APPENDIX L

Jordan Creek Stream Survey

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JORDAN CREEK

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

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Stream Survey
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Cover Photo - River Mile 0.7, Reach 2, approximately SO 30 (Photo Courtesy of Bureau of Reclamation)

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CHAPTER 1: STREAM SURVEY

OVERVIEW

Dates Surveyed: September 20th – 21st, 2010
Survey Type: Region 6 Stream Inventory Methodology, Version 2.10, Level II
Mouth Location: 044º 22' 41.69"' N, 114º 43' 15.34" W
Headwater Location: 044º 28' 13.23" N, 114º 46' 29.20" W
USGS Quadrangle: Custer
Subbasin (4th field): Upper Salmon
Watershed (5th field): Yankee Fork
Subwatershed (6th field): Jordan Creek
Tributary To: Yankee Fork
NFS Watershed No.: 170602010503
Stream Class at Mouth: I
Distance Surveyed: 3.61 miles
Stream Length: 7.8
Surveyors: Chris Mello, Sam Fiorito and Andrew Flynn

SUMMARY

Jordan Creek was surveyed from the confluence with the Yankee Fork upstream to a small tributary on the left bank, just upstream of the Moon family private property. A restoration project was performed on the first reach (approximately 0.4 miles) of the channel that was funded by Hecla Mining Company. The Grouse Creek Mine (owned by Hecla Mining Company) is currently in the reclamation phase. The Jordan Creek stream channel was dredge mined from its confluence with Yankee Fork approximately 1.2 miles upstream. A short section that contained bedrock near the top of reach two was not dredged (Stephens 1991). A small section within reach two is private property, but the majority of the land in this drainage and surveyed reaches are administered by the Salmon-Challis National Forest. National Forest Road 172 runs close to Jordan Creek for the length of the survey. Important wildfires have occurred in the Yankee Fork watershed and the Potato Fire of 2006 burned approximately 622 acres within the Jordan Creek sub-watershed (Vacirca 2006). Jordan Creek currently contains rearing habitat for juvenile spring Chinook salmon (*Oncorhynchus tshawytscha)*, spawning and rearing habitat for summer steelhead (*Oncorhynchus mykiss),* westslope cutthroat trout (*Oncorhynchus clarki lewisi*) and bull trout (*Salvelinus confluentus)* populations.

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, unless in a photo in which it is noted in the picture title. 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 or large woody debris. The RMO for bank stability was met with the banks being greater than 90% stable in each reach. The RMO for width/depth ratio was met with the ratio being less than 27 for reaches one, three, and four, which are all Rosgen stream type B. Reach two is Rosgen stream type G and the RMO is not met for width/depth ratio because the ratio exceeds the standard of 10. 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 and was calculated to be 4.15 ft^3/second on September 13, 2010. A Marsh McBernie Flowmate was the instrument used to collect the data. The watershed acres contributing to the measurement point are 10,643 acres.

The Jordan Creek survey is within one sixth field hydrologic unit code (HUC). Level one (i.e. 17) is the region level and level six (i.e. 03) is the subwatershed level. The start of the survey through the end is in HUC6# 170602010503.

BASIN DESCRIPTION

Watershed and Flow Regime

General Characteristics

- **Location:** The Jordan Creek stream survey began at the mouth and ended at a tributary on the left bank (looking downstream) just upstream of the Moon family property which is on the left bank also. National Forest Road 172 is adjacent to Jordan Creek throughout the length of the survey.

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

    - Third order throughout 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 4.15 ft^3/second on September 13, 2010.

    - The location of the flow was N 44° 22.695' W 114° 43.264', just upstream of the survey start point.

- **Elevation and General Gradient:** The survey began at 6,368 feet in elevation and ended at 6,900 feet, making the gradient for the entire survey 2.78%.
    - 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 low at 1.04.
    - Mapped channel length and valley length were determined using the measure tool in ArcMap 9.3.1.

- **Rosgen Channel and Valley Type:** The Rosgen channel type for each reach is B and the Rosgen valley type for every reach is 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°F in migration and rearing areas and <60°F in spawning areas except in steelhead spawning areas within steelhead priority watershed 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 watershed, <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 Jordan Creek stream survey were Class I streams.

Confluence with Yankee Fork, start of survey at RM 0.0, SO 1 (Photo courtesy of Bureau of Reclamation)

Tributaries

- **Access to Fish out of the Mainstem:** Ten tributaries entered Jordan Creek throughout the survey.
    - Approximately one half mile of Montana Gulch contains cutthroat trout. This is the only fish-bearing tributary in the Jordan Cr drainage (SCNF 2008).

Table 1.2. Tributaries encountered on Jordan Creek.

Tributary Name/ Number	Reach	SO (Sequence Oder)	River Mile (RM)	% Flow Contribu-tion*	Tributary Temper-ature ºC**	Down-stream Bank Orientation	% Gradient At Mouth+
1	2	25	0.52	10	8.5	RB	3
2	2	59	1.22	5	5	LB	20
3	2	91	1.67	5	6	LB	3
4	3	107	2.06	20	8	RB	5
5	3	118	No coordinates	2	6	LB	20
6	3	146	No coordinates	5	6	RB	3
7	4	169	2.99	15	8	RB	6
8	4	188	3.31	10	7.5	RB	15
9	4	201	3.42	30	11	RB	10
10	4	211	3.64	10	8	LB	7

* = 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

- Fish were observed from above the surface of the water by crew members in each reach of the survey.

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.
    - There were no special cases on this survey, therefore special case units made up 0% of the total channel units on the survey.

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 Jordan Creek survey was from 5.5ºC to 12.5ºC.

Table 1.3. Average and maximum temperature readings by reach.

Reach	Average Temp ºC	Maximum Temp ºC	Date(s) Temperature Collected	Time Range Readings Collected In	Number of Readings
1	11.75	12.5	09/20/2010	1418-1520	4
2	7.42	12	09/20/2010 – 09/21/2010	0915-1808	12
3	7.6	9	09/21/2010	1121-1440	10
4	10.05	11	09/21/2010	1504-1756	10

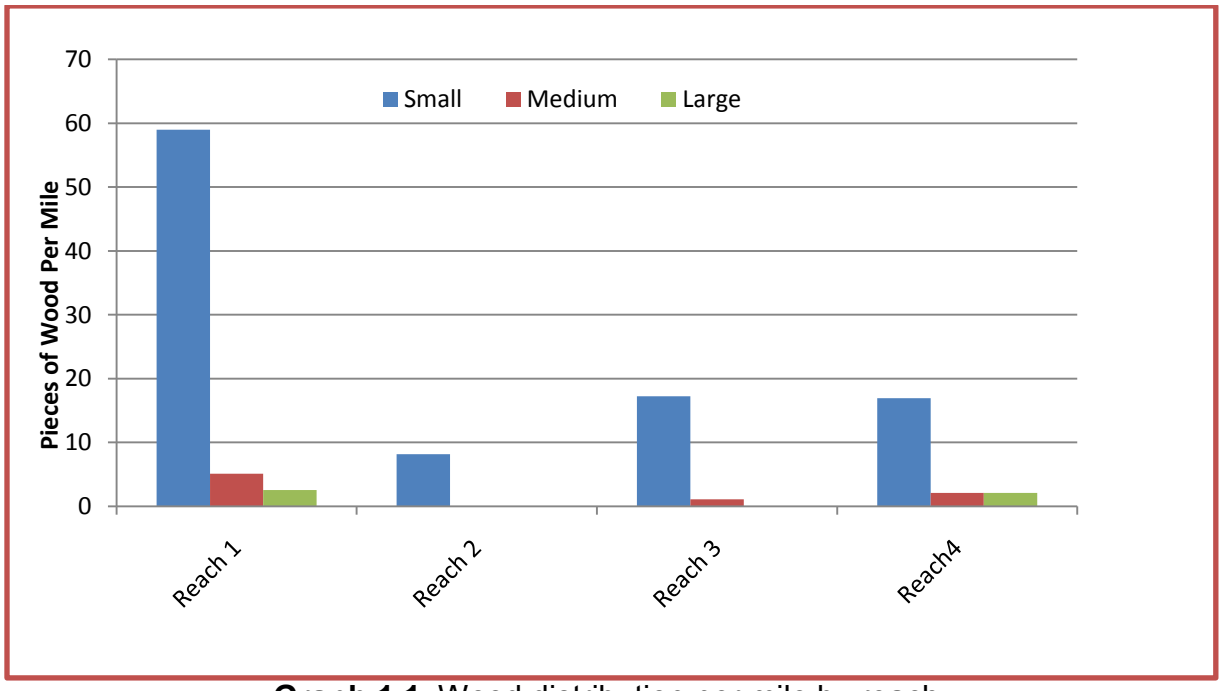
- These temperature readings are instantaneous and therefore cannot be used to relate to the Idaho Department of Environmental Quality Surface Water Quality Standards.

Woody Debris

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

Table 1.4. 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



Graph 1.1. Wood distribution per mile by reach.

- The countable wood found in Jordan Creek 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 5 – Debris jam, Reach 1, RM 0.2

- Of the countable wood found throughout this survey, 89% of the wood was small sized, 7% was medium and 4% was large.
- Photo is representative of the lack of wood in the channel found throughout the survey.
- Note: Wood is not counted in side channels.

SO 26 (approximately) - Photo in reach 2 (oriented downstream) from RM 0.6, (Photo courtesy of Bureau of Reclamation)

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 1.49 feet. This is the depth of water that would be persisting if water stopped flowing out of the pool.

Table 1.5. Pool Quality Data by Reach.

Reach	Pool Count	Pools Per Mile	Average Residual Pool Depth (Ft)	Average Wetted Width (Ft)
1	5	12.82	1.98	14.5
2	34	25.23	1.06	14.4
3	22	23.71	1.44	12.0
4	26	27.49	1.47	13.6

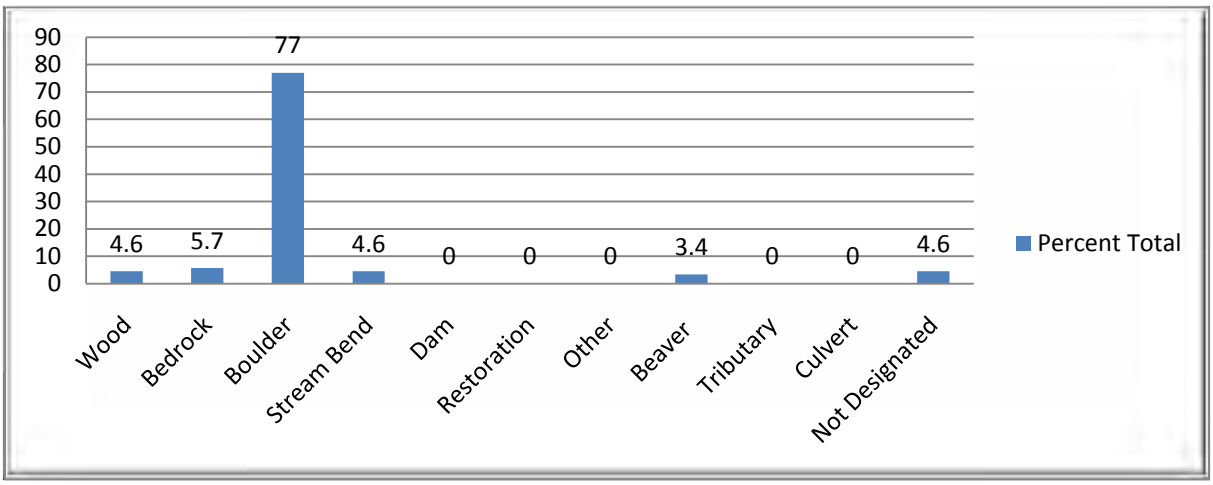
- The pool per mile criteria varies by channel width. The RMO for pool frequency was not met. For steams with an average wetted width of 10'-20', there must be at least 56 pools per mile to meet the RMO criteria. See Table 1.2, 1.5 and the Pool Summary in Chapter 2.

SO 147– beaver dam formed pool, Reach 4, RM 2.7

SO 176 – beaver dam formed pool, Reach 4, RM 3.0

Pool Forming Forces: For each pool the major pool forming forces were noted (Graph 1.2). The options for pool forming features are those that are most commonly encountered on the stream. Options are wood, bedrock, boulder, stream bend, dam, restoration, beaver, tributary, culvert, other and not designated (Handbook 2010).

- The survey crews were unable to positively identify the pool forming features on some of the pools within this survey.



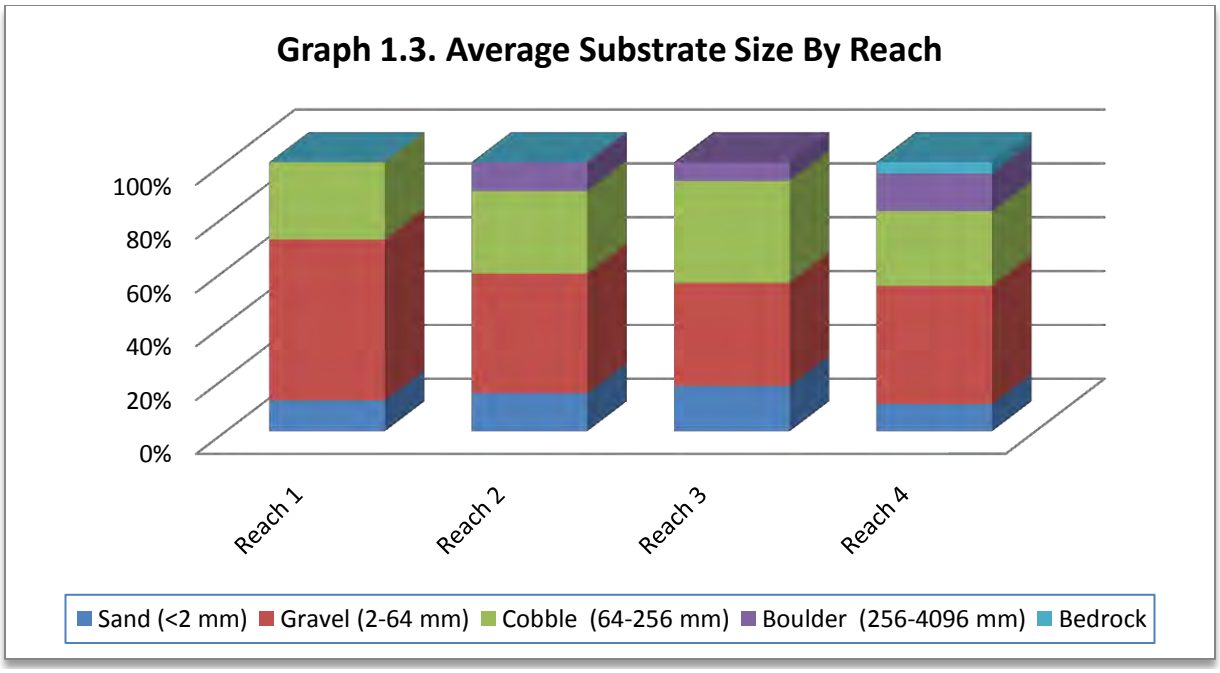
Graph 1.2. Average percent total of pool formation factors for survey.

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.



- Gravel (2-64 mm) was the dominant substrate size found in each of the four reaches followed by cobble (64-256 mm).

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

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 in the raw data were rounded to 10 percent 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 1.6. 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	28.8	28.8	32.5	10.0	0
2	13.1	28.1	29.2	17.3	12.3
3	17.0	27.0	34.0	21.0	1.0
4	14.0	35.0	35.0	15.5	0.5

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 7.0% of the total habitat units on the Jordan Creek stream survey. See the Percent Area Habitat Summary in Chapter 2 for more detailed information by reach.

- **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)

    - There was only one braided channel found on the survey and it was in reach one and made up 1.7% of the total habitats surveyed.

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)

- 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 1.7. Riparian vegetation classes and species observed.

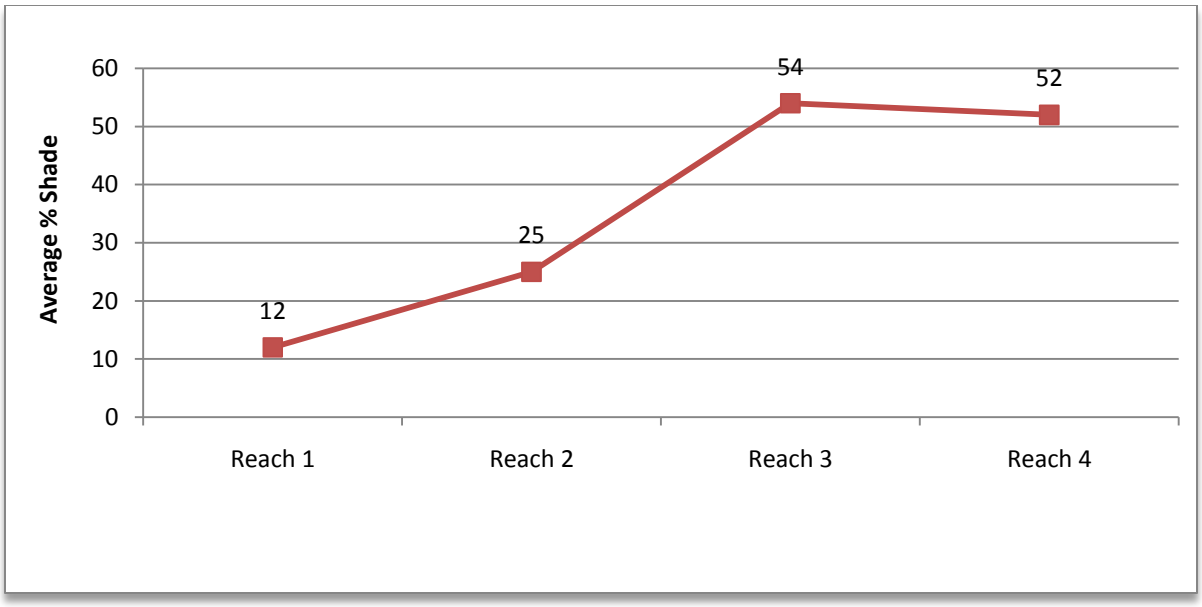
Reach	Riparian Class	Overstory	Understory
1	▪ Shrub/seedling	▪ Willow (*Salix* sp.)	▪ Grassland/forbs
2	▪ Small tree ▪ Shrub/seedling	▪ Willow (*Salix* sp.) ▪ Lodgepole pine (*Pinus contorta)*	▪ Shrub seedling ▪ Grassland/forbs ▪ Douglas fir (*Pseudotsuga menziesii)* ▪ Lodgepole pine (*Pinus contorta)*
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

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.

SO 5-6 (approximately) - near RM 0.3 in reach 1. Photo orientation is facing upstream. (Photo courtesy of Bureau of Reclamation)

- The above photo shows the lack of shade on the channel in the lower portion of the survey. The lack of stream side vegetation is the origin of the low percent of shade for reaches 1 and 2.



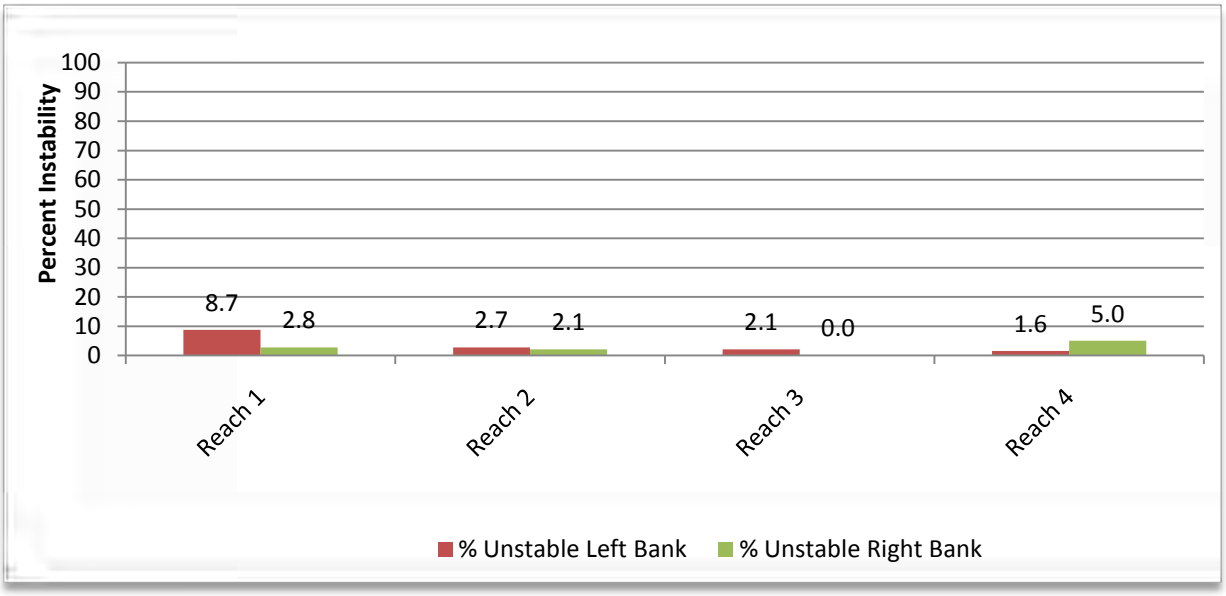
Graph 1.4. Average percent shade on the channel for each reach.

Bank Stability

- The banks on the Jordan Creek stream survey met the RMO for bank stability, being more than 80% stable.

- For more detailed information by reach see Graph 1.5 and the Unstable Bank Summary in Chapter 2.

SO 155 – Unstable banks, right bank (Photo oriented downstream), Reach 4, RM 2.8



Graph 1.5. Percent of unstable banks observed by reach.

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

MANAGEMENT ACTIVITIES / IMPACTS

Roads

- Jordan Creek is accessed by traveling east from Stanley, Idaho, on state highway 75/National Forest Road 26 or traveling west from Challis, Idaho, on State Highway 75/National Forest Road 26 until you reach Sunbeam. At Sunbeam turn north up National Forest Road 013 and follow it until the 172 spur road. National Forest Road 172 follows Jordan Creek closely for the surveyed length.

SO 38 – Old bridge crossing, Reach 2, RM 0.9

- There were a few nonfunctioning culverts located in the channel near the end of reach one.

SO 20 – culverts lying in channel, Reach 2, RM 0.4

SO 75 – Old road ford, Reach 2, RM 1.4

Mining

- Historically parts of the Yankee Fork and Jordan Creek were mined for gold intermittently from 1940 to 1952. Jordan Creek was dredge mined from the confluence with Yankee Fork upstream about 1.2 miles. (Stephens 1991) 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.

Stream Enhancement Projects

Previously restored section of Jordan Creek near RM 0.5, Reach 1 (Photo courtesy of Bureau of Reclamation)

- A restoration project was performed on the first reach of this survey (nearly 0.4 miles) in the early 1990's funded by Hecla Mining Company. Grouse Creek Mine, owned by Hecla Mining Company, was a gold-silver mine located 3 miles up

Jordan Creek that closed in the 1990's. The Grouse Creek Mine only operated from November 1994 through April 1997. On May 1, 1997 the mine was placed on temporary suspension and operations were permanently suspended on May 1, 2000 (USDA 2003). The tailings impoundment was under CERCLA jurisdiction from 2000-2009. Currently, the EPA is the lead agency managing this site and ongoing reclamation activities.

Grazing

- There are no cattle allotments within the surveyed area.

CHAPTER 2: STREAM SURVEY SUMMARY REPORTS

Hydrology Summary

Stream Name: Jordan Creek

Hydrologic Unit Code: 170602010503

Protocol Name: R6 Eastside Aquatic Inventory

Date: 09/20/2010 – 09/21/2010

Reach	Valley Form	Mapped Gradient	Mapped Sinuosity	Average Width/Depth Ratio	Average Entrench-ment Ratio	Dominant Substrate Size Class	Rosgen Stream Class
1	8	1.7	1.00	11.1	3.9	Gravel (2-64 mm)	B4
2	3	2.9	1.04	10.9	1.7	Gravel (2-64 mm)	G4
3	5	2.5	1.06	16.9	3.1	Gravel (2-64 mm)	B4
4	3	3.3	1.03	14.8	1.9	Gravel (2-64 mm)	B4c
Average		**2.6**	**1.03**	**13.4**	**2.7**		

Hydrology Summary (continued)

Stream Name: Jordan Creek

Hydrologic Unit Code: 170602010503

Protocol Name: R6 Eastside Aquatic Inventory

Date: 09/20/2010 – 09/21/2010

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	1,910	2,059	6,368	6,401	3	4.15	14.5	1.80	2.00	9.1	79	236	1,904
2	7,286	7,116	6,401	6,611	3	-	14.4	2.15	2.66	10.3	40	212	6,998
3	4,938	4,900	6,611	6,735	3	-	12.0	1.39	1.70	10.0	69	175	4,672
4	4,984	4,994	6,735	6,900	3	-	13.6	1.54	2.17	10.2	44	97	4,821
Average	**19,118**	**19,069**				**4.15**	**13.6**	**1.72**	**2.13**	**9.9**	**58**	**180**	**18,395**

* = Surveyed Length in Feet is determined using ArcMap 9.3.1.

Percent Habitat Area Summary

Stream Name: Jordan Creek

Hydrologic Unit Code: 170602010503

Protocol Name: R6 Eastside Aquatic Inventory

Date: 09/20/2010 – 09/21/2010

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	25.0	5	55.0	11	2.20	15.0	3	0.0	0	5.0	1	0.0	0
2	45.3	34	50.7	38	1.12	0.0	0	0.0	0	0.0	0	4.0	3
3	43.1	22	47.1	24	1.09	3.9	2	0.0	0	0.0	0	5.9	3
4	40.0	26	44.6	29	1.11	9.2	6	0.0	0	0.0	0	6.2	4
Total / Average	**38.4**	**87**	**49.4**	**102**		**7.0**	**11**	**0.0**	**0**	**1.3**	**1**	**4.0**	**10**

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: Jordan Creek

Hydrologic Unit Code: 170602010503

Protocol Name: R6 Eastside Aquatic Inventory

Date: 09/20/2010 – 09/21/2010

			Number of Pieces of Wood per Mile				
Reach	Miles		Small	Medium	Large	Total	Frequency of Large Pieces of Wood*
1	0.39		59.0	5.1	2.6	66.7	0.007
2	1.35		8.2	0.0	0.0	8.2	0
3	0.93		17.2	1.1	0.0	18.3	0
4	0.95		16.8	2.1	2.1	21.1	0.005
Total	**3.62**	**Average**	**25.3**	**2.1**	**1.2**	**114.2**	**0.003**

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

Pool Summary

Stream Name: Jordan Creek

Hydrologic Unit Code: 170602010503

Protocol Name: R6 Eastside Aquatic Inventory

Date: 09/20/2010 – 09/21/2010

								Percentage of Pools Formed By										
Reach	Miles	Number of Pools	Number of Pool/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	0.39	5	12.82	0.035	0.6	0.007	1.98				60	40						
2	1.35	34	25.23	0.069	1.06	0.002	1.06			6	94							
3	0.93	22	23.71	0.054	1.23	0.005	1.44			14	77	9						
4	0.95	26	27.49	0.07	0.88	0.005	1.47	12	15		58							15
Total/Average	**3.62**	**87**	**22.3125**	**0.057**	**0.9425**	**0.00475**	**1.4875**	**12**	**15**	**20**	**289**	**49**						**15**

* 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: Jordan Creek

Hydrologic Unit Code: 170602010503

Protocol Name: R6 Eastside Aquatic Inventory

Date: 09/20/2010 – 09/21/2010

Reach	Miles	Sum Unstable Left Bank	% Unstable Left Bank	Sum Unstable Right Bank	% Unstable Right Bank	% Unstable Both Banks
1	0.39	180	8.7	57	2.8	11.5
2	1.35	190	2.7	150	2.1	4.8
3	0.93	104	2.1	0	0.0	2.1
4	0.95	80	1.6	250	5.0	6.6
Total/Average	**3.62**	**554**	**3.8**	**457**	**2.5**	**6.3**

Count of Special Habitat Units

Stream Name: Jordan Creek

Hydrologic Unit Code: 170602010503

Protocol Name: R6 Eastside Aquatic Inventory

Date: 09/20/2010 – 09/21/2010

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	1	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
Total	**0**		**0**	**1**	**0**	**0**	**0**	**0**	**0**

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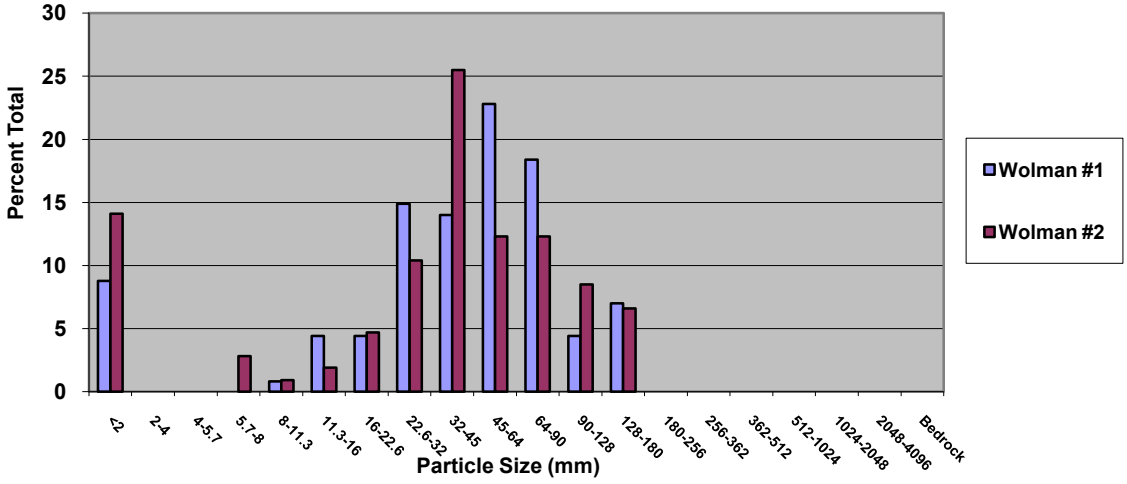
Vacirca, Joseph. 2006. Biological Assessment for the Potential Effects of Managing the Salmon-Challis National Forest in the Yankee Fork Section 7 Watershed on Snake River Basin Spring/Summer Chinook Salmon, Snake River Steelhead, and Columbia River Bull Trout. Custer County, Idaho. 126p.

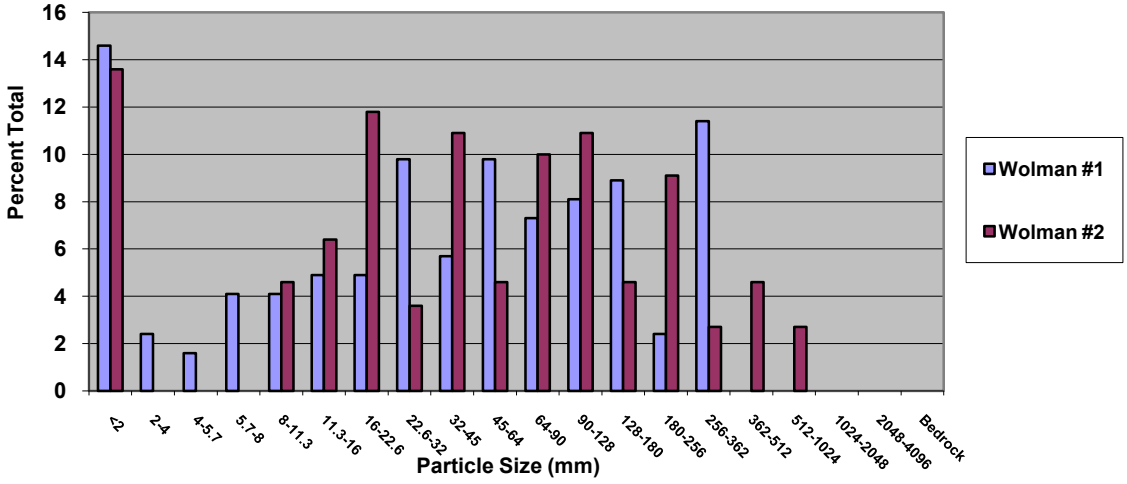
APPENDICES

APPENDIX A: Wolman Pebble Count Graph by Reach

Reach 1
D16 – 12.5 mm
D50 – 43 mm
D84 – 85.5 mm

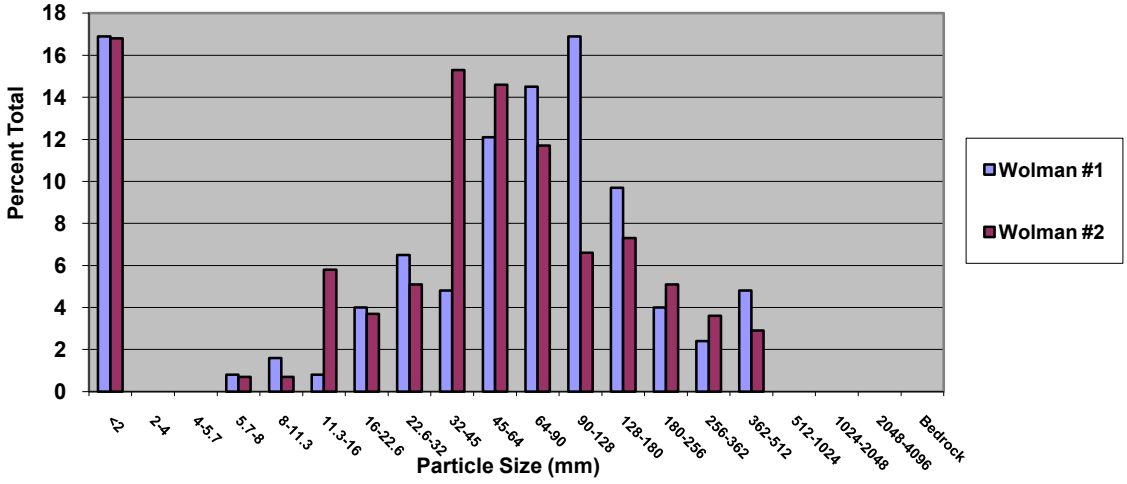


Reach 2
D16 – 6.5 mm
D50 – 42 mm
D84 – 184.5 mm

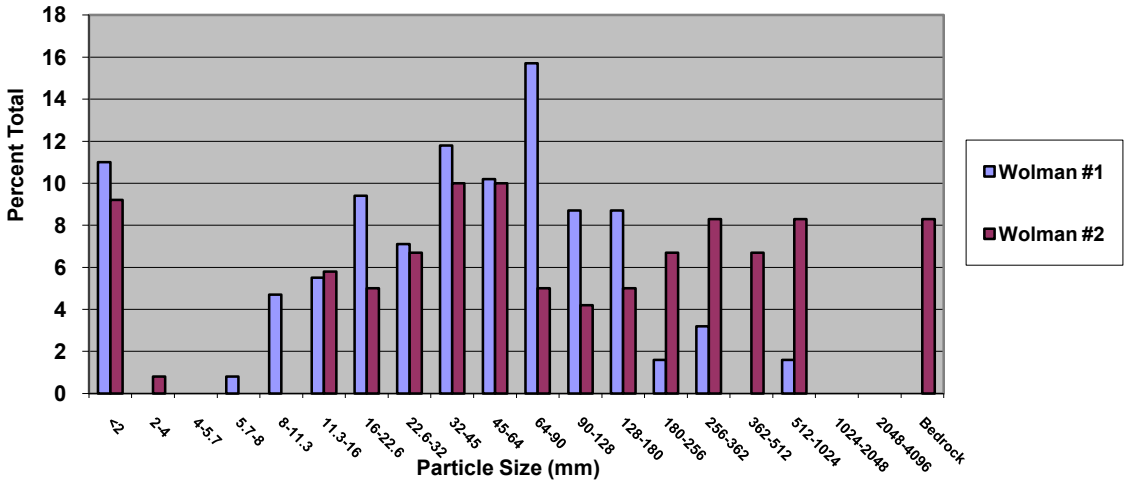


APPENDIX A (Continued)

Reach 3
D16 – 2 mm
D50 – 57.5 mm
D84 – 149.5 mm

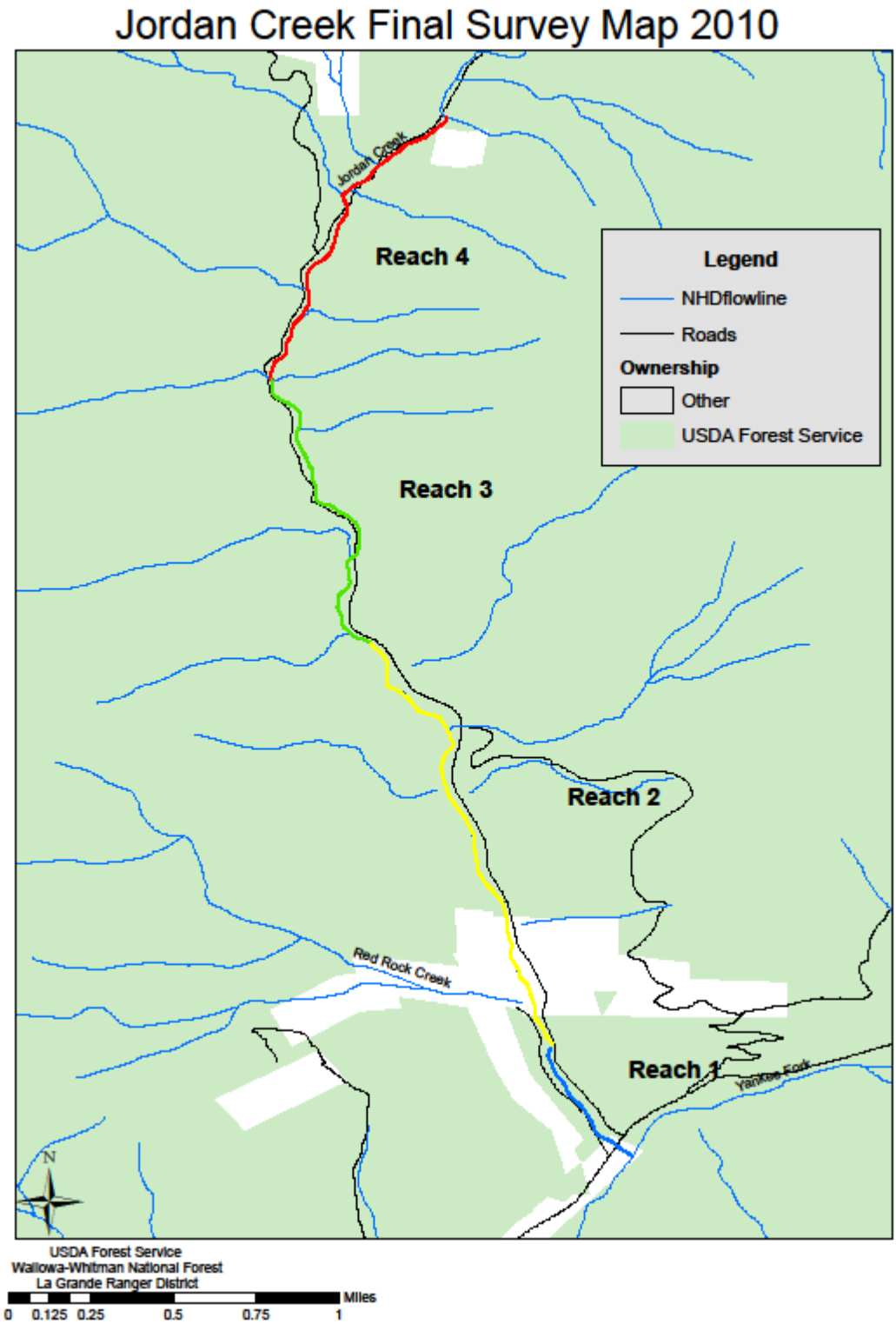


Reach 4
D16 – 13 mm
D50 – 52 mm
D84 – 245.5 mm

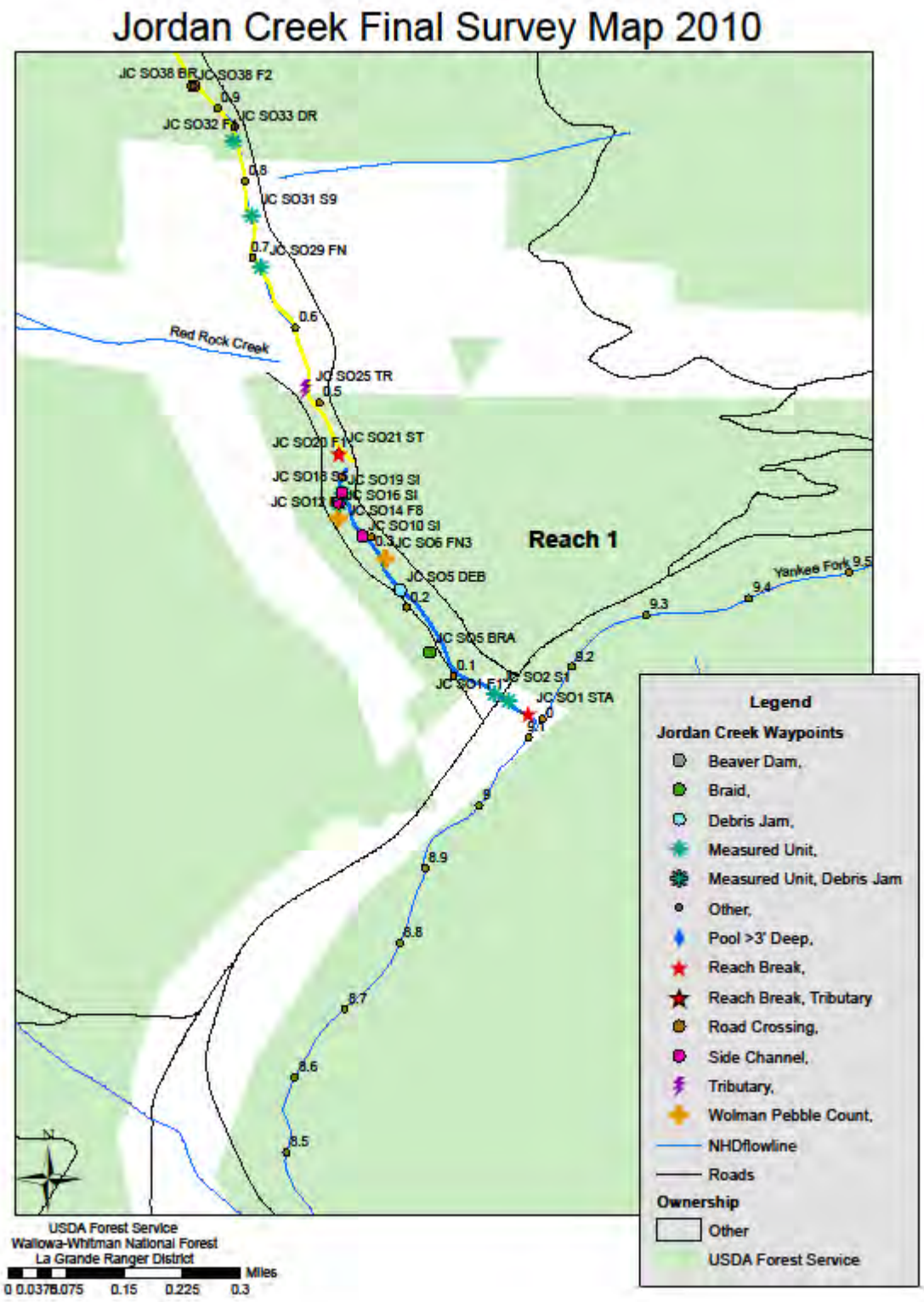


APPENDIX B - Maps

Map 1. Yankee Fork Stream Survey – Final Survey Map

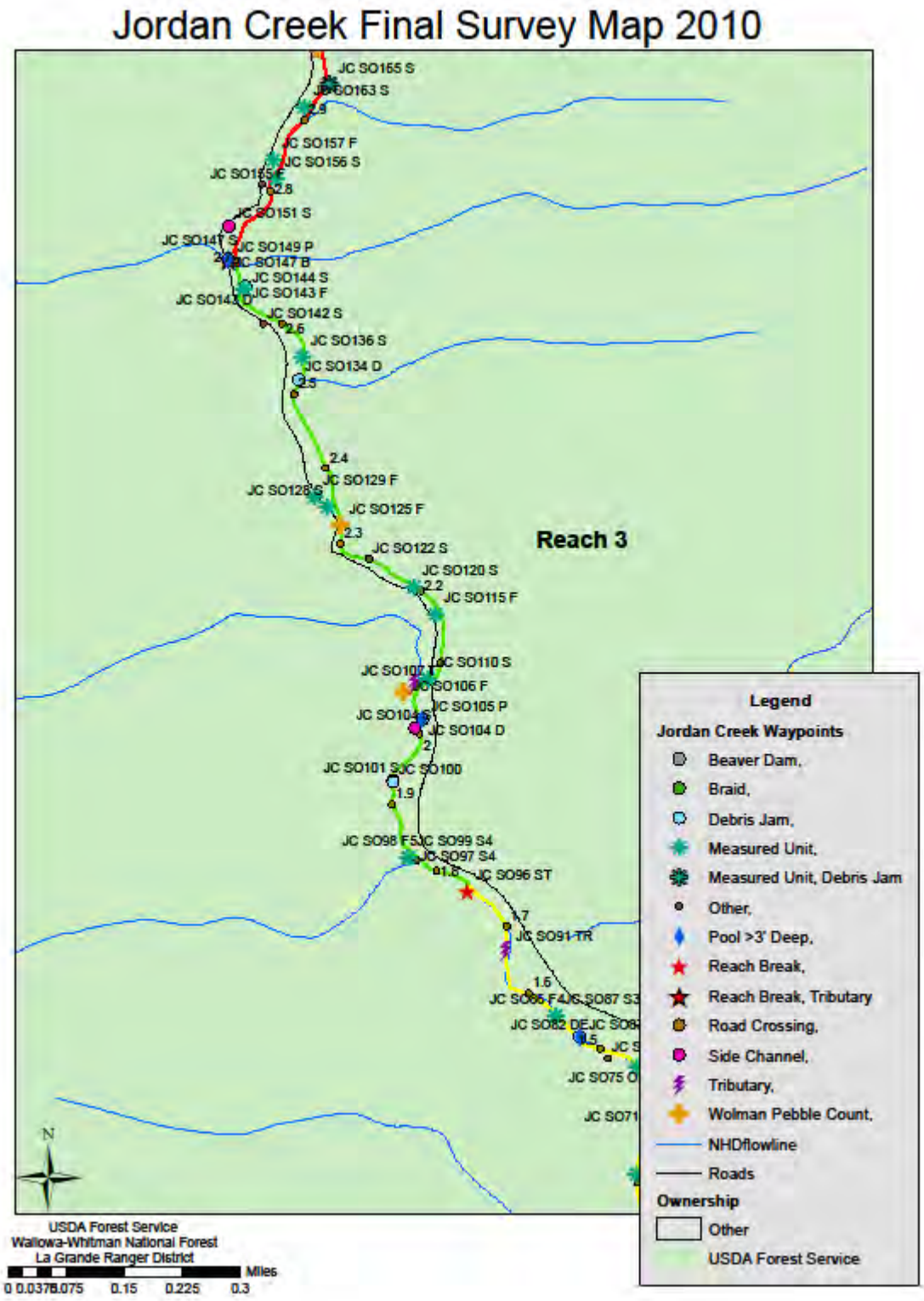


Map 2. Yankee Fork Stream Survey – Reach 1

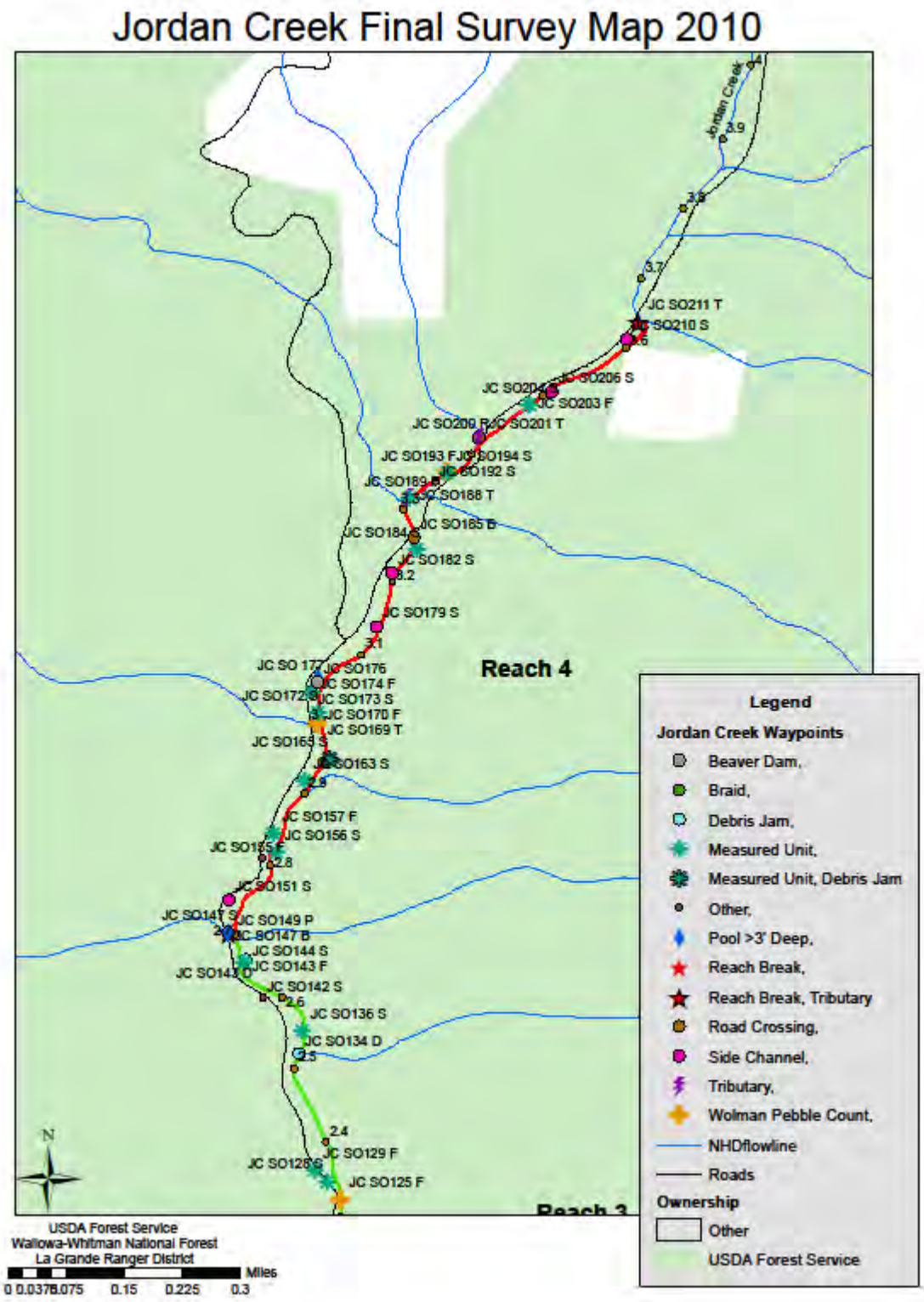


Map 3. Yankee Fork Stream Survey – Reach 2

Map 4. Yankee Fork Stream Survey – Reach 3



Map 5. Yankee Fork Stream Survey – Reach 4



APPENDIX C – Photos & Raw Data Sheets

Appendix C

JORDAN CREEK

STREAM SURVEY PHOTOS

September 20th – 21st, 2010

SO 1 – Start of survey, confluence with Yankee Fork

SO 3 – culvert, right bank

SO 5 – Debris jam #1 in braid

SO 5 – Debris jam #2 in braid

SO 5 – Debris jam #3 in braid

SO 9 – Debris jam

SO 20 – Culverts in fast water unit

SO 20 – End of reach 1, downstream

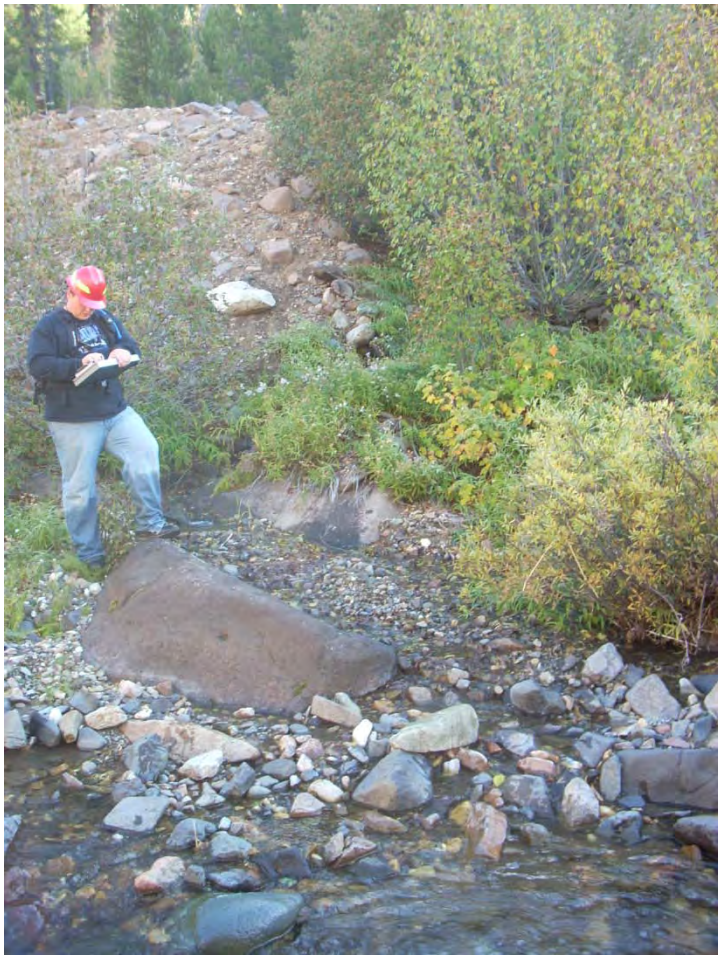
SO 21 – Start of reach 2, upstream

SO 25 – Tributary #1, right bank

SO 33 – Dry tributary, left bank

SO 38 – Old bridge crossing

SO 59 – Tributary #2, left bank



SO 75 – Old road crossing

SO 80 – Dry side channel, right bank, with two stagnant pools

SO 82 – Debris jam

SO 91 – Tributary #3, left bank

SO 95 – End of reach 2

SO 96 – Start of reach 3

SO 101 – Debris jam in side channel

SO 101 – Debris jam in side channel

SO 101 – Debris jam in side channel

SO 104 – Debris jam where side channel exits SO 105

SO 106 – Tributary, right bank

SO 117 – Tributary #5, left bank

SO 134 – Debris jam

SO 145 – End of reach 3

SO 146 – Tributary #6, right bank

SO 147 – Beaver dam

SO 147 – Start of reach 4

SO 155 – Unstable right bank (downstream)

SO 165 – Debris jam

SO 169 – Tributary #7, right bank

SO 176 – Beaver dam

SO 201 – Tributary #9, right bank

SO 209, 210, 211 – Upstream at end of survey

SO 209, 201, 211 – Downstream from end of survey

SO 211 – Tributary #10, left bank, end of survey point

FINAL REACH FORM Page: 1 of 2

R6-2500/2600-21

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

E. Stream Name Jordan Creek

F. 4th HUC Code 17 . 06 . 02 . 01 5th 05 6th 03

G. USGS Quad Custer

* 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	20	9/20/10	9/20/10	R6 eastside AI	A. Flynn	S. Fiorito	6368	6401

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)
3	8	perennial	B	1,910	236	Metered	4.15	0	0.36

21 Mapped Valley Length (ft)	22 Mapped Channel Gradient (%)	23 Mapped Sinuosity Value	24. Reason for Reach Break: End of previously restored section of stream 25.*Inner Riparian Zone Width: 26. Remarks: Survey starts at the mouth and reach 1 ends at the upstream end of the previously restored section of stream
1,904	1.7%	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)
2	21	95	9/20/10	9/21/10	R6 eastside AI	A. Flynn	S. Fiorito	6401	6611

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)
3	3	perennial	B	7286	212	—	—	0.36	1.74

21 Mapped Valley Length (ft)	22 Mapped Channel Gradient (%)	23 Mapped Sinuosity Value	24. Reason for Reach Break: dredge tailings end 25.*Inner Riparian Zone Width: 26. Remarks: Reach 2 is within the dredged area and ends where the tailings end. There is a short section that is not dredged within the reach
6998	2.9%	1.04	

FINAL REACH FORM Page: 2 of 2

R6-2500/2600-21

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

E. Stream Name Jordan Creek

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 03

G. USGS Quad Custer

* 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	96	146	9/21/10	9/21/10	R6 eastside AI	a.flynn	s.fiorito	6611	6735
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)**
3	5	perennial	B	4938	175	—	—	1.74	2.68
21 Mapped Valley Length (ft)	**22 Mapped Channel Gradient (%)**	**23 Mapped Sinuosity Value**	24. Reason for Reach Break: valley floor narrows 25.*Inner Riparian Zone Width:						
4672	2.5%	1.06	26. Remarks: Reach 3 ends where a tributary enters on the right bank and the valley floor closes up						

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	147	211	9/21/10	9/21/10	R6 eastside AI	a.flynn	s.fiorito	6735	6900
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)**
3	3	perennial	B	4984	97	—	—	2.68	3.62
21 Mapped Valley Length (ft)	**22 Mapped Channel Gradient (%)**	**23 Mapped Sinuosity Value**	24. Reason for Reach Break: end of designated survey section 25.*Inner Riparian Zone Width:						
4821	3.3%	1.03	26. Remarks: The survey ends at a tributary on the left bank, just upstream of the moon family property						

MF = ~~10~~ F15
GPS = S10/F10
GPS = Every channel unit.

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District Yankee Fork Survey Start Date: 9/20/10

Stream Name: JORDAN CREEK Sampling Frequency: F 1/7 S 1/4 Contacts: REC: S. Focke OBS: A. Flynn

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:
	START	JORDAN	CREEK			REACH 1		N44° 22.695			W 114° 43.264							
1	F1	1.4	.8			11	179										Time 14:09	Temp: 11°C
/	MF1		Back														Bridge Xing	Pp 1.4
2	S1	4.5		.9	BO	11	48											~~Fish~~
/	MS1		Back															
3	F2	1.5	.5			12	46	Less 5% Creek		Enters	Culvert goes to			Dredge Pool ->			OPic Culvert	PP 1.5/N44°22.724 W114°43.30
4	S2	2.3		.5	BO	14	18											
5	B1	3.4				25	865				PP 3.4	2.2		4 channels		->	N44° 22.726	W 114° 43.315 / Fish
/	Debris	Jam	N44° 22.741		W 114° 43.352					Debris	Jam #2	N44° 22.764		W 114° 43.379			OPic Djam	@ Pic Djam 2
/	Debris	Jam² BR	Pic	N44° 22.834	W 114° 43.407													
6	FN3	1.0	.5			12	128		Wolman									
7	F4	.7	.5			18	57					57						
8	FN5	2.6	.5			11	80											PP 2.6
9	F6	2.8	.5			16	200				80			80				PP 2.8
/	DJam	N44	22.894		W114 43.449													OPic
10	Sides	.4				2.0		N44° 22.894		W114° 43.449							LB	Enters 50# 9 Exits
11	FN6	1.4	.4			13	40											
12	F7	.7	.5			16	100		Wolman									
13	S3	1.9	~~Back~~	.5	BO	13	33											
14	F8	.6	.5			15	82											
/	MF8		Back															Veg in Channel
15	S4	1.7		.4	SB	10	46											
16	Side F	.3				35	100											
17	F9	.8	.4	~~.3~~		20	64						N44	22.83	W 114° 43.475			Enters 50# 14 - Exits 50# 17
18	S5	2.2		.4	SB	12	61		Measured	on	Back							Fish
19	Side F	.6				5.0							N44	22.942	W 114 43.472			Enters 50 17 & 18 Exits 50 2
20	F10	.7	.5			18	200				100		both	Jam #	N44°	22.987	W 114° 43.476	Large Pipes OPic

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

	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
1	17	1.9	2.0	2.4	2.4	22	SS	HW	GF	8	10	30	40	20	0		11	14:18	N44°22.711 W114° 43.286
2							SS	HW	GF	13	50	30	0	20	0		11	14:25	N44°22.719 W114° 43.302
14	21	1.5	1.4	1.6	1.6	135	SS	HW	GF	20	10	40	50	0	0		12.5	15:09	N44° 22.931 W114°43.475
18										20	45	15	40	0	0		12.5	15:20	N44° 22.942 W114° 43.72

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large tree, MT = mature tree
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

MF ~~F1~~ F22
GPS S10/F10

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 09/20/10

Stream Name: JORDAN CREEK Sampling Frequency: F 1/1 S 1/1 Contacts: REC: S. Fiorito OBS: A. Flynn

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:
	END	Reach 1					N44°	22.487	W114	43.476						Pic	Upstream	@ Down Stream Pic
	START	REACH 2																
21	S6	1.7		.4	BO	16	64											
22	F11	1.4	.6			13	162				30			30				
23	S7	1.5		.6	BO	10	34							34	34			
24	F12	1.1	.7			11	233											
25	T1	Temp: 8.5/Grade: 3%/				Contr's 10%		/N 44°	23.058	W114°	43.513/							① Pic Trib
26	F13	1.4	.7			11	310											fish PP. 1.4
27	S8	1.5		.9	BO	11	26											
28	F14	1.5	.8			13	500										Dry Side	PP. 1.4, 1.1, 1.5/Fish
29	FN15	1.1	.7			13	39											
/	MFN15			Back														
30	F16	1.2	.7			15	290											Fish
31	S9	1.5		.8	BO	12	44											
/	MS9		Back															
32	F17	1.2	.8			14	500		Wolman								fish	PP. 1.1, 1.2 Cable in chan
33	F18	1.4	.8			11	285								50			PP 1.2, 1.4
/	Dry Trib	① Pic		of Culvert		Dry Trib		N 44°	23.352	W114	43.592							
34	S10	1.6		.6	BO	13	28		10th	Unit	N 44°	23.378		W114	43.620			
35	F19	1.2	.7			15	120								20			fish
36	S11	1.3		.7	BO	13	19											
37	S12	1.3		.5	BO	14	18											
38	F20	1.5	.9			16	210		10th Unit		N44°	23.398	W114	43.638		fish	PP. 1.0, 1.5	Old Bridge Xing
/	Old Bridge			① Pic	of Bridge			N 44°	23.398			W 114°	43.638					
39	FN21	1.4	.9			11	51											
40	S13	1.8		.8	BO	12	46											
/	MS13		Back															

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 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
29	18	19	1.3	1.4	1.9	39	SS	HW	GF	13	10	50	40	0	0		12	16:40	N 44°23.196 W114°43.563
31							SS	Hw	GF	11	15	45	40	0	0		11	16:56	N 44°23.253 W114°43.573
40							SS	HW	CD	30	20	30	30	20	0		10	17:38	N 44°23.445 W114°43.604

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 - F22 MF - F22 Fish + 36

Channel Unit Form – BOR Stream Survey

Salmon-Challis

State: ID County: Custer Forest: District: Yankee Fork Survey Start Date: 09/20/10 – 09/21/2010

Stream Name: Sampling Frequency: F 1/7 S 1/4 Contacts: REC: SF or to OBS: A Flynn

Jordan Creek

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:
41	F22	1.1	.9			15	56											
	mF22		Back															
42	S14	2.5		.9	BO	17	25											Fish
43	F23	1.3	1.0			14	300										Fish	FP 1.3, 1.0, 1.2
44	SS15	1.2		.8	BO	14	9											
45	F24	1.1	.8			15	100											Fish
46	S16	1.2		.6	BO	14	30											
47	F25	1.4	.8			13	100											FP. 1.4, 1.3
48	S17	1.4		.7	BO	13	14											
	mS17		Back															
49	F26	1.7	1.0			16	105											Fish FP. 1.7
50	S18	1.3		.7	BO	14	15											
51	F27	1.0	.9			12	10											
52	S19	1.3		.8	BO	11	24											
53	S20	1.9		.8	BO	14	24	10th	unit		N44° 23.576		W	114° 43.648				
54	F28	1.4	.9			14	26											
55	S21	1.3		.8	BO	12	30											
	mS21		Back			END	Day		Temp: 9°C			Time 13:08						
56	F29	1.5	.8			12	Boo		Temp: 5.5			Time 09:15					Start Day/Fish/	#2 WO Inma FP 1.5, 1.2
	mF29		Back									BSpring RB						
57	S22	1.4		.6	BO	13	24											
58	F30	1.4	.8			13	60											FP 1.4
59	T2	Temp: 5°C			Gravel: 20%		Cont: 6	5%		N44° 23.633		W114	43.22			Opic T.10		LB
60	F31	1.9	.8			14	195											Fish / FP. 1.8
61	S23	1.8		.5	BO	12	56											
62	F32	1.3	.8			13	140											
63	SS24	1.9		.9	BO	15	12											

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: ART/F = culvert or dam, WF = waterfall, CH = chute M = mainstem
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

	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
41	21	2.0	1.9	1.5	2.0	35	SS	Hw	BCD	30	70	30	40	10	0		10	17:41	N44°23.450 W114°43.661
48							SS	Hw	GF	11	10	30	20	40	0		9.5	17:57	N44°23.548 W114°43.683
55							SS	Hw	GF	15	20	30	30	30	0		9	18:08	N44 23.582 W114°43.702
56	20	2.2	2.1	2.2	2.2	30	SS	Hw	GF	13	10	40	40	10	0		5.5	9:15	N44°23.589 W 114 43.705

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 = F33 mF = ~~F26~~ S43

Channel Unit Form – BOR Stream Survey

Salmon-Challis Yankee Fork

State: IID County: Custer Forest: District: Survey Start Date: ~~09/20/10~~ 09/21/2010

Stream Name: Sampling Frequency: F 1/7 S 1/4 Contacts: REC: S Fiorino OBS: A Flynn

Dan Creek

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
64	F33	1.5	1.0			11	87											PP 1.5 / Fish
65	S25	1.7		.6	BO	13	22											
/	mS25		Back															
66	F34	1.2	.7			20	110											
67	S26	1.9		.8	BO	12	38											Fish
68	F35	1.2	.8			15	71										Gradient increase	
69	S27	1.7		.5	BO	20	11											
70	S28	2.5		1.1	BO	13	22											
71	F36	1.5	1.0			16	49											PP 1.4
/	mF36																	
72	S29	1.9		.6	BO	17	27											
/	mS29																	
73	F37	1.8	1.0			15	165										(Debris)	PP 1.8, 1.5
74	S30	2.0		1.0	BO	17	22		10th	Unit	Pool	N44°	23.788	W114	43.731			
75	F38	1.5	1.0		~~BO~~	17	100				30						Dry trib	PP 1.5
/	Old Road	Xing				N	44° 23.803		W114° 43.740		①Pic							
76	S31	2.5		.6	BR	16	29				30							
77	S32	2.4		.6	BO	11	60										Debris in	channel
78	F39	1.3	.9			20	85											
79	S33	1.4		.7	BO	11	37											
/	mS33		Back															
80	F40	1.5	.9			12	205			Fish				60	60	PP 1.5	Galvanized	pipe / RB 100 ft Bed / Debris
/	Notes →	Dry Side RB		Contains		2 Pool	(1.7, 2.3)	/ ①Pic /		N44°23.839		W114°	43.785	← Fish		in the 2 Pools		
81	S34	1.8		.7	BO	16	18											
82	F41	1.4	.9			13	116											
/	DJam	①Pic									N44°	23.863	W114	43.817				
83	S35	3.4		1.0	BO	16	32			Over 3ft →	N44°	23.863	W	114°	43.817			

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

	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
65							SS	HW	GF	13	30	30	20	20	0		5.5	09:40	N44° 23.710 W114° 43.754
71	31	3.1	2.5	1.5	3.1	100	SS	HW	GF	13	10	20	30	40	0		6	09:52	N44° 23.755 W114° 43.738
72							SS	HW	CL	13	10	20	35	35	0		6	09:54	N44° 23.755 W114° 43.738
78							ST	CL	HW	39	15	30	35	20	0		6	10:15	N44° 23.831 W114° 43.753

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 = F42 mF = ~~F43~~ ~~F50~~ F57

Channel Unit Form – BOR Stream Survey

Salmon-Challis Yankee Fork

State: ID County: Custer Forest: District: Survey Start Date: ~~09/20/2010~~ – 09/21/2010

Stream Name: Jordan Creek Sampling Frequency: F 1/7 S 1/4 Contacts: REC: S Fiorito OBS: A Flynn

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:
83	F42	1.5	1.0			12	32											
84	S36	2.3		.9	BO	10	25										Gradient	Entrenchment increase
85	F43	2.3	.8			10	82										PP, 2.3, 1.5	
/	mF43		Back															
86	S37	1.4		.7	BO	10	20											
/	mS37																	
87	F44	1.5	.8			13	256										PP 1.5	
88	S38	2.2		.7	BO	15	21										Fish	
89	F45	1.2	.7			13	246				100						Spring	RB
90	T3	Temp: .6°C		Contrib: 5%		Grade: 3%		N44°	23.960		W	114	43.900		①Pic	Trib		
91	F46	.9	.7			15	200					150			150			
92	S39	1.8		.5	BR	11	28											
93	F47	1.0	.7			15	116											
94	FN48	1.1	.7			16	66							15			Backwater	Pool 2.0 RB
/	END REACH 2					①Pic	up stream		② Down Stream				N	44	24.027		W114 43.948	
/	START REACH 3					9/21/2010												
95	F49	1.1	.7			11	324										Backwater	Pool RB / PP 1.1
96	S40	1.7		.6	BO	10	43		10th	unit	Pool		N44°	24.061		W114°	44.000	
97	F50	1.2	.7			14	82											PP 1.2 Spring LB
/	mF50							* Trib	RB	Enters		underground.						
98	S41	2.9		.5	BO	9	41								41			
/	mS41																	
99	F51	1.3	.8			12	500				20				100			
100	Side F	.5				4	50		N44	24.150		W114	44.019				RB	
/	D Jam x2	①Pic	D	Jam	②	Pic	D Jam #2	GPS	goes	For	both	N44	24.148		W114	44.026		
101	S42	2.0		.5	SB	9	31							31				
102	F52	1.8	.7			10	315										Gradient	Decrease PP 1.8

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 2 / Reach 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
85	25	2.4	4.1	2.2	4.1	~~35~~	ST	CL	HW	62	0	10	10	0	80		6	10:42	N4423.888 W114 43.844
86							ST	CL	HW	64	0	10	10	0	80		6	10:45	N4423.888 W114 43.844
97	27	.9	1.0	1.1	1.1	77	ST	CL	HW	57	10	30	40	20	0		6	11:21	N4424.064 W114 44.009
98							ST	CL	HW	100	10	30	40	20	0		6	11:25	N4424.064 W114 44.009

Riparian Vegetation: Class: NV = no vegetation, GF = grassland/forbs, SS = shrub/seedling, SP = sapling/pole, ST = small tree, LT = large tree, MT = mature tree
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

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 09/21/2010

Stream Name: Jordan Creek Sampling Frequency: F 1/7 S 1/4 Contacts: REC: SFPT OBS: A. Flynn

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
103	Side F	.6				5	100	N44° 24.209		W114 44.801		RB		Exits SB#101			Exits SB#	Log > enters SB #102
✓	Note S	where	Side		Channel		Exits	There	is	a	Debris	Jam		N44° 24.215			W114 43.	993 exits #105
104	S43	3.3		.6	SB	12	88	1 Pool	3ft	Depth	N44°	24.2	18	W114	43.993			
105	F53	1.8	.8			12	186	★	Wolman								Back water RB, PP1.8	
106	T9	Temp	.8	Grade:	5	Contrib	20%	① Pic	Trib	N44°	24.2	58	W114	44.0	02			RB
107	S44	1.5		.6	BO	11	30											
108	F54	.8	.6			12	34											
109	S45	3.2		.7	BO	7	37										Fish	Bridge Xing GPS on Back
✓	ms S45		Back	②														
110	F55	1.2	.6			12	256										(Dry Trib	LB)
111	S46	1.7		.7	BO	11	24											
112	F56	.8	.6			10	40											
113	S47	1.6		.6	BO	10	26											
114	F57	1.9	.7			13	87	★ Measured ★			on	Back						PP 1.8
115	S48	1.8		.6	BO	11	19											
116	F58	1.7	.8			13	149	III										PP 1.7, 1.5
117	T8	Temp	6.6°C	Grade:	70%	Contrib	>2%	①	Pic Trib			N44°	24.367		W114	43.994		LB
118	F59	1.7	.8			12	82											
119	S49	1.8		.6	BO	12	51							51				Fish Spring RB
✓	MS49																	
120	F60	1.3	.8			12	200										Grade/Entrench	Instream / fish
121	S50	2.5		.6	BR	11	39		16th	unit	N44°	24.398	W114	44.053				
122	F61	1.2	.8			20	100										Spring RB	Spring RB
123	S51	1.3		.5	30	14	30										Dry Trib	RB/
124	F62	2.0	.8			19	178	★	WO	mm								PP2.0
125	S52	2.1		.5	BO	12	26											
126	F63	1.1	.6			8	54										Dry Str	RB / 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, CB = shore M = mm/bland
Formed By: BV = beaver, WD = wood, BR = bedrock, BO = boulder, SB = stream bend, TR = tributary, CU = culvert, DA = dam, RS = restoration, OT = other

Reach 2

	Bankfull Measurements						Riparian Vegetation			Shade	Streambed Substrate = 100%					GPS	Water Temp		
Seq	BF Width	1	2	3	Max BF Depth	FPW	Class	Overstory	Understory	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
104							SS	HW	CD	100	50	30	20	0	0		7	12:12	N44° 24.264 W114°.43.987
114	20	1.4	2.1	1.9	2.1	45	SS	HW	CE	39	10	30	40	20	0		7	12:53	N44 24.336 W114° 43.979
119							ST	CL	HW	26	20	20	30	30	0			13:04	N44 24.367 W114° 44.003

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 = F64 mF = ~~F64~~ ~~F71~~ F72

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 09/21/2010

Stream Name: Jordan Creek Sampling Frequency: F 1/7 S 1/4 Contacts: REC: S. Fiorito OBS: A. Flynn

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:
127	S53	1.6		.6	BR	9	35	* Measured On Back										
128	F64	1.1	.7	[illegible]		12	135											
/	mF64																	
129	S54	1.7		.7	BO	13	24											
130	F65	1.3	.8			12	143											
131	S55	1.5		.5	BO	9	18											Fish
132	F66	1.0	.7			14	467				50			50				Dry Side LB/RB
133	S56	2.4		.5	BO	13	34				34			34				
/	DJam	①Pic Jam								N44°	24.	598	W	114	44.131			
134	F67	.9	.7			14	115											
135	S57	1.9		.5	BO	11	22											
/	mS57		Back															
136	F68	1.0	.6			15	162											
137	S58	2.0	[illegible]	.6	BR	10	47											Fish
138	F69	1.3	.8			13	176											PP. 1.3
139	S59	1.6		.6	BO	14	34											Fish
140	F70	1.1	.8			12	29											
141	S60	2.3		.6	BO	17	30			* 10th unit	N44	24.661		W	114°	44.171		
142	F71	2.8	.7			13	271										(Spring RB)	PP, 2.8 / Fish
/	mF71			Back														
/	DJam	①Pic Jam								N44	24.7	03	W	114°	44.191			
143	S61	2.0		.6	BO	14	33										Black Plastic/Fish	
/	mS61																	
144	F72	1.1	.8			13	133											
145	T6	Temp. 6°C			Grade 3%			Contrib: 5%			①Pic Trib						RB	
/	END	REACH	3							N44	24.7	33	W	114	44.	210		
/	START	REACH	4														①Pic Upstream	

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 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
127							SS	Hw	GF	100	10	20	30	30	10		8	13:38	N44° 24.456 W114° 44.100
128	22	1.8	1.5	.9	1.8	82	SS	Hw	GF	31	10	30	40	20	0		8	13:44	N44° 24.468 W114° 44.114
135							St	CE	HW	29	10	40	10	10	0		9	14:09	N44° 24.625 W114° 44.120
142	19	.8	1.5	1.8	1.9	70	ST	CE	HW	25	20	20	30	30	0		9	14:27	N44° 24.701 W114° 44.103
143							St	CE	HW	34	20	20	30	30	0		9	14:35	N44 24.701 W114° 44.193

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 = F73 mF = ~~F78~~ F85

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 09/21/2010

Stream Name: Jordan Creek Sampling Frequency: F 1/7 S 1/4 Contacts: REC: Fiorito OBS: Flynn

	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:
7	146	S62	1.6		0	BV	15	27				N44	24.	733	W114	44.	210	2 Beaver Dams	2 Pics/Possible migration
8	147	F73	1.0	.7			16	20											
9	148	S63	4.0		0	BV	15	90	Over	3ft	N44	24.733		W114	44.	210			
1	149	F74	1.6	.8			18	210											Fish
	150	Side F	.6				6	90			N44°	24.770		W114	44.	209		PP. 1.6, 1.5	
2	151	SS64	1.6	[illegible]	.8	WD	20	10										Enter/Exits	So # 149
3	152	F75	1.2	.7			18	110											
4	153	FN76	1.5	.8			10	56											
5	154	F77	1.0	.7			14	100										Fish	
		Notes for	Backwater	LB			Very unstable	Bank RB					100		①Pic of Bank			Fish	
6	155	S65	2.0		.6	BO	8	72							72			N44 24.817	W114 44.172
		MS65		Back															
11	156	F78	1.5	.8			15	270							20			PP 1.5	
		MF78		Back															
8	157	S66	2.6		.6	WD	13	45							10				
9	158	F79	.9	.8			11	59											
0	159	S67	1.5		.5	BO	10	27											
	160	F80	1.5	.8			15	64							64				
2	161	S68	1.7		.5	BO	10	33											
3	162	S69	1.6	[illegible]	.7	BO		24											
		MS69																	
1	163	F81	1.4	.5			25	185											
	164	S70	1.9		.5	WD		73	Pool	10th Unit	N44	24.928		W114	44.097			Fish	Undercut RB 30ft
		DJam	①Pic	N	44.24	.928	W114 44	.097											
	165	F82	2.0	1.0			15	67											
	164	SS71	2.4		.5	WD	25	15											Fish
	165	F83	1.0	.8			25	58											

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	Overstory	Understory	%	SA	GR	CO	BO	BR	Name of Point	°C	Time	Comments
155							SS	HW	CL	31	10	20	40	30	0		10	15:04	N44 24.824 W114° 44.157
156	24	1.7	2.5	1.1	2.5	64	SS	HW	CL	45	10	40	40	10	0		10	15:08	N44 24.845 W114° 44.160
162							ST	CE	HW	46	10	45	40	5	0		10.5	15:20	N44 24.904 W114° 44.125

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

IVF = FP1 MF = ~~ES~~ ~~FS~~ F92

Channel Unit Form – BOR Stream Survey

State: ID County: Custer Forest: Salmon-Challis District: Yankee Fork Survey Start Date: 09/21/2010

Stream Name: Jordan Creek Sampling Frequency: F 1/7 S 1/4 Contacts: REC: Fiorito OBS: Flynn

Jordan Creek Channel Units

	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:
59	166	T7	Gravel: 6%			Temp:	8c	Cont:	n: 15%		N44°24.968		W		114 44.111			①Pic trib	RB?
70	167	F84	1.0	.6			16	48	11									Walmart	
71	168	S72	2.0		.6	BO	12	22											
72	169	S73	1.8		.8	BO	11	31											
		mS73		Beach															
73	170	Side F	.5				7	90			N44°25.003		W 114°	44.117				LB	Enters SO#171 EXITS SO#172
74	171	F85	1.0	.7			17	120											
		mF85																	
75	172	S74	1.5		.8	BO	10	38											
76	173	F86	1.1	.8			14	87											
		Beaver Dam		NW44°	25.019		W 114	44.110										①Pic?	
77	174	S75	4.1		0	BV	16	36		Over	3++ Pool		N44° 25.019	W 114°	44.110				
HH	175	F87	1.4	.7			16	490	NE	1									RP1.4
	176	Side F	.5				8	80	N44.25076			W114	44.041					RB	Enters SO#175 EXITS SO#175
79	177	Fn88	1.5	.9			11	53											RP 1.5
III	178	F89	1M	.8			15	375											
	179	Side F	.8				5	80	N44°	25.136		W114	44.027					Ent of SITE	Exits 179 (RB)
83	180	S76	1.6		.7	BO	15	21										Lots of	Algae
84	184	S77	1.4		.8	BO	14	33											
		mS77		Back															
85	187	F90	1.5	1.0			14	148						N44	25.176		W 114° 44.002	Bridge Xing	RP 1.5
86	187	SS78	1.8		.7	BO	12	10											Fish
87	184	F91						132					100						RP 1.5
88	185	T8	Cont: bi: 10%		Temp: 7.		5	Gravel:	5%			N44°	25.	221	W	114°	44.008	RB	No pic?
89	186	F92	1.0	.8			15	34											
		mF92		Back															
90	187	SS79	1.9		.7	BO	15	10											

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 = mainstand
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
169							ST	CE	HW	47	20	30	30	20	0		11	15:19	N44° 24.980 W114° 44.110
171	Bad	B	ankfull				SS	HW	CE	52	~~10~~	45	40	5	0		11	15:54	N44° 25.003 W114° 44.117
181							SS	HW	CL	31	10	40	40	10	0		10	16:35	N44° 25.164 W114° 44.00
186	22	2.1	1.3	1.2	2.1	25	ST	CE	HW	65	~~20~~	30	30	20	0		10	16:49	N44° 25.221 W114° 44.008

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, EC = 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

NF = F93 mF = ~~F92~~ ~~F99~~ F106

Channel Unit Form – BQR Stream Survey

State: ID County: Custer Forest: Salmon-Chalk District: Yankee Fork Survey Start Date: 09/21/2010

Stream Name: Sampling Frequency: F 1/3 S 1/4 Contacts: REC: F. Grito OBS: Flynn

Jordan Creek

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:
188	F93	2.2	1.0			18	187				50	50						PP. 2.2
189	S80	2.3		.6	BO	10	38	10th	unit	Pool	N 44	25.	238	W 114°	43.	978		Fish
190	F94	1.5	1.1			8	41										* Wolman	
191	S81	1.8		.7	BO	13	23											
	mS81	~~[illegible]~~	Back	~~[illegible]~~		~~[illegible]~~	~~[illegible]~~											
192	F95	1.3	1.0			14	60											
193	S82	2.3		.5	BO	13	18											
194	F96	1.3	.9			10	86											
195	S83	2.2		.6	BO	8	23											
196	FN97	2.0	1.0			14	100											
197	F98	1.2	.7			10	224										(N44°25.288	W114 43.930 Road Xing)
198	T9	Contrib 30%			Grade:	10%		Temp: 11°C									D (N44° 25.288	W114 43.930)
199	S84	1.3		.5	BO	11	24											
200	F99	1.0	.7			11	105											
	mF99		Back															
201	S85	1.6		.5	BO	10	37							20			Stag	Pool RB
	mS85		Back															
202	F100	1.4	.7	~~[illegible]~~		10	137	11										
203	Side F	.5				7					N	44.25.339		W	114 43.848		LB	Enters 202 Exits 205
204	S86	2.1		.6	BO	7	41								41			
205	S87	1.8		.4	BO	12	50											Fish
206	F101	1.4	.9			15	436				30							PP 1.1
207	Side F	.6				6	100				N44.25.398			W 114	43.764		Enters 206	Exits 206
208	T10	Grade: 7%		temp: 8°C			Contrib: 10%		Time 17:56		@ Pic	Trib			N44°	25.416		W114 43.752
	END	JORDAN		CREEK			Time	17:59			@ Pic	UP Stream W/Bridge			@ Down	Stream		

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
191							ST	CL	HW	80	20	20	30	25	5		10	17:10	N44 25.248 W114°43.965
200	22	1.5	13	1.2	1.5	42	SS	HW	CL	54	15	40	30	15	0		9	17:30	N44 25.325 W114° 43.974
201							SS	HW	CL	73	15	40	30	15	0		9	17'35	N44 25.325 W114° 43.974

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

Wallowa-Whitman National Forest
Discharge Calculation Worksheet

District: Yankee Fork
HUC: 170602010503
Site: Jordan Creek
Date: 09/13/2010
Time: 09:05

Wetted Width (ft)	12.00
Mean Depth (ft)	0.33
Maximum Depth (ft)	0.70
Cross-sectional Area (ft2)	4.15
Mean Velocity (ft/s)	0.92
Total Discharge (ft3/s)	4.15

Sections	Distance from inititial point (ft)	Width (ft)	Depth (ft)	Area (ft^2)	Velocity (ft/sec)	Discharge (cfs)	Discharge (%)	Notes
1	0.5	0.3	0.00	0.00	0.00	0.00	0%	LWE
2	1.0	0.5	0.05	0.03	0.00	0.00	0%	
3	1.5	0.5	0.20	0.10	0.05	0.01	0%	
4	2.0	0.5	0.50	0.25	0.74	0.19	4%	
5	2.5	0.5	0.70	0.35	0.81	0.28	7%	
6	3.0	0.5	0.10	0.05	1.25	0.06	2%	
7	3.5	0.5	0.20	0.10	1.67	0.17	4%	
8	4.0	0.5	0.60	0.30	1.50	0.45	11%	
9	4.5	0.5	0.60	0.30	0.89	0.27	6%	
10	5.0	0.5	0.50	0.25	1.03	0.26	6%	
11	5.5	0.5	0.60	0.30	0.93	0.28	7%	
12	6.0	0.5	0.50	0.25	0.92	0.23	6%	
13	6.5	0.5	0.10	0.05	0.00	0.00	0%	
14	7.0	0.5	0.40	0.20	1.31	0.26	6%	
15	7.5	0.5	0.40	0.20	1.30	0.26	6%	
16	8.0	0.5	0.40	0.20	0.82	0.16	4%	
17	8.5	0.5	0.30	0.15	0.31	0.05	1%	
18	9.0	0.5	0.20	0.10	1.95	0.20	5%	
19	9.5	0.5	0.20	0.10	3.28	0.33	8%	
20	10.0	0.5	0.30	0.15	1.80	0.27	7%	
21	10.5	0.5	0.30	0.15	1.05	0.16	4%	
22	11.0	0.5	0.50	0.25	0.73	0.18	4%	
23	11.5	0.5	0.40	0.20	0.35	0.07	2%	
24	12.0	0.5	0.20	0.10	0.25	0.03	1%	
25	12.5	0.3	0.10	0.03	0.18	0.00	0%	RWE

DISCHARGE FORM
R6-2500/2600-31

Page: 1 of 2 (

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

E. Stream Name Jordan Creek

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 03

G. USGS Quad Custer

H. Survey Date 09/13/2010 I. Survey Time: 0905

MM/ DD / YYYY

J. Observer/Recorder Chris Mello observing / Andrew Flynn recording

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)
0.5		0				0			
1.0		.05				0			
1.5		.2				.05			
2.0		.5				.74			
2.5		.7				.81			
3.0		.1				1.25			
3.5		.2				1.67			
4.0		.6				1.50			
4.5		.6				.89			
5.0		.5				1.03			
5.5		.6				.93			
6.0		.5				.92			
6.5		.1				0			
7.0		.4				1.31			
7.5		.4				1.30			
8.0		.4				.82			
8.5		.3				.31			
9.0		.2				1.95			
9.5		.2				3.28			
10.0		.3				1.80			
10.5		.3				1.05			
11.0		.5				.73			
11.5		.4				.35			
12.0		.2				.25			
12.5		.1				.18			

L WE at 2 ft

R WE at 14

going by intervals of .5 ft.

WOLMAN FORM
R6-2500/2600-32

Page: 1 of 8

A. State ID B. County Custer C. Forest Salmon-Challis D. District Yankee Fork
E. Stream Name Jordan Creek
F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 03
G. USGS Quad Custer
H. Survey Date 9 / 20 / 2010
MM / DD / YYYY

★ | N44° 22.868 W114° 43.423 | ★

PEBBLE COUNT

SO #: 6 | Channel Unit # FN3 | # of Transects: 1
Surveyor: A. Flynn | Reach: 1

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	IIII IIII	10	8.77	
.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	I	1	0.8	
.44 - .63	Medium	11.3 - 16	V	IIII	5	4.386	
.63 - .89	Coarse	16 -22.6	E	IIII	5	4.386	
.89 - 1.26	Coarse	22.6 - 32	L	IIII IIII IIII	17	14.91	
1.26 - 1.77	Vry Coarse	32 - 45	S	IIII IIII IIII	16	14.035	
1.77 -2.5	Vry Coarse	45 - 64		IIII IIII IIII IIII I	26	22.81	
2.5 - 3.5	Small	64 - 90	C	IIII IIII IIII IIII I	21	18.42	
3.5 - 5.0	Small	90 - 128	O	IIII	5	4.386	
5.0 - 7.1	Large	128 - 180	B	IIII III	8	7.02	
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:	114		
	Total Tally:						

WOLMAN FORM
R6-2500/2600-32

Page: 2 of 8

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

E. Stream Name Jordan Creek

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 03

G. USGS Quad Custer

H. Survey Date 09 / 20 / 2010
MM / DD / YYYY

| N44° 22.914 W114° 43.476 |

PEBBLE COUNT

SO #: 12 | Channel Unit # F7 | # of Transects: 1

Surveyor: A Flynn | Reach: 2

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	𝍸 𝍸 𝍸	15	14.15	
.08 -.16	Very Fine	2 -4					
.16 - .22	Fine	4 -5.7	G				
.22 - .31	Fine	5.7 - 8	R	𝍸	3	2.83	
.31 - .44	Medium	8 -11.3	A	|	1	0.943	
.44 - .63	Medium	11.3 - 16	V	||	2	1.89	
.63 - .89	Coarse	16 -22.6	E	𝍸	5	4.72	
.89 - 1.26	Coarse	22.6 - 32	L	𝍸 𝍸 |	11	10.38	
1.26 - 1.77	Vry Coarse	32 - 45	S	𝍸 𝍸 𝍸 𝍸 𝍸 𝍸	27	25.47	
1.77 -2.5	Vry Coarse	45 - 64		𝍸 𝍸 |||	13	12.26	
2.5 - 3.5	Small	64 - 90	C	𝍸 𝍸 |||	13	12.26	
3.5 - 5.0	Small	90 - 128	O	𝍸 ||||	9	8.49	
5.0 - 7.1	Large	128 - 180	B	𝍸 ||	7	6.60	
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:	106		
	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 Jordan Creek

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 03

G. USGS Quad Custer

H. Survey Date 09 / 20 / 2010
MM / DD / YYYY

PEBBLE COUNT

SO #: 32 | Channel Unit # F17 | # of Transects: 1

Surveyor: A. Flynn | Reach: 2

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	𝍸 𝍸 𝍸 |||	18	14.63	
.08 -.16	Very Fine	2 -4		|||	3	2.44	
.16 - .22	Fine	4 -5.7	G	||	2	1.63	
.22 - .31	Fine	5.7 - 8	R	𝍸	5	4.07	
.31 - .44	Medium	8 -11.3	A	𝍸	5	4.07	
.44 - .63	Medium	11.3 - 16	V	𝍸 |	6	4.88	
.63 - .89	Coarse	16 -22.6	E	𝍸 ||	6	4.88	
.89 - 1.26	Coarse	22.6 - 32	L	𝍸 𝍸 ||	12	9.76	
1.26 - 1.77	Vry Coarse	32 - 45	S	𝍸 ||	7	5.69	
1.77 -2.5	Vry Coarse	45 - 64		𝍸 𝍸 ||	12	9.76	
2.5 - 3.5	Small	64 - 90	C	𝍸 ||||	9	~~8.13~~	73.2%
3.5 - 5.0	Small	90 - 128	O	𝍸 𝍸	10	8.13	
5.0 - 7.1	Large	128 - 180	B	𝍸 𝍸 |	11	8.94	
7.1 - 10.1	Large	180 - 256	B	|||	3	2.44	
10.1 - 14.3	Small	256 - 362	B	𝍸 𝍸 |||	14	11.38	
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:	123		
	Total Tally:						

N 44° 23.337
W 117° 43.594

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 Jordan Creek

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 03

G. USGS Quad Custer

H. Survey Date 09 / 21 / 2010
MM / DD / YYYY

N44 23.592 W114°43.702

PEBBLE COUNT

SO #: 56	Channel Unit # 529	# of Transects: 11
Surveyor: A. Flynn		Reach: 2

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	𝍸 𝍸 𝍸	15	13.64	
.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	𝍸	5	4.55	
.44 - .63	Medium	11.3 - 16	V	𝍸	7	6.36	
.63 - .89	Coarse	16 -22.6	E	𝍸 𝍸	13	11.82	
.89 - 1.26	Coarse	22.6 - 32	L	𝍸	4	3.64	
1.26 - 1.77	Vry Coarse	32 - 45	S	𝍸 𝍸	12	10.91	
1.77 -2.5	Vry Coarse	45 - 64		𝍸	5	4.55	
2.5 - 3.5	Small	64 - 90	C	𝍸 𝍸	11	10.1	
3.5 - 5.0	Small	90 - 128	O	𝍸 𝍸	12	10.91	
5.0 - 7.1	Large	128 - 180	B	𝍸	5	4.55	
7.1 - 10.1	Large	180 - 256	B	𝍸 𝍸	10	9.09	
10.1 - 14.3	Small	256 - 362	B	𝍸	3	2.73	
14.3 - 20	Small	362 - 512	L	𝍸	5	4.55	
20 - 40	Medium	512 - 1024	D	𝍸	3	2.73	
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK				
				Totals:	110		
	Total Tally:						

WOLMAN FORM Page: 5 of 8
R6-2500/2600-32

A. State ID B. County Custer C. Forest Salmon-Challis D. District Yankee Fork
E. Stream Name JORDAN CREEK
F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 03
G. USGS Quad Custer
H. Survey Date 09 / 21 / 2010
MM / DD / YYYY

N44 29.249 W114° 44.014

PEBBLE COUNT

SO #: 105 | Channel Unit # F53 | # of Transects: 1
Surveyor: A. FLYNN | Reach: 3

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	𝍸 𝍸 𝍸	21	16.94	
.08 -.16	Very Fine	2 -4					
.16 - .22	Fine	4 -5.7	G				
.22 - .31	Fine	5.7 - 8	R	I	1	0.81	
.31 - .44	Medium	8 -11.3	A	II	2	1.61	
.44 - .63	Medium	11.3 - 16	V	I	1	0.81	
.63 - .89	Coarse	16 -22.6	E	𝍸	5	4.03	
.89 - 1.26	Coarse	22.6 - 32	L	𝍸 III	8	6.45	
1.26 - 1.77	Vry Coarse	32 - 45	S	𝍸 I	6	4.84	
1.77 -2.5	Vry Coarse	45 - 64		𝍸 𝍸 𝍸	15	12.10	
2.5 - 3.5	Small	64 - 90	C	𝍸 𝍸 𝍸 III	18	14.516	
3.5 - 5.0	Small	90 - 128	O	𝍸 𝍸 𝍸 𝍸	21	16.935	
5.0 - 7.1	Large	128 - 180	B	𝍸 𝍸 III	12	9.677	
7.1 - 10.1	Large	180 - 256	B	𝍸	5	4.032	
10.1 - 14.3	Small	256 - 362	B	III	3	2.419	
14.3 - 20	Small	362 - 512	L	𝍸 I	6	4.84	
20 - 40	Medium	512 - 1024	D				
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK				
				Totals:	124		
	Total Tally:						

WOLMAN FORM Page: 6 of 8
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A. State ID B. County Custer C. Forest salmon-challis D. District Yankee Fork
E. Stream Name JORDAN CREEK
F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 02
G. USGS Quad Custer
H. Survey Date 09 / 21 / 2010
MM / DD / YYYY

N44° 24.435 W 114° 44.085

PEBBLE COUNT

SO #: 124 | Channel Unit # FG2 | # of Transects: 1
Surveyor: A FLYNN | Reach: 3

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	𝍸 𝍸 𝍸 III	23	16.788	
.08 -.16	Very Fine	2 -4					
.16 - .22	Fine	4 -5.7	G				
.22 - .31	Fine	5.7 - 8	R	I	1	0.73	
.31 - .44	Medium	8 -11.3	A	I	1	0.73	
.44 - .63	Medium	11.3 - 16	V	𝍸 III	8	5.839	
.63 - .89	Coarse	16 -22.6	E	𝍸	5	3.65	
.89 - 1.26	Coarse	22.6 - 32	L	𝍸 II	7	5.109	
1.26 - 1.77	Vry Coarse	32 - 45	S	𝍸 𝍸 𝍸 I	21	15.328	
1.77 -2.5	Vry Coarse	45 - 64		𝍸 𝍸 𝍸 𝍸	20	14.598	
2.5 - 3.5	Small	64 - 90	C	𝍸 𝍸 I	16	11.678	
3.5 - 5.0	Small	90 - 128	O	𝍸 IIII	9	6.569	
5.0 - 7.1	Large	128 - 180	B	𝍸	10	7.299	
7.1 - 10.1	Large	180 - 256	B	𝍸 II	7	5.109	
10.1 - 14.3	Small	256 - 362	B	𝍸	5	3.649	
14.3 - 20	Small	362 - 512	L	IIII	4	2.919	
20 - 40	Medium	512 - 1024	D				
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK				
				Totals:	137		
	Total Tally:						

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

E. Stream Name Jordan Creek

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 03

G. USGS Quad Custer

H. Survey Date 09 / 21 / 2010

MM / DD / YYYY

N44° 24.968 W114° 44.111

PEBBLE COUNT

SO #: 167	Channel Unit # F87	# of Transects:
Surveyor:		Reach: 4

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	< 2	S/C/S	~~IIII~~ ~~IIII~~ ~~IIII~~ IIII	14	11.024	
.08 -.16	Very Fine	2 -4					
.16 - .22	Fine	4 -5.7	G				
.22 - .31	Fine	5.7 - 8	R	I	1	0.787	
.31 - .44	Medium	8 -11.3	A	~~IIII~~ I	6	4.72	
.44 - .63	Medium	11.3 - 16	V	~~IIII~~ III	7	5.512	
.63 - .89	Coarse	16 -22.6	E	~~IIII~~ ~~IIII~~ II	12	9.449	
.89 - 1.26	Coarse	22.6 - 32	L	~~IIII~~ IIII	9	7.087	
1.26 - 1.77	Vry Coarse	32 - 45	S	~~IIII~~ ~~IIII~~ ~~IIII~~	15	11.811	
1.77 -2.5	Vry Coarse	45 - 64		~~IIII~~ ~~IIII~~ III	13	10.236	
2.5 - 3.5	Small	64 - 90	C	~~IIII~~ ~~IIII~~ ~~IIII~~ ~~IIII~~	20	15.748	
3.5 - 5.0	Small	90 - 128	O	~~IIII~~ ~~IIII~~ I	11	8.661	
5.0 - 7.1	Large	128 - 180	B	~~IIII~~ ~~IIII~~ I	11	8.661	
7.1 - 10.1	Large	180 - 256	B	II	2	1.575	
10.1 - 14.3	Small	256 - 362	B	IIII	4	3.15	
14.3 - 20	Small	362 - 512	L				
20 - 40	Medium	512 - 1024	D	II	2	1.575	
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK				
				Totals:	127		
	Total Tally:						

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 Jordan Creek

F. 4th HUC Code 17, 06, 02, 01 5th 05 6th 03

G. USGS Quad Custer

H. Survey Date 09 / 21 / 2010
MM / DD / YYYY

N44° 25.248 W114° 43.965

PEBBLE COUNT

SO #: 190	Channel Unit # F94	# of Transects: 1
Surveyor: A Flynn		Reach: 4

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	Sand	<2	S/C/S	𝍸 𝍸 |	11	9.167	
.08 -.16	Very Fine	2 -4		|	1	0.833	
.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	𝍸 ||	7	5.833	
.63 - .89	Coarse	16 -22.6	E	𝍸 |	6	5.0%	
.89 - 1.26	Coarse	22.6 - 32	L	𝍸 |||	8	6.667	
1.26 - 1.77	Vry Coarse	32 - 45	S	𝍸 𝍸 ||	12	10.0	
1.77 -2.5	Vry Coarse	45 - 64		𝍸 𝍸 ||	12	10.0	
2.5 - 3.5	Small	64 - 90	C	𝍸 |	6	5.0%	
3.5 - 5.0	Small	90 - 128	O	𝍸	5	4.167	
5.0 - 7.1	Large	128 - 180	B	𝍸 |	6	5.0%	
7.1 - 10.1	Large	180 - 256	B	𝍸 |||	8	6.667	
10.1 - 14.3	Small	256 - 362	B	𝍸 𝍸	10	8.333	
14.3 - 20	Small	362 - 512	L	𝍸 |||	8	6.667	
20 - 40	Medium	512 - 1024	D	𝍸 𝍸	10	8.333	
40 - 80	Large	1024 -2048	R				
80 - 160	Vry Large	2048 -4096	S				
	Bedrock		BDRK	𝍸 𝍸	10	8.333	
				Totals:	120		
	Total Tally:						

PRELIMINARY REACH FORM Page: 1 of 2

R6-2500/2600-11

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

E. Stream Name Jordan Creek

F. 4th HUC Code 17.06.02.01 5th 05 6th 03

G. USGS Quad Custer

H. Survey Date __/__/____

MM/DD/YYYY

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1. Reach # 1	1. Reach # 2
2. Mapped River Mile From 0 To 0.36	2. Mapped River Mile From 0.36 To 1.74
3. Mapped Valley Width Estimate (ft) 236'	3. Mapped Valley Width Estimate 212'
4. Flow Regime Change N	4. Flow Regime Change N
5. Mapped Channel Length 1,910' (0.36mi)	5. Mapped Channel Length 7,286' (1.38mi)
6. Change in Elevation (ft) Min 6372 Max 6391	6. Change in Elevation Min 6391 Max 6626
7. Mapped Channel Gradient (%) 0.99%	7. Mapped Channel Gradient 3.2%
8. Mapped Valley Length (ft) 1,904' (0.36mi)	8. Mapped Valley Length 6,998' (1.33mi)
9. Mapped Sinuosity 1.0	9. Mapped Sinuosity 1.04
10. Rosgen Stream Type B	10. Rosgen Stream Type C
11. Comments: Survey starts at the mouth and reach 1 ends at the end of the portion of stream already restored.	11. Comments: Reach 2 is within the dredged area and ends where the tailings end. There is a short section that is not dredged within the reach
12. Stream Order (Forest Option) 3	12. Stream Order (Forest Option) 3
13. Valley Type (Forest Option) B	13. Valley Type (Forest Option) 3

PRELIMINARY REACH FORM Page: 2 of 2

R6-2500/2600-11

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

E. Stream Name Jordan Creek

F. 4th HUC Code 17,06,02,01 5th 05 6th 03

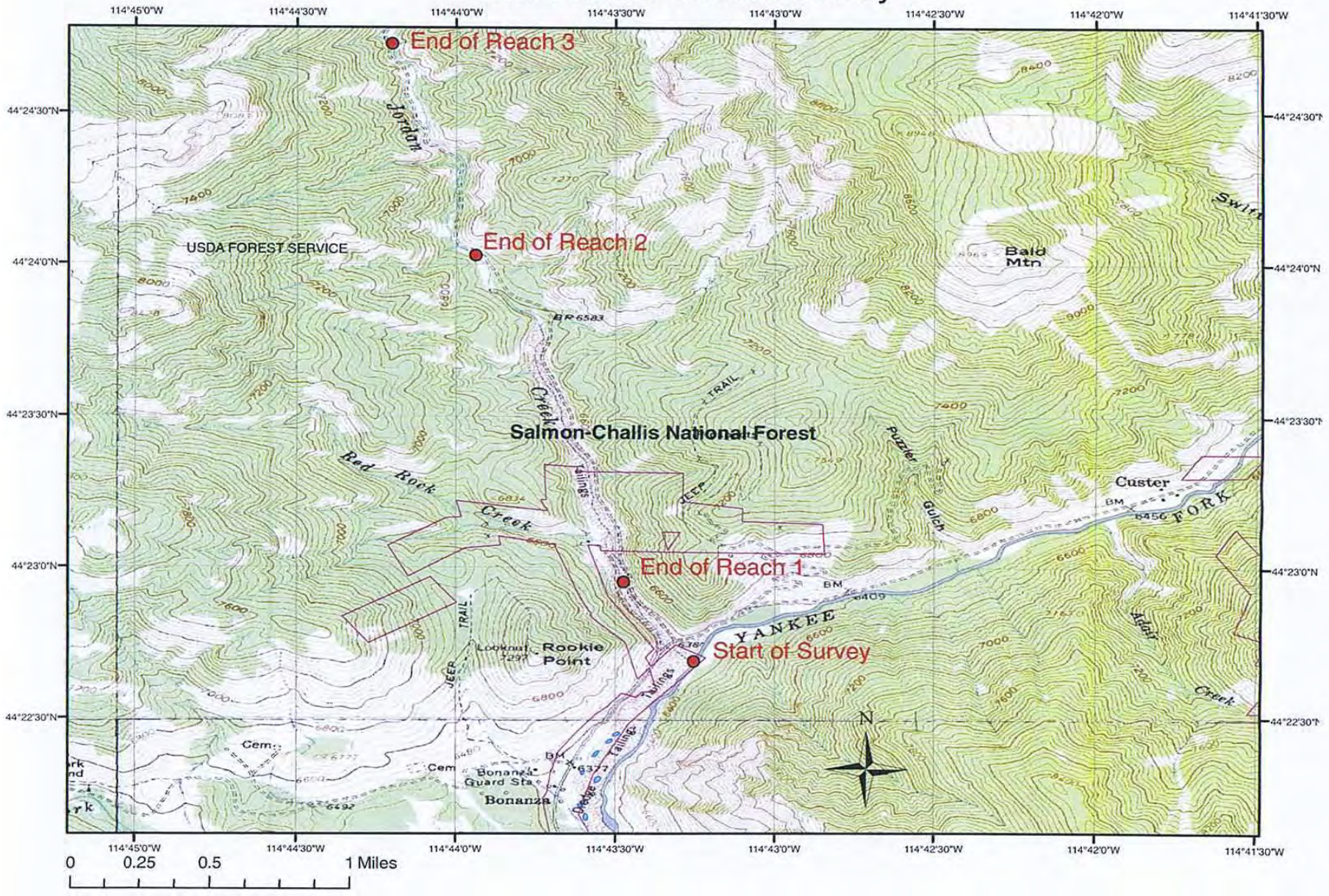
G. USGS Quad Custer

H. Survey Date __/__/____

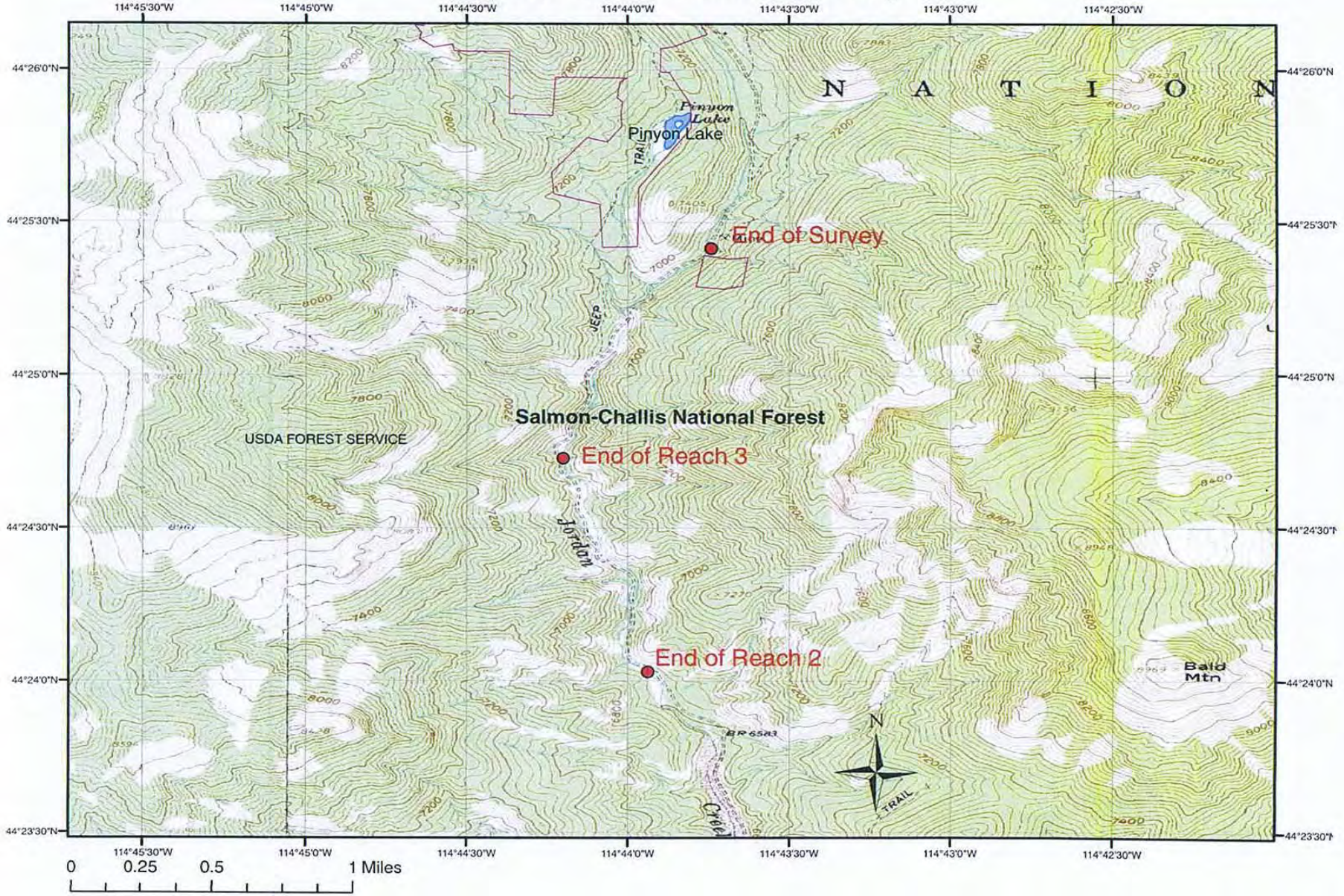
MM/DD/YYYY

1. Reach # 3	1. Reach # 4
2. Mapped River Mile From 1.74 To 2.68	2. Mapped River Mile From 2.68 To 3.62
3. Mapped Valley Width Estimate (ft) 175'	3. Mapped Valley Width Estimate 97'
4. Flow Regime Change Y	4. Flow Regime Change Y
5. Mapped Channel Length 4,938' (0.94mi)	5. Mapped Channel Length 4,984' (0.94mi)
6. Change in Elevation (ft) Min 6626 Max 6710	6. Change in Elevation Min 6710 Max 6923
7. Mapped Channel Gradient (%) 1.7%	7. Mapped Channel Gradient 4.3%
8. Mapped Valley Length (ft) 4,672' (0.88mi)	8. Mapped Valley Length 4,821' (0.91mi)
9. Mapped Sinuosity 1.06	9. Mapped Sinuosity 1.03
10. Rosgen Stream Type B	10. Rosgen Stream Type B
11. Comments: Reach 3 ends where a tributary enters on both banks and the valley floor closes up	11. Comments: The survey ends at a tributary on the left bank, just upstream of the Moon family property
12. Stream Order (Forest Option) 3	12. Stream Order (Forest Option) 3
13. Valley Type (Forest Option) 5	13. Valley Type (Forest Option) 3

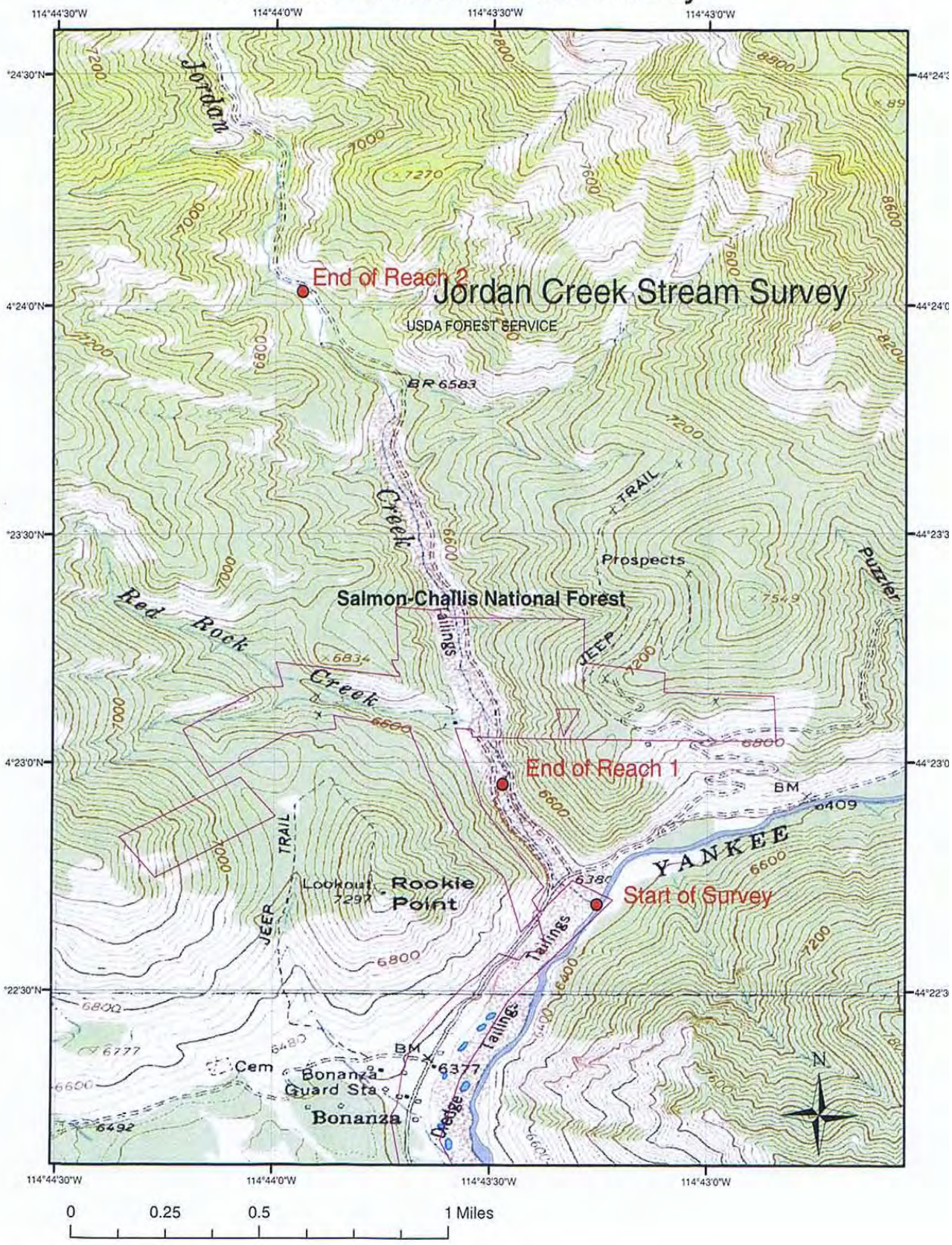
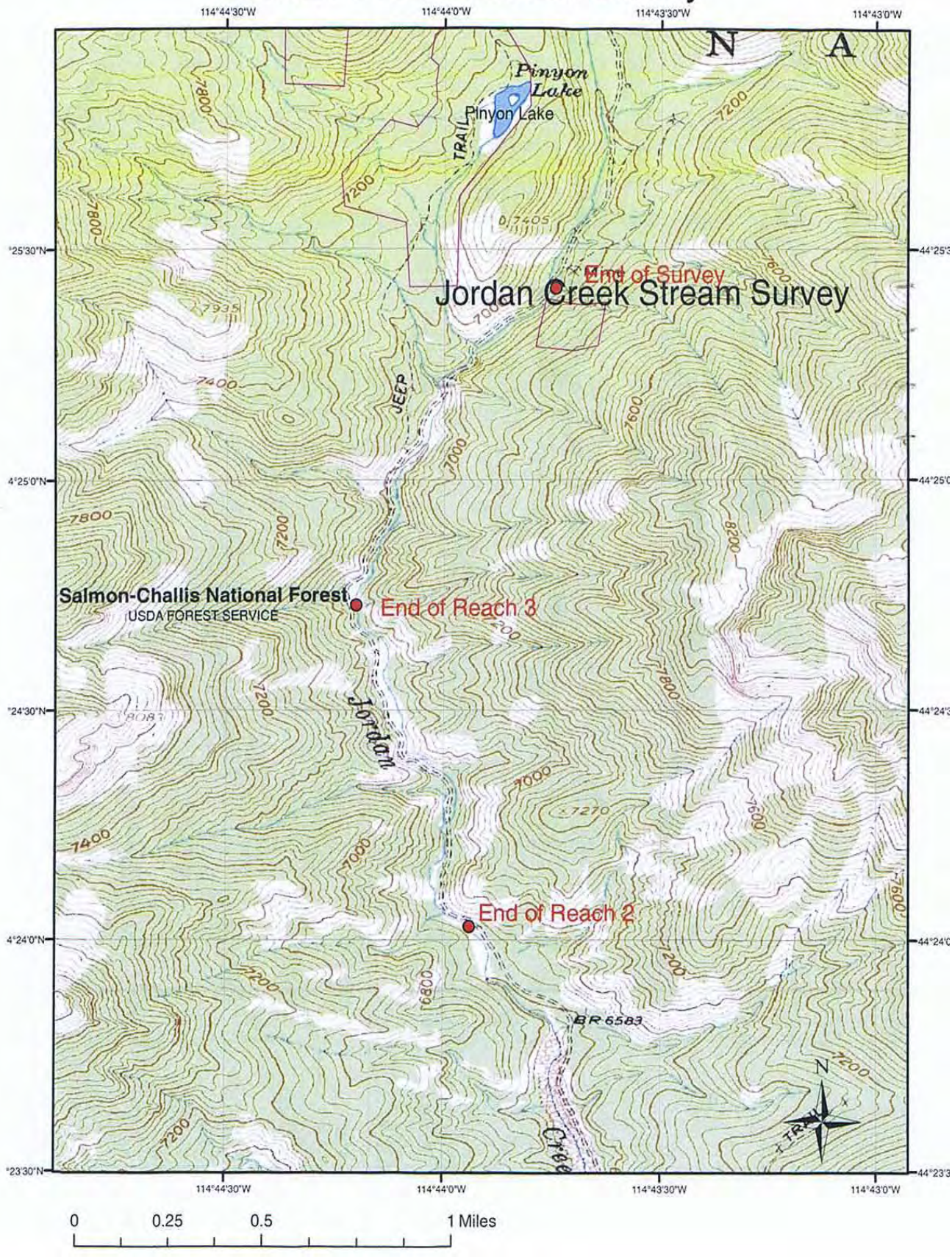
Jordan Creek Stream Survey



Jordan Creek Stream Survey



Jordan Creek Stream Survey



Jordan Creek Stream Survey