slow, SIDEF = side channel fast, D = dry channel

Special Cases: ARTIF = culvert or dam, WF = waterfall, CH = chute M = marshland

Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

S35 mF65 Reach 3/4

	Bankfull Measurements						Riparian Vegetation			Shade	Streambed Substrate = 100%					GPS	Water Temp		
Seq	BF Width	1	2	3	Max BF Depth	FPW	Class	Over story	Under story	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
95	66	2.0	2.4	2.3	2.4	96	HA	SP	GF	12	3	24	70	3	0		11	18:31	
97							HA	SP	GF	12	20	30	40	10	0		11	18:44	
106	83	2.4	2.0	.4	2.1	173	ST	HA	GF	2	10	30	60	0	0		6.5	1006	

Riparian Vegetation: **Class:** NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large trees, MT = mature trees
Hardwood: HA = alder, HC = cottonwood, HD = dogwood, HQ = quaking aspen, HW = willow, HR = rocky mountain maple, HH = black hawthorn, HS = sagebrush, HW = wild rose, HSB = service berry, HHB = huckleberry, HM = mock orange, HCU = current, HX =other/unknown
Conifer: CD = Douglas fir, CW = white fir, grand fir, CA = subalpine fir, CP = ponderosa pine, CL = lodgepole pine, CJ = juniper, CWL = western larch, CX = other/unknown

Reach: 4

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 9/13/10

Stream Name: Yankee Fork Sampling Frequency: F 1/7 S 1/4 Contacts: REC: Andrew Flynn OBS: Chris Mello

Channel Units								Woody Material			Unstable Banks			Undercut Banks				
Seq	Channel Unit Type & No.	Max Depth	Avg Depth	Pool Crest Depth	Formed By	Wet Width	Length	S	M	L	Length Left	Length Right	Total Length	Length Left	Length Right	Total Length	Picture	Comments:
111	F62	1.5	.8			45	369											N 44° 21.231' W 114° 43.716' ↑ 38 ft (the channel)
112	SIDEF	1.0	RB			8	90	Enters; exits			SO#	111					SO# 113	
113	S35	2.3		1.0		31	100	MEASURED –			ON	BACK						
114	F63	1.5	.8			50	273											
115	FN64	1.8	1.2			45	383											
116	F65	2.2	1.0			40	415	dry	SC exits		this unit							Pipe metal in str. (large) dry trib LB
117	SIDEF	.5	LB			5		N 44° 21.432'	W 114° 43.671'		± 6	seeps	into	SO #116			from rocks	
118	S36	2.5		1.0		46	139											
119	F66	1.9	1.2			43	500	N	44°	21.478'		W	114°	43.691'		± 7 ft		fish
	MF66					43												
120	F67	1.9	1.3			30	500											
121	F68	2.3	1.5			38	500		N	44° 21.723'		W	114°	43.743'	± 25			
122	SIDES	1.0				5	LB	exits	SO# 122		3		unlikely	will exit here (comes from Dredge T.)				pp 2.3
123	F69	1.7	1.0			45	500				—	20	20					
124	FN70	1.8	1.2			48	100											
125	S37	2.8		1.0		34	115											
126	F71	1.5	.8			45	500											
127	F72	3.0	1.3			34	500		N 44°	21.924'	W	114°	43.676'	0	70	70		
	MF72													± 6	± 3	± 9 ft		pp 2.5, 1.5, 3.0
128	SIDES	2.5				2.5	40		N 44°	21.924'	W	114°	43.676'	± 3	9 ft			
129	F73	2.0	1.3			32	500											pp 1.5 dry side RB
130	F74	2.5	1.5			34	398											
131	S38	4.5		1.0		36	53							N 44° 22.089'				fish road crossing
132	F75	1.7	1.0			36	500				20	—	20	W 114° 43.492'			396 ft ± 3 ft	bridge
133	F76	2.5	.8			52	500											
134	F77	1.5	.8			57	500											pp 2.0, 2.5 fish
135	F78	1.5	.7			47	119										dry side RB 450 ft	fish

Channel Unit Codes: FT = fast turbulent, FN = fast non-turbulent, SS = scour (plunge) pool, SD = dam pool, SIDES = side channel slow, SIDEF = side channel fast, D = dry channel

Special Cases: ARTIF = culvert or dam, WF = waterfall, CH = chute M = marshland

Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

Reach 4

	Bankfull Measurements						Riparian Vegetation			Shade	Streambed Substrate = 100%					GPS	Water Temp		
Seq	BF Width	1	2	3	Max BF Depth	FPW	Class	Over story	Under story	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
113							ST	HA	CL	16	10	20	40	30	80		7	10:42	N 44° 21. 22T W 114° 43. 732'
119	56	1.8	1.7	2.0	2.0	82	ST	HA	GF	4	20	30	40	20	0		7	11:16	
127	39	2.2	1.7	2.0	2.2	55	ST	HA	CL	25	5	20	40	30	5		9	13:18	

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large trees, MT = mature trees
Hardwood: HA = alder, HC = cottonwood, HD = dogwood, HQ = quaking aspen, HW = willow, HR = rocky mountain maple, HH = black hawthorn, HS = sagebrush, HW = wild rose, HSB = service berry, HHB = huckleberry, HM = mock orange, HCU = current, HX =other/unknown
Conifer: CD = Douglas fir, CW = white fir, grand fir, CA = subalpine fir, CP = ponderosa pine, CL = lodgepole pine, CJ = juniper, CWL = western larch, CX = other/unknown

Reach: 4/5

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District Yankee Fork Survey Start Date: 9/13/10

Stream Name: Yankee Fork Sampling Frequency: F 1/7 S 1/4 Contacts: REC: A. Flynn OBS: Chris Mello

Channel Units								Woody Material			Unstable Banks			Undercut Banks				
Seq	Channel Unit Type & No.	Max Depth	Avg Depth	Pool Crest Depth	Formed By	Wet Width	Length	S	M	L	Length Left	Length Right	Total Length	Length Left	Length Right	Total Length	Picture	Comments:
136	S39	2.5		1.0		31	130			N	44°	22.220'		W114°	43.	542'	±39ft	
/	MS39																	
137	F79	2.0	1.2			34	400											
/	MF79							N	44°	22.237'		W	114°	43.	545'	±46ft		pp 2.0
138	~~FN80~~ S40	2.5		1.5		30	235					N44°	22.	371'	W114°		43.475' ±30	Rock Quary RB
139	F80	1.7	.9			43	500	1			150	0	150					pp 2.1
140	FN81	3.0	1.5			33	300											pp 2.5, 3.0
141	F82	2.3	1.2			56	476					pipes submerged acting as nuclear turbines for bathman						pp 2.3
142	S41	5.0		1.2		38	130		N44°	22.689'			W114°	43.1	266'	±39ft		
143	~~T9~~ 10	Contrib.		10%	Grad. 3%			Temp	13°	N44°	22.696		W114°	43.261			JORDAN CR. 1525 RB	① Jordan upstr.
	END REACH 4																	
	START REACH 5				① pic upstream at start of reach												9/15/10	
144	F83	1.5	.8			36	176											fish
145	S42	2.8		1.5		30	94				80	0	80					
146	S43	2.5		1.5		21	41	1										Debris jam
147	SIDEF	.4				10	170	enters		SD# 146		exits		SO#	149		LB	N44°22.728' W114°43.224'
/	MS43									N44°	22.725'		W114°	43.224'	+	27ft		±27ft
148	F84	2.2	1.0			33	200			* missed	side	channel		exits	SO#149			veg. in channel pp2
149	S44	2.7		.8		30	173			5 wide	68ft	long	08 deep			enters	SO#148	s.c. exits here – ?
150	SIDES	.6		enters SO# 149		4		N 44°	22.768'	W	144°	43.236'	±19		exits	SO#	RB	N44 22.774' W 114°43.2F
151	F85	1.7	.8			42	500	1			100	0	100	100	0	100	* possible side	missed LB* ±21ft
152	F86	1.5	.8			42	250	1										fish
/	MF86					~~42~~			N44°	22.813'	W114°	43.	071'	±12ft				
153	S45	3.5		1.5		36	86		N44°	22.824'	W114°	43.	025'	±19ft				
154	F87	1.5	.9			40	300				0	50	50	0	50	50		RV on Right Bank
155	S46	5.0		.7		27	99											N44°22.853' W114°42.924' *
156	F88	1.7	.8			49	500											±13

Channel Unit Codes: FT = fast turbulent, FN = fast non-turbulent, SS = scour (plunge) pool, SD = dam pool, SIDES = side channel slow, SIDEF = side channel fast, D = dry channel
Special Cases: ARTIF = culvert or dam, WF = waterfall, CH = chute M = marshland
Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

Reach 4/5

	Bankfull Measurements						Riparian Vegetation			Shade	Streambed Substrate = 100%					GPS	Water Temp		
Seq	BF Width	1	2	3	Max BF Depth	FPW	Class	Over story	Under story	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
136							ST	HA	GF	22	5	15	40	30	10		9.5	1425	
137	39	1.9	2.3	2.1	2.3	48	ST	HA	GF	17	5	16	39	30	10		9.5	1436	
146	~~51~~	~~2.1~~	~~2.3~~	~~2.2~~	~~2.3~~	~~63~~	ST	HA	GF	80	20	40	30	5	5		10	1630	
152	51	2.1	2.3	2.2	2.3	63	ST	HA	CL	31	20	50	20	10	0		10.5	1656	

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large trees, MT = mature trees
Hardwood: HA = alder, HC = cottonwood, HD = dogwood, HQ = quaking aspen, HW = willow, HR = rocky mountain maple, HH = black hawthorn, HS = sagebrush, HW = wild rose, HSB = service berry, HHB = huckleberry, HM = mock orange, HCU = currant, HX =other/unknown
Conifer: CD = Douglas fir, CW = white fir, grand fir, CA = subalpine fir, CP = ponderosa pine, CL = lodgepole pine, CJ = juniper, CWL = western larch, CX = other/unknown

Reach: 5

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 09/13/10

Stream Name: Yankee Fork Sampling Frequency: F 1/7 S 1/4 Contacts: REC: A Flynn OBS: C Mello

Seq	Channel Unit Type & No.	Max Depth	Avg Depth	Pool Crest Depth	Formed By	Wet Width	Length	Woody Material S	Woody Material M	Woody Material L	Unstable Banks Length Left	Unstable Banks Length Right	Unstable Banks Total Length	Undercut Banks Length Left	Undercut Banks Length Right	Undercut Banks Total Length	Picture	Comments:
157	F89	1.7	.8			39	500											
158	F90	1.5	1.0			35	500	11										
159	F91	1.4	.8			40	500	1										
160	F92	2.0	1.0			69	387										RB	N44°22.996' W114°42.497'
161	SIDEF	.2				1.0	150		enters, exits			so	#160		*Possible	Trib		(Puzzler Gulch) *
162	S47	2.5		1.0		25	100		N44°	22.99	9' W	114°	42.	390'	±38			
	MS47																	
163	F93	2.4	1.0			40	559		N44°	23.080'	W	114°	42.323'	±11ft	200	200		pp 2.0
	MF93																	
164	FN94	1	.9			30	190											
		END OF	Day							9/15/2010								Time 18:27
		Resume survey				9/16/10		8°C	1300									
165	F95	1.2	.8			30	540										② eqp. crossing	① pic upstream.
166	SIDEF	1.0	RB			20	120		N	44°	23.	098'	W 11	4°	42.2	69'	±13ft	enters so #165 exits
167	S48	2.0		.7		33	200											so #167
168	SIDEF	.8	LB			22	280		SIDE	Channel	splits	into	2	channels	-			enter str. ~~exit~~ separately
169	F96	2.0	1.0			34	298	111	enters		so#	169	exits	same			Debris	pp 2.0 N44°23.126'
170	FN97	1.2	.8			30	179											fish W114°42.119'
171	F98	1.5	1.0			30	224											
172	T101	LB	Contrib.		2%	Gradient		8%	Temp 7°		1340	N44°	23.	170	W 11	4°	41.975	① pic of t. ② ±2 pic of t
173	F99	1.7	.8			47	325											cable
174	S49	2.3		.8		31	130											
175	F100	1.5	.8			36	57	N44°	23.190'									
	MF100							W114°	41.866'	±25 ft								
176	S50	3.0		1.0		36	85											
177	F101	2.5	1.0			34	500											fish pp 2.5
178	F102	2.0	1.2			39	500											fish pp 2.0

Channel Unit Codes: FT = fast turbulent, FN = fast non-turbulent, SS = scour (plunge) pool, SD = dam pool, SIDES = side channel slow, SIDEF = side channel fast, D = dry channel
Special Cases: ARTIF = culvert or dam, WF = waterfall, CH = chute M = marshland
Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

Reach 5

	Bankfull Measurements						Riparian Vegetation			Shade	Streambed Substrate = 100%					GPS	Water Temp		
Seq	BF Width	1	2	3	Max BF Depth	FPW	Class	Over story	Under story	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
162							ST	CL	HA	39	10	10	40	30	5		11	1752	
163	43	2.1	2.7	2.5	2.3	55	ST	CL	HA	34	10	15	40	30	5		11	1758	
175	45	2.1	2.3	2.0	2.3	57	GF	GF	HA	22	5	20	30	40	5		8.5	1402	

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large trees, MT = mature trees
Hardwood: HA = alder, HC = cottonwood, HD = dogwood, HQ = quaking aspen, HW = willow, HR = rocky mountain maple, HH = black hawthorn, HS = sagebrush, HW = wild rose, HSB = service berry, HHB = huckleberry, HM = mock orange, HCU = current, HX =other/unknown
Conifer: CD = Douglas fir, CW = white fir, grand fir, CA = subalpine fir, CP = ponderosa pine, CL = lodgepole pine, CJ = juniper, CWL = western larch, CX = other/unknown

Reach: 5/6

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District Yankee Fork Survey Start Date: 9/13/10

Stream Name: Yankee Fork Sampling Frequency: F 1/7 S 1/4 Contacts: REC: A. Flynn OBS: C. Mello

Seq	Channel Unit Type & No.	Max Depth	Avg Depth	Pool Crest Depth	Formed By	Wet Width	Length	Woody Material S	Woody Material M	Woody Material L	Unstable Banks Length Left	Unstable Banks Length Right	Unstable Banks Total Length	Undercut Banks Length Left	Undercut Banks Length Right	Undercut Banks Total Length	Picture	Comments:
179	SS1	2.5		1.0		24	769											N44°23.274 W114°41.640 ±9
/	MSS1																	
180	F103	1.7	1.0			26	230											
181	SIDEF	.6	LB			4	150	enters	SOH		180	exits	SOH	182				
182	SS2	2.0		1.5		27	98										N	44°23.277 W114°41. ±15ft
183	F104	1.2	.8			29	200											
184	SS3	4.0		1.2		30	200		N	44°2	3.3%	W	114°	41.5	63'	±18ft		fish
185	SS4	2.8		1.5		24	117											fish / Bridgexing
186	F105	1.7	1.0			35	300											
187	SS5	2.8		1.5		24	168											
188	F106	2.0	1.5			27	500											
189	F107	2.0	1.5			36	500											old bridge footing
190/M	F108	2.0	1.5			30	~~150~~ 171											
191	F109	2.0	1.0			42	147											pp 2.1
192	SS6	4.5		1.2		30	118				N	44°	23.	541'	W	14°	41.196 ±29	fish
193	F112	RB	Confnb.	5%		Gradient	20%	Temp	9°		N44	40	23.5	24	W	14°	41.207	① pic of brb 1645
	END REACH 5																	
	BEGIN REACH 6			①	pic	upstr	② dnstream.											
	End for day						9/16/2010											
	Start of DAY REACH 6					SHORTO	Rec.			9/17/2010								
194	SS7	2.5		MS		25	62					30						
195	F110	2.0	1.7			33	510											
196	SS8	4.0		1.5		27	105										N 44°23.554' W114 41.028' ±23	
197	F111	1.7	1			30	160											
198	SS9	2.5		1.5		33	85											
/	MSS9			MF	Back					N 44°	23.543'			W114°	40.991'		±35	
199	F112	1.1	1			28	72											

Channel Unit Codes: FT = fast turbulent, FN = fast non-turbulent, SS = scour (plunge) pool, SD = dam pool, SIDES = side channel slow, SIDEF = side channel fast, D = dry channel
Special Cases: ARTIF = culvert or dam, WF = waterfall, CH = chute M = marshland
Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

MS = MSS9
MF = MF115

Reach 5/6

	Bankfull Measurements						Riparian Vegetation			Shade	Streambed Substrate = 100%					GPS	Water Temp		
Seg	BF Width	1	2	3	Max BF Depth	FPW	Class	Over story	Under story	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
179							ST	HA	~~GF~~	15	15	30	30	20	5		9.5	1519	
187							~~ST~~	HA	GF	40	15	30	30	20	5		10	1600	
190	45	1.5	1.8	2.6	2.6	70	ST	HA	GF	17	10	30	30	20	10		10	1624	
198							ST	CL	HA	70	10	40	30	20	0		5.5	1024	

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large trees, MT = mature trees
Hardwood: HA = alder, HC = cottonwood, HD = dogwood, HQ = quaking aspen, HW = willow, HR = rocky mountain maple, HH = black hawthorn, HS = sagebrush, HW = wild rose, HSB = service berry, HHB = huckleberry, HM = mock orange, HCU = current, HX =other/unknown
Conifer: CD = Douglas fir, CW = white fir, grand fir, CA = subalpine fir, CP = ponderosa pine, CL = lodgepole pine, CJ = juniper, CWL = western larch, CX = other/unknown

MF = ~~F115~~ ~~F122~~ F129
UF: 113

Reach: 6

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 09/13/10

Stream Name: Yankee Fork Sampling Frequency: F 1/7 S 1/4 Contacts: REC: S Fr[illegible] OBS: C. Mello

Channel Units								Woody Material			Unstable Banks			Undercut Banks				
Seq	Channel Unit Type & No.	Max Depth	Avg Depth	Pool Crest Depth	Formed By	Wet Width	Length	S	M	L	Length Left	Length Right	Total Length	Length Left	Length Right	Total Length	Picture	Comments:
200	S60	2.3		1.3		27	82										N 44°23.546'	W 114°40.956' ±21ft
201	F113	2.5	1.5			28	500											PP 2.5, 2.3
202	F114	1.6	.9			32	300											
203	S61	2.7		1.0		30	88											
204	F115	2.9	1.5			20	100					128						PP 2.1, 2.9
	MF115	[illegible]	[illegible]			[illegible]	on	Back									N 44°23.653'	W 114°40.826' ±25
205	SS62	3.0		1.0	Bedrock	40	34											
206	F116	1.5	.9			38	223			dispersed		Camp site	RB					
207	S63	3.5		1.2		36	41		dispersed			Camp site			RB		N 44°23.641'	W 114°40.768' ±24
	MS63			on	Back													
208	F117	1.5	1.0			40	500			dispersed		Camp		so	RB	/ LB		
209	F118	1.5	1.0			44	142					dispersed		camp		LB		
210	S64	2.3		1.5		36	71					dispersed		camp		LB		
211	S65	2.3		1.5		35	76											
212	T13	Contrib = >2%			Grade = 20%		Temp = 8°C		N44 23.720		W 114° 40.615						⊙ Pic Trib	RB
213	S66	3.0		1.2		30	67											
214	S67	4.5		1.5		25	45										N	44°23.723'
	MS67		Back														W	114°40.615' ±23
215	F119	2.5	1.3			30	292											
216	S68	2.2	1.0			33	68											
217	S69	2.5	1.0			33	105						N 44°	~~23.759'~~ 23.758'		W 114°	40.516 ±22	Bridge Xing
218	F120	2.0	1.5			30	111											
219	S70	2.7		1.2		30	77									N	44°23.770'	W 114°40.500' ±17
220	F121	2.5	1.5			29	470					20						PP 2.5, 2.5
221	[illegible]	Contrib = >2%			Grade = 3%			Temp = 6°C				N 44°	23.799	W	114°	40.381	⊙ Pic trib.	RB
222	F122	3.5	2.0			33	233											PP 2.5, 3.5
	MF122									N 44°	23.813'	W	114°	40.378'				

±18

Cont find pic

Channel Unit Codes: FT = fast turbulent, FN = fast non-turbulent, SS = scour (plunge) pool, SD = dam pool, SIDES = side channel slow, SIDEF = side channel fast, D = dry channel
Special Cases: ARTIF = culvert or dam, WF = waterfall, CH = chute M = marshland
Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

Reach 6

	Bankfull Measurements						Riparian Vegetation			Shade	Streambed Substrate = 100%					GPS	Water Temp		
Seq	BF Width	1	2	3	Max BF Depth	FPW	Class	Over story	Under story	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
204	36	3.5	4.1	1.9	4.1	55	ST	CL	HA	32	10	20	30	30	10		6	10:56	
207							ST	CE	HA	80	0	30	40	30	0		6	11:12	
214							ST	CE	HA	78	30	30	20	20	0		7	12:21	
222	40	2.5	3.3	2.5	3.3	63	ST	CE	HA	47	5	40	30	25	0		9.5	14:00	

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large trees, MT = mature trees
Hardwood: HA = alder, HC = cottonwood, HD = dogwood, HQ = quaking aspen, HW = willow, HR = rocky mountain maple, HH = black hawthorn, HS = sagebrush, HW = wild rose, HSB = service berry, HHB = huckleberry, HM = mock orange, HCU = current, HX =other/unknown
Conifer: CD = Douglas fir, CW = white fir, grand fir, CA = subalpine fir, CP = ponderosa pine, CL = lodgepole pine, CJ = juniper, CWL = western larch, CX = other/unknown

PF = F123 MF = ~~F129~~ F136

Reach: 6

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District Yankee Fork Survey Start Date: 09/13/10

Stream Name: Yankee Fork Sampling Frequency: F 1/7 S 1/4 Contacts: REC: J. Giorio OBS: C. Mello

Channel Units								Woody Material			Unstable Banks			Undercut Banks				
Seq	Channel Unit Type & No.	Max Depth	Avg Depth	Pool Crest Depth	Formed By	Wet Width	Length	S	M	L	Length Left	Length Right	Total Length	Length Left	Length Right	Total Length	Picture	Comments:
223	Trib 15	Confl =	>5%	Temp = 8		Grade = 6%	Time =				14:08							
224	F123	2.0	1.5			25	220										Pic Trib	LB 4th of July Creek
225	S71	2.5		1.0		24	52										3	Springs LB / RED
	M S71			Back													N	44°23.844'
226	F124	2.5	1.5			30	128					40					W	114°40.346' ±24ft
227	S72	2.2		1.5		26	60											PP 2.5
228	S73	4.0		1.3		30	93											
229	F125	1.7	1.0			29	54											N 44°23.889' W114°40.315' ±3.7ft
230	S74	2.5		1.2		27	65											
231	F126	2.7	1.5			30	232											
232	S75	2.7		1.5		33	36											PP 2.5, 2.7
	M S75			Back														N 44°23.924'
233	S76	4.5		1.7		22	62											W 114° 40.250' ± 19ft
234	S77	3.7		1.5		20	46										N 44°23.	940' W 114°40.246' ±23
235	F127	2.2	1.5			27	83										N 44° 23.930	W114° 40.231' ±17ft
236	S78	3.0		1.2		24	73											
237	F128	2.3	1.5			30	179											
238	S79	3.2		1.8		20	34											PP, 2.3
	M S79		Back														N 44°23.961'	
239	F129	2.4	1.2			42	139										W114°40.154'	±15ft
	M F129		Back														Fish	PP 2.4 Picture Sun
240	S80	3.4		1.0	BO	30	41										N 44°23.966'	
241	F130	1.7	1.0			34	75										W114°40.136'	±19ft
242	S81	3.7		1.5		31	74											
243	F131	2.1	.8			36	185										N 44° 23.970'	W 114° ~~40~~ 40.096' ±21
244	S82	3.8		1.0		24	78											
245	F132	1.5	.8			36	62										N 44°23.967'	W 114° 40.065' ±33ft

Channel Unit Codes: FT = fast turbulent, FN = fast non-turbulent, SS = scour (plunge) pool, SD = dam pool, SIDES = side channel slow, SIDEF = side channel fast, D = dry channel
Special Cases: ARTIF = culvert or dam, WF = waterfall, CH = chute M = marshland
Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

Reach 6

	Bankfull Measurements						Riparian Vegetation			Shade	Streambed Substrate = 100%					GPS	Water Temp		
Seq	BF Width	1	2	3	Max BF Depth	FPW	Class	Over story	Under story	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
225							ST	CE	HA	46	5	25	10	5	55		10	14:21	
232							ST	CE	HA	42	10	20	40	20	0		10	14:45	
238							ST	4C	HA	44	5	25	40	30	0		10.5	15:06	
239	47	1.6	1.9	2.4	25	60	ST	CL	HA	80	20	30	30	20	0		10.5	15:15	

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large trees, MT = mature trees
Hardwood: HA = alder, HC = cottonwood, HD = dogwood, HQ = quaking aspen, HW = willow, HR = rocky mountain maple, HH = black hawthorn, HS = sagebrush, HW = wild rose, HSB = service berry, HHB = huckleberry, HM = mock orange, HCU = current, HX =other/unknown
Conifer: CD = Douglas fir, CW = white fir, grand fir, CA = subalpine fir, CP = ponderosa pine, CL = lodgepole pine, CJ = juniper, CWL = western larch, CX = other/unknown

-133 ~~F133~~ F143

Reach: 6/7

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 09/13/10

Stream Name: Yankee Fork Sampling Frequency: F 7 S 4 Contacts: REC: S. Fiorito OBS: C. Mello

Channel Units								Woody Material			Unstable Banks			Undercut Banks				
Seq	Channel Unit Type & No.	Max Depth	Avg Depth	Pool Crest Depth	Formed By	Wet Width	Length	S	M	L	Length Left	Length Right	Total Length	Length Left	Length Right	Total Length	~~Picture~~ Comments	Comments:
* 246	S83	4.0		1.2	BO	23	58											N 44°23.981
/	MS83			Back														W 114°40.033' ±18ft
247	F133	1.8	.9			39	109											
* 248	S84	4.0		1.0	BO	40	59										N 44°23.977'	W 114°39.982' ±20
249	S85	3.0		1.3	BO/BR	37	37										Fish	
250	F134	3.0	1.0			48	73										PP c Dry trib	PP 2.7, 3.0 @ upstream
/	END Reach 6				N 44°	23.981	W 114°	39.968										
/	Start Reach 7																9/17/10	
251	F135	1.7	.8			30	481											*Spring RB*
* 252	S86	3.6		1.0		27	57										N 44°24.017'	W 114°39.865' ±22ft
* 253	F136	1.4	.8			26	126											
/	MF136		Back															
* 254	Side F	.5				30	90	Enters So #253			Exits So #256						N 44°24.030'	W 114°39.836' ±20ft
* 255	S87	2.5		1.2		27	60				60							
/	MS87	Back															N 44°24.032'	W 114°39.830'
256	F137	3.5	1.0			25	72											PP 3.5
* 257	S88	4.0		1.5		36	51										N 44°24.039'	W 114°39.827' ±27
* 258	S89	5.0		1.5			54										N 44°24.059'	W 114°39.801' ±21
259	F138	1.5	1.0			27	27											
* 260	S90	3.5		1.2		20	35										N 44°24.065'	W 114°39.794' ±27ft
261	F139	2.0	1.5			26	186									* (Possible missed side channel)		PP 3.0
* 262	S91	4.0		1.0		27	52											
/	MS91		Back															N 44°24.070'
* 263	SS92	3.2		1.5		34	20					20						W 114°39.754' ±33ft
264	F140	4.0	2.0			39	41											PP 4.0
* 265	S92	4.0		.7		28	56										N 44°24.068'	W 114°39.727' ±37ft
266	F141	1.5	1.0			25	28											

Channel Unit Codes: FT = fast turbulent, FN = fast non-turbulent, SS = scour (plunge) pool, SD = dam pool, SIDES = side channel slow, SIDEF = side channel fast, D = dry channel
Special Cases: ARTIF = culvert or dam, WF = waterfall, CH = chute M = marshland
Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

Reach 6/7

	Bankfull Measurements						Riparian Vegetation			Shade	Streambed Substrate = 100%					GPS	Water Temp		
Seq	BF Width	1	2	3	Max BF Depth	FPW	Class	Over story	Under story	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
246							ST	CL	HA	100	30	30	25	15	0		11	15:41	
253	Bad	BF	Indi				ST	CL	HA	66	10	30	35	25	0		11.5	16:20	
255							ST	CL	HA	66	10	30	35	25	0		11.5	16:30	
262							ST	CL	HA	85	5	30	10	25	30		11	16:57	

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large trees, MT = mature trees
Hardwood: HA = alder, HC = cottonwood, HD = dogwood, HQ = quaking aspen, HW = willow, HR = rocky mountain maple, HH = black hawthorn, HS = sagebrush, HW = wild rose, HSB = service berry, HHB = huckleberry, HM = mock orange, HCU = current, HX =other/unknown
Conifer: CD = Douglas fir, CW = white fir, grand fir, CA = subalpine fir, CP = ponderosa pine, CL = lodgepole pine, CJ = juniper, CWL = western larch, CX = other/unknown

NF = F142 WF = ~~F150~~ F157
Next 15

Reach: 7

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District Yankee Fork Survey Start Date: 9/13/10

Stream Name: Yankee Fork Sampling Frequency: F 1/7 S 1/4 Contacts: REC: SFor.t OBS: C. Mello

Seq	Channel Unit Type & No.	Max Depth	Avg Depth	Pool Crest Depth	Formed By	Wet Width	Length	Woody Material S	Woody Material M	Woody Material L	Unstable Banks Length Left	Unstable Banks Length Right	Unstable Banks Total Length	Undercut Banks Length Left	Undercut Banks Length Right	Undercut Banks Total Length	Picture	Comments
267	S93	4.0		1.5		20	29										N 44°24.076'	W 114°39.712' ±31 ft
268	F142	1.4	.8			36	27											
269	S94	7.0		.7		33	92										N 44°24.088	W 114°39.688' ± 45 ft
270	F143	2.2	1.0			66	130			Wolman # 13								
	END	Day					Time 18:30		9/17/2010									
	Start	Day			Temp	6.5°C	Time 10:41					9/18/2010						
271	S95	4.5		.8	BR/BO	23	92										N 44°24.111'	W 114°39.673' ±41 ft
	mS95		Back															
272	F144	3.5	2.0			25	61											
273	SS96	4.8		1.0	BR	51	35										N 44°24.122'	W 114°39.655' ±34 ft
274	F145	3.0	1.8			30	24											cascade (see back)
275	S97	6.0		1.3	BR	25	26										N 44°24.120'	W 114°39.636' ±25 ft
276	F146	4.0	2.5			24	27											
277	[illegible]	See	Special	Case		24	6		1 Foot			N 44°24.126'			W 114° 39.630' ±31		Gradient = 120% 6 ft tall	
278	F147	3.0	2.0			35	25											Pc. 3 ft
279	S98	3.0		1.0	BR	30	33											
280	F148	2.0	1.5			30	27											
281	S99	4.5		1.0	BR	33	34										N 44°24.138'	W 114°39.615' ± 34 ft
	mS99																	
282	F149	4.5	1.8			40	200	III	I		100							
283	S100	4.6		1.5	BR	30	52				52			N 44° 24.150'				PP 3.0
284	F150	2.5	1.0			28	323							W 114° 39.571'		±60 ft		
	mF150		Back															
285	S101	2.9		1.5	BR	27	24											
286	F151	2.0	1.0			50	200											PP 2.0
287	SS102	1.8		1.5	BR	66	39				N 44° 24.219'		W 114° 39.484'		±42 ft		2 Pools Side by Side	QPC (2)
[illegible]	[illegible]	See	Special	Case		15	12		Depth 1 Ft								(Tall 7 ft)	

Channel Unit Codes: FT = fast turbulent, FN = fast non-turbulent, SS = scour (plunge) pool, SD = dam pool, SIDES = side channel slow, SIDEF = side channel fast, D = dry channel
Special Cases: ARTIF = culvert or dam, WF = waterfall, CH = chute M = marshland
Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

N 44°24.207'
W 114°39.469' ±64

Reach 7

	Bankfull Measurements						Riparian Vegetation			Shade	Streambed Substrate = 100%					GPS	Water Temp		
Seq	BF Width	1	2	3	Max BF Depth	FPW	Class	Over story	Under story	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
270	80	2.8	4.0	4.2	4.2	90	ST	CL	HA	30	10	45	30	50	0		11.5	17:43	
271							LT	CD	HA	88	15	20	30	25	10		6.5	10:52	
291							LT	CD	HA	29	10	20	30	30	10		7.5	11:40	
291	29	1.6	2.5	2.9	2.9	50	LT	CE	HA	59	10	20	20	40	10		8.0	12:12	

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large trees, MT = mature trees
Hardwood: HA = alder, HC = cottonwood, HD = dogwood, HQ = quaking aspen, HW = willow, HR = rocky mountain maple, HH = black hawthorn, HS = sagebrush, HW = wild rose, HSB = service berry, HHB = huckleberry, HM = mock orange, HCU = current, HX = other/unknown
Conifer: CD = Douglas fir, CW = white fir, grand fir, CA = subalpine fir, CP = ponderosa pine, CL = lodgepole pine, CJ = juniper, CWL = western larch, CX = other/unknown

(5) looking down @ SO # 295
(6) looking down @ cascade SO# 296
(7) SO# 298

SO#274 (4) Pic upstream

Pictures taken after survey Complete (1) pic of Chris holding paper (2) pic of Cascade SO# 298 pic of team

NF=152 MF=~~F157~~ F164

Reach: 7/8

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 9/13/10

Stream Name: Yankee Fork Sampling Frequency: F 7 S 4 Contacts: REC: S.F. then A.F. OBS: C Mello

Seq	Channel Unit Type & No.	Max Depth	Avg Depth	Pool Crest Depth	Formed By	Wet Width	Length	Woody Material S	Woody Material M	Woody Material L	Unstable Banks Length Left	Unstable Banks Length Right	Unstable Banks Total Length	Undercut Banks Length Left	Undercut Banks Length Right	Undercut Banks Total Length	Picture	Comments:
* 289	S103	7		1.0	BR/[illegible]	42	41	NW						N44°	24.207		W 114° 39.469	Debris Jam
/	MS103		Back														±64ft	
* 290	S104	3.5		2.0	BR	24	22											
291	F152	2.0	1.0			20	20							N 44°	24.210'		W114° 39.463'	±35ft
* 292	S105	3.5		2.0	BR	27	30											PP.2.0
293	F153	2.5	.8			22	30				N	44°	24.216'		W 114°	39.	466' ±	16ft
* 294	S105	3.8		1.9	BR	27	62											
168 295	S106	7.0		1.3	BR	23	168										Spring rb	N 44°24.231'
296	F154	2.0	1.0			36	27											W 114°39.457' ±68
* 297	Sides	2.5				10	36	Enters		So# 296		Exits #299						Cascade
* 298	S107	12		1.5	BR	36	42	NW									N 44° 24.248'	
/	MS107		Back														W114°39.431'	±22ft
299	F155	4	1.5			38	59											PP.4.
* 300	S108	4.6		1.4	BR	20	82											
301	S109	2.7		1.5	BR/BO	19	29										N 44°24.261'	W 114°39.394' ±20ft
* [illegible]	[illegible]	6.0	3.0			20	121	(Special		Case)								
* 303	S110	5.0		2.0	BR	10	50										N 44°24.276'	W 114°39.375' ±25
304	F156	2.3	1.5			20	31											
* 305	S111	3.2		1.2	WD/OT	24	75											
/	MS111		Back														N44°24.292'	W 114° 39.368' ±2
* 306	F157	1.7	.9			42	125											
/	MF157			Back														
307	Trib 6	Temp: 8.5°c			Time: 15:31			Grade: 2%			Contrib: 5%						N 44°24.294'	W114°39.254' ±21ft
	END	Reach 7																3 Pics Trib
	Start	Reach 8			①	Pic	upstream											
308	F158	1.5	.7			33	192										9/18/10	
309	S112	2.5		1.5	OT	30	55											BW pool RB

Channel Unit Codes: FT = fast turbulent, FN = fast non-turbulent, SS = scour (plunge) pool, SD = dam pool, SIDES = side channel slow, SIDEF = side channel fast, D = dry channel
Special Cases: ARTIF = culvert or dam, WF = waterfall, CH = chute M = marshland
Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

Reach 7/8

	Bankfull Measurements						Riparian Vegetation			Shade	Streambed Substrate = 100%					GPS	Water Temp		
Seq	BF Width	1	2	3	Max BF Depth	FPW	Class	Over story	Under story	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
284							LT	CE	GF	62	0	0	0	0	100		10°	14:20	
293							LT	CE	GF	62	0	10	10	0	80		10°	15:05	
305							LT	CE	GF	42	20	20	30	15	15		10°	15:21	
306	48	1.8	2.0	2.2	2.2	63	LT	CE	GF	42	20	20	30	15	15		10°	15:25	

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large trees, MT = mature trees
Hardwood: HA = alder, HC = cottonwood, HD = dogwood, HQ = quaking aspen, HW = willow, HR = rocky mountain maple, HH = black hawthorn, HS = sagebrush, HW = wild rose, HSB = service berry, HHB = huckleberry, HM = mook orange, HCU = current, HX = other/unknown
Conifer: CD = Douglas fir, CW = white fir, grand fir, CA = subalpine fir, CP = ponderosa pine, CL = lodgepole pine, CJ = juniper, CWL = western larch, CX = other/unknown

Reach: 8

MF171

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 9/13/10

Stream Name: Yankee Fork Sampling Frequency: F 1/7 S 1/4 Contacts: REC: A. Flynn OBS: C. Mello

Seq	Channel Unit Type & No.	Max Depth	Avg Depth	Pool Crest Depth	Formed By	Wet Width	Length	Woody Material S	Woody Material M	Woody Material L	Unstable Banks Length Left	Unstable Banks Length Right	Unstable Banks Total Length	Undercut Banks Length Left	Undercut Banks Length Right	Undercut Banks Total Length	Picture	Comments:
310	S113 ~~F159~~	2.5		1.0		30	90											
311	F159	2.0	1.0			60	81											backwater pool RB
312	S114	2.5		1.0		20	116											
313	F160	3.0	1.0			22	200					BW pool LB						
314	S115	2.0		1.0		19	46					46			46		dry side RB	Spring LB pp 3.0
	MS115							N 44°	24.425'	W	114°	39.	273'	±16ft				
315	F161	2.0	.8			20	199											
316	S116	5.0				19	113					100			100			N 44°24.454' W 114°39.27[illegible]
317	F162	.8	.5			30	46											dry side ±17ft
318	S117	3.0		.7		17	140					140			140			
319	~~F~~617	~~[illegible]~~	LB	Contrib.		<2%	Gradient		1%	Temp		13°	N 44°	24.	452		① trib picture	W114° 39.213
320	F163	1.0	.8			30	54											
321	FN164	1.4	.9			32	121											
	MFN164							N	44°24.475'	W	114°	39.197'			±17			
322	F165	1.0	.8			39	234				50	80					missed side F RB	enters SO# 322 exits unknown ~~SO#3~~
323	FN166	1.3	.8			25	138				140			140			0.6, 6ft,	N 44°24.473' W 114°39.144'
324	F167	2.0	.8			36	433				50	50		50	50			pp 2.0 (See back)
325	S118	5.0		1.0		24	100					100			100		N 44°24.556'	W 114°39.022' ±8ft
326	F168	1.6	1.0				216				150			150				Stream splits into channel pp. 2.7
327	S119	3.0		1.0		20	100											N 44°24.53[illegible] W 114°38.9[illegible] ±9ft
	MS119																	
328	F169	1.0	.6			30	32											
329	S120	7.0		1.0		20	58		N 44°	24.553		W	114°	38.9	66'	±17 ft		
330	S121	3.5		1.0		15	71		N 44°	24.566		W	114°	38.9	55'	±9ft		backwater RB - slow
331	F170	1.3	.8			17	170											backwater RB - slow
332	S122	4.5		1.0		24	~~200~~ 150						N 44°	24.	565		W 114° 38.905	±9ft
333	F171	3.0	1.0			25	162		MEASURED				N 44°	24.	575		W 114° 38.867	pp 2.0, 3.0

±6ft

Channel Unit Codes: FT = fast turbulent, FN = fast non-turbulent, SS = scour (plunge) pool, SD = dam pool, SIDES = side channel slow, SIDEF = side channel fast, D = dry channel
Special Cases: ARTIF = culvert or dam, WF = waterfall, CH = chute M = marshland
Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

Reach 8

	Bankfull Measurements						Riparian Vegetation			Shade	Streambed Substrate = 100%					GPS	Water Temp		
Seq	BF Width	1	2	3	Max BF Depth	FPW	Class	Over story	Under story	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
314							SS	HW	CL	8	10	60	30	0	0				
321	43	2.7	2.6	2.3	2.7	200+	SS	HW	~~SS~~	6	10	60	30	0	0		10.5	1555	
327							SS	HW	GF	5	10	60	25	5	0		11	1629	
333	BAD	BANKFUL	IND.				SS	HW	CL	5	10	60	30	0	0		11	1647	
																	11	1701	

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large trees, MT = mature trees
Hardwood: HA = alder, HC = cottonwood, HD = dogwood, HQ = quaking aspen, HW = willow, HR = rocky mountain maple, HH = black hawthorn, HS = sagebrush, HW = wild rose, HSB = service berry, HHB = huckleberry, HM = mock orange, HCU = current, HX =other/unknown
Conifer: CD = Douglas fir, CW = white fir, grand fir, CA = ~~subalpine fir, GP = ponderosa pine, CL = ledgepole pine, CJ = juniper, CWL = western larch~~, CX = other/unknown

SO #324
F167

possible trib missed RB or sidechannel

N 44°24.542'
W 101°29.077' ±9

Reach: 8

~~MF198~~ ~~MS131~~ MS135
~~MS127~~ MF185

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 9/13/10

Stream Name: Yankee Fork Sampling Frequency: F 1/7 S 1/4 Contacts: REC: A. Flynn OBS: C. Mello

Channel Units								Woody Material			Unstable Banks			Undercut Banks				
Seq	Channel Unit Type & No.	Max Depth	Avg Depth	Pool Crest Depth	Formed By	Wet Width	Length	S	M	L	Length Left	Length Right	Total Length	Length Left	Length Right	Total Length	Picture	Comments:
334	S123	7.0		1.0		22	57											N44°24.591 W114°38.839' ±20
335	F172	2.0	.6			42	286	WOLMAN										
336	S124	2.5		.6		39	154						N 44°	24.5	62'	W	114°38.747 ±17ft	fish Road crossing
337	F173	1.0	.7			45	224		/		100							
338	FN174	1.3	.9			20	120											
339	S125	2.3		1.0		21	75											
340	F175	2.0	1.0			19	26							26				
341	S126	4.0		1.5		20	66	//	N	44°24.549'				66	W	114°	38.633' ±32	Debris jam
342	F176	2.1	.6			27	44											
343	S127	3.0		.8		20	100	////				40						
~~344~~	MS127																	
344	F177	2.1	1.0			33	500	//	/		250			250			N 44°24.559'	W114°38.610' ±26
345	F178	2.3	.8			20	168											
	MF178								N	44°	24.5	76'	W	114°	38.5	37'	±21ft	pp 2-3
346	S128	3.0		1.0		25	100	~~////~~ ///	//			100			100			spring LB length of
347	SIDE SF	1.0	LB			4.0	60			enters		so# 346		exits		so # 348		~~N44°24.597 W114°38.4~~
348	F179	.7	.5			30	?	WOLMAN				88 ft						spring RB ±13
349	~~S129~~ FN180	1.0	.7	~~#~~		30	125							36				
350	F180	1.0	.6			27	100											N44°24.619'
351	SIDE F	.3	RB			2.0	~~70~~		enters	so #	350			exits		so # 355		W114°38.452'
352	S129	2.7		.7		20	83									# 356		±20
353	F181	1.0	.6		45 →	~~36~~	79										N45°24.653'	
354	S130	5.0		1.0		15	52		N 44°	24.682'	W114°	38.372'		±22ft			W114° 38.390' ±23ft	
355	F182	1.2	.8			27	161			Giant	Washout	where	Greylock	Creek			±23	Pictures taken
356	S131	2.0		1.0		15	80										Comes in	
	MS131																	
~~357~~	~~SIDE F~~	~~1.5~~	~~LB~~			~~10~~	~~60~~										N 44°24.708'	W114°38.376' ±28ft

Channel Unit Codes: FT = fast turbulent, FN = fast non-turbulent, SS = scour (plunge) pool, SD = dam pool, SIDES = side channel slow, SIDEF = side channel fast, D = dry channel
Special Cases: ARTIF = culvert or dam, WF = waterfall, CH = chute M = marshland
Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

Reach 8

	Bankfull Measurements						Riparian Vegetation			Shade	Streambed Substrate = 100%					GPS	Water Temp		
Seq	BF Width	1	2	3	Max BF Depth	FPW	Class	Over story	Under story	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
334							SS	HW	CL	5	10	60	30	0	0		11	1703	
343							SS	HW	CL	13	10	60	30	0	0		11	1742	
345	65	.2	.6	1.6	1.6	95	SS	HW	CL	24	10	60	30	0	0		11	1751	
356							SS	HW	CL	10	10	60	30	0	0		10	1836	

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large trees, MT = mature trees
Hardwood: HA = alder, HC = cottonwood, HD = dogwood, HQ = quaking aspen, HW = willow, HR = rocky mountain maple, HH = black hawthorn, HS = sagebrush, HW = wild rose, HSB = service berry, HHB = huckleberry, HM = mock orange, HCU = currant, HX = other/unknown
Conifer: CD = Douglas fir, CW = white fir; grand fir, CA = subalpine fir, CP = ponderosa pine, CL = lodgepole pine, CJ = juniper, CWL = western larch, CX = other/unknown

Reach: 8/9

~~MS135~~ ~~MS131~~ MS143 ~~MF185~~ MF192

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 9/13/10

Stream Name: Yankee Fork Sampling Frequency: F 1/7 S 1/4 Contacts: REC: Andrew Flynn OBS: Chris Mello

Seq	Channel Unit Type & No.	Max Depth	Avg Depth	Pool Crest Depth	Formed By	Wet Width	Length	Woody Material S	Woody Material M	Woody Material L	Unstable Banks Length Left	Unstable Banks Length Right	Unstable Banks Total Length	Undercut Banks Length Left	Undercut Banks Length Right	Undercut Banks Total Length	Picture	Comments:
183 132 ~~357~~	~~B1~~	2.0	~~30~~			30	58										N44°24.722'	W114°38.411' ±15
358	~~T19~~	LB	Contrib. 5% Gradient 3%					Temp 7.5°			N44°	24.730	W114°38.415				(Greylock)	① pic ② pic of tri
359	S132	4.0		1.5	90	~~[illegible]~~	129											N44°24.728' W114°38.4
360	SIDEF	1.5	RB			8.0	250		enters SO#			359, exits		SO#	~~365~~	366		N44°24.728' W114°38.417 ±3
361	F183	1.5	.7			10	69											
362	S133	6.0		.8		33	53	~~HHT~~ ///			53			53			N44°24.734 W114°38.370 ±16	Debris jam
363	S134	3.2		1.0		19	72	//										
364	SIDEF	1.0				5.0	90		enters SO#			363, exits		SO#	~~365~~	366		N44°24.736 W114°38.351 ±15ft
365	F184	1.5	.5			34	91											
366	FN185	2.0	1.2			39	241	///										
	MFN185							~~[illegible]~~	N44°24.763		W114°38.314		±17ft	24.719				
~~367~~	~~T18~~ 19	LB	"SIXMILE CREEK" Contrib.					5% Grad. 3% Temp				8°		N44°	~~[illegible]~~		W114°38.284	① pic ② pic of tro
	End for day – END REACH 8 –							9/18/2010										
	Resume Survey 9/19/10 → Time 11:03 Temp 6°																	
	Start Reach 9							① picture upstream – beginning of reach 9										
368	F186	2.0	1.0			30	527	/	/			40						
369	S135	4.0		1.0		17	119											
	MS135									N44°24.828'		W114°38.165'	±12					
370	F187	1.8	.8			36	265	~~HHT~~ /	/								* HV trail (Crossing)	
371	SIDEF	2.0	LB			10	90		enters SO#			370, exits		SO#			N44°24.787' W114°38.167' ±40	
372	S136	3.2		.8		12	69	//									N44°24.787' W114°38.167' ±40	
373	F188	2.0	.8			30	95	~~HHT~~ /	/	/		30			30		N44°24.771' W114°38.148' ±14ft	Debris Jam
374	S137	4.0		.6		15	38		/		38							N44°24.760' W114°38.136 ±10ft
375	F189	1.3	.7			20	103				103	103						
376	S138	4.0		1.0		22	73					73			73			N44°24.774' ±12ft W114°38.099'
377	S139	3.0		1.3		16	82					82			82			
	MS139																	

Channel Unit Codes: FT = fast turbulent, FN = fast non-turbulent, SS = scour (plunge) pool, SD = dam pool, SIDES = side channel slow, SIDEF = side channel fast, D = dry channel
Special Cases: ARTIF = culvert or dam, WF = waterfall, CH = chute M = marshland
Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

Reach 8/9

	Bankfull Measurements						Riparian Vegetation			Shade	Streambed Substrate = 100%					GPS	Water Temp		
Seq	BF Width	1	2	3	Max BF Depth	FPW	Class	Over story	Under story	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
366	55	2.2	2.4	2.4	2.4	90	SS	HW	CL	8	20	50	30	0	0		9.5	1905	
369							SS	HW	CL	6	20	50	30	0	0		6.5	1148	
377							SS	HW	CL	13	15	45	40	0	0		6.5	1159	

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large trees, MT = mature trees
Hardwood: HA = alder, HC = cottonwood, HD = dogwood, HQ = quaking aspen, HW = willow, HR = rocky mountain maple, HH = black hawthorn, HS = sagebrush, HW = wild rose, HSB = service berry, HHB = huckleberry, HM = mock orange, HCU = current, HX =other/unknown
Conifer: CD = Douglas fir, CW = white fir, grand fir, CA = subalpine fir, CP = ponderosa pine, CL = lodgepole pine, CJ = juniper, CWL = western larch, CX = other/unknown

MS155 ~~MS151~~ ~~MS147~~ ~~MF150~~ ~~MS143~~

Reach: 9

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 9/13/10

Stream Name: Yankee Fork Sampling Frequency: F 1/2 S 1/4 Contacts: REC: A. Flynn OBS: C. Mello

Seq	Channel Unit Type & No.	Max Depth	Avg Depth	Pool Crest Depth	Formed By	Wet Width	Length	Woody Material S	Woody Material M	Woody Material L	Unstable Banks Length Left	Unstable Banks Length Right	Unstable Banks Total Length	Undercut Banks Length Left	Undercut Banks Length Right	Undercut Banks Total Length	Picture	Comments:
378	S140	4.0		1.4		19	74	/	/								N 44°24.777'	Debris Jam
379	S141	5.0		.8		21	70	//			70			70			W114°38.063'	±16ft
380	F190	2.2	1.0			36	570	///	recorded missed	pool before fast		140			140			pp 2.2
381	SIDES	1.0	RB			10			enters SO#380, can't find exit									N44°24.790' W114°38.0[illegible]
382	S142	3.0		1.0		20	120											±18
383	F191	1.2	.8			30	227					150						
384	S143	2.7		1.0		35	38											
	MS143							N	44°24.	867'		W	114°	37.9	30'	±19 ft		debris Jam
385	F192	1.0	.6			51	137											
	MF192							N44.24.	862'	W114°	37.906'	±22 ft						
386	S144	4.0	.	.8		45	157	/	N44°24.	867'	W114°	37.877'	±	32ft				backwater LB
387	FN193	2.2	1.2			30	225	//			225			225				pp. 2.0, 2.2 fish
388	F194	1.5	.8			27	376	///						45				dry chan. LB fish
389	S145	2.7		1.0		17	48											
390	S146	7.0		1.0		24	86											N 44°24.979'
391	S147	2.5		1.0		14	77		MEASURED!									W114°37.777' ±30ft
392	F195	2.5	1.0			27	70		WOLMAN									
393	S148	7.0		.6		20	67					N44°24.958'		W	114°37.754'		±16	pp 2.5
394	F196	1.0	.6			39	193				75							backwater LB
395	S149	6.0				24	254	////			30			254	254		N44°24.965' W114°37.697'	±27ft dry side RB
396	F197	1.0	.8			23	29											
397	S150	2.5		.9		22	46											
398	SIDES	1.0	RB			4.0	120		enters SO#			398, exits SO#			399			debris in channel N44°24.977 W114°37.624' ±19
399	S151	3.5		1.0		14	200	/						200	200			
	MS151																	N 44°24.977 W114°37.624' ±19
400	S152	2.4	1.7			11	81							81	81			pp 2.4
401	S153	4.0		1.0		13	45	/	N 44°24.968'		W114°37.592'			45	45			entrenchment inc.

±32ft

Channel Unit Codes: FT = fast turbulent, FN = fast non-turbulent, SS = scour (plunge) pool, SD = dam pool, SIDES = side channel slow, SIDEF = side channel fast, D = dry channel
Special Cases: ARTIF = culvert or dam, WF = waterfall, CH = chute M = marshland
Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

Reach 9

	Bankfull Measurements						Riparian Vegetation			Shade	Streambed Substrate = 100%					GPS	Water Temp		
Seq	BF Width	1	2	3	Max BF Depth	FPW	Class	Over story	Under story	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
384							SS	HW	CL	12	10	50	40	0	0		8	1220	
385	63	2.1	1.8	2.0	2.1	89	SS	HW	CL	34	5	50	45	0	0		8	1225	
391							SS	~~HW~~	CL	9	10	50	40	0	0		8	1246	
399							SS	HW	CE	54	10	50	40	0	0		9	1345	

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large trees, MT = mature trees
Hardwood: HA = alder, HC = cottonwood, HD = dogwood, HQ = quaking aspen, HW = willow, HR = rocky mountain maple, HH = black hawthorn, HS = sagebrush, HW = wild rose, HSB = service berry, HHB = huckleberry, HM = mock orange, HCU = current, HX =other/unknown
Conifer: CD = Douglas fir, CW = white fir, grand fir, CA = subalpine fir, CP = ponderosa pine, CL = lodgepole pine, CJ = juniper, CWL = western larch, CX = other/unknown

Reach: 9

MS159 MS 163

Channel Unit Form -- BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 9/13/10

Stream Name: Yankee Fork Sampling Frequency: F 1/7 S 1/4 Contacts: REC: A. Flynn OBS: C. Mello

Seq	Channel Unit Type & No.	Max Depth	Avg Depth	Pool Crest Depth	Formed By	Wet Width	Length	Woody Material S	Woody Material M	Woody Material L	Unstable Banks Length Left	Unstable Banks Length Right	Unstable Banks Total Length	Undercut Banks Length Left	Undercut Banks Length Right	Undercut Banks Total Length	Picture	Comments:
402	S154	5.0		1.2		33	54											N 44° 24.968' W 114° 37.564' ±24ft
403	F198	1.5	.7			15	141							54	54			
404	SIDEF	.8	LB			4.0	200	enters	SO#	403	, exits			SO#	408	408	N 44° 24.997' W 114° 37.654' ±21ft	dry channel RB
405	S155	2.2		.8		18	64					17			64			
~~406~~	MS155								N	44° 25.	018'		W 114	°37.	531'	±34ft		
406	S156	2.0		1.0		17	48											
407	F199	2.1	.8			18	105	1	N 44°	25.010'								backwater RB
	MF199								W 114°	37.502'								
408	S157	4.0		1.0		23	100	III		± 90ft								
409	S158	3.0		1.0		24	128											±25ft
410	SIDES	2.0	LB			18	570	enters	SO#	409	, exits			SO#	417			N 44° 25.011' W 114° 37.446' Topic of S.C. w/ beaver activ
411	F200	1.0	.6			20	28											trib flows into S.C
412	S159	3.2		1.0		16	96	II										
	MS159								N 44°	25.031'								
413	S160	2.0		.5		21	62		W 114° 37.	434'	± 30ft							
414	F201	1.0	.5			36	51											
415	S161	5.0		.6		30	126		N 44°	25.073'		W 114°	37.	364'	±22 ft			
416	F202	1.6	.7			39	61											
417	FN203	2.7				30	292											
418	F204	1.0	.7			30	80	III										pp. 2.7
419	S162	2.5		1.0		32	150											BW RB
420	F205	1.0	.6			20	145					dispersed		CAMP	SITE	RB		
421	S163	5.0					100											BW RS
	MS163								N	44°25.	212'	W	114°	37.2	55'	±17ft		
422	SIDES	.7		1.0		2.0	55	enters	SO#	420	, exits	SO#	421	N 44° 25.211' W 114° 37.261' ±47ft				backwater LS
423	F206	1.4	.7			36												dry trib LS
	MF206							N 44°	25.260'	W 114°	37.	245'	±17ft					

Channel Unit Codes: FT = fast turbulent, FN = fast non-turbulent, SS = scour (plunge) pool, SD = dam pool, SIDES = side channel slow, SIDEF = side channel fast, D = dry channel
Special Cases: ARTIF = culvert or dam, WF = waterfall, CH = chute M = marshland
Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

Reach 9

	Bankfull Measurements						Riparian Vegetation			Shade	Streambed Substrate = 100%					GPS	Water Temp		
Seq	BF Width	1	2	3	Max BF Depth	FPW	Class	Over story	Under story	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
405							SS	HW	CL	9	10	50	40	0	0		9	1357	
407	BAD	BANKFULL					SS	HW	CL	11	10	50	40	0	0		9	1401	
412							SS	HW	CL	25	10	50	40	0	0		10	1428	
421							ST	CL	HW	37	10	50	40	0	0		10	1452	
423	49	2.1	1.9	2.8	2.8	152	ST	CL	HW	50	10	50	40	0	0		10	1457	

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large trees, MT = mature trees
Hardwood: HA = alder, HC = cottonwood, HD = dogwood, HQ = quaking aspen, HW = willow, HR = rocky mountain maple, HH = black hawthorn, HS = sagebrush, HW = wild rose, HSB = service berry, HHB = huckleberry, HM = mock orange, HCU = currant, HX =other/unknown
Conifer: CD = Douglas fir, CW = white fir, grand fir, CA = subalpine fir, CP = ponderosa pine, CL = lodgepole pine, CJ = juniper, CWL = western larch, CX = other/unknown

Reach: 9/10

~~MS 167~~ MS 171

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 9/13/10

Stream Name: Yankee Fork Sampling Frequency: F 1/7 S 1/4 Contacts: REC: A. Flynn OBS: C. Mello

Channel Units								Woody Material			Unstable Banks			Undercut Banks				
Seq	Channel Unit Type & No.	Max Depth	Avg Depth	Pool Crest Depth	Formed By	Wet Width	Length	S	M	L	Length Left	Length Right	Total Length	Length Left	Length Right	Total Length	Picture	Comments:
424	T1920	LB	Contrib. 2%	Gradient 1%				Temp 7°			N 44°	25.273	W 114°				① pic ② pic	enters SO 425
425	S164	2.0		1.0		20	100							100		37.229		
426	F207	2.1	.7				68											
427	SIDEF	.7	LB			3.0			enters		SO #426,	exits		SO #436				N 44°25.292 W 114°37.248 ±13ft
428	FN208	2.0	1.0			29	215	1111										
429	S165	2.7		.6		23	125	/										
430	SIDEF	.6	RB			3			enters		SO # 429,	exits		SO # ~~436~~ 434				
430	F209	1.3	.7			25	36		N 44°	25.350'	W 114°	37.276'	±15ft				debris jam fish	
431	S166	5.0		1.3		30	27	1111	N 44°	25.350'	W 114°	37.276	±15ft					
432	F210	1.0	.5			33	67											
433	S167	2.5		1.0		42	97	//										
	MS167								N	44°	25.392	W	114°	37.267'			±21ft	
434	F211	1.7	.6			54	264	/										
435	FN212	2.5	.8			36	200	//										
436	F213	2.0	1.0			27	114					115					N 44°25.444'	pp 2.5 W 114°37.228' ±2ft
	MF213														BW-LB			
437	SIDEF	.5	RB			20			enters		SO #436,	exits		@	trib	"8 mile"		N 44°25.510' W 114°37.269' ±22ft
438	SIDEF	.6	RB			7			enters		SO #436,	exits		at	SO # 440			
439	S168	2.7		.8		16	119							40				
440	F214	1.3	.6			30	124	/										
441	S169	2.7		.8		70	158											
442	T2021	RB	Cont. 20%	Grade 2%				Temp 9.5°			N 44°	25.580	W 114°	37.243			① pic ② pic	
	END	REACH 9																
	BEGIN	REACH 10		① picture beginning of reach														
443	FN215	1.5	1.0			30	59											
444	F216	1.3	.8			20	400											
445	SIDES	.5	RB			3	65	enters	SO # 444,		exits	SO #444				and 446	pp 2.5 backw. LS	

Channel Unit Codes: FT = fast turbulent, FN = fast non-turbulent, SS = scour (plunge) pool, SD = dam pool, SIDES = side channel slow, SIDEF = side channel fast, D = dry channel
Special Cases: ARTIF = culvert or dam, WF = waterfall, CH = chute M = marshland
Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

~~N 44° 25.579' W 114° 37.180'~~ ±8ft

N 44° 25.585' W 114° 37.142' ±19ft

Reach 9/10

	Bankfull Measurements						Riparian Vegetation			Shade	Streambed Substrate = 100%					GPS	Water Temp		
Seq	BF Width	1	2	3	Max BF Depth	FPW	Class	Over story	Under story	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
433							ST	CL	GF	18	10	50	40	0	0		8.5	1544	
436	40	1.1	2.5	2.5	2.5	190	ST	CL	GF	46	10	50	40	0	0		8.5	1615	

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large trees, MT = mature trees
Hardwood: HA = alder, HC = cottonwood, HD = dogwood, HQ = quaking aspen, HW = willow, HR = rocky mountain maple, HH = black hawthorn, HS = sagebrush, HW = wild rose, HSB = service berry, HHB = huckleberry, HM = mock orange, HCU = current, HX =other/unknown
Conifer: CD = Douglas fir, CW = white fir, grand fir, CA = subalpine fir, CP = ponderosa pine, CL = lodgepole pine, CJ = juniper, CWL = western larch, CX = other/unknown

~~MS141~~ ~~MS175~~ MS179

Reach: 10

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 9/13/10

Stream Name: Yankee Fork Sampling Frequency: F 1/1 S 1/4 Contacts: REC: A. Flynn OBS: Chris Mello

Seq	Channel Unit Type & No.	Max Depth	Avg Depth	Pool Crest Depth	Formed By	Wet Width	Length	Woody Material S	Woody Material M	Woody Material L	Unstable Banks Length Left	Unstable Banks Length Right	Unstable Banks Total Length	Undercut Banks Length Left	Undercut Banks Length Right	Undercut Banks Total Length	Picture	Comments:
446	S170	2.2		1.0		20	100											
447	S1DEF	.2	LB			4.0		enters	SO#	448		exits	SO#	452				N 44°25.542
448	F217	1.0	.7			24	47											W 114° 37.108' ± 13ft
449	S171	2.0		.7		27	53				N 44° 25.614'							
	MS171										W 114° 37.107'			± 17 ft				
450	F218	1.0	.7			30	30				30	30		30	30			
451	S172	3.0		1.0		16	62											
[illegible]	[illegible]	3.0		see	back	55	955										upstream	(on back)
453	F22[illegible]	LB	Contrib.	<1%		Gradient		20%	Downstream	Temp 6.5°	N 44°25.624			W 114° 37.070'		± 12		pp 3.0 see specia
454	F219	2.5	.7			28	295				N 44° 25.667			W 114° 36.907				Dpic of fr.5
455	S173	3.5		1.3	BR	42	25											pp 2.5
456	F220	1.5	.6			20	106	WOLMAN			N 44° 25.7	39'						
	MF220										W 114° 36.99	6'		± 2 ft				
457	S174	3.0		1.0		19	48											N 44°25.759' W 114° 36.970' ± 16ft
458	F221	1.5	.7			20	279							~~pair~~ fed	side	channel	~~#457~~ #5	
459	SIDE[illegible]	.3		LB		6.0	260							279	279			
460	S175	2.2		.6		27	110	enters	SO#	458,	exits same							N 44° 25.759'
	MS175																	W 114° 36.970' ± 16ft
461	F222	1.3	.7			30	100		N 44° 25.802'		W 114°	36.942'	± 18 ft					
[illegible]	[illegible]	3.0				45	506											
463	SIDEF	.3		LB		12	150	downstream	N 44° 25.803'	W	114° 36.9[illegible]		±17				upstream	N44°25.964' W 114° 36.894'
464	F223	1.3	.7			41	149	enters	SO#	467,	exits	SO#	465					± 11ft
466	FN224	1.5	1.0			27	100											
466	F225	1.3	.6			36	505											
467	S176	2.0		.8		21	92											more algae dry si.
468	F226	1.0	.6			39	40											LT
	End Survey	at	dry	trib			N 44°	26.032	W 114°	36.803		1842	total	temp	7°			

Channel Unit Codes: FT = fast turbulent, FN = fast non-turbulent, SS = scour (plunge) pool, SD = dam pool, SIDES = side channel slow, SIDEF = side channel fast, D = dry channel
Special Cases: ARTIF = culvert or dam, WF = waterfall, CH = chute M = marshland
Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

9/19/2010

Reach 10

N 44° 26.032 [illegible] 36.803

① dry trib w/ San
② dry upstream

	Bankfull Measurements						Riparian Vegetation			Shade	Streambed Substrate = 100%					GPS	Water Temp		
Seq	BF Width	1	2	3	Max BF Depth	FPW	Class	Over story	Under story	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
449							SS	HW	CL	7	10	50	40	0	0		8.5	1641	
456	30	2.1	2.0	1.7	2.1	38	~~ST~~	CL	HW	60	10	50	40	0	0		7	1741	
460							ST	CL	HW	39	10	50	40	0	0		7	1802	

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large trees, MT = mature trees
Hardwood: HA = alder, HC = cottonwood, HD = dogwood, HQ = quaking aspen, HW = willow, HR = rocky mountain maple, HH = black hawthorn, HS = sagebrush, HW = wild rose, HSB = service berry, HHB = huckleberry, HM = mock orange, HCU = current, HX = other/unknown
Conifer: CD = Douglas fir, CW = white fir, grand fir, CA = subalpine fir, CP = ponderosa pine, CL = lodgepole pine, CJ = juniper, CWL = western larch, CX = other/unknown

50 # 452 B2 debris Jam N44°25.654' ±11ft
W114°36.980'

end of brail N. 44°25.694' ±20ft Woody debris Brail end

SPECIAL CASES FORM
(Culverts, Dams, Falls, Chutes, and Marshlands)

A. State ID B. County Custer C. Forest Salmon-Challis R6-2500/2600-23 D. District Yankee Fork
E. Stream Name Yankee Fork
F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02/01
G. USGS Quad Sunbeam, Custer, Elevenmile Creek
H. Survey Date 09/13/2010 (MM/DD/YYYY) I. Contacts: Observer: C. Mello Recorder: S. Fiorito / A. Flynn

Reach #	Sequence Order #	Channel Unit Type and No.*	Type of Structure (culverts)**	Length of Structure or Channel Unit (ft)	Diameter or Width (ft)	% Gradient	Jumping Distance (ft)	Spill Pool Depth (ft)	Height (ft)	Baffles Present (Y or N)	Migration Barrier (Y or N)	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13
												9/18/2010
7	277	WF1	N/A	6	24	100%	6	4.0	6	N/A	N	Possibly migration
7	288	WF2	N/A	12	15	58%	7	18	7	N/A	N	barriers for Juvenile
7	302	CH7	N/A	121	20	3%	0	6.0	0	N/A	N	9/18/2010
8*	357	B1	N/A	58	30	2%	0	N/A	N/A	N/A	N	9/18/2010
10*	453	B2	N/A	955	55	2%	0	N/A	N/A	N/A	N	9/19/2010
10*	463	B3	N/A	500	45	2%	0	N/A	N/A	N/A	N	9/19/2010

*Channel Unit Type = ARTIF (Culvert, Dam), WF (waterfall), CH (Chute), ND (Marshlands)

**Type of Structure (for culverts only). This data entered into Remarks area in AI only

Round Pipe (RP) Box (BX) Arch (AR) Open Arch (OA) Open Box (OB) Elliptical (EL)

* = barrier one end

Wallowa-Whitman National Forest
Discharge Calculation Worksheet

District: Yankee Fork
HUC: 170602010505/02
Site: Yankee Fork below Polecamp Creek
Date: 09/13/2010
Time:
Stream Temperature:

Wetted Width (ft)	62.00
Mean Depth (ft)	0.88
Maximum Depth (ft)	1.50
Cross-sectional Area (ft2)	56.45
Mean Velocity (ft/s)	1.31
Total Discharge (ft3/s)	83.46

Sections	Distance from inititial point (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)	Discharge (%)	Notes
1	0.0	1.0	0.05	0.05	0.00	0.00	0%	RWE
2	2.0	2.0	0.00	0.00	0.00	0.00	0%	
3	4.0	2.0	0.10	0.20	0.70	0.14	0%	
4	6.0	2.0	0.50	1.00	0.66	0.66	1%	
5	8.0	2.0	0.40	0.80	2.34	1.87	2%	
6	10.0	2.0	1.30	2.60	2.36	6.14	7%	
7	12.0	2.0	1.20	2.40	2.29	5.50	7%	
8	14.0	2.0	1.20	2.40	1.67	4.01	5%	
9	16.0	2.0	1.20	2.40	1.00	2.40	3%	
10	18.0	2.0	0.90	1.80	0.41	0.74	1%	
11	20.0	2.0	1.10	2.20	1.40	3.08	4%	
12	22.0	2.0	0.80	1.60	3.78	6.05	7%	
13	24.0	2.0	0.40	0.80	2.48	1.98	2%	
14	26.0	2.0	1.00	2.00	0.73	1.46	2%	
15	28.0	2.0	1.00	2.00	1.48	2.96	4%	
16	30.0	2.0	1.30	2.60	2.07	5.38	6%	
17	32.0	2.0	1.10	2.20	1.44	3.17	4%	
18	34.0	2.0	0.80	1.60	1.14	1.82	2%	
19	36.0	2.0	0.90	1.80	2.22	4.00	5%	
20	38.0	2.0	1.10	2.20	2.02	4.44	5%	
21	40.0	2.0	1.30	2.60	2.02	5.25	6%	
22	42.0	2.0	1.20	2.40	1.45	3.48	4%	
23	44.0	2.0	0.70	1.40	1.07	1.50	2%	
24	46.0	2.0	1.10	2.20	0.14	0.31	0%	
25	48.0	2.0	1.10	2.20	1.50	3.30	4%	
26	50.0	2.0	1.00	2.00	1.87	3.74	4%	
27	52.0	2.0	1.20	2.40	1.70	4.08	5%	
28	54.0	2.0	1.40	2.80	0.20	0.56	1%	
29	56.0	2.0	1.50	3.00	1.75	5.25	6%	
30	58.0	2.0	1.40	2.80	0.07	0.20	0%	
31	60.0	2.0	0.00	0.00	0.00	0.00	0%	
32	62.0	1.0	0.00	0.00	0.00	0.00	0%	LWE

DISCHARGE FORM
R6-2500/2600-31

Page: 1 of 1

A. State ID B. County Custer C. Forest Salmon-Challis D. District Yankee Fork

E. Stream Name YANKEE FORK

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02

G. USGS Quad Sunbeam, Custer, Elevenmile Creek

H. Survey Date 09/13/2010 I. Survey Time:
MM / DD / YYYY

J. Observer/Recorder L. MELLO / S. FIORITO

K. Meter Type Marsh McBirney L. Remarks

	Distance from initial point (ft)	Width (ft)	Depth (ft)	Observation Depth (ft)	Revolutions	Time in Seconds	Velocity at point (ft/sec)	Velocity Mean in Vertical (ft/sec)	Area (ft^2)	Discharge (cfs)
1	0		.05				.0			
2	2		0				.0			
3	4		.1				.70			
4	6		.5				.66			
5	8		.4				2.34			
6	10		1.3				2.36			
7	12		1.2				2.29			
8	14		1.2				1.67			
9	16		1.2				1.00			
10	18		.9				.41			
11	20		1.1				1.40			
12	22		.8				3.79			
13	24		.4				2.48			
14	26		1				.73			
15	28		1				1.48			
16	30		1.3				2.07			
17	32		1.1				1.44			
18	34		.8				1.14			
19	36		.9				2.22			
20	38		≠1.1				2.02			
21	40		1.3				2.02			
22	42		1.2				1.45			
23	44		.7				1.07			
24	46		1.1				.14			
25	48		1.1				1.5			
26	50		1				1.87			
27	52		1.2				1.7			
28	54		1.4				.20			
29	56		1.5				1.75			
30	58		1.4				.07			
31	60		0				0			

LWE = 62

WOLMAN FORM
R6-2500/2600-32

Page: 1 of 20

A. State ID B. County Custer C. Forest Salmon-challis D. District Yankee Fork

E. Stream Name Yankee Fork

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02

G. USGS Quad Sunbeam, Custer, eleven mile creek

H. Survey Date 9 / 13 / 2016

MM / DD / YYYY

PEBBLE COUNT

SO #: 18 | Channel Unit # F8 | # of Transects: 1

Surveyor: C. Mello | Reach: 1

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	IIII IIII IIII	15	13.636	
.08 - .16	Very Fine	2 - 4					
.16 - .22	Fine	4 - 5.7	G				
.22 - .31	Fine	5.7 - 8	R				
.31 - .44	Medium	8 - 11.3	A				
.44 - .63	Medium	11.3 - 16	V				
.63 - .89	Coarse	16 - 22.6	E	IIII	7	6.364	
.89 - 1.26	Coarse	22.6 - 32	L	IIII IIII IIII	16	14.545	
1.26 - 1.77	Vry Coarse	32 - 45	S	IIII IIII IIII IIII	20	18.182	
1.77 - 2.5	Vry Coarse	45 - 64		IIII IIII IIII	15	13.636	
2.5 - 3.5	Small	64 - 90	C	IIII IIII IIII	15	13.636	
3.5 - 5.0	Small	90 - 128	O	IIII IIII IIII III	18	16.364	
5.0 - 7.1	Large	128 - 180	B	IIII	4	3.636	
7.1 - 10.1	Large	180 - 256	B				
10.1 - 14.3	Small	256 - 362	B				
14.3 - 20	Small	362 - 512	L				
20 - 40	Medium	512 - 1024	D				
40 - 80	Large	1024 - 2048	R				
80 - 160	Vry Large	2048 - 4096	S				
	Bedrock		BDRK				
				Totals:	110		
	Total Tally: [illegible]						

N 44° 19.563

W 114° 42.116

WOLMAN FORM
R6-2500/2600-32

Page: 2 of 20

A. State ID B. County Custer C. Forest Salmon-Challis D. District Yankee Fork

E. Stream Name Yankee Fork

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02

G. USGS Quad sunbeam, custer, elevenmile creek

H. Survey Date 9 / 13 / 2010
MM / DD / YYYY

PEBBLE COUNT

SO #: 37 | Channel Unit # FK | # of Transects: 1

Surveyor: A Flynn | Reach: 1

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	III	3	2.381	
.08 -.16	Very Fine	2 -4					
.16 - .22	Fine	4 -5.7	G				
.22 - .31	Fine	5.7 - 8	R				
.31 - .44	Medium	8 -11.3	A				
.44 - .63	Medium	11.3 - 16	V				
.63 - .89	Coarse	16 -22.6	E	III	3	2.381	
.89 - 1.26	Coarse	22.6 - 32	L	𝍸	10	7.937	
1.26 - 1.77	Vry Coarse	32 - 45	S	𝍸 II	12	9.524	
1.77 -2.5	Vry Coarse	45 - 64		𝍸 𝍸 𝍸	~~22~~	17.460	
2.5 - 3.5	Small	64 - 90	C	𝍸 IIII	14	11.111	
3.5 - 5.0	Small	90 - 128	O	𝍸 𝍸 𝍸 II	22	17.460	
5.0 - 7.1	Large	128 - 180	B	𝍸 𝍸 III	19	15.079	
7.1 - 10.1	Large	180 - 256	B	𝍸 I	11	8.730	
10.1 - 14.3	Small	256 - 362	B	𝍸	10	7.937	
14.3 - 20	Small	362 - 512	L				
20 - 40	Medium	512 - 1024	D				
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK				
				Totals:	126		
	Total Tally:						

N 44° 16.809'
W 114° 43.072'

WOLMAN FORM Page: 3 of 20
R6-2500/2600-32 salmon-challis

A. State ID B. County Custer C. Forest _____ D. District Yankee Fork

E. Stream Name Yankee Fork

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02

G. USGS Quad sunbeam, Custer, eleven mile creek

H. Survey Date 09 / 14 / 2010
MM / DD / YYYY

PEBBLE COUNT

SO #: 50 | Channel Unit # F26 | # of Transects: 1
Surveyor: Sam Fiorito | Reach: 2

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	𝍸 I	6	3.03	
.08 -.16	Very Fine	2 -4					
.16 - .22	Fine	4 -5.7	G				
.22 - .31	Fine	5.7 - 8	R				
.31 - .44	Medium	8 -11.3	A	II	2	1.01	
.44 - .63	Medium	11.3 - 16	V	𝍸 I	6	3.03	
.63 - .89	Coarse	16 -22.6	E	𝍸 𝍸 I	11	5.556	
.89 - 1.26	Coarse	22.6 - 32	L	𝍸 𝍸 III	13	6.566	
1.26 - 1.77	Vry Coarse	32 - 45	S	𝍸 𝍸 𝍸 I	16	8.081	
1.77 -2.5	Vry Coarse	45 - 64		𝍸 𝍸 𝍸 𝍸	20	10.101	
2.5 - 3.5	Small	64 - 90	C	𝍸 𝍸 𝍸 𝍸 𝍸 I	26	13.131	
3.5 - 5.0	Small	90 - 128	O	𝍸 𝍸 𝍸 𝍸 I	21	10.606	
5.0 - 7.1	Large	128 - 180	B	𝍸 𝍸 𝍸 𝍸 𝍸 II	27	13.636	
7.1 - 10.1	Large	180 - 256	B	𝍸 𝍸 𝍸 𝍸 𝍸 II		16.162	
10.1 - 14.3	Small	256 - 362	B	𝍸 𝍸 𝍸 III	18	9.091	
14.3 - 20	Small	362 - 512	L				
20 - 40	Medium	512 - 1024	D				
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK				
				Totals:	198		
	Total Tally: 198 - this guy's efficient!						

32

WOLMAN FORM
R6-2500/2600-32

A. State ID B. County Custer C. Forest salmon-challis D. District Yankee Fork

E. Stream Name Yankee Fork

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02

G. USGS Quad Sunbeam, Custer, elevenmile Creek

H. Survey Date 09 / 14 / 2010

MM / DD / YYYY

PEBBLE COUNT

SO #: 55	Channel Unit # F29	# of Transects: 11
Surveyor: C. Mello		Reach: 2

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	//// //// ////	16	14.286	
.08 - .16	Very Fine	2 -4					
.16 - .22	Fine	4 -5.7	G	/	1	0.893	
.22 - .31	Fine	5.7 - 8	R				
.31 - .44	Medium	8 -11.3	A				
.44 - .63	Medium	11.3 - 16	V	///	3	2.679	
.63 - .89	Coarse	16 -22.6	E	////	4	3.571	
.89 - 1.26	Coarse	22.6 - 32	L	////	4	3.571	
1.26 - 1.77	Vry Coarse	32 - 45	S	//// ////	9	8.036	
1.77 -2.5	Vry Coarse	45 - 64		//// //// ////	14	12.5	
2.5 - 3.5	Small	64 - 90	C	//// ////	9	8.036	
3.5 - 5.0	Small	90 - 128	O	//// //// //// ////	20	17.857	
5.0 - 7.1	Large	128 - 180	B	//// //// //	12	10.714	
7.1 - 10.1	Large	180 - 256	B	//// //// ///	8	7.143	
10.1 - 14.3	Small	256 - 362	B	//// ////	9	8.036	
14.3 - 20	Small	362 - 512	L	///	3	2.679	
20 - 40	Medium	512 - 1024	D				
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK				
				Totals:	///		
	Total Tally: ///				112		

N 44° 19.436
W 114° 43.231

WOLMAN FORM
R6-2500/2600-32

Page: 5 of 20

A. State ID B. County Custer C. Forest Salmon-Challis D. District Yankee Fork

E. Stream Name Yankee Fork

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02

G. USGS Quad Sunbeam, Custer, elevenmile creek

H. Survey Date 09 / 14 / 2020

MM / DD / YYYY

PEBBLE COUNT

SO #: 70 | Channel Unit # F39 | # of Transects: 1

Surveyor: A Flynn | Reach: 3

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	IIII	9	8.411	
.08 -.16	Very Fine	2 -4		I	2	1.869	
.16 - .22	Fine	4 -5.7	G				
.22 - .31	Fine	5.7 - 8	R	I	1	0.935	
.31 - .44	Medium	8 -11.3	A	I	1	0.935	
.44 - .63	Medium	11.3 - 16	V	I	1	0.935	
.63 - .89	Coarse	16 -22.6	E	IIII	7	6.542	
.89 - 1.26	Coarse	22.6 - 32	L	IIII IIII II	13	12.149	
1.26 - 1.77	Vry Coarse	32 - 45	S	IIII III	9	8.411	
1.77 -2.5	Vry Coarse	45 - 64		IIII IIII	15	14.019	
2.5 - 3.5	Small	64 - 90	C	IIII IIII III	13	12.149	
3.5 - 5.0	Small	90 - 128	O	IIII II	8	7.477	
5.0 - 7.1	Large	128 - 180	B	IIII IIII	10	9.346	
7.1 - 10.1	Large	180 - 256	B	IIII	5	4.673	
10.1 - 14.3	Small	256 - 362	B	IIII	5	4.673	
14.3 - 20	Small	362 - 512	L	IIII	5	4.673	
20 - 40	Medium	512 - 1024	D	III	3	2.804	
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK				
				Totals:	107		
	Total Tally:						

N 44° 20.028
W 114° 43.341

WOLMAN FORM
R6-2500/2600-32

Page: 6 of 20

A. State ID B. County Custer C. Forest salmon-challis D. District Yankee Fork

E. Stream Name Yankee Fork Salmon River

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02

G. USGS Quad Sunbeam, Custer, elevenmile creek

H. Survey Date 09 / 13 / 2010

MM / DD / YYYY

PEBBLE COUNT

SO #: 84	Channel Unit # F46	# of Transects:	
Surveyor: S. Fiorito		Reach: 3	

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	𝍸 𝍸 II	12	9.756	
.08 -.16	Very Fine	2 -4					
.16 - .22	Fine	4 -5.7	G				
.22 - .31	Fine	5.7 - 8	R				
.31 - .44	Medium	8 -11.3	A	III	3	2.439	
.44 - .63	Medium	11.3 - 16	V	𝍸	5	4.065	
.63 - .89	Coarse	16 -22.6	E	𝍸 IIII	9	7.317	
.89 - 1.26	Coarse	22.6 - 32	L	𝍸 𝍸 𝍸 IIII	19	15.447	
1.26 - 1.77	Vry Coarse	32 - 45	S	𝍸 𝍸 𝍸 IIII	19	15.447	
1.77 -2.5	Vry Coarse	45 - 64		𝍸 𝍸 II	12	9.756	
2.5 - 3.5	Small	64 - 90	C	𝍸 IIII	9	7.317	
3.5 - 5.0	Small	90 - 128	O	𝍸 𝍸	10	8.130	
5.0 - 7.1	Large	128 - 180	B	𝍸 III	8	6.504	
7.1 - 10.1	Large	180 - 256	B	𝍸 𝍸 II	12	9.756	
10.1 - 14.3	Small	256 - 362	B	III	3	2.439	
14.3 - 20	Small	362 - 512	L	II	2	1.626	
20 - 40	Medium	512 - 1024	D				
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK				
				Totals:	~~130~~		
	Total Tally:				123		

N 44° 20.595'
W 114° 43.496'

WOLMAN FORM
R6-2500/2600-32

A. State ID B. County Custer C. Forest salmon-challis D. District Yankee Fork

E. Stream Name Yankee Fork

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02

G. USGS Quad Sunbeam, Custer, elevenmile creek

H. Survey Date 09 / 13 / 2010
MM / DD / YYYY

PEBBLE COUNT

SO #: 126 | Channel Unit # F71 | # of Transects: 11

Surveyor: A. Flynn | Reach: 4

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	~~IIII~~ ~~IIII~~	10	10 %	
.08 -.16	Very Fine	2 -4					
.16 - .22	Fine	4 -5.7	G				
.22 - .31	Fine	5.7 - 8	R	III	3	3 %	
.31 - .44	Medium	8 -11.3	A	~~IIII~~ I	6	6 %	
.44 - .63	Medium	11.3 - 16	V	~~IIII~~	5	5 %	
.63 - .89	Coarse	16 -22.6	E	III	3	3 %	
.89 - 1.26	Coarse	22.6 - 32	L	~~IIII~~ III	8	8 %	
1.26 - 1.77	Vry Coarse	32 - 45	S	~~IIII~~	5	5 %	
1.77 -2.5	Vry Coarse	45 - 64		~~IIII~~ ~~IIII~~ II	12	12 %	
2.5 - 3.5	Small	64 - 90	C	~~IIII~~ III	8	8 %	
3.5 - 5.0	Small	90 - 128	O	~~IIII~~ ~~IIII~~ II	12	12 %	
5.0 - 7.1	Large	128 - 180	B	~~IIII~~ ~~IIII~~ I	11	11 %	
7.1 - 10.1	Large	180 - 256	B	~~IIII~~ I	6	6 %	
10.1 - 14.3	Small	256 - 362	B	II	2	2 %	
14.3 - 20	Small	362 - 512	L	~~IIII~~ II	7	7 %	
20 - 40	Medium	512 - 1024	D	II	2	2 %	
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK				
				Totals:	100		
	Total Tally:						

N 44° 21.871'
W 114° 43.707'

WOLMAN FORM
R6-2500/2600-32

A. State ID B. County Custer C. Forest Salmon-Challis D. District Yankee Fork

E. Stream Name Yankee Fork

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02

G. USGS Quad Sunbeam, Custer, elevenmile creek

H. Survey Date 09 / 13 / 2010
MM / DD / YYYY

PEBBLE COUNT

SO #: ~~FS~~ 139 | Channel Unit # F80 | # of Transects:

Surveyor: | Reach: 4

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	IIII	7	6.422	
.08 -.16	Very Fine	2 -4		I	1	0.917	
.16 - .22	Fine	4 -5.7	G				
.22 - .31	Fine	5.7 - 8	R				
.31 - .44	Medium	8 -11.3	A				
.44 - .63	Medium	11.3 - 16	V	IIII	5	4.587	
.63 - .89	Coarse	16 -22.6	E	IIII	6	5.505	
.89 - 1.26	Coarse	22.6 - 32	L	IIII	7	6.422	
1.26 - 1.77	Vry Coarse	32 - 45	S	IIII I	11	10.092	
1.77 -2.5	Vry Coarse	45 - 64		IIII	6	5.505	
2.5 - 3.5	Small	64 - 90	C	IIII I	11	10,092	
3.5 - 5.0	Small	90 - 128	O	IIII II	12	11.009	
5.0 - 7.1	Large	128 - 180	B	IIII IIII III	18	16.514	
7.1 - 10.1	Large	180 - 256	B	IIII II	12	11.009	
10.1 - 14.3	Small	256 - 362	B	IIII III	13	11.927	
14.3 - 20	Small	362 - 512	L				
20 - 40	Medium	512 - 1024	D				
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK				
				Totals:	109		
	Total Tally:						

N 44° 22.523
W 114° 43.390

WOLMAN FORM
R6-2500/2600-32

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A. State ID B. County Custer C. Forest Salmon-Challis D. District Yankee Fork

E. Stream Name Yankee Fork

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02

G. USGS Quad Sunbeam, Custer, elevenmile Creek

H. Survey Date 09 / 13 / 2010
MM / DD / YYYY

PEBBLE COUNT

SO #: 164 | Channel Unit # F94 | # of Transects:

Surveyor: S. Fiorito | Reach: 5

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	<2	S/C/S	1111	4	3.2	
.08 -.16	Very Fine	2 -4		1	1	0.8	
.16 - .22	Fine	4 -5.7	G	1	1	0.8	
.22 - .31	Fine	5.7 - 8	R	1111	4	3.2	
.31 - .44	Medium	8 -11.3	A	5 111	8	6.4	
.44 - .63	Medium	11.3 - 16	V	1	1	0.8	
.63 - .89	Coarse	16 -22.6	E	1111	4	3.2	
.89 - 1.26	Coarse	22.6 - 32	L	5 5	10	8	
1.26 - 1.77	Vry Coarse	32 - 45	S	5 5 5	20	16	
1.77 -2.5	Vry Coarse	45 - 64		5 5 5	20	16	
2.5 - 3.5	Small	64 - 90	C	5 5 1111	14	11.2	
3.5 - 5.0	Small	90 - 128	O	5 1111	9	7.2	
5.0 - 7.1	Large	128 - 180	B	5 5 5	18	14.4	
7.1 - 10.1	Large	180 - 256	B	5	5	4	
10.1 - 14.3	Small	256 - 362	B	5 1	6	4.8	
14.3 - 20	Small	362 - 512	L				
20 - 40	Medium	512 - 1024	D				
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK				
				Totals:	125		

Total Tally:

N 44° 23.080'
W 114° 22.304'

WOLMAN FORM
R6-2500/2600-32

Page: 10 of 20

A. State ID B. County Custer C. Forest salmon-challis D. District Yankee Fork
E. Stream Name Yankee Fork
F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02
G. USGS Quad Sunbeam, Custer, elevenmile creek
H. Survey Date 09 / 13 / 2010
MM / DD / YYYY

PEBBLE COUNT

SO #: 178 | Channel Unit # F102 | # of Transects: 11
Surveyor: A. Flynn | Reach: 5

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	𝍸	5	4.098	
.08 -.16	Very Fine	2 -4					
.16 - .22	Fine	4 -5.7	G				
.22 - .31	Fine	5.7 - 8	R	I	1	0.819	
.31 - .44	Medium	8 -11.3	A	II	2	1.639	
.44 - .63	Medium	11.3 - 16	V	IIII	4	3.279	
.63 - .89	Coarse	16 -22.6	E	𝍸 I	6	4.918	
.89 - 1.26	Coarse	22.6 - 32	L	𝍸 I	6	4.918	
1.26 - 1.77	Vry Coarse	32 - 45	S	𝍸 𝍸 IIII	14	11.475	
1.77 -2.5	Vry Coarse	45 - 64		𝍸 𝍸 IIII	14	11.475	
2.5 - 3.5	Small	64 - 90	C	𝍸 𝍸 IIII	14	11.475	
3.5 - 5.0	Small	90 - 128	O	𝍸 𝍸 III	13	10.656	
5.0 - 7.1	Large	128 - 180	B	𝍸 𝍸 𝍸	21	17.213	
7.1 - 10.1	Large	180 - 256	B	𝍸	5	4.098	
10.1 - 14.3	Small	256 - 362	B	𝍸 III	8	6.557	
14.3 - 20	Small	362 - 512	L	𝍸	5	4.098	
20 - 40	Medium	512 - 1024	D				
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK	IIII	4	3.279	
				Totals:	122		
	Total Tally:						

𝍸 I

N 44° 23.275
W 114° 41.648

WOLMAN FORM Page: 11 of 20
R6-2500/2600-32

A. State ID B. County Custer C. Forest Salmon-challis D. District Yankee Fork
E. Stream Name YANKEE FORK
F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02
G. USGS Quad Sunbeam, Custer, elevenmile creek
H. Survey Date ___/___/___
MM / DD / YYYY

N 44° 23.657 W 114° 40.763

PEBBLE COUNT

SO #: 208 | Channel Unit # F117 | # of Transects: 1
Surveyor: A. Flynn | Reach: 6

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	𝍸 II	7	6.667	
.08 -.16	Very Fine	2 -4					
.16 - .22	Fine	4 -5.7	G	I	1	0.952	
.22 - .31	Fine	5.7 - 8	R	III	3	2.857	
.31 - .44	Medium	8 -11.3	A	I	1	0.952	
.44 - .63	Medium	11.3 - 16	V	𝍸 𝍸 II	12	11.429	
.63 - .89	Coarse	16 -22.6	E	𝍸 III	8	7.619	
.89 - 1.26	Coarse	22.6 - 32	L	𝍸 𝍸 III	13	12.381	
1.26 - 1.77	Vry Coarse	32 - 45	S	𝍸 𝍸	11	10.476	
1.77 -2.5	Vry Coarse	45 - 64		𝍸 𝍸 IIII	14	13.333	
2.5 - 3.5	Small	64 - 90	C	𝍸 𝍸	10	9.524	
3.5 - 5.0	Small	90 - 128	O	𝍸 II	7	6.667	
5.0 - 7.1	Large	128 - 180	B	𝍸 II	7	6.667	
7.1 - 10.1	Large	180 - 256	B	𝍸 II	7	6.667	
10.1 - 14.3	Small	256 - 362	B	I	1	0.952	
14.3 - 20	Small	362 - 512	L				
20 - 40	Medium	512 - 1024	D	III	3	2.857	
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK				
				Totals:	105		
	Total Tally:						

WOLMAN FORM
R6-2500/2600-32

Page: 12 of 20

A. State ID B. County Custer C. Forest salmon-challis D. District Yankee Fork

E. Stream Name Yankee Fork

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02

G. USGS Quad Sunteam, Custer, elevenmile creek

H. Survey Date 09 / 13 / 2010

MM / DD / YYYY

PEBBLE COUNT

SO #: 222	Channel Unit # F122	# of Transects: 1
Surveyor: A. Flynn		Reach: 6

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	卌卌	10	8.197	
.08 -.16	Very Fine	2 -4		1	1	0.819	
.16 - .22	Fine	4 -5.7	G		~~0~~	~~0~~	
.22 - .31	Fine	5.7 - 8	R	卌	5	4.098	
.31 - .44	Medium	8 -11.3	A	卌卌	10	8.197	
.44 - .63	Medium	11.3 - 16	V	卌	5	4.098	
.63 - .89	Coarse	16 -22.6	E	卌卌	10	8.197	
.89 - 1.26	Coarse	22.6 - 32	L	卌卌 1	11	9.016	
1.26 - 1.77	Vry Coarse	32 - 45	S	卌卌 111	13	10.656	
1.77 -2.5	Vry Coarse	45 - 64		卌卌卌	15	12.295	
2.5 - 3.5	Small	64 - 90	C	卌卌 1111	14	11.475	
3.5 - 5.0	Small	90 - 128	O	卌	5	4.098	
5.0 - 7.1	Large	128 - 180	B	111	3	2.459	
7.1 - 10.1	Large	180 - 256	B	1111	4	3.279	
10.1 - 14.3	Small	256 - 362	B	卌	5	4.098	
14.3 - 20	Small	362 - 512	L	卌	5	4.098	
20 - 40	Medium	512 - 1024	D		∅		
40 - 80	Large	1024 -2048	R		∅		
80 - 160	Vry Large	2048 -4096	S		∅		
	Bedrock		BDRK	卌 1	6	4.918	
				Totals:	122		
	Total Tally:						

N 44° 23799
W 114° 40.381

WOLMAN FORM Page: 13 of 20
R6-2500/2600-32

A. State ID B. County Custer C. Forest Salmon-challis D. District Yankee Fork
E. Stream Name Yankee Fork
F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02
G. USGS Quad Sunbeam, Custer, elevenmile creek
H. Survey Date ___/___/___
MM / DD / YYYY
N44° 24.104 W 114° 39.686

PEBBLE COUNT

SO #: 270 | Channel Unit # F143 | # of Transects: 11
Surveyor: C. MELLO | Reach: 7

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	IIII IIII IIII	16	14.035	
.08 -.16	Very Fine	2 -4					
.16 - .22	Fine	4 -5.7	G	I	1	0.879	
.22 - .31	Fine	5.7 - 8	R	IIII	5	4.386	
.31 - .44	Medium	8 -11.3	A				
.44 - .63	Medium	11.3 - 16	V				
.63 - .89	Coarse	16 -22.6	E	IIII III	8	7.018	
.89 - 1.26	Coarse	22.6 - 32	L	IIII I	6	5.263	
1.26 - 1.77	Vry Coarse	32 - 45	S	IIII I	6	5.263	
1.77 -2.5	Vry Coarse	45 - 64		IIII II	7	6.140	
2.5 - 3.5	Small	64 - 90	C	IIII	5	4.386	
3.5 - 5.0	Small	90 - 128	O	IIII	5	4.386	
5.0 - 7.1	Large	128 - 180	B	IIII II	7	6.140	
7.1 - 10.1	Large	180 - 256	B	IIII III	8	7.018	
10.1 - 14.3	Small	256 - 362	B	IIII IIII	9	7.895	
14.3 - 20	Small	362 - 512	L	IIII IIII I	11	9.649	
20 - 40	Medium	512 - 1024	D	IIII IIII I	11	9.649	
40 - 80	Large	1024 -2048	R	IIII I	6	5.263	
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK	III	3	2.632	
				Totals:	114		
	Total Tally:						

WOLMAN FORM
R6-2500/2600-32

A. State ID B. County Custer C. Forest Salmon-Challis D. District Yankee Fork

E. Stream Name Yankee Fork

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02

G. USGS Quad Sunbeam, Custer, elevenmile Creek

H. Survey Date ___/___/___

MM / DD / YYYY

N 44° 24.234, W 114° 39.450

PEBBLE COUNT

SO #: 293	Channel Unit # F153	# of Transects:
Surveyor: A Flynn		Reach:

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	𝍸 𝍸 ||||	14	12.174	
.08 -.16	Very Fine	2 -4					
.16 - .22	Fine	4 -5.7	G				
.22 - .31	Fine	5.7 - 8	R				
.31 - .44	Medium	8 -11.3	A	|	1	0.869	
.44 - .63	Medium	11.3 - 16	V				
.63 - .89	Coarse	16 -22.6	E	𝍸 |	6	5.217	
.89 - 1.26	Coarse	22.6 - 32	L	𝍸 |	6	5.217	
1.26 - 1.77	Vry Coarse	32 - 45	S	𝍸 |	6	5.217	
1.77 -2.5	Vry Coarse	45 - 64		||||	4	3.478	
2.5 - 3.5	Small	64 - 90	C	|	1	0.869	
3.5 - 5.0	Small	90 - 128	O	|	1	0.869	
5.0 - 7.1	Large	128 - 180	B	𝍸	5	4.348	
7.1 - 10.1	Large	180 - 256	B				
10.1 - 14.3	Small	256 - 362	B				
14.3 - 20	Small	362 - 512	L	|||	3	2.609	
20 - 40	Medium	512 - 1024	D				
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	68	59.13	
				Totals:	115		
	Total Tally:						

WOLMAN FORM
R6-2500/2600-32

A. State ID B. County Custer C. Forest Salmon-Challis D. District Yankee Fork

E. Stream Name Yankee Fork

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02

G. USGS Quad Sunbeam, Custer, Elevenmile Creek

H. Survey Date 09 / 13 / 2000
MM / DD / YYYY

PEBBLE COUNT

SO #: 335 | Channel Unit # F172 | # of Transects: 11 (2)
Surveyor: S. Fiorito | Reach: 8

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	𝍸 𝍸 𝍸 ||||	19	14.844	
.08 - .16	Very Fine	2 -4					
.16 - .22	Fine	4 -5.7	G				
.22 - .31	Fine	5.7 - 8	R				
.31 - .44	Medium	8 -11.3	A	1	1	0.781	
.44 - .63	Medium	11.3 - 16	V	1	1	0.781	
.63 - .89	Coarse	16 -22.6	E	𝍸 |	6	4.688	
.89 - 1.26	Coarse	22.6 - 32	L	𝍸 𝍸 |||	13	10.156	
1.26 - 1.77	Vry Coarse	32 - 45	S	𝍸 𝍸 𝍸 𝍸 𝍸 ||	27	21.094	
1.77 -2.5	Vry Coarse	45 - 64		𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 ||||	37	28.906	
2.5 - 3.5	Small	64 - 90	C	𝍸 𝍸 ||||	14	10.938	
3.5 - 5.0	Small	90 - 128	O	𝍸 |	6	4.688	
5.0 - 7.1	Large	128 - 180	B	|	2	1.563	
7.1 - 10.1	Large	180 - 256	B	|	2	1.563	
10.1 - 14.3	Small	256 - 362	B				
14.3 - 20	Small	362 - 512	L				
20 - 40	Medium	512 - 1024	D				
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK				
				Totals:	128		
	Total Tally: 128						

N 44° 24.565
W 114° 38.770

WOLMAN FORM
R6-2500/2600-32

A. State ID B. County Custer C. Forest salmon-challis D. District Yankee Fork

E. Stream Name Yankee Fork

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02

G. USGS Quad Sunbeam, Custer, elevenmile creek

H. Survey Date 09 / 13 / 2010
MM / DD / YYYY

PEBBLE COUNT

SO #: 348	Channel Unit # F179	# of Transects: 2
Surveyor: Chris Mello		Reach: 8

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	::	4	2.941	
.08 -.16	Very Fine	2 -4					
.16 - .22	Fine	4 -5.7	G	•	1	0.735	
.22 - .31	Fine	5.7 - 8	R				
.31 - .44	Medium	8 -11.3	A				
.44 - .63	Medium	11.3 - 16	V				
.63 - .89	Coarse	16 -22.6	E	☒	9	6.618	
.89 - 1.26	Coarse	22.6 - 32	L	☒	9	6.618	
1.26 - 1.77	Vry Coarse	32 - 45	S	☒ ::	15	11.029	
1.77 -2.5	Vry Coarse	45 - 64		☒ ☒ ::	26	19.118	
2.5 - 3.5	Small	64 - 90	C	☒ ☒	20	14.706	
3.5 - 5.0	Small	90 - 128	O	☒ ::	27	19.853	
5.0 - 7.1	Large	128 - 180	B	☒ ::	24	17.647	
7.1 - 10.1	Large	180 - 256	B				
10.1 - 14.3	Small	256 - 362	B				
14.3 - 20	Small	362 - 512	L	•	1	0.735	
20 - 40	Medium	512 - 1024	D				
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK				
				Totals:	120		
	Total Tally: 120				136		

N 44° 24.641
W 114° 38.434

WOLMAN FORM
R6-2500/2600-32

A. State ID B. County Custer C. Forest Salmon-challis D. District Yankee Fork

E. Stream Name Yankee Fork

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02

G. USGS Quad Sunbeam, Custer, elevenmile creek

H. Survey Date 09/13/2010
MM / DD / YYYY

PEBBLE COUNT

SO #: 392 | Channel Unit # F195 | # of Transects:

Surveyor: A. Flynn | Reach: 9

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	<2	S/C/S	IIII IIII IIII	18	14.876	
.08 -.16	Very Fine	2 -4					
.16 - .22	Fine	4 -5.7	G	I	2	1.653	
.22 - .31	Fine	5.7 - 8	R	I	1	0.826	
.31 - .44	Medium	8 -11.3	A	I	1	0.826	
.44 - .63	Medium	11.3 - 16	V	IIII	5	4.132	
.63 - .89	Coarse	16 -22.6	E	IIII III	9	7.438	
.89 - 1.26	Coarse	22.6 - 32	L	IIII IIII IIII II	22	18.182	
1.26 - 1.77	Vry Coarse	32 - 45	S	IIII IIII IIII IIII	40	33.058	
1.77 -2.5	Vry Coarse	45 - 64		IIII IIII III	19	15.702	
2.5 - 3.5	Small	64 - 90	C	IIII	4	3.306	
3.5 - 5.0	Small	90 - 128	O				
5.0 - 7.1	Large	128 - 180	B				
7.1 - 10.1	Large	180 - 256	B				
10.1 - 14.3	Small	256 - 362	B				
14.3 - 20	Small	362 - 512	L				
20 - 40	Medium	512 - 1024	D				
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK				
				Totals:	121		
	Total Tally:						

IIII IIII
IIII IIII

N 44° 24.974
W 114° 37.764

WOLMAN FORM
R6-2500/2600-32

A. State ID B. County Custer C. Forest Salmon-challis D. District Yankee Fork

E. Stream Name Yankee Fork

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02

G. USGS Quad Sunbeam, Custer, elevenmile Creek

H. Survey Date 09 / 13 / 2010

MM / DD / YYYY

PEBBLE COUNT

SO #: 423 | Channel Unit # F206 | # of Transects: 1

Surveyor: Chris Mello | Reach: 9

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S		8	7.843	
.08 -.16	Very Fine	2 -4		•	1	0.980	
.16 - .22	Fine	4 -5.7	G				
.22 - .31	Fine	5.7 - 8	R	•	1	0.980	
.31 - .44	Medium	8 -11.3	A	•	1	0.980	
.44 - .63	Medium	11.3 - 16	V	••	2	1.961	
.63 - .89	Coarse	16 -22.6	E	⊠	10	9.804	
.89 - 1.26	Coarse	22.6 - 32	L	⊠ ::	14	13.725	
1.26 - 1.77	Vry Coarse	32 - 45	S	⊠ •	11	10.784	
1.77 -2.5	Vry Coarse	45 - 64		⊠ :•	13	12.745	
2.5 - 3.5	Small	64 - 90	C	⊠ ⊡	17	16.667	
3.5 - 5.0	Small	90 - 128	O	⊠	10	9.804	
5.0 - 7.1	Large	128 - 180	B	⊡	7	6.863	
7.1 - 10.1	Large	180 - 256	B	⊡	7	6.863	
10.1 - 14.3	Small	256 - 362	B				
14.3 - 20	Small	362 - 512	L				
20 - 40	Medium	512 - 1024	D				
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK				
				Totals:	~~105~~		
	Total Tally: 105				102		

N 44° 25.272
W 114° 37.221

WOLMAN FORM
R6-2500/2600-32

A. State ID B. County Custer C. Forest Salmon-Challis D. District Yankee Fork

E. Stream Name Yankee Fork

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02

G. USGS Quad Sunbeam, Custer, elevenmile creek

H. Survey Date 09/13/2010
MM/ DD / YYYY

PEBBLE COUNT

SO #: 450 | Channel Unit # F218 | # of Transects: 1

Surveyor: Sam Fronzo | Reach: 10

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	⁘	3	3%	
.08 -.16	Very Fine	2 -4					
.16 - .22	Fine	4 -5.7	G				
.22 - .31	Fine	5.7 - 8	R	•	1	1%	
.31 - .44	Medium	8 -11.3	A				
.44 - .63	Medium	11.3 - 16	V				
.63 - .89	Coarse	16 -22.6	E	•	1	1%	
.89 - 1.26	Coarse	22.6 - 32	L	⁙	6	6%	
1.26 - 1.77	Vry Coarse	32 - 45	S	⊠ 𝍸	17	17%	
1.77 -2.5	Vry Coarse	45 - 64		⊠ ⊠ ••	22	22%	
2.5 - 3.5	Small	64 - 90	C	⊠ ⁙	17	17%	
3.5 - 5.0	Small	90 - 128	O	⊠ ⊡	19	19%	
5.0 - 7.1	Large	128 - 180	B	⊠ ⁘	14	14%	
7.1 - 10.1	Large	180 - 256	B				
10.1 - 14.3	Small	256 - 362	B				
14.3 - 20	Small	362 - 512	L				
20 - 40	Medium	512 - 1024	D				
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK				
				Totals:	~~102~~		
	Total Tally: 102				100		

N 44° 25.615
W 114° 37.087

WOLMAN FORM
R6-2500/2600-32

Page: 20 of 20

A. State ID B. County Custer C. Forest Salmon-challis D. District Yankee Fork

E. Stream Name Yankee Fork

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 05/02

G. USGS Quad Sunbeam, Custer, elevenmile creek

H. Survey Date 09/13/2020

MM / DD / YYYY

PEBBLE COUNT

SO #: 456	Channel Unit # F220	# of Transects: 2
Surveyor: Chris Mello		Reach: 10

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	𝍸 𝍸 ||||	14	13.861	
.08 -.16	Very Fine	2 -4					
.16 - .22	Fine	4 -5.7	G				
.22 - .31	Fine	5.7 - 8	R	|	1	0.99	
.31 - .44	Medium	8 -11.3	A	|	1	0.99	
.44 - .63	Medium	11.3 - 16	V	||	2	1.98	
.63 - .89	Coarse	16 -22.6	E	𝍸 |	6	5.941	
.89 - 1.26	Coarse	22.6 - 32	L	𝍸 |	6	5.941	
1.26 - 1.77	Vry Coarse	32 - 45	S	𝍸 ||	7	6.931	
1.77 -2.5	Vry Coarse	45 - 64		𝍸 𝍸 |	11	10.891	
2.5 - 3.5	Small	64 - 90	C	𝍸 𝍸 ||	12	11.881	
3.5 - 5.0	Small	90 - 128	O	𝍸 𝍸 𝍸	15	14.851	
5.0 - 7.1	Large	128 - 180	B	𝍸 ||	7	6.931	
7.1 - 10.1	Large	180 - 256	B				
10.1 - 14.3	Small	256 - 362	B	||	2	1.98	
14.3 - 20	Small	362 - 512	L				
20 - 40	Medium	512 - 1024	D				
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK	𝍸 𝍸 𝍸 ||	17	16.832	
				Totals:	101		
	Total Tally: 101						

N 44° 25.752
W 114° 36.981

PRELIMINARY REACH FORM

R6-2500/2600-11

Page: 1 of 5

A. State ID B. County Custer C. Forest Salmon-Challis D. District Yankee Fk.

E. Stream Name Yankee Fork

F. 4th HUC Code 17060201 5th 05 6th 05/02/01

G. USGS Quad Sunbeam, Custer, Elevenmile Creek

H. Survey Date __/__/____

MM/DD/YYYY

1. Reach # 1	1. Reach # 2
2. Mapped River Mile From 2.9 To 4.26	2. Mapped River Mile From 4.26 To 5.2
3. Mapped Valley Width Estimate (ft) 492'	3. Mapped Valley Width Estimate 539'
4. Flow Regime Change Y	4. Flow Regime Change Y
5. Mapped Channel Length 7,201' (1.36mi)	5. Mapped Channel Length 4,956' (0.94mi)
6. Change in Elevation (ft) Min 6120 Max 6177	6. Change in Elevation Min 6177 Max 6203
7. Mapped Channel Gradient (%) 0.8%	7. Mapped Channel Gradient 0.6%
8. Mapped Valley Length (ft) 6,888' (1.30mi)	8. Mapped Valley Length 4,415' (0.84mi)
9. Mapped Sinuosity 1.05	9. Mapped Sinuosity 1.12
10. Rosgen Stream Type B	10. Rosgen Stream Type C
11. Comments: Survey begins at RM 2.9 and reach one ends where Rankin Creek enters on the right bank. Survey start point is just downstream of the Sodon fish trap (screw trap)	11. Comments: Reach 2 ends at the confluence with Jerry's Creek on the left bank
12. Stream Order (Forest Option) 6	12. Stream Order (Forest Option) 6
13. Valley Type (Forest Option) 9	13. Valley Type (Forest Option) 9

PRELIMINARY REACH FORM

R6-2500/2600-11

A. State ID B. County Custer C. Forest Salmon-Challis D. District Yankee Fk.

E. Stream Name Yankee Fork

F. 4th HUC Code 17060201 5th 05 6th 05/02/01

G. USGS Quad Sunbeam, Custer, Eleven mile Creek

H. Survey Date __/__/____

MM/DD/YYYY

1. Reach # 3	1. Reach # 4
2. Mapped River Mile From 5.2 To 6.82	2. Mapped River Mile From 6.82 To 9.08
3. Mapped Valley Width Estimate (ft) 559'	3. Mapped Valley Width Estimate 457'
4. Flow Regime Change Y	4. Flow Regime Change Y
5. Mapped Channel Length 8,565' (1.62mi)	5. Mapped Channel Length 11,935' (2.26mi)
6. Change in Elevation (ft) Min 6203 Max 6257	6. Change in Elevation Min 6257 Max 6373
7. Mapped Channel Gradient (%) 0.6%	7. Mapped Channel Gradient 1.0%
8. Mapped Valley Length (ft) 7,647' (1.45mi)	8. Mapped Valley Length 11,477' (2.17mi)
9. Mapped Sinuosity 1.12	9. Mapped Sinuosity 1.04
10. Rosgen Stream Type C	10. Rosgen Stream Type B
11. Comments: Reach 3 ends at the confluence with West Fork Yankee Fork from the right bank	11. Comments: Reach 4 ends at the confluence with Jordan Creek from the right bank. The dredge tailings end just upstream of the end of the reach and the valley floor narrows)
12. Stream Order (Forest Option) 6	12. Stream Order (Forest Option) 5
13. Valley Type (Forest Option) 9	13. Valley Type (Forest Option) 9

PRELIMINARY REACH FORM Page: 3 of 5
R6-2500/2600-11

A. State ID B. County Custer C. Forest Salmon-Challis D. District Yankee Fk.
E. Stream Name Yankee Fork
F. 4th HUC Code 17.06.02.01 5th 05 6th 05/02/01
G. USGS Quad Sunbeam, Custer, Eleven mile Creek
H. Survey Date __/__/____
MM/DD/YYYY

1. Reach # 5	1. Reach # 6
2. Mapped River Mile From 9.08 To 11.18	2. Mapped River Mile From 11.18 To 12.47
3. Mapped Valley Width Estimate (ft) 346	3. Mapped Valley Width Estimate 293'
4. Flow Regime Change Y	4. Flow Regime Change Y
5. Mapped Channel Length 11,066' (2.1mi)	5. Mapped Channel Length 6793' (1.29mi)
6. Change in Elevation (ft) Min 6373 Max 6513	6. Change in Elevation Min 6513 Max 6601
7. Mapped Channel Gradient (%) 1.3%	7. Mapped Channel Gradient 1.3%
8. Mapped Valley Length (ft) 10,391' (1.97mi)	8. Mapped Valley Length 6,267' (1.19mi)
9. Mapped Sinuosity 1.06	9. Mapped Sinuosity 1.08
10. Rosgen Stream Type B	10. Rosgen Stream Type C
11. Comments: Reach 5 ends at the confluence with Swift Gulch from the right bank	11. Comments: Reach 6 ends at a small tributary entering from the left bank just before the valley floor becomes more confined and the gradient increases. Tributary is most likely dry
12. Stream Order (Forest Option) 5	12. Stream Order (Forest Option) 5
13. Valley Type (Forest Option) 9	13. Valley Type (Forest Option) 8

PRELIMINARY REACH FORM

R6-2500/2600-11

A. State ID B. County Custer C. Forest Salmon-Challis D. District Yankee FR.

E. Stream Name Yankee FR.

F. 4th HUC Code 17,06,02,01 5th 05 6th 05/02/01

G. USGS Quad Sunbeam, Custer, Eleven mile Creek

H. Survey Date __/__/____

MM/DD/YYYY

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1. Reach # 7
2. Mapped River Mile From 12.47 To 13.23
3. Mapped Valley Width Estimate (ft) 108'
4. Flow Regime Change Y
5. Mapped Channel Length 3,988' (0.76mi)
6. Change in Elevation (ft) Min 6701 Max 6716
7. Mapped Channel Gradient (%) 2.9%
8. Mapped Valley Length (ft) 3,969' (0.75mi)
9. Mapped Sinuosity 1.00
10. Rosgen Stream Type B
11. Comments: Reach 7 ends at the confluence with Elevenmile Creek which enters on the left bank. The valley floor broadens and gradient decreases upstream
12. Stream Order (Forest Option) 5
13. Valley Type (Forest Option) 5

1. Reach # 8
2. Mapped River Mile From 13.23 To 14.49
3. Mapped Valley Width Estimate 360'
4. Flow Regime Change Y
5. Mapped Channel Length 6,667' (1.26mi)
6. Change in Elevation Min 6716 Max 6778
7. Mapped Channel Gradient 0.9%
8. Mapped Valley Length 6,211' (1.18mi)
9. Mapped Sinuosity 1.07
10. Rosgen Stream Type C
11. Comments: Reach 8 ends at the confluence with Sixmile Creek on the left bank
12. Stream Order (Forest Option) 5
13. Valley Type (Forest Option) 9

PRELIMINARY REACH FORM Page: 5 of 5

R6-2500/2600-11

A. State ID B. County Custer C. Forest Salmon-Challis D. District Yankee Fk

E. Stream Name Yankee Fork

F. 4th HUC Code 17.06.02.01 5th 05 6th 05/02/01

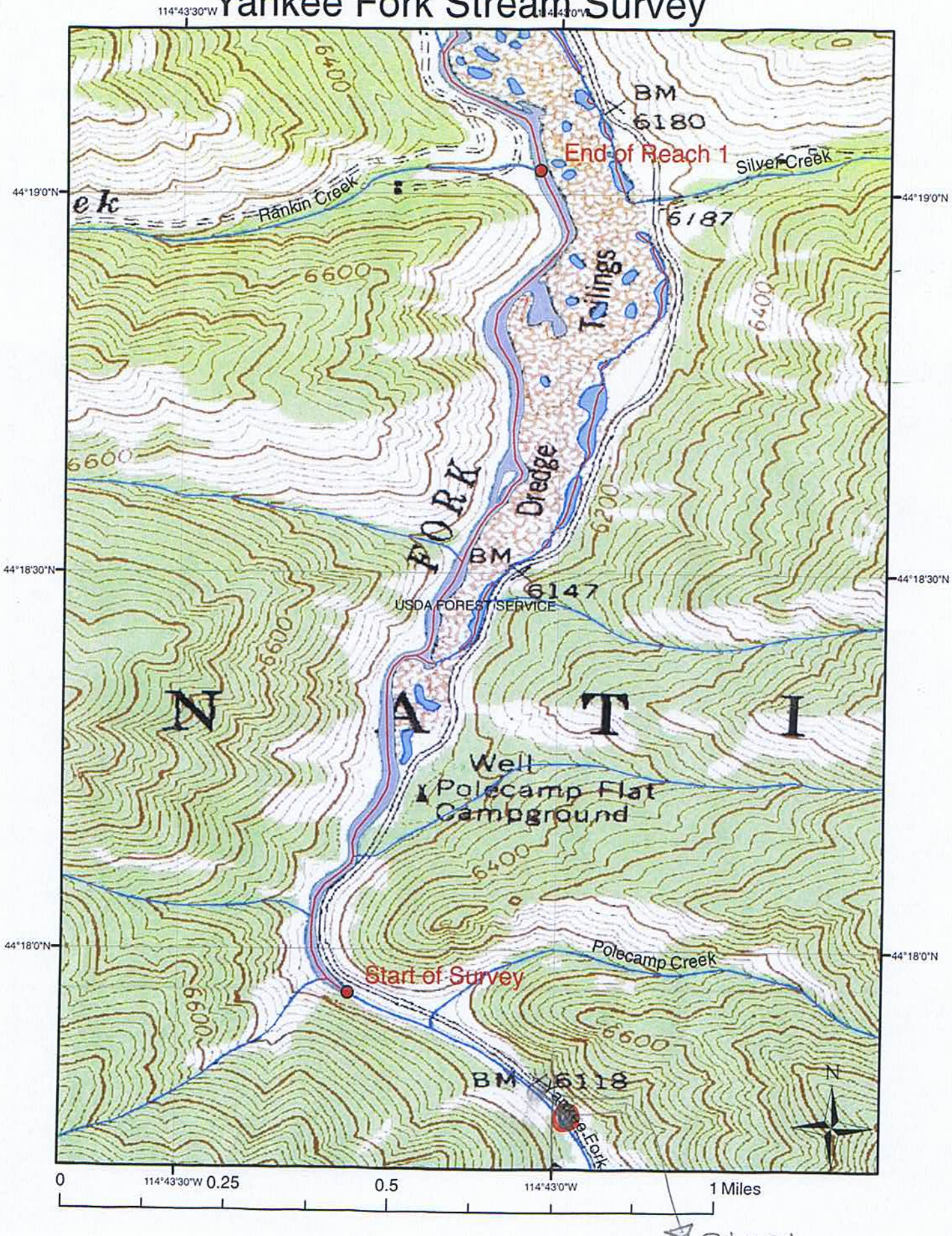
G. USGS Quad Sunbeam, Custer, Elevenmile Creek

H. Survey Date __/__/____

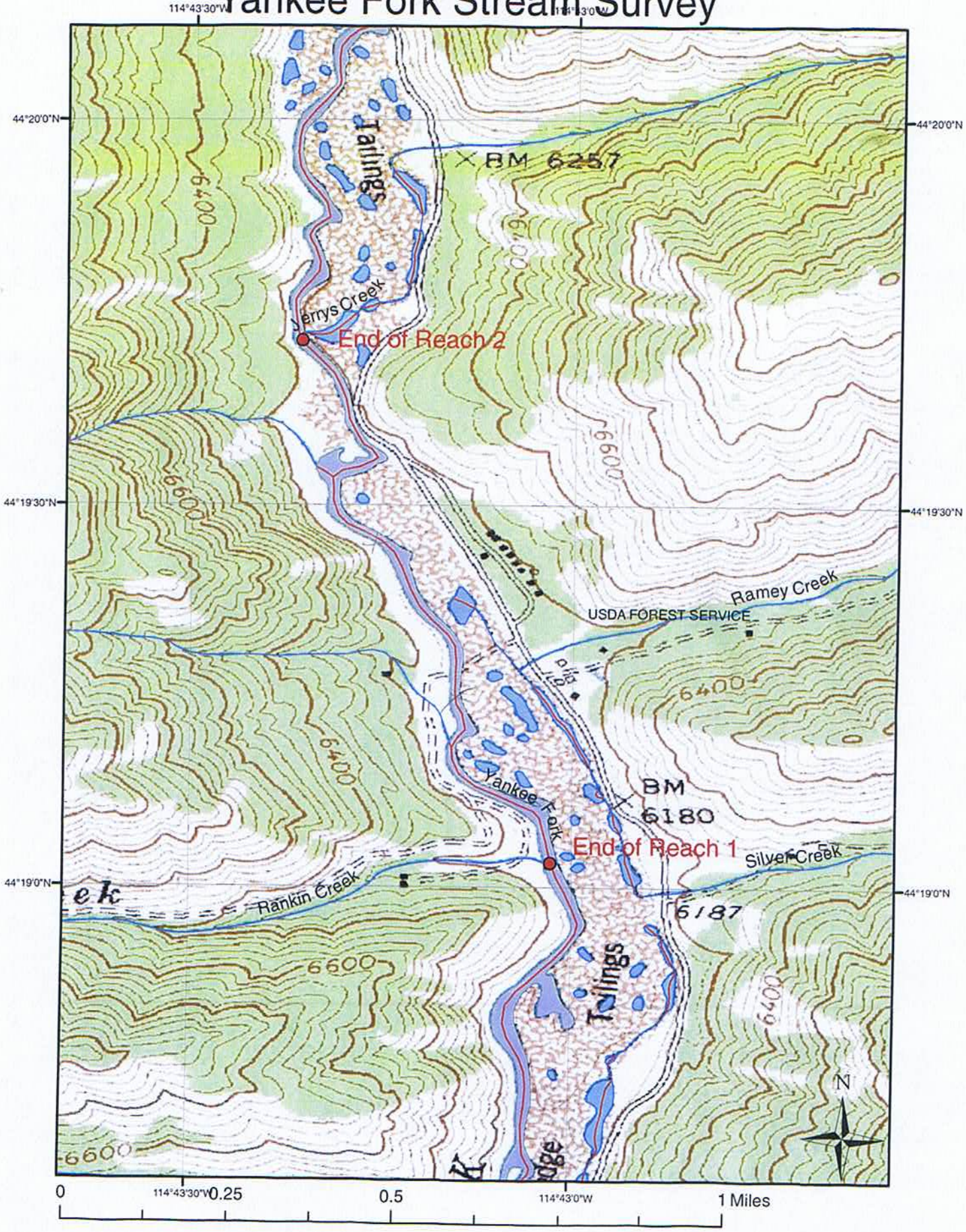
MM/DD/YYYY

1. Reach # 9	1. Reach # 10
2. Mapped River Mile From 14.49 To 16.29	2. Mapped River Mile From 16.29 To 17.08
3. Mapped Valley Width Estimate (ft) 417'	3. Mapped Valley Width Estimate 457'
4. Flow Regime Change Y	4. Flow Regime Change Y
5. Mapped Channel Length 9,731' (1.8mi)	5. Mapped Channel Length 4,145' (0.79mi)
6. Change in Elevation (ft) Min 6778 Max 6823	6. Change in Elevation Min 6823 Max 6876
7. Mapped Channel Gradient (%) 0.5%	7. Mapped Channel Gradient 1.3%
8. Mapped Valley Length (ft) 7,670' (1.52mi)	8. Mapped Valley Length 3,702' (0.70mi)
9. Mapped Sinuosity 1.23	9. Mapped Sinuosity 1.20
10. Rosgen Stream Type C	10. Rosgen Stream Type C
11. Comments: Reach 9 ends at the confluence with Eight Mile Creek from the right bank	11. Comments: The survey ends at an unnamed tributary that enters from the right bank. This reach has multiple channels/side channels
12. Stream Order (Forest Option) 5	12. Stream Order (Forest Option) 4
13. Valley Type (Forest Option) 9	13. Valley Type (Forest Option) 9

Yankee Fork Stream Survey



Yankee Fork Stream Survey



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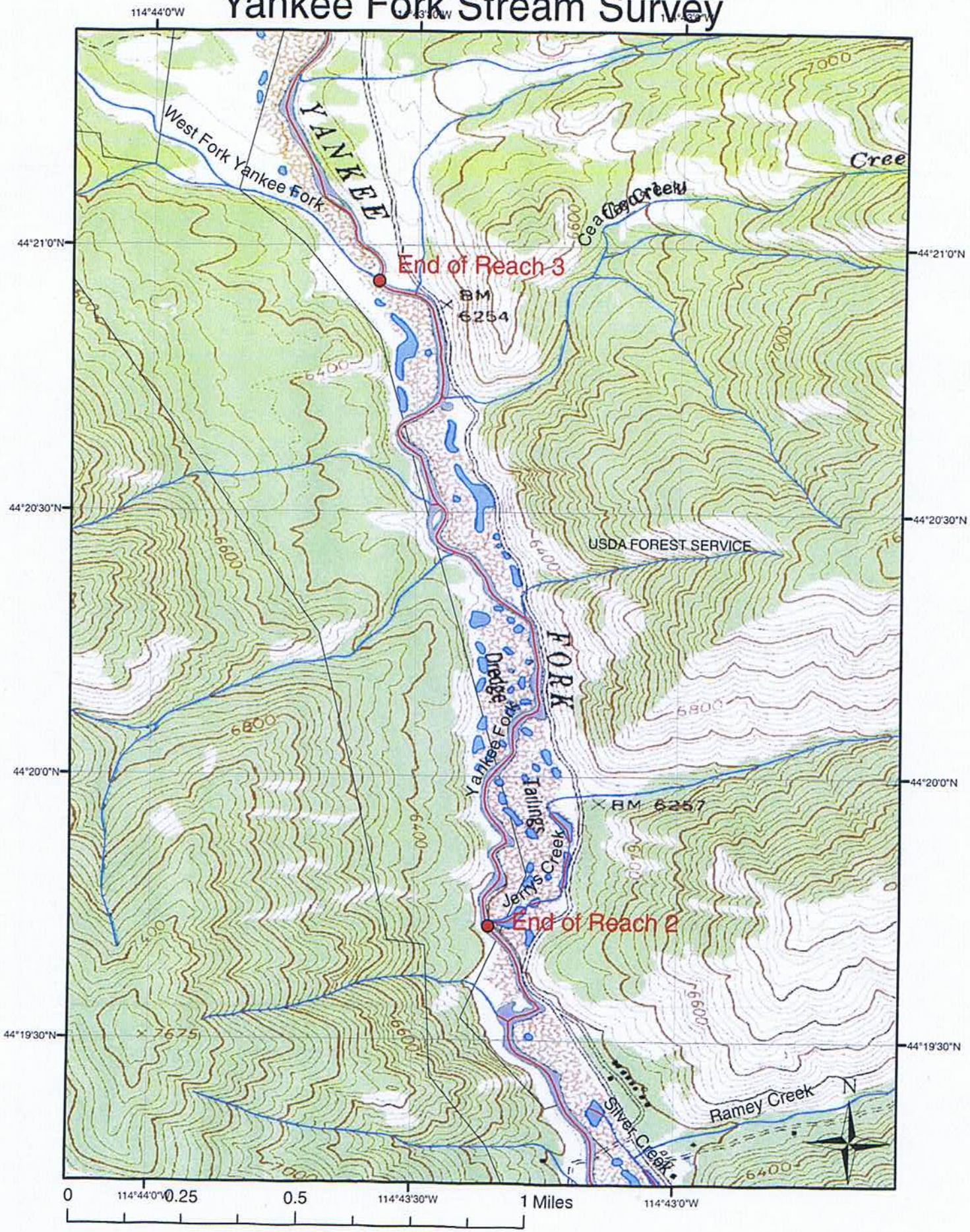
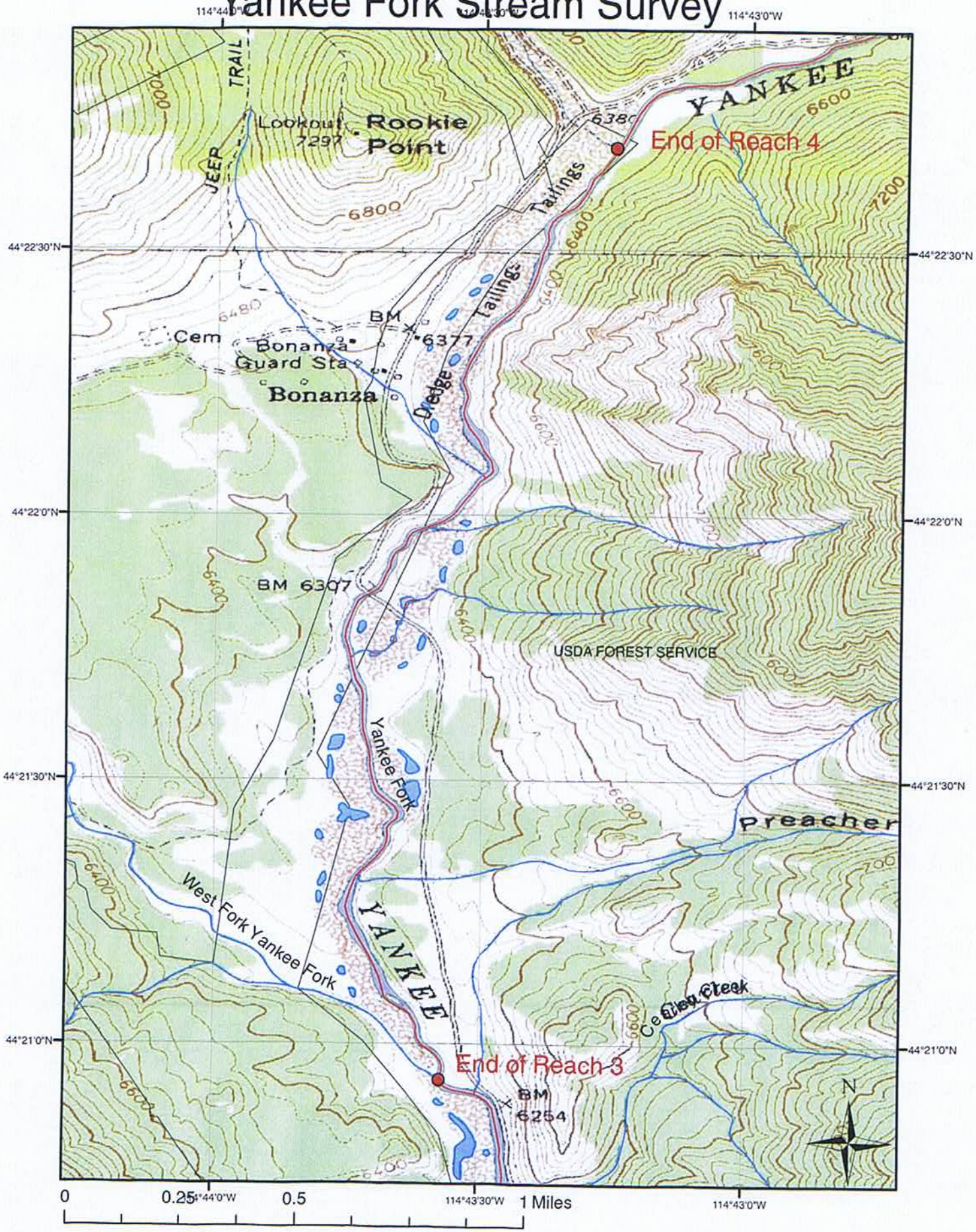


Yankee Fork Stream Survey



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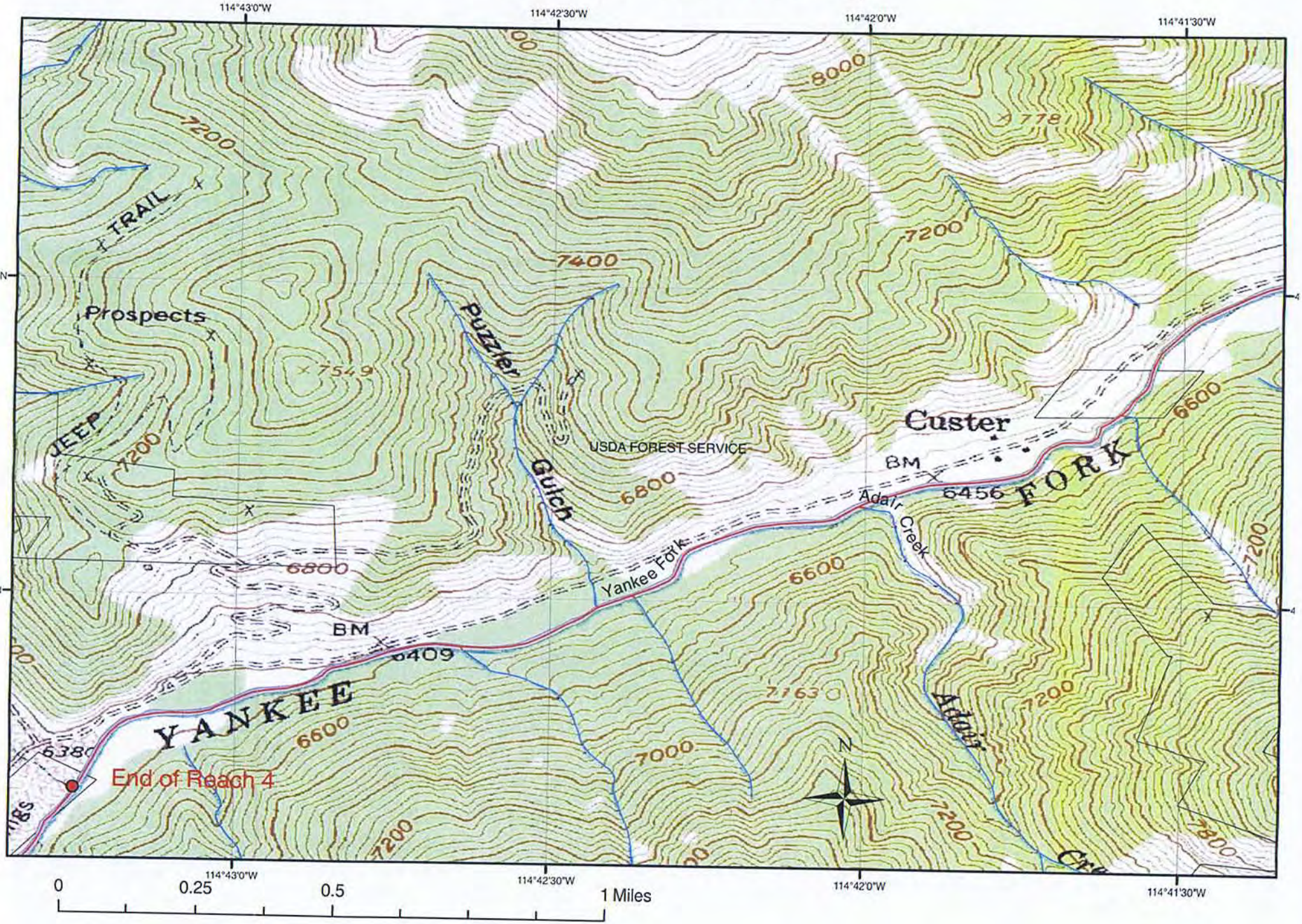

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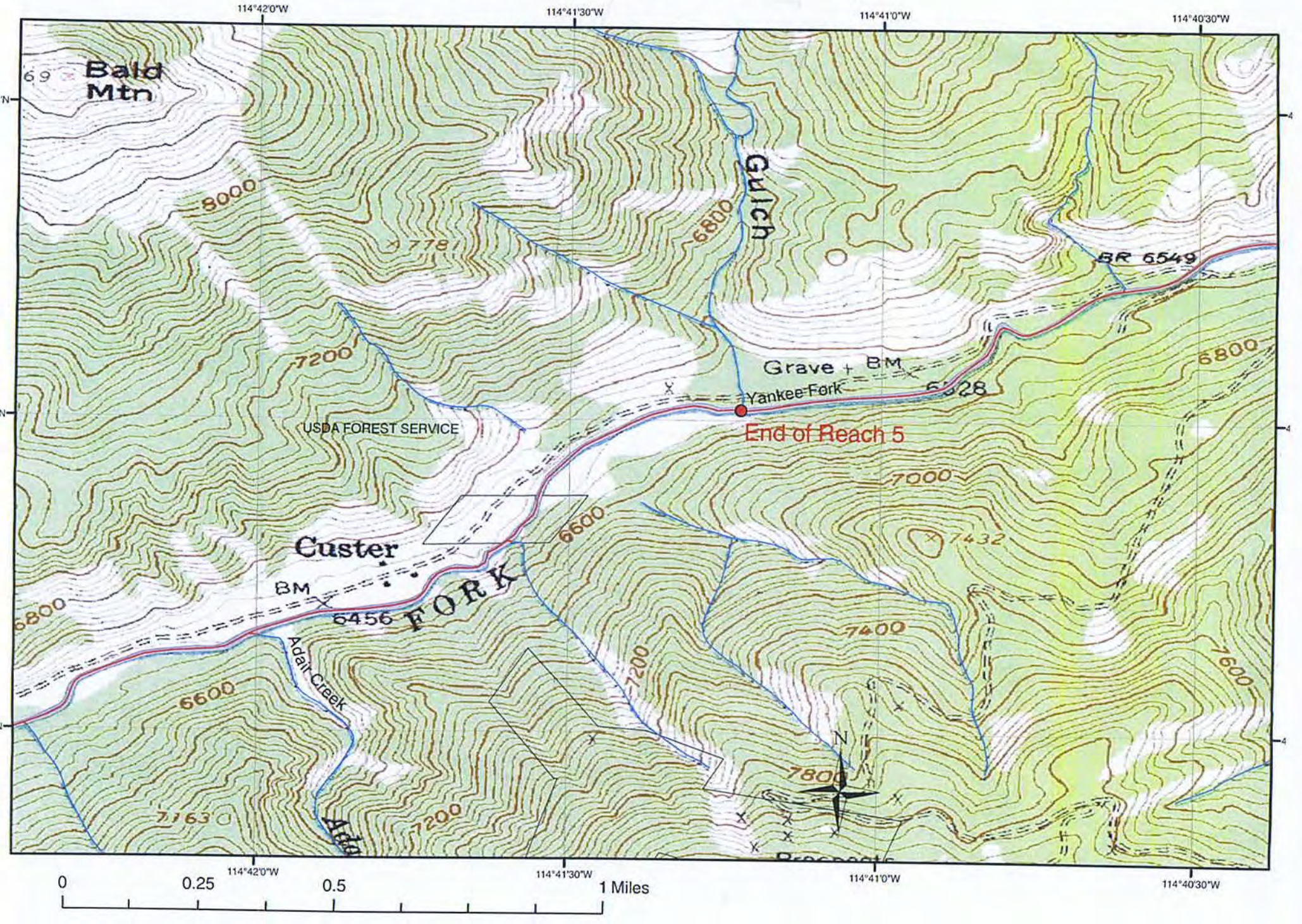

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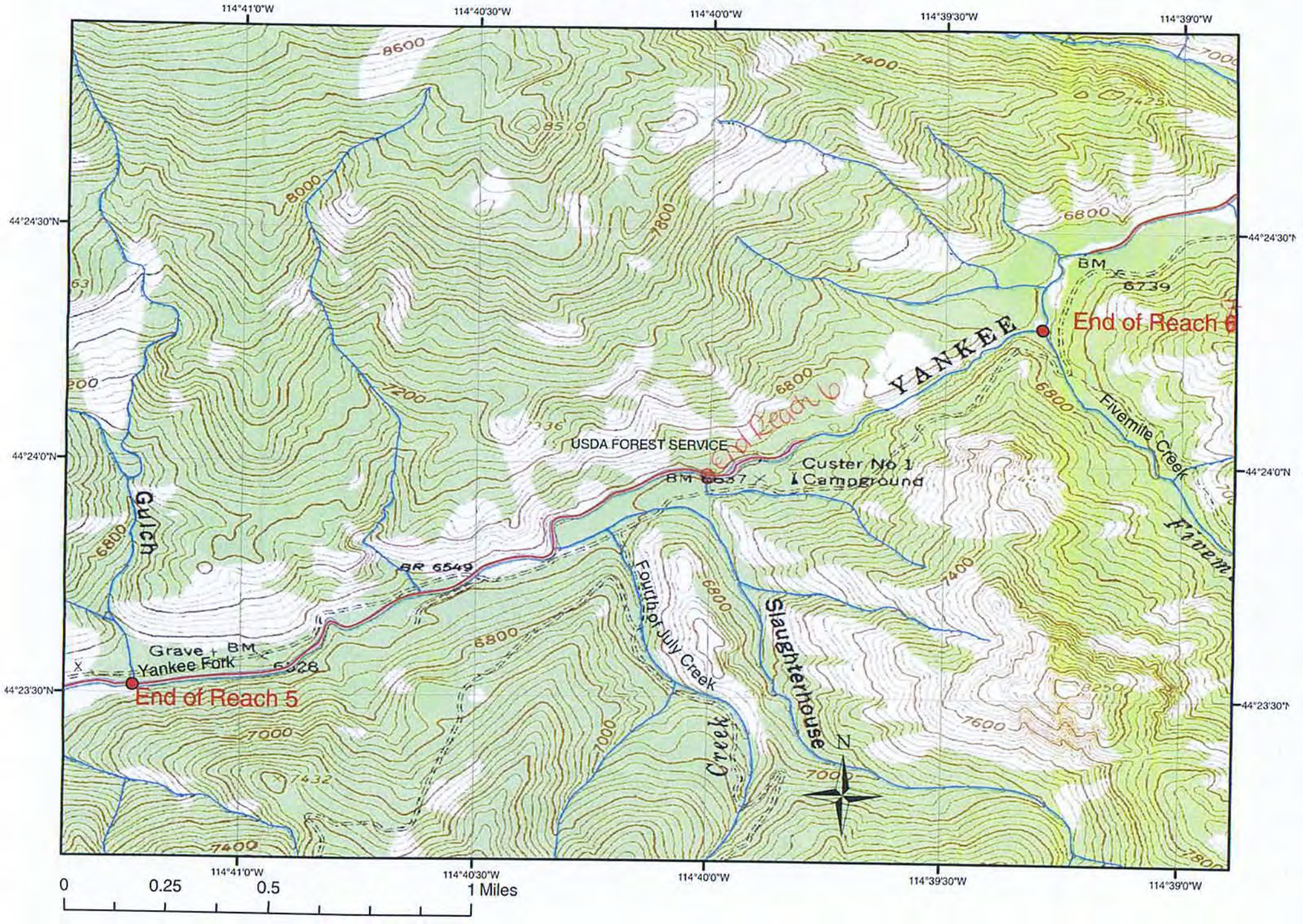

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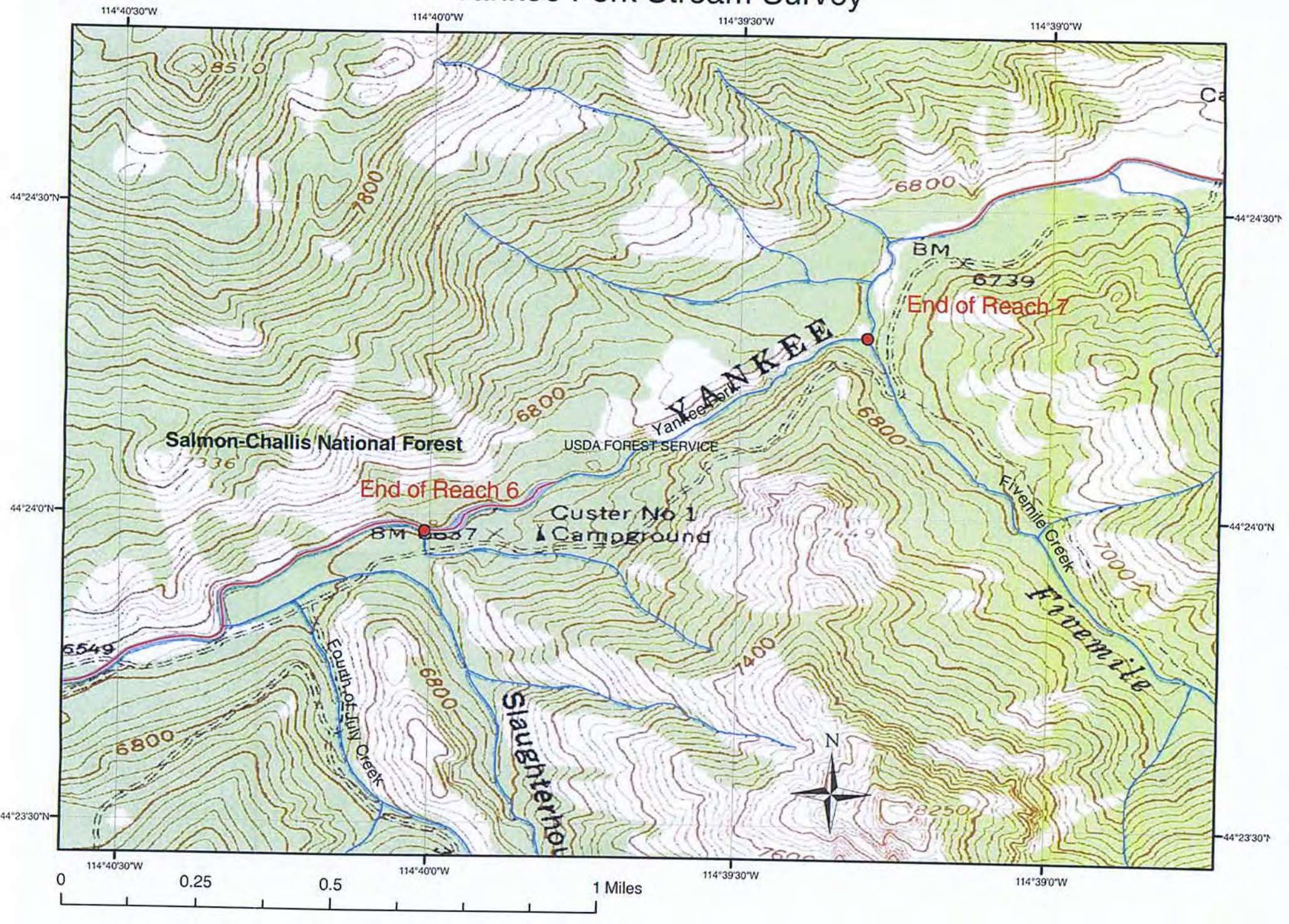

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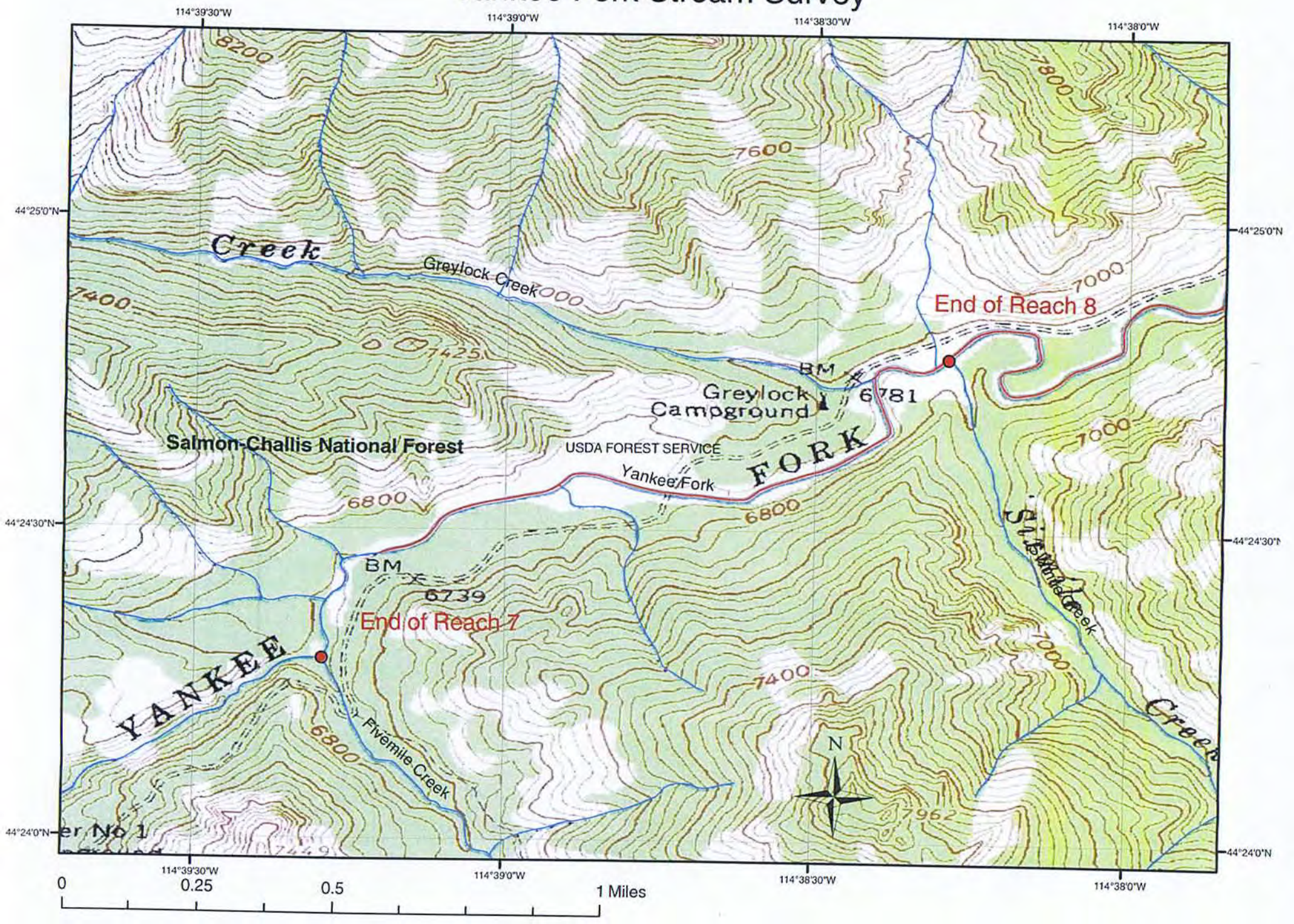

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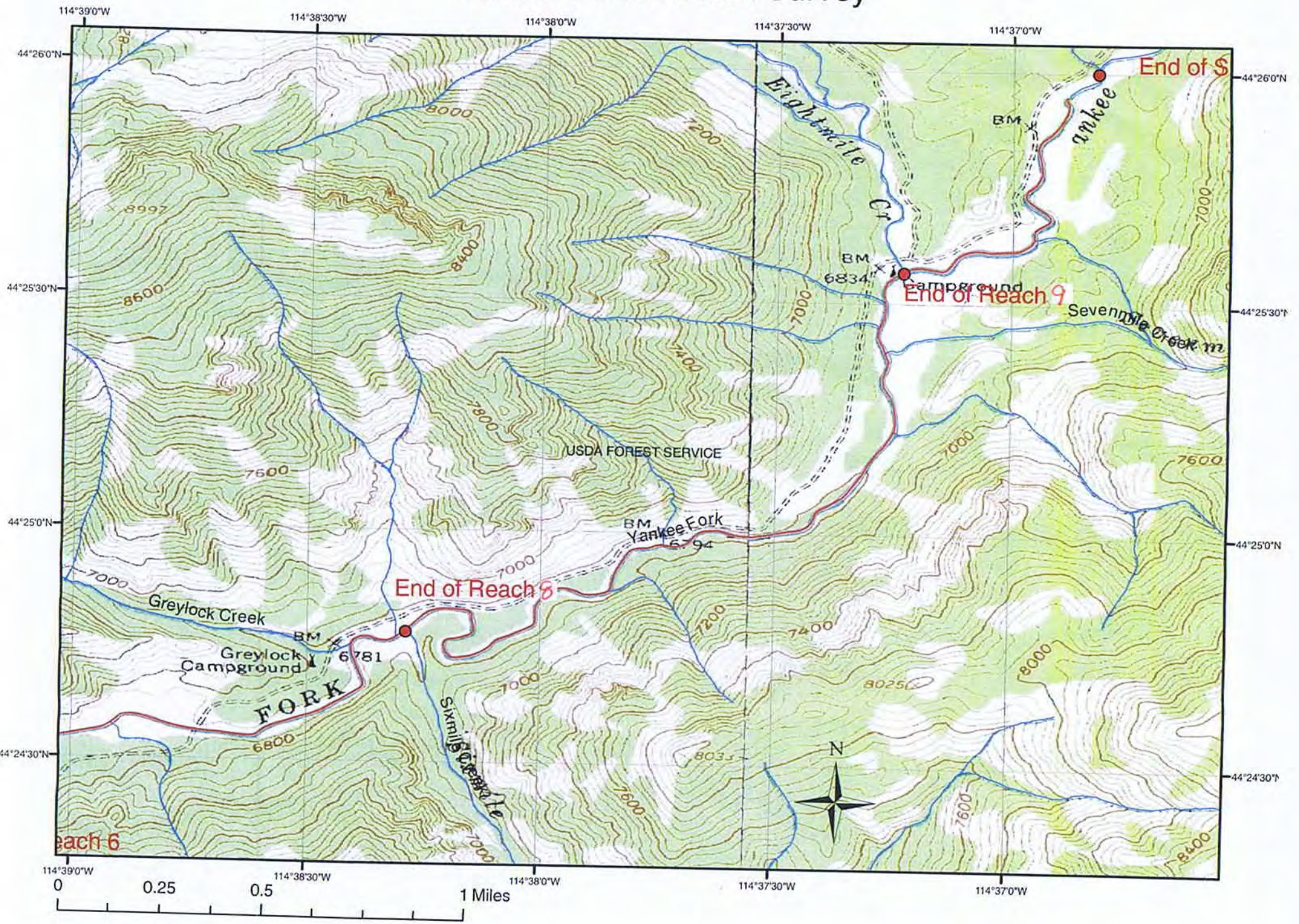
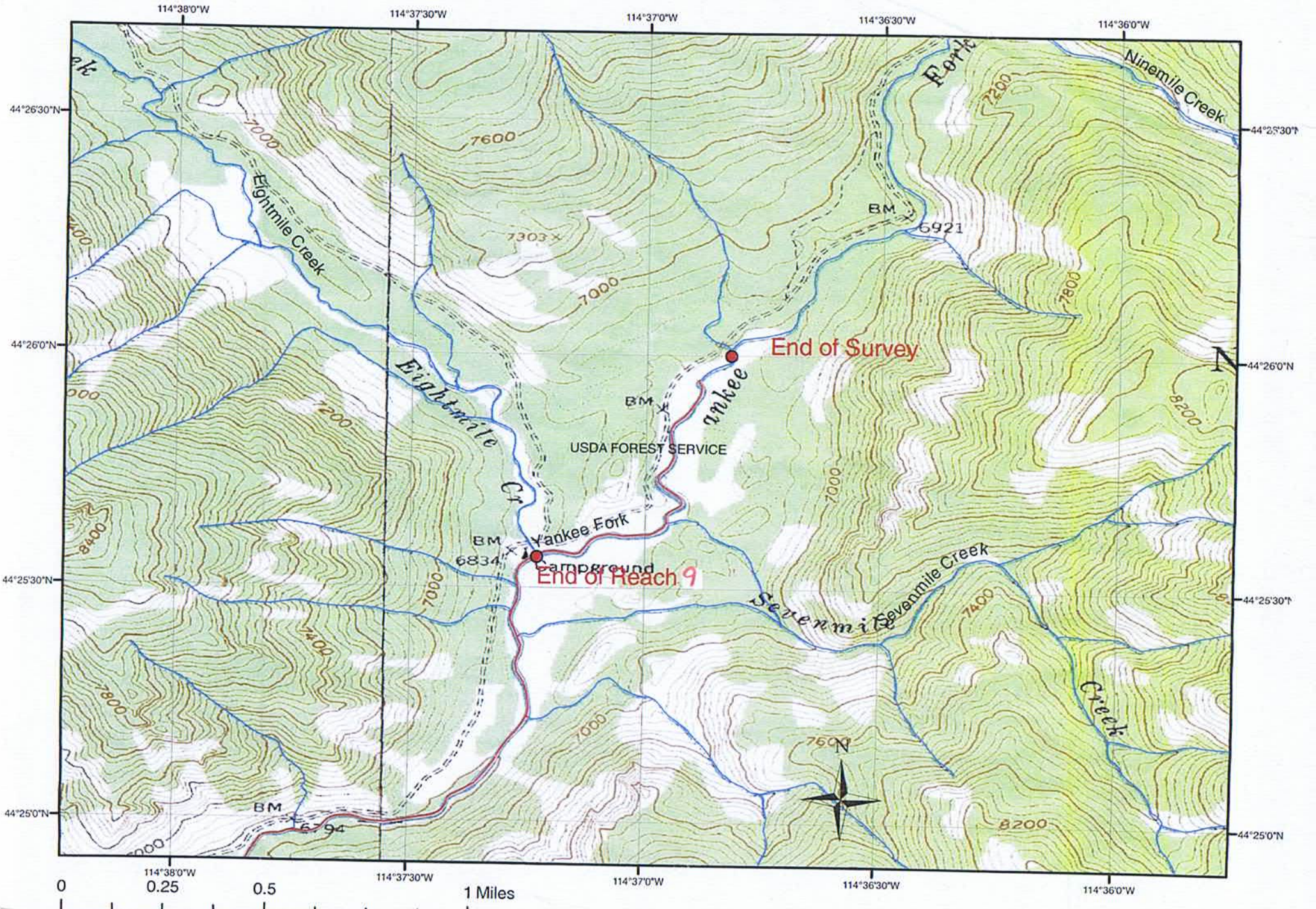
Yankee Fork Stream Survey