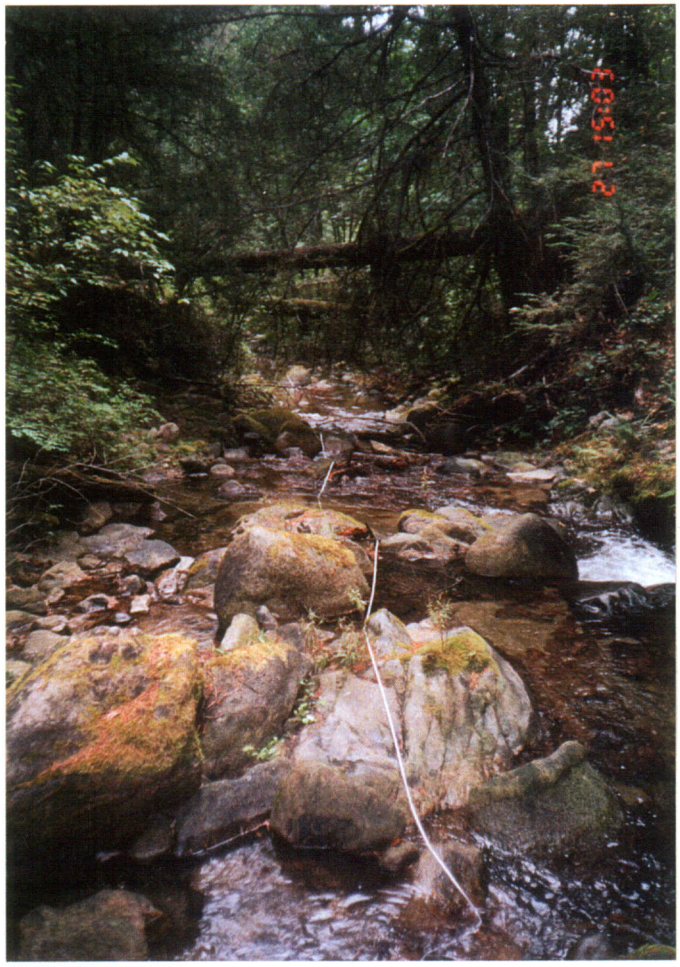
WEST FORK ASHLAND CREEK
2001 LEVEL II STREAM SURVEY REPORT

ROGUE RIVER NATIONAL FOREST
ASHLAND RANGER DISTRICT
ASHLAND, OREGON



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Submitted to:

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Ashland Ranger District
Ashland, Oregon

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March 2002

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Information Block

Stream Name:	Ashland Creek
Tributary to:	Reeder Reservoir / Ashland Creek / Bear Creek / Rogue River
Stream Order	3
Mouth Location:	T39N, R01E, S28
Distance Surveyed:	4.13 miles
USGS Quadrangle:	Mt Ashland
Ranger District:	Ashland
County, State:	Jackson, Oregon
NFS Watershed Code:	17,10,03,08 / 04
Surveyors:	G. Bennett, S. Bowman

EXECUTIVE SUMMARY

West Fork Ashland Creek serves the municipal water needs for the City of Ashland and maintaining water quality is the primary management consideration for the watershed. As a result, ground-disturbing activities are minimized and West Fork Ashland Creek contains quality aquatic and riparian habitats that support a robust resident trout population. Nevertheless, West Fork Ashland Creek lacks large woody material (LWM) and aquatic habitats are accumulating sediment originating from the eroding granitic soils of the watershed. Fish distribution extends approximately 3.9 miles into the West Fork watershed where a sustained steep gradient excludes fish.

INTRODUCTION

West Fork Ashland Creek, a third order tributary to Reeder Reservoir, is located in the eastern Siskiyou Mountains of southern Oregon. West Fork Ashland Creek flows north from the Siskiyou Crest dividing the Rogue and Klamath River watersheds. West Fork Ashland Creek drains a basin area 7,466 acres of mountainous terrain and deeply dissected canyons before discharging into Reeder Reservoir approximately 5.34 miles upstream of Ashland Creek's confluence with Bear Creek. The West Fork watershed is pinnately shaped and located within an elevation band of 2,920 feet to 7,200 feet. Approximately one-half of the watershed is located within the transient snow zone (3,500 feet – 5,000 feet) and can receive moisture as either rain or snow. Consequently, rain-on-snow events are not uncommon and are the primary cause of flooding in the Ashland Creek watershed.

With the exception of approximately 160 acres of city-owned land, West Fork Ashland Creek is located on federally owned land managed by the Ashland Ranger District of the Rogue River National Forest. The West Fork Ashland Creek watershed is currently managed as Late Successional Reserve (LSR). In addition to supplying water for the City of Ashland, West Fork Ashland watershed land uses have included, to a limited extent, past road building and timber harvesting; and to a greater extent recreation activities such as hiking, mountain biking, and skiing.

On 27 and 28 September 2001, approximately 4.13 miles of West Fork Ashland Creek were surveyed and typed for aquatic habitat, abundance of large woody material (LWM), stream bank erosion, substrate composition, dominant riparian vegetation, and fish abundance and diversity according to protocol of the 2001 Forest Service Region 6 Level II Stream Inventory Handbook. The survey began at the confluence with Reeder Reservoir and ended 4.13 miles upstream just downstream of the Forest service road 2060 crossing (see map in **Appendix A**). Two reaches were delineated based on a 30% decrease in stream flow and an increase in stream gradient.

Right and left stream bank designations are made from the perspective of looking upstream (fisheries biologist convention). All pools and riffles were measured for length, width, and depth (no habitat dimensions were estimated). **Table 1** summarizes the attributes of West Fork Ashland Creek identified during this survey. A stream survey map showing the locations of survey starting and ending points, reach breaks, tributaries, special case habitats, photographic points, and other noteworthy features are found in **Appendix A**. Photographs depicting representative habitats and unusual or permanent features are found in **Appendix F**.

Table 1. Summary of West Fork Ashland Creek Attributes

Reach	1	2		Reach	1	2
Stream Order	3	3		% Pools	16	13
Rosgen Channel Type	B3	B3a		Average Residual Pool Depth (ft)	1.8	1.5
Valley Segment Type	Colluvial Canyon	Colluvial Canyon		Bank Instability (% reach length)	0.5	0.6
Valley Form	Narrow V-shaped	Narrow V-shaped		Dominant/Subdominant Riparian Veg. Class	Small tree/ Large tree	Large tree/ Mature tree
Ave. Gradient (%)	5	10		Ave. Riffle Width (ft)	14	9
Sinuosity Value	1.01	1.08		SWM / Mile	7.9	15
Length (miles)	1.52	2.61		MWM / Mile	0.7	0.8
AveValley Width (ft)	109	119		LWM / Mile	0.7	0
Ave. Bankfull Width (ft)	20	18		Hi / Lo Water Temperature (°F)	52 / 51	51 / 47
Bankfull Width:Depth	23.8	18.9		Dominant / Subdominant Substrate	Sand / Gravel	Sand / Gravel
Average Bankfull Depth (ft)	0.9	1		D_{50} - 1 (mm)	31	57
Entrenchment Ratio	1.55	1.27		D_{84} - 1 (mm)	362	190
% Pocket Pool Habitat in Riffles	42	36		D_{50} - 2 (mm)	35	75
$Pool_{(area)}$:$Riffle_{(area)}$	0.19	0.15		D_{84} - 2 (mm)	312	204
Pools / Mile	30.2	29.9		Fish Species Observed	ONCL	ONCL
# of Special Case Habitats	0	6		Salmonid Density (fish/yd²)	0.139	0.059

GEOMORPHOLOGY/GEOLOGY

Ashland Creek is located in the geologically complex and ancient Klamath Physiographic Province. The Klamath Province, which includes the Siskiyou Mountains of southern Oregon and northern California, was formed by the tectonic actions of subduction and uplift in combination with volcanic activity approximately 130 to 250 million years ago. Fourteen million years ago this area began a process of uplift creating steep mountains that were simultaneously being eroded by weathering, stream development, landslides, and glaciation. Ultimately, these processes

striped away the overlying volcanic and sedimentary material to expose the underlying granitics that are present today in the Ashland watershed (Bear Watershed Analysis, 1995). The geology is largely comprised of granitics from the Mt. Ashland Batholith with lesser amounts of sedimentary rocks and alluvial deposits. The watershed is rich in decomposed granite that originated from weathering and erosion of the batholith and is characterized by thin soils prone to erosion and landslides. The geomorphology of the West Fork canyon is diverse and contains glacial outwash material, areas of actively unstable ground, and dissected V-shaped canyons with steep side slopes as observed during this survey.

The surveyed section of West Fork Ashland Creek flows through a valley segment type identified as a colluvial canyon (CC). Colluvial canyons are described by Frissell (1991) as steep narrow canyons located in mid basin and upper basin areas containing moderately entrenched channels with low bankfull width-to-depth ratios and moderate to high stream gradients. Aquatic habitats consist of rapids, cascades with pocket pools, and plunge pools. Colluvial canyon segments contain resident rainbow and cutthroat trout, and winter steelhead if no migration barrier is located downstream. Spawning habitat is often located in small patches of suitable-sized gravel deposited in eddy and along habitat margins. Within this dominant colluvial canyon of West Fork Ashland Creek are short inclusions of alluviated canyons (e.g. end reach 1). Alluviated canyons are characterized by discontinuous floodplains, scattered terraces, and alluvial deposits typically bounded by complex colluvial slopes. Gravel and cobble are the dominant substrate and side channel habitat is not uncommon in the alluviated canyon segments. Further, due to lower stream gradients and smaller substrate, these canyon segments contain more spawning and rearing habitat.

RIPARIAN

The riparian habitat consists of an area extending 100 linear feet out from each stream bank (2001 Stream Inventory Handbook). The inner riparian zone occupies the first 25 feet while the outer riparian zone occupies the remaining 75 feet (Forest option). The riparian vegetation throughout much of the surveyed section of West Fork Ashland Creek consists of multi-aged stands of mixed conifers and hardwoods with a component of mature trees. The quality riparian habitat of West Fork Ashland Creek is attributed to recovery from past road building and logging. The riparian habitat is providing shade, protection from erosion and slope movement, future instream woody material, habitat for terrestrial insects, and nutrient inputs important to headwater streams.

AQUATIC

The aquatic habitats of West Fork Ashland Creek are diverse and generally of good quality but do appear to suffer from sedimentation and embeddedness (photos 5,11,17). Aquatic habitats contain large amounts of course sand. Aquatic habitats consist of long rapids (with pocket pools) and small aggrading plunge pools. Aquatic habitats lack instream woody material and spawning habitat is degraded by sedimentation. Stream gradient is moderate, ranging from an average of 5% in reach 1 to an average of 10% in reach 2. Pools are moderate in occurrence (30 pools/mile) but relatively shallow for a stream the size of West Fork. Side channel habitat is found in West Fork Ashland Creek but is uncommon and not a significant habitat type. Side channels are located in the alluviated canyon sections of West Fork Ashland Creek. Instream large woody material, particularly medium and large size wood, is lacking in West Fork Ashland Creek, however, there is recruitment potential due to the presence of mid and late-seral riparian forests along West Fork Ashland Creek. Large woody material documented was mostly of the small size category ($\geq$12" in diameter and $\geq$ 25' in length) and found as scattered pieces or tied up in small logjams (photo 28). Occasional scattered pieces of LWM are accruing gravel, maintaining side channel habitat, and promoting pool formation (photos 6, 20). Several special case habitats including waterfalls, bedrock chutes, and logjam dams were identified during our survey. Most appeared to be barriers to upstream fish passage at most stream flows, nevertheless fish were seen above these features.

FISHERIES

West Fork Ashland Creek contains a robust population of resident cutthroat trout as determined by snorkel surveys. Rainbow trout may be present but were not detected in our snorkel survey. West Fork Ashland Creek lacks an anadromous fishery due downstream barriers (i.e. Hosler Dam and Granite Street dam). The resident trout population appears robust and extends quite far into the drainage (see map for fish distribution). A sustained steep stream gradient appears to end fish distribution. Cover for fish is provided by small boulders, turbulence, woody material (photo 19), and undercut banks (photo 10). Spawning gravel is degraded due to sedimentation.

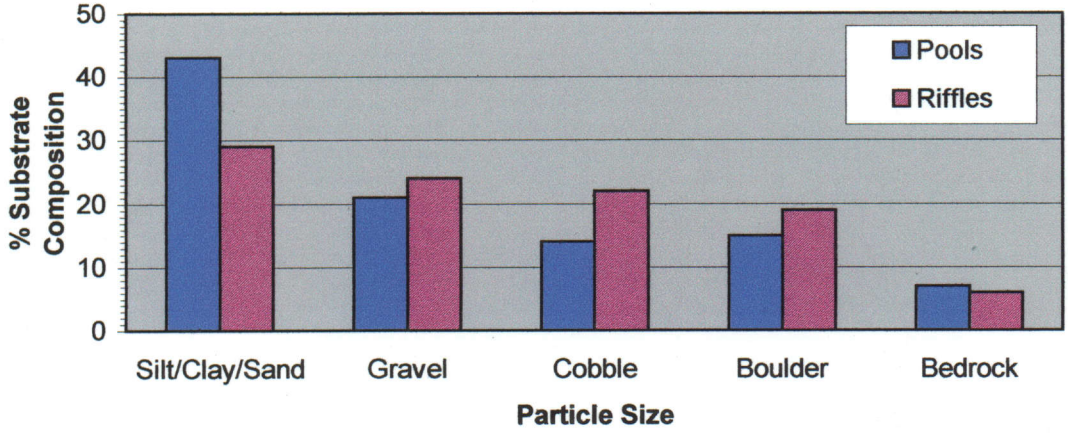
REACH 1

Reach 1 begins at the confluence with Reeder Reservoir and ends 1.52 miles upstream at the confluence with Tributary 2 (Weasel Creek). Reach 1 ends at this location due to a decrease in stream flow (approximately 30%) and an increase in stream gradient.

GEOMORPHOLOGY/HYDROLOGY

Reach 1 flows through a colluvial canyon containing short segments of alluviated canyons. These inclusions are not long enough to break into separate reaches. Stream gradient of reach 1 ranges between 3% and 16% with a mapped average gradient of 5%. Mapped sinuosity is 1.01, and estimated average valley width is 109 feet. Channel substrate estimates were made for every pool and riffle throughout the survey to reflect the percent of sand, gravel, cobble, boulder, and bedrock present in each habitat unit. Substrate estimates were then averaged for pools and riffles and depict a sand-dominated channel with gravel, cobble, and small boulders as sub dominant (**Figure 1**). Five cross section measurements were conducted in reach 1. The results were averaged to describe a moderately entrenched channel with an entrenchment ratio of 1.52 and a bankfull width-to-depth ratio of 23.80. Two Wolman pebble counts were averaged to give a median channel material size (D_{50}) of 33 mm (Wolman pebble count graphs are found in **Appendix D**. Rosgen (1996) stream-type B3 best describes reach 1 of West Fork Ashland Creek based on an average of cross section data, Wolman pebble counts, substrate estimates, and measured stream gradients. The results of individual cross section measurements reveal the inclusion of an alluviated canyon.

Figure 1. Average Substrate Composition
West Fork Ashland Creek Reach 1



All instances of bank instability were measured for length and estimated for height in each individual habitat unit to determine the percent of the reach length affected by eroding banks and to quantify the area of canyon instability. Conversely, SMART (Stream Management, Analysis, Reporting, and Tracking) only calculates bank instability at measured units for length and reports as a percent of stable banks for the reach. The inner canyon and stream banks of reach 1 are stable and only two small areas of bank erosion were identified for a total length of 41 feet (0.5% of reach length). A stream discharge measurement of 2.27 ft^3/sec was conducted just upstream of the confluence with Reeder Reservoir using a calibrated pygmy meter.

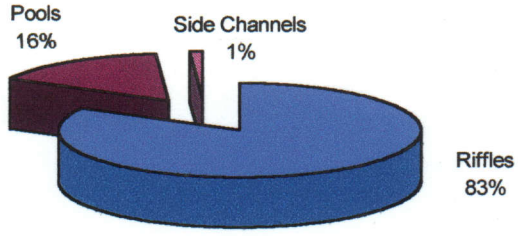
RIPARIAN

The riparian vegetation in reach 1, as determined at each measured unit, consists of an inner riparian zone dominated by 50% small tree class and 45% large tree class alder, madrone, pacific yew, bigleaf maple, and Douglas fir. The remaining 5% of the inner riparian vegetation are scattered mature tree class Douglas fir. The outer riparian zone is dominated by 31% mature tree class and 27% large tree class Douglas fir overstory. The understory of the outer riparian zone is comprised of 42% small tree class bigleaf maple, pacific yew, and Douglas fir. The riparian habitat appears to be in good condition and has had time to recover from past management activities like road building and logging.

AQUATIC

The aquatic habitats of reach 1 consist largely of gravel and cobble rapids and plunge pools aggraded with substantial amounts of coarse sand. Aquatic habitat morphology is maintained by boulder and bedrock substrate that is creating and controlling pool habitat, retaining smaller substrate, and providing cover for fish. Channel-wide pool habitat comprises 16% of the total habitat area (**Figure 2**).

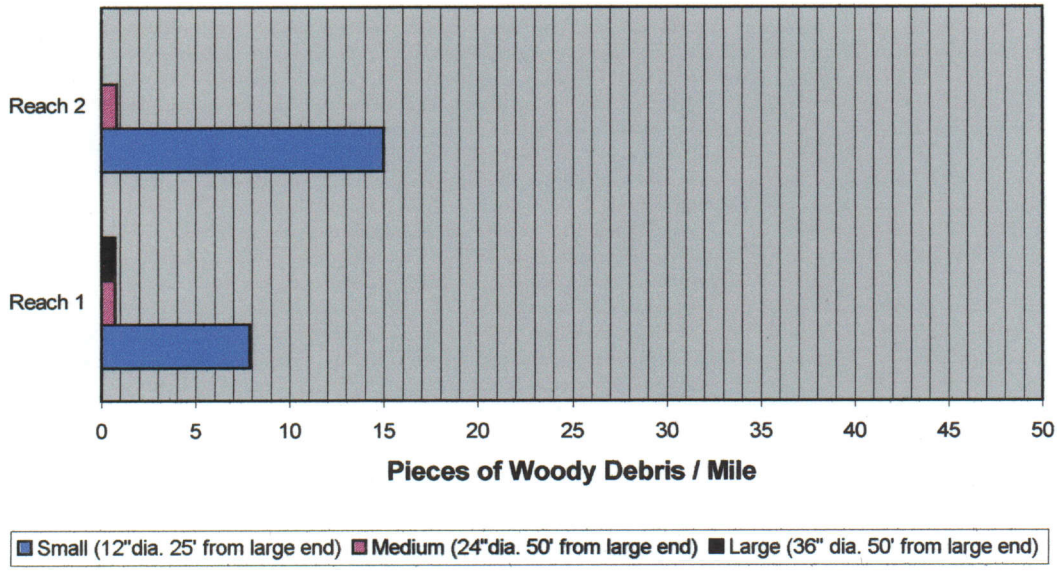
Figure 2. Habitat Composition
West Fork Ashland Creek Reach 1



Pool frequency is 30 pools/mile, of which 5 pools/mile exceed three feet in depth. Average residual pool depth is 1.8 feet. Riffle habitat comprises 83% of the total habitat area with 42% of the riffle area comprised of pocket pool habitat. Pocket pool habitat within riffles was determined by an ocular estimate of the percent of pool-like habitat contained in each riffle. Pocket pool

habitat lacks the criteria to be identified as an individual pool yet often contains quality foraging and rearing habitat for fish. Pocket pools include side pools, eddy pools, backwater pools, or any area of calm water within a riffle, rapid, or cascade. This estimation was performed to demonstrate the amount of pool habitat that is not quantified. Average riffle width is 14 feet and average bankfull depth is 0.9 feet. Side channel habitat comprises 1% of the total habitat area for reach 1 and is located primarily in the alluviated canyon sections. Large woody material is deficient in West Fork Ashland Creek. Large woody material from the medium and large categories are uncommon, each accounting for only 0.7 pieces/mile. Small LWM was found as scattered pieces with a reach frequency of 7.9 pieces/mile. **Figure 3** offers a comparison of LWM densities between the two reaches of West Fork Ashland Creek.

Figure 3. Woody Debris
West Fork Ashland Creek



FISHERIES

Fish identification and enumeration were obtained from snorkel surveys. Parr marks, coloration, behavior, and size were characteristics used in fish identification. Twenty percent of total pools and ten percent of total riffles were sampled. Resident cutthroat trout were the only species observed however some identification was inconclusive and rainbow trout may be present in West Fork Ashland Creek. Further, fish coloration varied considerably depending on the streambed. Fish were of a lighter color in areas dominated by decomposed granite and darker in areas that had a streambed dominated by darker substrate or organic material. Nine pools and five riffles were snorkeled in reach 1 for a snorkeled area of 3,754 ft^2 and 10,140 ft^2, respectively. In the snorkeled pool habitat, 32 juvenile trout and 82 adults ($\geq$ 1+) were counted for a density of 0.273 fish/yd^2. In the snorkeled riffle habitat, 52 juvenile trout and 49 adults were counted for a density of 0.090 fish/yd^2. Total fish density for the reach is 0.139 fish/yd^2. **Table 2** summarizes

the results of the snorkeling data for species, habitat type, and age class. **Appendix E** contains habitat dimensions and fish counts in a calculation table that was used to derive fish densities.

Table 2. Summary of Fish densities for species, age class, and habitat type

Reach	Habitat	%Area	Species	Tally per Age Class			Total Salmonids			Salmonid Density (fish/yd^2)								
No	Type	Sampled	Code	0+	1+	≥2+	Pools	Riffles	Total	Pools	Riffles	ONMY	ONCL	ONKI	ONTS	0+	≥1+	Total
1	Pools	20.2	ONCL	32	55	27												
	Riffles	10.2	ONCL	52	29	20												
	Salmonid Age Class			84	84	47	114	101	215	0.273	0.09	0	0.139	0	0	0.054	0.085	0.139
2	Pools	19.3	ONCL	15	5	14												
	Riffles	7.8	ONCL	23	7	3												
	Salmonid Age Class			38	12	17	34	33	67	0.092	0.043	0	0.059	0	0	0.033	0.026	0.059

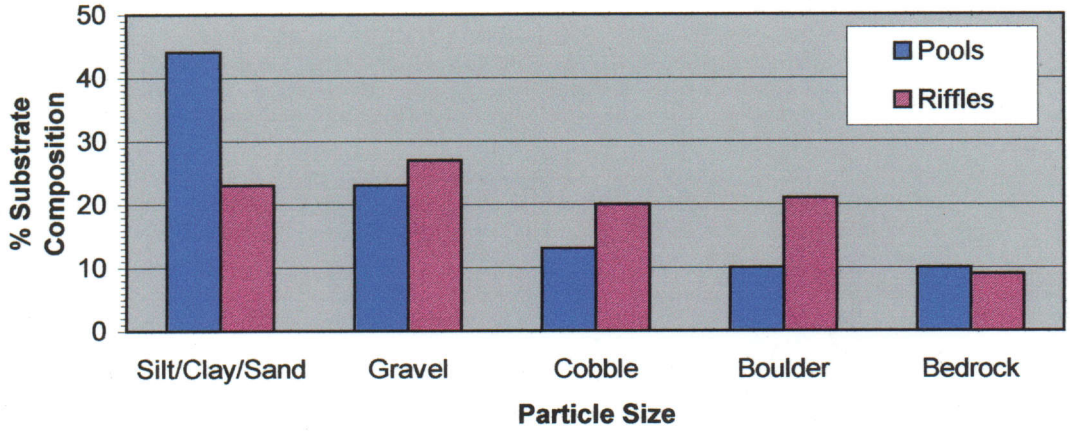
REACH 2

Reach 2 begins at Weasel Creek confluence (T2) and extends 2.61 miles upstream, ending just downstream of Forest Service road 2060 crossing. Reach 2 contains approximately two-thirds of the stream flow in a canyon with a steeper gradient than reach 1.

GEOMORPHOLOGY/HYDROLOGY

Reach 2 flows through a V-shaped colluvial canyon. The channel is entrenched and stream gradient averages 10%. Mapped sinuosity is 1.08 and estimated average valley width is 119 feet. Channel substrate contains gravel and cobble with substantial amounts of coarse sand, especially in the pool habitats (**Figure 4**). Eight cross section measurements were averaged to describe an entrenchment ratio of 1.27 and a bankfull width-to-depth ratio of 18.90. Two Wolman pebble counts were averaged to give a D_{50} of 66 mm. Rosgen stream type B3a best describes reach 2 based on the data presented. Only one instance of bank instability, found at the top of the reach, was noted for a total length of 86 feet (0.6% of reach length).

Figure 4. Average Substrate Composition
West Fork Ashland Creek Reach 2



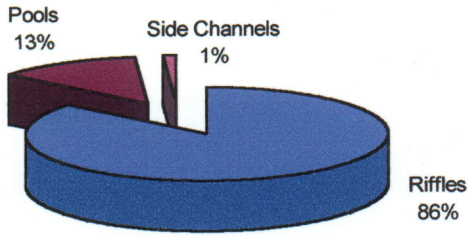
RIPARIAN

The inner riparian habitat of reach 2 consists of 29% small tree alder, bigleaf maple, pacific yew, and Douglas fir, 54% large tree Douglas fir, and 19% mature tree Douglas fir. The outer riparian zone is dominated by 83% large tree and 17% mature tree Douglas fir. The multi-aged riparian forest with a mature tree component provides structural diversity, protection from erosion, and recruitment potential for instream woody material.

AQUATIC

Pocket pool-rich rapids and plunge pools are the most common aquatic habitats in reach 2. The upper section of reach 2, having a steeper gradient, contains more cascades and special case habitats such as waterfalls and logjam dams. Channel-wide pool habitat comprises 13% of the total habitat area (**Figure 5**). Pool frequency is 30 pools/mile, of which 1.2 pools/mile exceed three feet in depth. Average residual pool depth is 1.5 feet. Riffle habitat comprises 86% of the total habitat area with an estimated 36% of the riffle area containing pocket pool habitat. Average riffle width is 9.5 feet and average bankfull depth is 1.0 foot. LWM densities are similar in reach 2 to that of reach 1. This is unusual, as one would expect a greater amount of instream woody material to be found in the upper reach of a mountain stream. Medium size LWM is found at 0.8 pieces/mile and large LWM was not observed. Small LWM density, at 15 pieces/mile, is twice the amount of small LWM that was found in reach 1 but still lower than would be expected for a headwaters reach (**Figure 3**). Reach 2 contains six special case habitats (three waterfalls, two logjam dams, and one bedrock chute) and all are estimated, at a minimum, to inhibit fish passage at most flows. Nevertheless, fish were seen above all of these passage barriers.

Figure 5. Habitat Composition
West Fork Ashland Creek Reach 2



FISHERIES

Throughout the survey 20% of total pools and 10% of total riffles were sampled for fish assemblage. Seventeen pools and eight riffles were snorkeled in reach 2 for a snorkeled area of 3,312 ft^2 and 6,922 ft^2, respectively. In the snorkeled pool habitat 15 juvenile trout and 19 adults ($\geq$ 1+) were counted for a density of 0.092 fish/yd^2. In the snorkeled riffle habitat, 23 juvenile trout and 10 adults were counted for a density of 0.043 fish/yd^2. Total fish density for the reach is 0.059 fish/yd^2. A sustained steep gradient appears to limit fish distribution in West Fork Ashland Creek. This section is characterized as a very long cascade with small and infrequently occurring plunge pools. This habitat type continued to the survey end point and beyond. We continued the snorkel survey to the reach endpoint, approximately one-quarter mile above the last fish seen. **Table 2** summarizes the results of the snorkeling data for species, habitat type, and age class. **Appendix E** contains habitat dimensions and fish counts in a calculation table that was used to derive fish densities

OTHER FEATURES

Seven perennial tributaries feeding West Fork Ashland Creek were identified during the course of the survey. Tributaries 2 and 3 are fish bearing based on a visual survey. A summary of tributary information is listed in **Table 3** and tributary locations are found on the survey map in **Appendix A**.

Table 3. Tributary Summary

Tributary Number	Reach #	NSO #	Est. Flow Contrib.	Fish Bearing?	Dom./Subdom. Substrate	Temp. (°F)	Time	Gradient @ Mouth	Enters From	Tributary Name
1	1	71	2%	No	Gravel / Cobble	59	1430	69%	Left	NA
2	1	96	30%	Yes	Sand / Gravel	51	1540	7%	Right	Weasel Cr.
3	2	123	30%	Yes	Bedrock / Gravel	51	1645	7%	Left	NA
4	2	150	10%	No	Sand / Gravel	51	1240	16%	Right	NA
5	2	215	5%	No	Boulder / Gravel	49	1510	44%	Right	NA
6	2	246	7%	No	Gravel / Sand	47	1630	10%	Left	NA
7	2	251	15%	No	Sand / Gravel	47	1640	5%	Right	NA

CONCLUSION

West Fork Ashland Creek contains diverse aquatic habitats, stable stream banks, and a riparian habitat that is providing shade, recruitment of LWM, and stabilizing side slopes. The stream channel is aggrading with coarse sand and appears to be degrading pool habitat and embedding substrate. LWM is lacking in West Fork Ashland Creek, probably as a result of past management activities. West Fork Ashland Creek provides rearing and foraging habitat for fish, however spawning habitat appears limited and negatively affected by the large quantities of fine sediment. Nevertheless, fish densities are robust in reach1, but decrease in reach 2 as a result of increased gradient and the presence of special case habitats such as waterfalls and logjam dams. Quality recreation opportunities exist in the watershed for hiking and biking and skiing.

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APPENDIX A

WEST FORK ASHLAND CREEK STREAM SURVEY MAP

Name: MT ASHLAND
Date: 2/10/2002
Scale: 1 inch equals 2000 feet

Location: 042° 07' 45.7" N 122° 43' 24.7" W
Caption: West Fork Ashland Creek 2001 Stream Survey Map

APPENDIX B

WEST FORK ASHLAND CREEK SMART SUMMARY TABLES

(10 Pages)

Watershed : 1710030804
Stream Name : WF ASHLAND CREEK 01
Survey Start Date: 27-SEP-2001

Reach	Corr. Miles	Large Wood/Mile	Large Class/Mile	Medium Class/Mile	Small Class/Mile	% Pools	% Riffles	% Side Channels	% Special Cases	Length of Dry in Feet
1	1.52	1.31	.66	.66	7.88	15.59	83.25	1.16	.00	.00
2	2.61	.77	.00	.77	14.96	12.90	85.57	1.49	.04	.00
Totals	4.13	.97	.24	.73	12.35	14.17	84.48	1.33	.02	.00

Watershed : 1710030804
Stream Name : WF ASHLAND CREEK 01
Survey Start Date: 27-SEP-2001

Reach	Corr. /Mile	Pools /Mile	Pools > 3 Mile	Pools > 3 Freq.	Pools with 1-3 pieces LWM(CI 1&2)	Pools with > 3 pieces LWM(CI 1&2)	Riffles /Mile	Riffles width 1-3 pieces LWM(CI 1&2)	Riffles width > 3 pieces LWM(CI 1&2)
1	1.52	30.20	5.25	.000	1	0	30.20	1	0
2	2.61	29.93	1.15	.000	0	0	32.61	2	0
Totals	4.13	30.03	2.66	.000	1	0	31.72	3	0

Watershed : 1710030804
Stream Name : WF ASHLAND CREEK 01
Survey Start Date: 27-SEP-2001

Reach	Corrected Pool Area (sq ft)	Pool Confidence Interval	n	Corrected Riffle Area (sq ft)	Riffle Confidence Interval	n
1	18564.00	.00	9	99139.00	.00	5
2	17160.00	.00	16	113862.00	.00	8

Forest : 10
District : 02
Watershed : 1710030804
Stream Name : WF ASHLAND CREEK 01
Survey Start Date : 27-SEP-2001

Observer	Length	Width	Area	Count	SS
G.BENNETT	1.0000	1.0000	1.0000	38	

* WARNING: Habitat type not measured adequately -- data suspect.

** WARNING: Habitat type not measured at all -- ratio could not be calculated.

Watershed : 1710030804
Stream Name : WF ASHLAND CREEK 01
Survey Start Date: 27-SEP-2001

Reach	Rosgen Channel Type	Entrench Ratio	Flow (CFS)	Corr Miles	Average BnkFul Depth ft	Average Riffle Width ft	Bankfull W:D	Pool Residual Depth ft	Wollman Summary D50	Wollman Summary D85	Wollman Summary D50	Wollman Summary D85	Water Temp	Percent Stable Banks
1	B	1.55	2.30	1.52	.88	14.24	23.80	1.77					52	.00
2	B	1.27	.00	2.61	1.00	9.49	18.90	1.51					51	.00
Totals		1.38		4.13	.95	11.16	20.79	1.61						100.00

Watershed : 1710030804
Stream Name : WF ASHLAND CREEK 01
Survey Start Date: 27-SEP-2001
Stream Order: 4

Reach	Mapped River Miles From	To	Valley Length in mi	Mapped Channel Gradient	Sinuosity	Mapped Valley Width Estimate in feet	Rosgen Channel Type	Inner Riparian Zone Width in ft	Valley Form
1	.0	1.5	1.50	5	1.01	100	B	25	2
2	1.5	3.9	2.40	10	1.08	100	B	25	2
Totals			3.90	8	1.05				

Watershed : 1710030804
Stream Name : WF ASHLAND CREEK 01
Survey Start Date: 27-SEP-2001

ZONE 1

Reach	Corrected Miles	Inner Zone Width	Floodplain Vegetation Class Percentages GF	SS	SP	ST	LT	MT	NV	Vegetation Species GF O	GF U	SS O	SS U	SP O	SP U	ST O	ST U	LT O	LT U	MT O	MT U	NV O	NV U
1	1.52	25	0	0	0	50	45	6	0							CD	HB	CD	HB	CD	HX		
2	2.61	25	0	0	2	29	50	19	0					HA	SS	CD	HB	CD	CY	CD	HB		

ZONE 2

Reach	Corrected Miles	Outer Zone Width	Floodplain Vegetation Class Percentages GF	SS	SP	ST	LT	MT	NV	Vegetation Species GF O	GF U	SS O	SS U	SP O	SP U	ST O	ST U	LT O	LT U	MT O	MT U	NV O
1	1.52	75	0	0	0	42	27	31	0							CD	HX	CD	HX	CD	HX	
2	2.61	75	0	0	0	0	83	17	0									CD	CD	CD	CD	

Watershed : 1710030804
Stream Name : WF ASHLAND CREEK 01
Survey Start Date: 27-SEP-2001

Reach	Miles	Falls	Chutes	Dams	Max Height in feet	Marshes	Braids	Culverts
1	1.52	0	0	0	.00	0	0	0
2	2.61	3	1	2	11.00	0	0	0
Totals:	4.13	3	1	2	11.00	0	0	0

Watershed : 1710030804
Stream Name : WF ASHLAND CREEK 01
Survey Start Date: 27-SEP-2001

Species	Total Miles Present	Reach	NSO
DITE	.0055	1	73
ONCL	3.5074	1 - 2	253

Watershed : 1710030804
Stream Name : WF ASHLAND CREEK 01
Survey Start Date: 27-SEP-2001

Reach	Mapped River Miles from	to	NSO from	NSO to	Corrected Length in feet	Percent Area	W.D.	# Pools	Pools Freq.	# LWM	LWM Freq.	Gradient	Rosgen Class
1	.0	1.5	1	96	8042.00	47.23	12.73	46	.081	1	.002	5	B
2	1.5	3.9	97	276	13762.00	52.77	13.02	78	.054	0	.000	10	B
Totals					21804.00	100.00	12.91	124	.063	1	.001	8	

APPENDIX C

WEST FORK ASHLAND CREEK STREAM SURVEY DATA FORMS

A, B2, C, C2, D, E, F, G

STREAM HABITAT DATA FORM A Page: ____ of ____
R6-2500/2600-10

A. State Oregon (41) B. County Jackson (29) C. Forest 10 D. District 02

E. Stream Name West Fork Ashland CR.

F. Watershed Code 17, 10, 03, 08 NFS 04 ;___,___,___,___,___,___,___

G. USGS Quad Ashland NW

H. Survey Date ___-___-___ I. Name _____
DD-MMM-YY

1. Watershed Area 14,791 Acres
2. Stream Order 4
3. Fish and Amphibian Species ONCL (CT), ONMY (RB), Dite (PG salamander), Astr (Tail Frog)
   Data Source _____
4. Flow Data 3.28 CFS
5. Water Quality Data _____
6. Macroinvertebrate Data _____
7. Previous Surveys J. Hoover - 1969, P. Hicks, J. Kreuzman 1990
8. Historical Land Use Data _____
9. Coordination _____
10. Comments _____

State 41 B. County 29 C. Forest 10 D. District 02 E. Stream Name WF Ashland Creek

Watershed Code 17 10 . 03 . 08 NFS 04. ___ ___ . ___ ___ . ___ G. USGS Quad Ashland

1. Observer G. Bennett Recorder S. Bowman
2. Reach No. 1 Reach End Date 27 - Sep - 01
3. Nat. Seq. Order (NSO) from 1 to 96
4. Flow/Method 2.3 cfs / pygmy meter
5. Mapped River Mile (RM) from 0.0 to 1.5
6. Mapped Valley Length 7920
7. Change in Elevation Δ = 430 from 2920 to 3350
8. Mapped Channel Gradient 5.4%
9. Mapped Sinuosity Value ⊗ measured length / mapped length 1.01
10. Mapped Valley Width Estimate 100
11. Valley Segment Type ⊗⊗ CC
12. Entrenchment (FPW/BFW) ___
13. Width/Depth Ratio (BFW/BFD) ___
14. Wolman D50 ___ mm. D84 ___ m
D50 ___ mm. D84 ___ m
15. Rosgen Channel Type B
16. Inner Riparian Zone Width 25
17. Stream Order 4
18. Angling Pressure L X M ___ H ___
19. Migration Barrier ? Yes ___ No X
20. Fish Sighted ? Yes X No ___
21. Comments: Reach ends at weasel Creek due to flow contribution of weasel Creek and an increasing stream gradient and narrowing canyon.

⊗ measured length = 8042

⊗⊗ Valley Form 2

1. Observer G. Bennett Recorder S. Bowman
2. Reach No. 2 Reach End Date 28 - Sep - 01
3. Nat. Seq. Order (NSO) from 97 to 276
4. Flow/Method —
5. Mapped River Mile (RM) from 1.5 to 3.9
6. Mapped Valley Length 12672
7. Change in Elevation Δ = 1290 from 3350 to 464
8. Mapped Channel Gradient 10%
9. Mapped Sinuosity Value * measured length / mapped length 1.08
10. Mapped Valley Width Estimate (115.8) 100
11. Valley Segment Type ⊗⊗ CC
12. Entrenchment (FPW/BFW) ___
13. Width/Depth Ratio (BFW/BFD) ___
14. Wolman D50 ___ mm. D84 ___ m
D50 ___ mm. D84 ___ m
15. Rosgen Channel Type B
16. Inner Riparian Zone Width 25
17. Stream Order 3
18. Angling Pressure L X M ___ H ___
19. Migration Barrier ? Yes X No ___
20. Fish Sighted ? Yes X No ___
21. Comments: Survey ended above the upstream limit of fish distribution in WF Ashland Creek.

⊗ measured length = 13762

⊗⊗ Valley Form = 2

P49
R5

Modified Stream Habitat Data Form C

LAST D____ P____ R____ S____ T____ F____ C____ ____

State 41 County 29 Forest 10 District 2 Stream Name West Fork Ashland Creek Date 27 / 9 / 01 (day / mon / yr)

Watershed Code 17, 10, 03, 08 NFS 04.__:__.__, __.__ USGS Quad: Ashland

Reach Number 1 Sampling Freq: Pools 20% Riffles 10% Recorder S Bowman Observer G Bennett

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	
nat. seq. ord. #	Hab. type & num. P,R,S,F,D,T,C	Hab. Length nearest ft.	Hab. Width nearest ft.	Hab. Depth max/ave. 0.1 ft.	PTC max. dep. 0.1 ft.	Substrate					# LWD			key LWD # above BF	mass waste		BF width nearest ft.	BF depth @			BFD max. 0.1 ft.	floodprone		bank stab. both banks ft.	riparian zone			Stem count both banks	valley floor width 20 ft.	meas hab & trib. temp. deg. F		Photo frame no.	
						SA > 0.1in.	GR 0.1"-2.5in.	CO 2.5-10in.	BO 10in-13ft.	BR >13ft.	sm > 12" X 25'	med > 24" X 50'	lrg > 36" X 50'		length ft.	av ht. ft.		1/4 BFW 0.1 ft.	1/2 BFW 0.1 ft.	3/4 BFW 0.1 ft.		depth 2 (BFmax) 0.1 ft.	width nearest ft.		class	dom sp.	sub sp.			temp.	time		
1	RR1	341	12	1.9/.7		2	2	3	2	1					6% grade													30				↑14	Begin Survey
2	PP1	24	24	3.8/.8	.8	4	2	2	1	1																							
3	RR2	153	13	1.7/.9		3	2	1	1	3					Spawner													40					
4	PP2	15	15	2.6/.6	.6	6	2	1	1	-																							
5	RR3	130	18	1.7/.8		3	2	2	2	1																		50				↑15	Typical morph @ start
6	PP3	15	8	2.4/.7	.7	3	-	2	3	2	11																						
7	RR4	46	13	1.1/.5		1	3	3	2	1																		10					
8	PP4*	26	18	2.6/.5	.5	4	1	1	3	1														0	ST ST	CO CO	HB HB		80	52	1120		
9	RC5*	54	14	1.8/.7		2	3	2	2	1					14% grade		22	.6	1.3	.5	1.3	2.6	25	0	MT ST	CD CD	HX HX	20	80	52	1120		
10	PP5	31	13	2.7/.6	.6	7	1	1	1	-																							
11	RC6	23	12	1.6/.8		3	1	2	3	1																		10					
12	RR6	29	13	2.6/.5	.5	4	2	2	1	1																							
13	RR7	137	17	1.4/.8		3	2	3	2	-																		50					
14	PP7	36	13	2.2/.4	.4	5	1	1	1	2																						↑16	Typical Pool
15	RC8	337	12	1.9/.8		3	2	2	2	1	1																	50					
16	PP8	10	10	2.0/	.6	4	2	2	2	-																							
17	RR9	20	9	1.9/.6		2	2	4	2	-																		10					
18	PP9*	33	14	1.8/.5	.5	4	2	1	2	1	1													0	ST ST	CX CD	HB CX		120	52	1140		
19	RR10	77	16	1.7/.8		3	3	2	2	-																		30					
20	PP10	37	13	1.7/.4	.4	5	3	1	1	-																							
21	RR11	268	13	1.7/.7		3	3	2	2	-		1					Dipper											50					

↑ small debris jam

08-Apr-00

Modified Stream Habitat Data Form C

LAS NSO ____ P 11 R 12 S ____ T ____ F ____ C ____ D ____ Page 2 of 4

State 41 County 29 Forest 10 District 2 Stream Name West Fork Ashland Creek Date 27 / 9 / 01 (day / mon / yr)

Watershed Code 17, 10, 03, 08 NFS 04.__: __.__, __.__ USGS Quad: Ashland

Reach Number 1 Sampling Freq: Pools 20% Riffles 10% Recorder S Bowman Observer G Bennett

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	
nat. seq. ord. #	Hab. type & num. P,R,S,F,D,T,C	Hab. Length nearest ft.	Hab. Width nearest ft.	Hab. Depth max/ave 0.1 ft.	PTC max. dep. 0.1 ft.	Substrate SA > 0.1in.	GR 0.1"-2.5in.	CO 2.5-10in.	BO 10in-13ft.	BR > 13ft.	# LWD sm > 12" X 25'	med > 24" X 50'	lrg > 36" X 50'	key LWD # above BF	mass waste length ft.	av.ht. ft.	BF width nearest ft.	BF depth @ 1/4 BFW 0.1 ft.	1/2 BFW 0.1 ft.	3/4 BFW 0.1 ft.	BFD max. 0.1 ft.	floodprone depth 2(BFmax) 0.1 ft.	floodprone width nearest ft.	bank stab. both banks ft.	riparian zone class	dom sp.	sub sp.	Stem count both banks	valley floor width 20 ft.	meas hab & trib. temp. deg. F temp.	time	Photo frame no.	
22	PP11	33	14	1.9	.4	3	2	1	1	3																							
23	RR12	158	16	1.6 / 1.8		3	1	2	1	3																		40					
24	PP12	28	14	2.2	.5	3	3	3	1	-																						↑17	note substrate
25	RR13	103	17	1.5 / 1.8		3	2	2	1	2																		60					
26	PR13	17	12	2.0	.4	4	3	2	1	-																							
27	S1	391	3	.6						-																							
28	RR14	85	16	1.8 / .9		3	2	3	2	-					7% grade				CY	here								50					
29	PP14*	36	16	2.0	.5	6	1	1	1	1														0	LT LT	CD CX	CY HX		100	51	1210	↑18	note substrate color
30	RR15*	203	14	1.8 / 1.8		2	1	3	3	1		2.2' sidepool			9% grade		21	.9	.5	.8	1.5	3.0	46	0	ST ST	CD CD	HB HX	30	100	51	1210		
31	PR15	20	11	2.6	.5	5	3	1	1	-																				CX=CD+CT		HX=	HB+HM+HA	
32	RC16	77	17	1.7 / 1.7		3	3	2	2	-	1						LT	CT	here									50				↓9	Debris Tam bin 53
33	PP16	36	16	2.4	.5	4	3	2	1	-																							
34	PP17	40	16	3.1	.5	3	2	3	1	1																							
35	RR17	47	13	1.7 / 1.7		1	2	4	2	1																		20					
36	PP18	34	14	2.1	.6	3	3	2	2	-																							
37	PP19*	31	11	2.8	.4	5	2	1	2	-														0	ST ST	CD CD	CY HM		100	51	1220		
38	RR18	114	14	2.2 / 1.0		3	3	1	3	-																		60					
39	PP20	30	16	3.1	.5	6	1	1	1	1																							
40	RR19	78	15	1.7 / .9		4	3	1	2	-																		50					
41	PL21	44	13	2.1	.5	5	3	1	1	-	1																						
42	RR20	215	18	1.7 / 1.4		3	3	2	2	-					Sp annex													60					

08-Apr-00

P49
R5

Modified Stream Habitat Data Form C

LAST: D ____ **P** 22 **R** ~~20~~ 21 **S** 2 **T** ____ **F** ____ **C** ____ ____ **Page** 3 **of** ____

State 41 **County** 29 **Forest** 10 **District** 2 **Stream Name** West Fork Ashland Creek **Date** 27 / 9 / 01 (day / mon / yr)

Watershed Code 17 , 10 , 03 , 08 **NFS** 04 . __ : __ . __ , __ . __ **USGS Quad:** Ashland

Reach Number 1 **Sampling Freq: Pools** 20% **Riffles** 10% **Recorder** S Bowman **Observer** G Bennett 20

1 nat. seq. ord. #	2 Hab. type & num. P,R,S,F,D,T,C	3 Hab. Length nearest ft.	4 Hab. Width nearest ft.	5 Hab. Depth max/ave. 0.1 ft.	6 PTC max. dep. 0.1 ft.	7 Substrate SA > 0.1in.	8 Substrate GR 0.1"-2.5 in	9 Substrate CO 2.5-10 in.	10 Substrate BO 10 in-13 ft.	11 Substrate BR > 13 ft.	12 # LWD sm > 12" X 25'	13 # LWD med > 24" X 50'	14 # LWD lrg > 36" X 50'	15 key LWD # above BF	16 mass waste length ft.	17 mass waste av ht. ft.	18 BF width nearest ft.	19 BF depth @ 1/4 BFW 0.1 ft.	20 BF depth @ 1/2 BFW 0.1 ft.	21 BF depth @ 3/4 BFW 0.1 ft.	22 BFD max. 0.1 ft.	23 floodprone depth 2 (BFmax) 0.1 ft.	24 floodprone width nearest ft.	25 bank stab. both banks ft.	26 riparian zone class	27 riparian zone dom sp.	28 riparian zone sub sp.	29 Stem count both banks	30 valley floor width 20 ft.	31 meas hab & trib. temp. deg. F temp.	32 meas hab & trib. temp. deg. F time	33 Photo frame no.	Notes
43	PP22	29	15	2.6	.6	2	3	3	2	–																							
44	RR21	168	16	1.9/.9		4	3	2	1	–																		60					
45	PR23	30	16	2.2	.7	5	3	1	1	–																							
46	RR22	263	16	1.8/.9		3	3	1	2	1	1																	50					
47	PR24+	42	16	3.2	.6	5	2	1	1	1														0	LT ST	CD CD	HA CD		100	51	1300		
48	RR23	221	17	1.8/.8		4	3	2	1	–																		60				↓20	Typical [illegible]
49	PP25	44	13	3.1	.6	7	–	1	1	1																							
50	RC24	116	14	1.6/.9		3	1	2	3	1																		50					
51	PP26	29	15	1.4	.7	4	3	2	1	–																							
52	RC25+	33	14	2.1/1.1		3	3	2	2	–					16% grade		18	.9	1.4	.8	1.5	3.0	28	0	ST LT	CD CD	HX HX	80	120	51	1310		
53	PP27	39	16	2.2	.7	6	2	1	1	–					Spanner																		
54	RR26	96	15	1.6/.8		2	3	4	1	–																		30					
55	S2	103	2	.4																													
56	RR27	198	14	1.6/.8		3	3	2	2	–	1				2.2' side pool									18x10				40					
57	PP28	25	19	4.5	.7	5	2	1	1	1																							
58	RR28	68	10	1.2/.7		2	2	4	2	–																		20					
59	PR29+	32	14	1.8	.6	5	2	2	1	–														0	LT LT	CT CD	CY HY		150	51	1330	↑21	Small pool
60	RR29	213	16	1.8/.8		2	3	3	2	–						Spanner												40					
61	PL30	18	11	2.5	.7	5	2	1	2	–																							
62	RR30	208	16	1.9/.8		3	3	1	1	2						Spanners												40					
63	PR31	39	10	1.9	.6	4	3	2	1	–						Spanner																	

P49
R5

Modified Stream Habitat Data Form C

LAS NSO ____ P 32 R 31 S 3 T ____ F ____ C ____ D ____ Page 4 . 14

State 41 County 29 Forest 10 District 2 Stream Name West Fork Ashland Creek Date 27 / 9 / 01 (day / mon / yr)

Watershed Code 17 , 10 , 03 , 08 NFS 04 . __ : __ . __ , __ . __ USGS Quad: Ashland

Reach Number 1 Sampling Freq: Pools 202 Riffles 102 Recorder S Bowman Observer G Bennett 22

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
nat. seq. ord. #	Hab. type & num. P,R,S,F,D,T,C	Hab. Length nearest ft.	Hab. Width nearest ft.	Hab. Depth max/ave. 0.1 ft.	PTC max. dep. 0.1 ft.	Substrate SA > 0.1in.	GR 0.1"-2.5 in.	CO 2.5-10 in.	BO 10 in-13 ft.	BR ≥ 13 ft.	# LWD sm > 12" X 25'	med > 24" X 50'	lrg > 36" X 50'	key LWD # above BF	mass waste length ft.	av.ht. ft.	BF width nearest ft.	BF depth @ 1/4 BFW 0.1 ft.	1/2 BFW 0.1 ft.	3/4 BFW 0.1 ft.	BFD max. 0.1 ft.	floodprone depth 2 (BFmax) 0.1 ft.	width nearest ft.	bank stab. both banks ft.	riparian zone class	dom sp.	sub sp.	Stem count both banks	valley floor width 20 ft.	meas hab & trib. temp. deg. F temp.	time	Photo frame no.
64	RR31	225	17	1.9/.9		3	3	2	2	–																		50				
65	PP32	34	19	2.0	.4	4	4	1	1	–																						
66	RR32	159	14	2.2/1.0		3	3	2	2	–	1																	60				
67	PP33	18	16	2.3	.7	4	2	1	2	1																						
68	RC33	228	16	2.1/1.0		3	3	2	1	1																		30				
69	PL34	15	8	2.0	.7	3	2	2	3	-			1 ← creating debris jam																			
70	RC34	47	11	1.5/.7		4	2	1	2	1														23x 28				20				↓22
71	T1	28	3	.2			mx	mn						LB Fish no 2% cont. 69% grade																59	1430	
72	R35	69	11	1.4/.7		3	4	2	1	–																		80				
73	PR35*	29	11	2.1	.5	3	2	1	1	3														0	ST LT	CD CD	SS CD		140	51	1430	
74	PP36	20	11	2.0	.9	2	3	2	2	1																						
75	RR36*	91	16	1.6/.8		3	3	2	1	1					5% grade		24	1.3	.8	.1	2.0	4.0	26	0	ST LT	CY CO	SS HY	40	40	51	1440	
76	PL37	20	12	1.8	.7	5	1	1	2	1																						
77	RR37	198	14	1.9/.8		3	3	2	2	–	Small jam no counters					Spanners												30				
78	PR38	34	15	1.9	.5	5	2	1	2	–																						
79	RR38	36	9	1.4/.8		2	2	4	2	–																		10				
80	PP39*	18	13	3.7	.5	3	1	2	4	–														0	ST LT	CO CO	SS HY		80	51	1450	↑22
81	RR39	45	14	1.6/.8		2	2	2	3	1																		30				
82	PR40	24	13	1.7	.4	4	4	1	1	–																						
83	RR40	39	14	1.5/.8		3	2	3	2	–																		20				
84	PL41	45	11	1.7	.9	4	2	1	1	2																						

note debris + BI

small pool nits noticed

Modified Stream Habitat Data Form C

Pg 19 RS

LAST SO ____ P 42 R 41 S 3 T 2 F ____ C ____ ____ Page 5 of 1

State 41 County 29 Forest 10 District 2 Stream Name West Fork Ashland Creek Date 27 / 9 / 01 (day / mon / yr)

Watershed Code 17 , 10 , 03 , 08 NFS 04 . __ : __ . __ , __ . __ USGS Quad: Ashland

Reach Number 1-2 Sampling Freq: Pools 20% Riffles 10% Recorder S Bowman Observer G Bennett 24

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
nat. seq. ord. #	Hab. type & num. P,R,S,F,D,T,C	Hab. Length nearest ft.	Hab. Width nearest ft.	Hab. Depth max/ave 0.1 ft.	PTC max. dep 0.1 ft.	Substrate SA > 0.1in	GR 0.1"-2.5 in.	CO 2.5-10 in.	BO 10 in-13 ft.	BR > 13 ft.	# LWD sm > 12" X 25'	med > 24" X 50'	lrg > 36" X 50'	key LWD # above BF	mass waste length ft.	mass waste av ht. ft.	BF width nearest ft.	BF depth @ 1/4 BFW 0.1 ft.	BF depth @ 1/2 BFW 0.1 ft.	BF depth @ 3/4 BFW 0.1 ft.	BFD max. 0.1 ft.	floodprone depth 2 (BFmax) 0.1 ft.	floodprone width nearest ft.	bank stab. both banks ft.	riparian zone class	riparian zone dom sp.	riparian zone sub sp.	Stem count both banks	valley floor width 20 ft.	meas hab & trib. temp. deg. F temp.	meas hab & trib. temp. deg. F time	Photo frame no.
85	RR41	135	10	1.7 / .8		4	2	2	2	-					Spanner													60				
86	RR42	41	13	1.8	.5	4	3	1	2	-																						
87	RR42	52	10	1.3 / .7		3	2	2	3	-					Spanner									..	...			30				
88	PR43	37	10	1.8	.6	5	2	-	1	2																						
89	RR43	677	16	1.9 / .8		3	1	1	2	3	11				Spanner													40				↓24 Top of 1 our RR
90	PR44*	18	13	3.4	.7	3	2	1	1	3														0	LT LT	CD CD	CY CD		110	51	1510	
91	RR44	87	14	1.4 / .7		4	2	2	2	-																		60				
92	PL45	34	13	1.7	.5	3	3	2	1	1	1																					
93	RR45*	289	16	1.7 / .8		3	2	2	2	1					5% grade		14	1.0	1.6	.7	1.6	3.2	25	0	LT MT	CD CD	HR NY	50	200	51	1520	
94	RR46	23	11	1.7	.5	5	1	2	2	-																						
95	RR46	73	16	1.4 / .7		3	3	3	1	-					Dipper													60				↓2 Top Reach 1
96	T2	17	7	1.8		my	mn					RR		Fish	Yes		30%	cont.			7%	crude		Weasel	Cr.				51	1540	↑1 T2
97	RR47	151	13	1.6 / .9		3	2	2	2	1	111																	30				↑3 Reach 2
98	PL47	18	9	2.2	.7	4	2	-	-	4																						
99	RR48	173	13	1.3 / .8		3	2	2	3	-			-	Spanner														40				
100	PL48	35	11	1.3	.3	4	2	2	1	1																						
101	RR49	85	13	2.1 / .8		2	2	3	3	-																		20				
102	PL49*	39	9	3.1	.6	4	1	2	1	2	1													0	LT LT	CD CD	SS CD		200	51	1100	
103	RC50	46	12	1.1 / .7		2	1	1	3	3																		30				
104	PL50	29	13	1.7	.7	5	1	2	1	1																						
105	RR51	168	14	1.9 / .8		2	1	2	2	3					Shallows																	

08-Apr-00

P49
R5

Modified Stream Habitat Data Form C

LAS NSO ____ P 51 R 52 S 3 T 3 F ____ C ____ D ____

State 41 County 29 Forest 10 District 2 Stream Name West Fork Ashland Creek Date 27 / 9 / 01 (day / mon / yr)

Watershed Code 17 , 10 , 03 , 08 NFS 04 . __ : __ . __ , __ . __ USGS Quad: Ashland

Reach Number 2 Sampling Freq: Pools 20% Riffles 10% Recorder S Bowman Observer G Bennett

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	
nat. seq. ord. #	Hab. type & num. P,R,S,F,D,T,C	Hab. Length nearest ft.	Hab. Width nearest ft.	Hab. Depth max/ave. 0.1 ft.	PTC max. dep 0.1 ft.	Substrate SA > 0.1in.	GR 0.1"-2.5in.	CO 2.5-10in.	BO 10in-13ft.	BR > 13ft.	# LWD sm > 12" X 25'	med > 24" X 50'	lrg > 36" X 50'	key LWD # above BF	mass waste length ft.	mass waste av ht. ft.	BF width nearest ft.	BF depth @ 1/4 BFW 0.1 ft.	BF depth @ 1/2 BFW 0.1 ft.	BF depth @ 3/4 BFW 0.1 ft.	BFD max. 0.1 ft.	floodprone depth 2 (BFmax) 0.1 ft.	floodprone width nearest ft.	bank stab. both banks ft.	riparian zone class	riparian zone dom sp.	riparian zone sub sp.	Stem count both banks	valley floor width 20 ft.	meas hab & trib. temp. deg. F temp.	meas hab & trib. temp. deg. F time	Photo frame no.	
106	PP51	22	18	1.5 / .7	.6	5	1	2	2	-																							
107	RR52	171	13	1.4 / .7		3	2	2	2	1																		30					
108	PR52	29	13	1.9 / .7	.7	6	-	1	2	1																							
109	RR53	122	13	1.4 / .8		2	3	3	2	-																		60				↑4	Typical RR
110	PP53	13	12	1.6 / .6	.6	3	2	2	1	2																							
111	RR54	29	13	1.7 / .7		2	3	3	2	-																		20					
112	PP54*	17	11	2.0 / .4	.4	4	1	2	1	2														0	LT LT	CD CD	CY NB		110	51	1630	↑5	Typical Pool
113	RR55*	81	13	1.4 / .8		2	2	3	2	1					9% grade		29	1.1	.7	1.4	1.6	3.2	33	0	LT LT	CD CD	NB CD	30	110	51	1630		
114	PL55	24	15	1.8 / .4	.4	6	1	1	2	-																							
115	RR56	37	19	.9 / .7		4	2	3	1	-																		20					
116	PR56	52	16	1.8 / .4	.4	6	1	1	1	1																							
117	RR57	251	10	1.5 / .7		3	2	2	2	1																		30					
118	PP57	10	21	2.1 / .3	.3	3	4	2	1	-																							
119	RR58	73	12	1.10 / .5		2	5	2	1	-																		10				↓6	Unusual RR
120	PR58	241	11	1.5 / .5	.5	4	2	3	1	-																							
121	RR59	192	16	1.4 / .7		2	3	3	1	1					4% grade													60			1615		
122	PR59*	15	16	1.6 / .7	.7	5	2	1	1	1														0	SH LT	CD CD	HA CD		80	51	1615		
123	T3	38	6	1.2			mm			MY		LB		Fish Yes			30% cont.					7% grade								51	1645	↑7	T3
124	RR60	118	10	1.6 / .7		2	3	3	2	-																		60					
125	PR60	14	12	2.2 / .5	.5	5	2	1	1	1																							
126	RR61	55	8	1.1 / .7		2	3	2	3	-																		20					

P49
R5

Modified Stream Habitat Data Form C

LAST BO ____ P 61 R 62 S 3 T 4 F ____ C ____

State 41 County 29 Forest 10 District 2 Stream Name West Fork Ashland Creek Date 27-28 / 9 / 01 (day mon yr)

Watershed Code 17, 10, 03, 08 NFS 04 . __ : __ . __ , __ . __ USGS Quad: Ashland

Reach Number 2 Sampling Freq: Pools 20% Riffles 10% Recorder S Bowman Observer G Bennett

1 nat. seq. ord. #	2 Hab. type & num. P,R,G,F,D,T,C	3 Hab. Length nearest ft	4 Hab. Width nearest ft	5 Hab. Depth max/ave 0.1 ft	6 PTC max. dep. 0.1 ft	7 Substrate SA > 0.1 in.	8 GR 0.1"-2.5 in	9 CO 2.5-10 in.	10 BO 10 in-13 ft	11 BR > 13 ft	12 # LWD sm > 12" X 25'	13 med > 24" X 50'	14 lrg > 36" X 50'	15 key LWD # above BF	16 mass waste length ft	17 av ht. ft	18 BF width nearest ft	19 BF depth @ 1/4 BFW 0.1 ft	20 1/2 BFW 0.1 ft	21 3/4 BFW 0.1 ft	22 BFD max. 0.1 ft	23 floodprone depth 2 (BFmax) 0.1 ft	24 width nearest ft	25 bank stab. both banks ft	26 riparian zone class	27 dom sp.	28 sub sp.	29 Stem count both banks	30 valley floor width 20 ft	31 meas hab & trib. temp. deg F temp.	32 time	33 Photo frame no.
127	PP61	14	18	1.8	.5	3	2	3	1	1																						
128	RR62	322	9	1.8 / .8		2	3	2	2	1																		40				↑8
129	PL62	13	9	1.8	.5	5	2	2	1	–																						
130	RR63	52	10	1.3 / .6		2	2	3	3	–																		30				
131	PR63	18	11	1.7	.6	6	1	2	1	–																						
132	R64	9	8	.9 / .4		1	4	4	1	–																		10				
133	PP64*	20	12	2.5	.4	3	3	2	2	T														0	ST LT	CO CO	CY HV		80	51	1710	
134	RR65*	93	14	1.3 / .7		2	3	2	3	–							13	1.1	.8	1.4	1.5	3.0	16	0	ST LT	CO CO	HA CO	30	80	51	1710	
135	PP65	29	12	2.6	.5	7	1	–	2	–																						
136	RR66	35	10	1.1 / .7		2	3	2	2	1																		30				
137	PP66	17	10	2.0	.6	6	1	1	1	1		2 in small Logjam																				
138	RR67	383	10	1.4 / .8		3	2	3	2	–	111				Spanner				2.2'		sidepool							30				
139	PL67	22	8	2.0	.5	6	1	1	2	–																						
140	RR68	21	8	1.3 / .7		2	3	1	2	2																		20				
141	PP68	15	8	1.8	.5	4	2	1	1	2																						
142	RR69	108	10	1.1 / .7		3	3	2	1	1	11																	50				
143	PP69*	25	11	2.4	.4	7	1	1	1	–														0	LT MT	CO CO	HA CO		120	48	1230	
144	RR70	40	10	1.2 / .7		3	3	2	2	–																		80				
145	PP70	19	14	1.7	.5	4	2	1	1	2																						
146	RR71	46	10	1.2 / .6		3	2	2	3	–																		60				
147	PP71	17	10	1.9	.4	4	3	2	1	–																						

↑1 = Weasel Cr / ↓2 top reach 1 / ↑3 Begin Reach 2 / ↑4 7 pool RR / ↑5 ... pool / ↓6 unusual ... / ↑7 T3

P19
R5

Modified Stream Habitat Data Form C

LAS NSO ___ P 72 R 72 S 3 T 4 F ___ C ___ D ___ Page 8 of 14

State 41 County 29 Forest 10 District 2 Stream Name West Fork Ashland Creek Date 28/9/01 (day/mon/yr)

Watershed Code 17, 10, 03, 08 NFS 04.__: __.__, __.__ USGS Quad: Ashland

Reach Number 2 Sampling Freq: Pools 20% Riffles 10% Recorder S Bowman Observer G Bennett

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
nat. seq. ord. #	Hab. type & num. P,R,S,F,D,T,C	Hab. Length nearest ft.	Hab. Width nearest ft.	Hab. Depth max/ave. 0.1 ft.	PTC max. dep. 0.1 ft.	Substrate SA > 0.1in.	GR 0.1"-2.5in.	CO 2.5-10in.	BO 10in-13ft.	BR >13ft.	# LWD sm >12" X25'	med >24" X50'	lrg >36" X50'	key LWD # above BF	mass waste length ft.	mass waste av ht. ft.	BF width nearest ft.	BF depth @ 1/4 BFW 0.1 ft.	BF depth @ 1/2 BFW 0.1 ft.	BF depth @ 3/4 BFW 0.1 ft.	BFD max. 0.1 ft.	floodprone depth 2(BFmax) 0.1 ft.	floodprone width nearest ft.	bank stab. both banks ft.	riparian zone class	riparian zone dom sp.	riparian zone sub sp.	Stem count both banks	valley floor width 20 ft.	meas hab & trib. temp. deg. F temp.	meas hab & trib. temp. deg. F time	Photo frame no.
148	RR72	145	10	1.8 / 1.7		2	3	3	2	-				Spanners											1			30				
149	PP72	16	11	1.4 /	.4	7	1	1	1	-	1																					19
150	T4	25	3	.3 /		MY	MN						RB	Fish No				10% cont				16% grade							51	1240	
151	RR73	61	8	1.0 / 1.5		3	6	1	-	-																		50				
152	PP73	19	9	1.9 /	.4	6	3	-	1	-																						
153	RR74	79	9	1.9 / 1.5		3	4	2	1	-																		40				
154	PP74*	24	8	1.3 /	.5	5	2	-	1	2														0	MT MT	CO CO	CY CO		100	49	1245	
155	RR75*	38	6	1.9 / 1.4		-	-	-	2	8					7% grade		22	.8	.5	.7	.8	1.6	24	0	LT MT	CO CO	CY CO	20	100	49	1245	
156	PP75	13	14	2.7 /	.4	3	3	-	1	3																						
157	RR76	195	8	1.7 / 1.8		2	2	-	1	5																		60				
158	PP76	12	14	1.6 /	.4	5	1	1	1	2																						
159	RR77	258	8	1.4 / 1.7		3	2	1	1	3	111 ← .1 in				small loam													50				
160	PP77	38	18	2.0 /	.4	6	2	-	-	2																						10
161	PP78	22	10	1.8 /	.3	4	2	1	1	2																						
162	RR78	112	13	1.4 / 1.7		3	3	1	1	2	1																	40				
163	PP79	25	12	1.5 /	.4	6	1	1	-	2	1																					
164	RR79	375	9	1.7 / 1.7		2	3	2	2	1	11				Spanners													50				
165	PP80*	14	9	1.7 /	.4	2	5	3	-	-														0	MT MT	CO CO	HA CO		200	49	1300	
166	RR80	59	10	1.0 / .5		2	3	3	2	-																		60				
167	PL81	18	10	1.8 /	.5	4	3	2	1	-																						
168	RR81	137	9	1.3 / 1.6		2	3	2	3	-																		40				

LWD more common

Step pool in RR

08-Apr-00

Modified Stream Habitat Data Form C

LAST O ____ P 82 R 82 S 3 T 5 F ____ C ____ ____

State 41 **County** 29 **Forest** 10 **District** 2 **Stream Name** West Fork Ashland Creek **Date** 28 / 9 / 01 (day / mon / yr)

Watershed Code 17, 10, 03, 08 **NFS** 01. ___: ___.___, ___.___ **USGS Quad:** Ashland

Reach Number 2 **Sampling Freq: Pools** 20% **Riffles** 10% **Recorder** S Bowman **Observer** G Bennett

1 nat. seq. ord. #	2 Hab. type & num. P,R,S,F,D,T,C	3 Hab. Length nearest ft.	4 Hab. Width nearest ft.	5 Hab. Depth max/ave. 0.1 ft.	6 PTC max. dep. 0.1 ft.	7 Substrate SA > 0.1 in.	8 Substrate GR 0.1"-2.5 in.	9 Substrate CO 2.5-10 in.	10 Substrate BO 10 in-13 ft.	11 Substrate BR > 13 ft.	12 # LWD sm > 12" X 25'	13 # LWD med > 24" X 50'	14 # LWD lrg > 36" X 50'	15 key LWD # above BF	16 mass waste length ft.	17 mass waste av ht. ft.	18 BF width nearest ft.	19 BF depth @ 1/4 BFW 0.1 ft.	20 BF depth @ 1/2 BFW 0.1 ft.	21 BF depth @ 3/4 BFW 0.1 ft.	22 BFD max. 0.1 ft.	23 floodprone depth 2 (BFmax) 0.1 ft.	24 floodprone width nearest ft.	25 bank stab. both banks ft.	26 riparian zone class	27 riparian zone dom sp.	28 riparian zone sub sp.	29 Stem count both banks	30 valley floor width 20 ft.	31 meas hab & trib. temp. deg. F temp.	32 meas hab & trib. temp. time	33 Photo frame no.
169	PL82	25	8	1.3	4	6	2	2	-	-																						
170	S3	84	4	.6																												
171	RR82:	352	9	1.6 / .7		2	3	3	2	-	1				Spanners													30				
172	PP83	18	13	3.0	.3	5	3	-	1	1																						
173	RR83	74	8	1.1 / .7		2	3	2	3	-																		30				
174	PP84+	31	10	1.7	.4	4	2	-	2	2														0	LT LT	CD CD	HX CD		150	49	1340	↑11
175	RR84	88	9	1.6 / .7		3	2	1	1	3																		40				
176	PL85	20	10	2.1	.3	4	3	1	-	2																						
177	RR85+	102	9	1.2 / .7		2	3	3	2	-					8% grade		14	.8	1.2	.5	1.2	2.4	21	0	ST LT	CD CD	NB CD	30	150	48	1315	
178	PR86	21	9	1.4	.6	5	2	2	1	-																						
179	RR86	364	10	1.6 / .7		2	3	3	2	-	1																	40				
180	PP87	27	9	2.1	.5	6	2	1	1	-																						
181	RR87	235	10	1.5 / .7		3	3	2	2	-																		50				
182	PL88	30	9	2.2	.3	6	2	1	1	-																						
183	RR88	46	8	1.3 / .6		3	5	1	1	-																		60				
184	PP89+	11	10	1.9	.5	2	5	2	1	-					Spanner									0	ST MT	CY CO	HB CO		150	48	1400	
185	RR89	99	12	1.2 / .7		3	4	2	1	-																		30				
186	S4	141	3	.5																												
187	RR90	141	8	1.9 / .7		3	3	2	2	-					Spanners													30				
188	S5	64	3	.5																												
189	RR91	223	7	2.1 / 1.0		3	3	2	2	-	1				Spanners													60				

common pool & ...

Modified Stream Habitat Data Form C

LAS NSO ____ P 90 R 92 S 6 T 5 F ____ C ____ D ____ Page 10 . 14

State 41 County 29 Forest 10 District 2 Stream Name West Fork Ashland Creek Date 28 / 9 / 01 (day / mon / yr)

Watershed Code 17 , 10 , 03 , 08 NFS 04 . __ : __ . __ , __ . __ USGS Quad: Ashland

Reach Number 2 Sampling Freq: Pools 20% Riffles 10% Recorder S Bowman Observer G Bennett

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	
nat. seq. ord. #	Hab. type & num. P,R,S,F,D,T,C	Hab. Length nearest ft.	Hab. Width nearest ft.	Hab. Depth max/ave 0.1 ft.	PTC max. dep. 0.1 ft.	Substrate SA > 0.1in.	GR 0.1"-2.5 in.	CO 2.5-10 in.	BO 10 in-13 ft.	BR > 13 ft.	# LWD sm > 12" X 25'	med > 24" X 50'	lrg > 36" X 50'	key LWD # above BF	mass waste length ft.	av. ht. ft.	BF width nearest ft.	BF depth @ 1/4 BFW 0.1 ft.	1/2 BFW 0.1 ft.	3/4 BFW 0.1 ft.	BFD max. 0.1 ft.	floodprone depth 2 (BFmax) 0.1 ft.	floodprone width nearest ft.	bank stab. both banks ft.	riparian zone class	dom sp.	sub sp.	Stem count both banks	valley floor width 20 ft.	meas hab & trib. temp. deg. F temp.	time	Photo frame no.	
190	PP90	13	21	2.0	.5	3	2	1	4	-									•														
191	F1	22	2																													112	F1
192	RC92	129	9	1.4/1.6		2	3	1	1	3					12% brush				Spanners									20				113	upper fork note LWD plus 30x15 x 10
193	F2																																
194	PP93	191	8	1.4/1.7		2	2	2	3	1																		30					
195	PP91	10	12	1.9	.5	3	4	1	2	-																							
196	RP94	21	11	1.0/1.5		3	5	1	1	-																		20					
197	S6	31	4	1.8																													
198	PP92	19	9	3.0	.4	3	3	-	1	3																							
199	RC95*	139	9	2.1/1.9		3	3	1	3	-					26% brush		19	.5	1.0	.8	1.3	2.6	20	0	MT LT	CD CD	HB CD	20	80	48	1440		
200	PP93	17	9	1.8	.4	5	2	1	2	-																							
201	RP96	30	7	1.1/1.6		2	3	2	3	-																		40					
202	PP94*	21	10	1.4	.5	4	3	1	2	-														0	LT LT	CD CD	HB HB		60	48	1450		
203	RC97	18	6	2.4/1.1		2	3	2	2	1																		60					
204	PP95	14	11	2.1	.8	3	3	1	3	-																							
205	RC98	45	10	1.3/1.8		3	2	3	2	-																		20					
206	PP96	22	8	2.4	.5	5	1	-	2	2																							
207	RC99	17	4	1.9/1.6		-	-	-	10	-																		0					
208	PP97	24	7	2.4	.4	4	2	-	1	3																							
209	RC100	30	7	1.7/1.8		2	1	1	4	2	1																	30				114	note LWD in RC
210	RR101	122	6	1.3/1.7		3	2	2	2	1																		40					

08-Apr-00

Modified Stream Habitat Data Form C

LAST O ___ P 98 R 102 S 7 T 5 F 3 C ___ ___ Page 11 of 1

State 41 County 29 Forest 10 District 2 Stream Name West Fork Ashland Creek Date 28 / 9 / 01 (day / mon / yr)

Watershed Code 17 , 10 , 03 , 08 NFS 04 . ___ : ___ . ___ , ___ . ___ USGS Quad: Ashland

Reach Number 2 Sampling Freq: Pools 202 Riffles 102 Recorder S Bowman Observer G Bennett

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
nat. seq. ord. #	Hab. type & num. P,R,S,F,D,T,C	Hab. Length nearest ft.	Hab. Width nearest ft.	Hab. Depth max/ave. 0.1 ft.	PTC max. dep. 0.1 ft.	Substrate SA > 0.1in.	GR 0.1"-2.5 in.	CO 2.5-10 in.	BO 10 in-13 ft.	BR > 13 ft.	# LWD sm > 12" X 25'	med > 24" X 50'	lrg > 36" X 50'	key LWD # above BF	mass waste length ft.	av.ht. ft.	BF width nearest ft.	BF depth @ 1/4 BFW 0.1 ft.	1/2 BFW 0.1 ft.	3/4 BFW 0.1 ft.	BFD max. 0.1 ft.	floodprone depth 2 (BFmax) 0.1 ft.	floodprone width nearest ft.	bank stab. both banks ft.	riparian zone class	riparian zone dom sp.	riparian zone sub sp.	Stem count both banks	valley floor width 20 ft.	meas hab & trib. temp. deg. F temp.	meas hab & trib. temp. deg. F time	Photo frame no.
211	PP98	25	15	2.2 / .4	.4	4	2	1	1	2																						
212	RC102	171	9	1.8 / .8		3	2	1	1	3																		40				
213	PP99*	18	9	2.1 / .4	.4	4	2	2	2	-														.0	ST LT	CY CD	HA CD		100	48	1500	
214	RC103	92	9	1.8 / .8		3	3	2	2	-					Spawners													50				
215	TS	32	3	.3 /			mn		mv			RB	Fish	No			5%	Cont.			44%	0 grade								49	1510	
216	PR100	19	10	2.4 / .4	.4	4	3	2	1.	-																						↑15 common pool upper end
217	RR104	67	9	1.4 / .7		2	3	3	2	-																		30				
218	PP101	17	21	5.0 /	.5	2	4	1	1	2																						↑16 F3, F4
219	F3			/																												
220	RR108*	24	8	1.3 / .7		2	5	2	1	-					6% grade		16	2.0	.6	.8	2.0	4.0	26	0	SP MT	HA CD	SS CY	10	80	48	1530	
221	PP102	19	21	2.0 /	.5	4	3	2	-	1																						
222	F4			/																												
223	RR106	39	10	1.9 / .5		2	4	3	1	-																		20				
224	PP103	24	11	3.1 /	.4	4	2	1	1	2																						
225	RC107	115	8	1.5 / .7		2	3	1	3	1																		40				
226	PP104	16	9	1.9 /	.4	3	3	2	-	2																						
227	RR108	47	9	1.6 / .9		2	1	2	4	1																		20				
228	PP105*	28	11	2.4 /	.4	6	2	-	-	2														0	ST LT	CD CD	HB CD		60	47	1546	
229	RC109	60	9	1.5 / .7		3	2	-	3	2	11																	20				↑17 F5
230	F5			/																												
231	RR110	453	9	1.4 / .7		2	3	3	2	-	11																	60				

08-Apr-00

Modified Stream Habitat Data Form C

LAS NSO ____ P ____ R 11W S 7 T 6 F 6 C ____ D ____ Page 12 of 14

State 41 County 29 Forest 10 District 2 Stream Name West Fork Ashland Creek Date 28 / 9 / 01 (day / mon / yr)

Watershed Code 17, 10, 03, 05 NFS 04 . __ : __ . __ , __ . __ USGS Quad: Ashland

Reach Number 2 Sampling Freq: Pools 20% Riffles 10% Recorder S Bowman Observer G Bennett

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
nat. seq. ord. #	Hab. type & num. P,R,S,F,D,T,C	Hab. Length nearest ft.	Hab. Width nearest ft.	Hab. Depth max/ave 0.1 ft.	PTC max. dep. 0.1 ft.	Substrate SA > 0.1in.	GR 0.1"-2.5in.	CO 2.5-10in.	BO 10in-13ft.	BR > 13ft.	# LWD sm > 12" X 25'	med > 24" X 50'	lrg > 36" X 50'	key LWD # above BF	mass waste length ft.	mass waste av ht. ft.	BF width nearest ft.	BF depth @ 1/4 BFW 0.1 ft.	BF depth @ 1/2 BFW 0.1 ft.	BF depth @ 3/4 BFW 0.1 ft.	BFD max. 0.1 ft.	floodprone depth 2 (BFmax) 0.1 ft.	floodprone width nearest ft.	bank stab. both banks ft.	riparian zone class	riparian zone dom sp.	riparian zone sub sp.	Stem count both banks	valley floor width 20 ft.	meas hab & trib. temp. deg F temp.	meas hab & trib. temp. deg F time	Photo frame no.
232	PR106	16	8	1.5 / .4	.4	3	2	2	3	-																						
233	RR111	383	9	2.1 / .7		3	2	2	2	1	11 ← in small logjam				Spanner													40				
234	PP107	16	8	3.3 / .5	.5	2	2	1	1	4																						
235	RC112	142	10	1.8 / .8		2	3	2	2	1	1																	50				
236	PL108	16	7	1.6 / .4	.4	5	3	2	-	-																						
237	RR113	108	9	1.3 / .7		2	3	3	2	-							Dipper											50				
238	PR109	25	9	2.0 / .4	.4	4	3	2	1	-														0	LT MT	CO CO	CY CO		200	48	1600	
239	RR114	22	9	1.3 / .7		-	3	2	2	3																		30				
240	PP110	17	6	1.6 / .3	.3	3	2	2	1	2																						
241	RR115	85	10	1.4 / .8		2	2	3	3	-	1				8% grade		17	.7	1.8	1.0	1.8	3.6	21	0	LT LT	CO CO	HB CO	20	120	48	1610	
242	PL111	20	7	1.6 / .4	.4	3	2	1	-	4																						
243	RR116	261	10	1.5 / .8		2	2	3	3	-																		60				
244	PP112	16	19	2.2 / .4	.4	5	3	2	-	-	1																					
245	RR117	459	9	1.6 / .8		3	2	3	2	-	11																	40				
246	T6	55	4	.4		mn	mx							LB		Fish	Yes	7% cant.				10% grade							47	1630	718	T6
247	RR118	128	9	1.4 / .7		3	3	2	2	-					Spanner													40				
248	S7	57	3	.4																												
249	PP113	9	12	1.6 / .4	.4	5	2	1	2	-																						
250	RR119	171	8	1.6 / .8		3	3	2	2	-																		50				
251	T7	14	4	.6		mx	mn					RB			Fish	Yes	15% cant.				5% grade									47	1640	
252	RC120	178	8	1.4 / .8		2	2	3	3		1																					

08-Apr-00

Modified Stream Habitat Data Form C

LAST(O ____ P 114 R 121 S 8 T 8 F 6 C ____ ____ Page 13 of 1

State 41 County 29 Forest 10 District 2 Stream Name West Fork Ashland Creek Date 28 / 9 / 01 (day / mon / yr)

Watershed Code 17 , 10 , 03 , 08 NFS 04 . __ : __ . __ , __ . __ USGS Quad: Ashland

Reach Number 2 Sampling Freq: Pools 20% Riffles 10% Recorder S Bowman Observer G Bennett 19

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
nat. seq. ord. #	Hab. type & num. P,R,S,F,O,T,C	Hab. Length nearest ft.	Hab. Width nearest ft.	Hab. Depth max/ave. 0.1 ft.	PTC max. dep. 0.1 ft.	Substrate SA > 0.1in.	GR 0.1"-2.5 in	CO 2.5-10 in.	BO 10 in-13 ft.	BR > 13 ft.	# LWD sm > 12" X 25'	med > 24" X 50'	lrg > 36" X 50'	key LWD # above BF	mass waste length ft.	av.ht. ft.	BF width nearest ft.	BF depth @ 1/4 BFW 0.1 ft.	1/2 BFW 0.1 ft.	3/4 BFW 0.1 ft.	BFD max. 0.1 ft.	floodprone depth 2 (BFmax) 0.1 ft.	floodprone width nearest ft.	bank stab. both banks ft.	riparian zone class	dom sp.	sub sp.	Stem count both banks	valley floor width 20 ft.	meas hab & trib. temp. deg. F temp.	time	Photo frame no.
253	PP114	13	7	2.2 / .4	.4	5	3	1	1	-														0	mT mT	CD CD	CY CD		300	48	1645	
254	RR121	136	8	1.3 / .7		3	3	1	2	1																		30				
255	PP115	20	8	1.2 /	.3	6	3	-	-	1																						
256	RC122	96	9	1.4 / .9		4	2	1	1	2	1																	60				
257	PP116	11	9	2.0 /	.3	2	5	1	1	1																						
258	RR123	456	8	2.1 / .9		2	3	2	2	1	11	1																410				
259	PL117	16	7	1.3 /	.6	4	3	2	1	-																						
260	RC124	183	7	1.3 / .6		2	3	2	3	-					Spanners													40				
261	PP118	15	10	1.5 /	.4	5	2	1	-	2	1																					
262	RC125*	141	8	1.1 / .6		2	3	2	3	-					12% grade		11	1.3	1.6	.8	1.8	3.6	14	0	LT LT	CD CD	CY CD	20	60	48	1700	
263	PP119*	11	14	2.1 /	.4	2	5	1	-	2														0	LT LT	CD CL	SS CD		50	48	1700	
264	RC126	253	9	1.2 / .6		2	3	1	3	1	1																	30				
265	PP120	14	10	1.5 /	.3	4	3	1	-	2																						
266	RC127	21	9	1.2 / .6		-	-	-	-	10																		0				↑19 F6
267	F6			/																												
268	RR128	115	7	1.4 / .6		3	4	2	1	-		1												86r 5				410				
269	S8	245	3	.5 /																												
270	RC129	567	7	1.3 / .8		2	2	2	3	1	1				Spanners													30				↓20 Typical crossover
271	RR121	17	7	1.2 /	.4	4	4	2	-	-																						
272	RC130	292	7	1.5 / .8		3	3	2	3	-																		30				
273	PP122	14	9	1.6 /	.2	5	4	1	-	-																						

08-Apr-00

Modified Stream Habitat Data Form C

LAS NSO ____ P 123 R ~~293~~ 131 S 9 T 8 F 7 C ____ D ____ Page 14 of 14

State 41 County 29 Forest 10 District 2 Stream Name West Fork Ashland Creek Date 28 / 9 / 01 (day / mon / yr)

Watershed Code 17 , 10 , 03 , 05 NFS 04 . ___ : ___ . ___ , ___ : ___ USGS Quad: Ashland

Reach Number 2 Sampling Freq: Pools 20% Riffles 10% : Recorder S Bowman Observer G Bennett

1 nat. seq. ord. #	2 Hab. type & num. P,R,S,F,D,T,C	3 Hab. Length nearest ft.	4 Hab. Width nearest ft.	5 Hab. Depth max/ave 0.1 ft.	6 PTC max. dep. 0.1 ft.	7 Substrate SA > 0.1in.	8 GR 0.1"-2.5 in.	9 CO 2.5-10 in.	10 BO 10 in-13 ft.	11 BR > 13 ft.	12 # LWD sm > 12" X 25'	13 med > 24" X 50'	14 lrg > 36" X 50'	15 key LWD # above BF	16 mass waste length ft.	17 av ht. ft.	18 BF width nearest ft.	19 BF depth @ 1/4 BFW 0.1 ft.	20 1/2 BFW 0.1 ft.	21 3/4 BFW 0.1 ft.	22 BFD max. 0.1 ft.	23 floodprone depth 2 (BFmax) 0.1 ft.	24 floodprone width nearest ft.	25 bank stab. both banks ft.	26 riparian zone class	27 dom sp.	28 sub sp.	29 Stem count both banks	30 valley floor width 20 ft.	31 meas hab & trib. temp. deg. F temp.	32 time	33 Photo frame no.	
274	RC13	157	8	1.2/.6		2	2	3	3	-																		30					
275	PR123	14	7	1.6/	.3	2	5	2	-	1																								
276	PP124	11	8	2.2/	.3	4	3	-	1	2															0	ST LT	CD CD	SS CD		40	47	1740	↑21	END
277																																	↓22	SURVEY
278										END SURVEY																								
279																																		
280																																		
281																																		
282																																		
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294																																		

08-Apr-00

Stream Inventory Data Form C2

A. State 41 B. County 29 C. Forest 10 D. District 2 E. Stream Name West Fork Ashland Creek

F. Watershed Code 17, 10, 03, 08 NFS 01 . __ __ . __ __ . __ G. USGS Quad Ashland

H. Survey Date 28 - 9 - 01 (day - mm - yr)

---

1. Observer G Bennett Recorder S Bowman
2. Reach No. 2 3. Natural Sequence Order (NSO) 191
4. Habitat Type and No. (F) F1 5. Special Case Type Falls / (Chute) / Dam / Marshlands / Braided Channels (circle one)
6. Stream Survey Mile (RM) 3 7. Topo Map Elevation 3720 ft.
8. Habitat Dimensions Length 22 ft. Width 2 ft. Depth / Height 6 ft. for Braids
9. Gradient 70 %
10. Is a pool present downstream of habitat? YES 13 NO 21 (if "YES" give dimensions below)
11. Pool Dimensions Length ____ ft. Width ____ ft. Depth 2.0 ft.
12. Comments Bedrock chute a migration barrier

---

1. Observer G Bennett Recorder S Bowman
2. Reach No. 2 3. Natural Sequence Order (NSO) 193
4. Habitat Type and No. (F) F2 5. Special Case Type (Falls) / Chute / Dam / Marshlands / Braided Channels (circle one)
6. Stream Survey Mile (RM) 3 7. Topo Map Elevation 3760 ft.
8. Habitat Dimensions Length ____ ft. Width 4 ft. Depth / Height 8 ft. for braids
9. Gradient 200 %
10. Is a pool present downstream of habitat? YES ____ NO X (if "YES" give dimensions below)
11. Pool Dimensions Length ____ ft. Width ____ ft. Depth ____ ft.
12. Comments Bedrock barrier falls

---

1. Observer G Bennett Recorder S Bowman
2. Reach No. 2 3. Natural Sequence Order (NSO) 219
4. Habitat Type and No. (F) F3 5. Special Case Type (Falls) / Chute / Dam / Marshlands / Braided Channels (circle one)
6. Stream Survey Mile (RM) 3 7. Topo Map Elevation 3960 ft.
8. Habitat Dimensions Length ____ ft. Width 3 ft. Depth / Height 6 ft. for Braids
9. Gradient 190 %
10. Is a pool present downstream of habitat? YES X NO ____ (if "YES" give dimensions below)
11. Pool Dimensions Length 17 ft. Width 21 ft. Depth 5.0 ft.
12. Comments Bedrock and boulder migration barrier

Stream Inventory Data Form C2

A. State 41 B. County 29 C. Forest 10 D. District 2 E. Stream Name West Fork Ashland Creek

F. Watershed Code 17, 10, 03, 08 NFS 04.__ __.__ __.__ G. USGS Quad Ashland

H. Survey Date 28 - 9 - 01 (day - mm - yr)

---

1. Observer G Bennett Recorder S Bowman
2. Reach No. 2 3. Natural Sequence Order (NSO) 230
4. Habitat Type and No. (F) F5 5. Special Case Type Falls / Chute / (Dam) / Marshlands / Braided Channels (circle one)
6. Stream Survey Mile (RM) 4 7. Topo Map Elevation 4080 ft.
8. Habitat Dimensions Length 0 ft. Width 11 ft. Depth / Height 9 ft. for Braids
9. Gradient 200 %
10. Is a pool present downstream of habitat? YES_____ NO X (if "YES" give dimensions below)
11. Pool Dimensions Length _____ ft. Width _____ ft. Depth _____ ft.
12. Comments LWD Dam a migration barrier

---

1. Observer G Bennett Recorder S Bowman
2. Reach No. 2 3. Natural Sequence Order (NSO) 222
4. Habitat Type and No. (F) F4 5. Special Case Type (Falls) / Chute / Dam / Marshlands / Braided Channels (circle one)
6. Stream Survey Mile (RM) 4 7. Topo Map Elevation 3980 ft.
8. Habitat Dimensions Length _____ ft. Width 9 ft. Depth / Height 11 ft. for braids
9. Gradient 200 %
10. Is a pool present downstream of habitat? YES X NO_____ (if "YES" give dimensions below)
11. Pool Dimensions Length 19 ft. Width 21 ft. Depth 2.0 ft.
12. Comments Bedrock migration barrier

---

1. Observer G Bennett Recorder S Bowman
2. Reach No. 2 3. Natural Sequence Order (NSO) 267
4. Habitat Type and No. (F) F6 5. Special Case Type Falls / Chute / (Dam) / Marshlands / Braided Channels (circle one)
6. Stream Survey Mile (RM) 4 7. Topo Map Elevation 4400 ft.
8. Habitat Dimensions Length 1 ft. Width 11 ft. Depth / Height 7 ft. for Braids
9. Gradient 190 %
10. Is a pool present downstream of habitat? YES_____ NO X (if "YES" give dimensions below)
11. Pool Dimensions Length _____ ft. Width _____ ft. Depth _____ ft.
12. Comments LWD Dam migration barrier

STREAM HABITAT DATA FORM D

SISKIYOU RESEARCH GROUP

A. State 41 B. County 29 C. Forest 10 D. District 2 E. Stream Name West Fork Ashland Creek

F. Watershed Code 17, 10, 03, 08 NFS 04, ___; ___.___, ___.___, ___.___, ___.___

G. USGS Quad Ashland H. Survey Date(s) 27 (DD) - 9 (MMM) - 01 (YY)

I. Reach Number(s) 1 J. Survey Method Seine(S) Snorkel(SN) Electroshock(E)

SURVEY DATE	NSO #	REACH #	HABITAT TYPE & #	SPECIES CODE	AGE CLASSIFICATION 0+	1+	2+	3+	COMMENTS
	8	1	PP4	ONCL	3	6	–	–	
	9		RC5	ONCL	2	2	–	–	
	18		PP9	ONCL	1	3	–	–	
	29		PP14	ONCL	3	17	4	2	lighter fish color of DG / Darker fish color of detritus
	30		RR15	ONCL	6	8	3	1	sample 126
	37		PP19	ONCL	2	2	1	–	
	47		PR24	ONCL	8	12	10	5	
	52		RC25	ONCL	3	2	1	–	
	59		PR29	ONCL	6	4	–	–	2 of 11 possible ONMY
	73		PR35	ONCL	4	5	1	–	Dicamp.
	75		RR36	ONCL	4	3	1	1	
	80		PP39	ONCL	2	2	1	1	
	90		PP44	ONCL	3	4	1	1	
	93	↓	RR45	ONCL	141	·	2	2	sample 122
	102	2	PL49	ONCL	1	1	1	2	
	112		PP54	ONCL	–	–	1	1	
	113		RR55	ONCL	6	4	2	–	
	122	↓	PR59	ONCL	2	1	1	–	

STREAM HABITAT DATA FORM D

SISKIYOU RESEARCH GROUP

A. State 41 B. County 29 C. Forest 10 D. District 2 E. Stream Name West Fork Ashland Creek

F. Watershed Code 17, 10, 03, 08 NFS 04, ___; ___.___, ___.___, ___.___, ___.___

G. USGS Quad Ashland H. Survey Date(s) 27-28 (DD) - 9 (MMM) - 01 (YY)

I. Reach Number(s) 2 J. Survey Method Seine(S) Snorkel(SN) Electroshock(E)

SURVEY DATE	NSO #	REACH #	HABITAT TYPE & #	SPECIES CODE	AGE CLASSIFICATION 0+	1+	2+	3+	COMMENTS
27	133	2	PP64	ONCL	2	1	–	–	
27	134		RR65	ONCL	9	2	–	–	
28	143		PP69	ONCL	2	1	1	–	
	154		PP74	ONCL	3	1	–	–	
	155		RR75		No Fish				
	165		PP80	ONCL	1	–	–	–	
	174		PP84	ONCL	2	–	2	–	
	177		RR85	ONCL	5	1	1	–	
	184		PP89	ONCL	No Fish				
	199		RC95		No Fish				
	200		PP98	ONCL	–	–	1	–	
	202		PR101	ONCL	–	–	1	–	
	213		PP99	ONCL	2	–	–	–	
	220		RR105		No Fish				
	228		PP105	ONCL	–	–	1	–	
	238		PR109	ONCL	–	–	1	–	
	241		RR115	ONCL	3	–	–	–	
	253		PP114	ONCL	–	–	–	1	

STREAM HABITAT DATA FORM D

SISKIYOU RESEARCH GROUP

A. State 41 B. County 29 C. Forest 10 D. District 2 E. Stream Name West Fork Ashland Creek

F. Watershed Code 17, 10, 03, 08 NFS 04, ___, ___, ___, ___, ___, ___, ___

G. USGS Quad Ashland H. Survey Date(s) 28 (DD) - 9 (MMM) - 01 (YY)

I. Reach Number(s) 2 J. Survey Method Seine(S) Snorkel(SN) Electroshock(E)

SURVEY DATE	NSO #	REACH #	HABITAT TYPE & #	SPECIES CODE	AGE CLASSIFICATION 0+	1+	2+	3+	COMMENTS
	262		RC125		No	Fish			
	263		PP119		No	Fish			
	276		PP124		No	Fish			

STREAM HABITAT DATA FORM D

SISKIYOU RESEARCH GROUP

A. State________ B. County________ C. Forest________ D. District________ E. Stream Name ____________________

F. Watershed Code ____,____,____,____ NFS ____,____;____.____,____.____,____.____,____.____

G. USGS Quad ______________________________ H. Survey Date(s) ______ DD - ______ MMM - ______ YY

I. Reach Number(s) ____________ J. Survey Method Seine(S) Snorkel(SN) Electroshock(E)

SURVEY DATE	NSO #	REACH #	HABITAT TYPE & #	SPECIES CODE	AGE CLASSIFICATION				COMMENTS
					0+	1+	2+	3+	

STREAM HABITAT DATA FORM E
R6-2500/2600-31

Page: 1 of 1

A. State 41 B. County 29 C. Forest 10 D. District 2

E. Stream Name West Fork Ashland Creek

F. Watershed Code 17, 10, 03, 08 NFS 04

G. USGS Quad Ashland

H. Survey Date 9-27-01 (DD-MM-YY) I. Observer/Recorder Bennett / Bowman

J. Meter Type Pygmy K. Remarks Taken @ road crossing at mouth

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)
5.15	.3	.65	.6	15	46		.347		
5.45		.52		20	45		.462		
5.75		.64		15	40		.394		
6.05		.74		10	56		.202		
6.35		.72		10	59		.194		
6.65		.72		15	55		.294		
6.95		.60		15	40		.394		
7.25		.60		15	41		.385		
7.55		.70		20	41		.505		
7.85		.80		40	52		.780		
8.15		.83		40	40		1.00		
8.45		.84		40	43		.937		
8.75		.80		40	40		1.00		
9.05		.60		60	55		1.09		
9.35		.68		40	46		.878		
9.65		.60		60	73		1.01		
9.95		.60		25	52		.498		
10.25		.52		15	45		.354		
10.55		.50		7	48		.170		
10.85		.40		7	52		.160		

Q = 2.27

STREAM HABITAT DATA FORM F
R6-2500/2600-32

Page: 1 of 4

A. State 41 B. County 29 C. Forest 10 D. District 2

E. Stream Name West Fork Ashland Creek

Watershed Code 17, 10, 03, 08 NFS 04, ___, ___, ___, ___, ___, ___, ___

G. USGS Quad Ashland

H. Survey Date 27 - 9 - 01 I. Observer/Recorder Bennett / Bowman

DD-MMM-YY

PEBBLE COUNT

Stream Name:	Survey Date:
NSO #: 17 RR9	# of Transects: 11
Surveyor:	Reach: 1

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	< Sand	<2	S/C/S				
.08 -.16	Very Fine	2 -4	GRAVELS				
.16 - .22	Fine	4 -5.7					
.22 - .31	Fine	5.7 - 8					
.31 - .44	Medium	8 -11.3					
.44 - .63	Medium	11.3 - 16					
.63 - .89	Coarse	16 -22.6					
.89 - 1.26	Coarse	22.6 - 32					
1.26 - 1.77	Vry Coarse	32 - 45					
1.77 -2.5	Vry Coarse	45 - 64					
2.5 - 3.5	Small	64 - 90	COBL				
3.5 - 5.0	Small	90 - 128					
5.0 - 7.1	Large	128 - 180					
7.1 - 10.1	Large	180 - 256					
10.1 - 14.3	Small	256 - 362	BLDRS				
14.3 - 20	Small	362 - 512					
20 - 40	Medium	512 - 1024					
40 - 80	Large	1024 -2048					
80 - 160	Vry Large	2048 -4096					
	Bedrock		BDRK				
				Totals:			
	Total Tally:						

STREAM HABITAT DATA FORM F
R6-2500/2600-32

A. State 41 B. County 29 C. Forest 10 D. District 2

E. Stream Name West Fork Ashland Creek

Watershed Code 17, 10, 03, 08 NFS 04

G. USGS Quad Ashland

H. Survey Date 27-9-01 I. Observer/Recorder Bennett Bowman

DD-MMM-YY

PEBBLE COUNT

Stream Name:	Survey Date:
NSO #: 93 RR45	# of Transects: 11
Surveyor:	Reach: 1

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

STREAM HABITAT DATA FORM F
R6-2500/2600-32

Page: 3 of 4

A. State 41 B. County 29 C. Forest 10 D. District 2

E. Stream Name West Fork Ashland Creek

Watershed Code 17, 10, 03, 08 NFS 04, ____, ____, ____, ____, ____, ____, ____

G. USGS Quad Ashland

H. Survey Date 27-9-01 I. Observer/Recorder Bennett/Bowman

DD-MMM-YY

PEBBLE COUNT

Stream Name:	Survey Date:
NSO #: 132 RH	# of Transects: ///
Surveyor:	Reach: 2

Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
<.08	< Sand	<2	S/C/S	//// //// ///			
.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	///			
.89 - 1.26	Coarse	22.6 - 32	L	//// //// /			
1.26 - 1.77	Vry Coarse	32 - 45	S	//// //// //			
1.77 -2.5	Vry Coarse	45 - 64		//// ////			
2.5 - 3.5	Small	64 - 90	C	//// ////			
3.5 - 5.0	Small	90 - 128	O	//// //// ////			
5.0 - 7.1	Large	128 - 180	B	//// //// //// /			
7.1 - 10.1	Large	180 - 256	L	//// ////			
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:			
	Total Tally:						

STREAM HABITAT DATA FORM F
R6-2500/2600-32

Page: 4 of 4

A. State 41 B. County 29 C. Forest 10 D. District 2

E. Stream Name West Fork Ashland Creek

Watershed Code 17, 10, 03, 08 NFS 04

G. USGS Quad Ashland

H. Survey Date 28 - 9 - 01 I. Observer/Recorder Bennett/Bauman

DD-MMM-YY

PEBBLE COUNT

Stream Name:	Survey Date:
NSO #: 214 RC103	# of Transects: 11
Surveyor:	Reach: 2

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

FORM G: STREAM INVENTORY REACH DIARY
[redacted] NATIONAL FOREST

Stream Survey Name: West Fork Ashland Creek **Date:** 27-9-01

Obs/Rec: Bennett / Bowman **NSO: from** 1 **to** 96 **Reach:** 1

Sum of Habitat Length: _____ ft.

Comment on the following: ***Circle One***

Pool Habitat (depth; % fine sediment; cover; abundance) **Rating:** Poor (Fair) Good

Relatively small in in area. Some deep pools. Fines abundant – comprised of D6. Relatively abundant. Cover provided by depth and camoflause (coloration similar to substrate). Some bubble and overhang cover Mostly pocket pools Short in length and small in area.

Riffle Habitat (gradient; pocket pools; off-channel habitat) **Rating:** Poor (Fair) Good

Long rapids with scattered cascades. 7-14% gradient. Pocket pools average <0%. 2 side channels offer little in special habitat opportunities. Fines a significant portion of substrate (D6) Bedrock fairly common Gravel then cobble round at dominant substrate types.

Fish Habitat (spawning; rearing; cover; temp; habitat quality) **Rating:** Poor Fair Good

Spawning habitat appears meager but fish numbers are good. Rearing and foraging largely in pools. temp 51-52° Cover provided by some depth, bubbles, and coloration similar to substrate. Overall habitat quality appears fines dominated.

LWD (# in BF channel; key pcs. elevated above BF) **Rating:** (Poor) Fair Good

A minor component to habitat complexity. Few pieces. Some spanners. Recruitment potential is good given common LT conifers in riparian zone

Channel Stability (reliable BF indicators; bank erosion; veg'd banks) **Rating:** Poor Fair (Good)

Stable. Good BF indicators. Only 2 minor instances of BI. Banks vegd by trees of various sizes and SS

Migration Barriers (falls; sheets/chutes; culverts; log jams; dry channel) **Rating:** Poor Fair Good

none.

Riparian Condition (inner width; harvested; unmanaged; rec. sites) **Rating:** Poor Fair (Good)

Good. Comprised largely of ST/LT and some MT conifers. Minor evidence of logging. Hardwoods include HB, HA, HV, and some HM. POC? seen

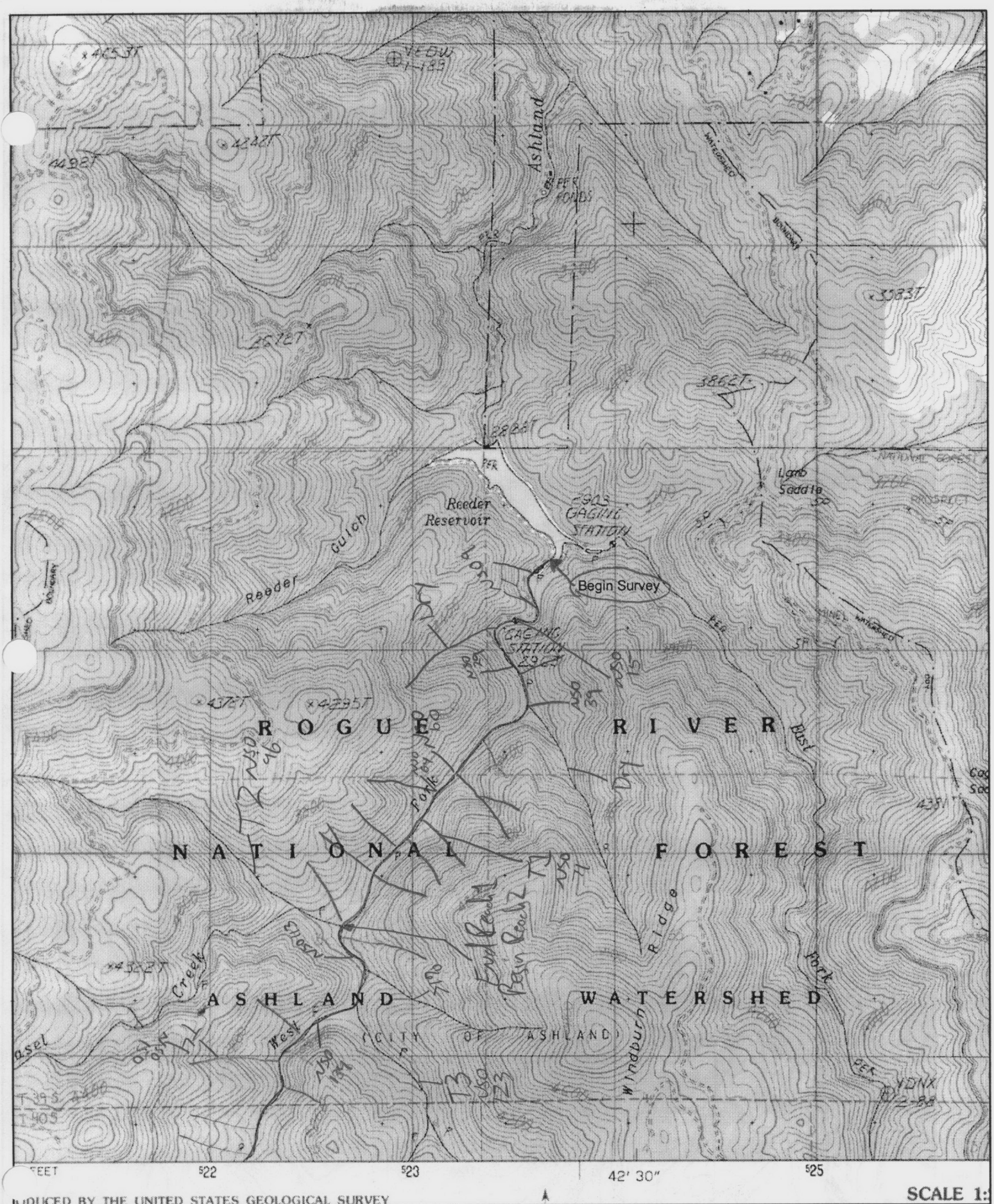
FORM G: STREAM INVENTORY REACH DIARY
[redacted]E NATIONAL FOREST

Stream Survey Name: _____ **Date:** _____

Obs/Rec: _____/_____ **NSO: from** _____ **to** _____ **Reach:** _____

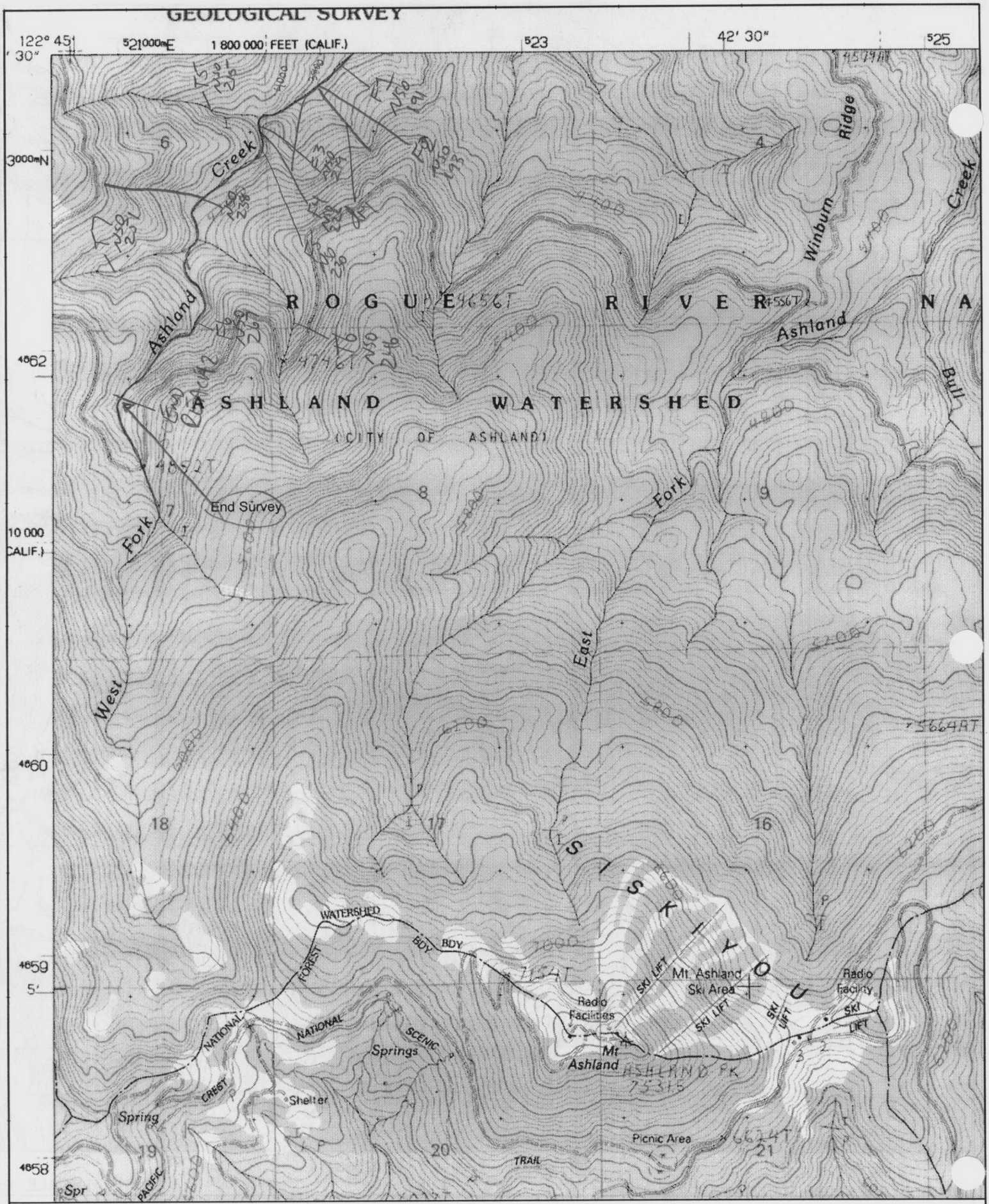
Sum of Habitat Length: _____ **ft.**

Comment on the following:	*Circle One*
Pool Habitat (depth; % fine sediment; cover; abundance)	**Rating:** Poor Fair Good
Riffle Habitat (gradient; pocket pools; off-channel habitat)	**Rating:** Poor Fair Good
Fish Habitat (spawning; rearing; cover; temp; habitat quality)	**Rating:** Poor Fair Good
LWD (# in BF channel; key pcs. elevated above BF)	**Rating:** Poor Fair Good
Channel Stability (reliable BF indicators; bank erosion; veg'd banks)	**Rating:** Poor Fair Good
Migration Barriers (falls; sheets/chutes; culverts; log jams; dry channel)	**Rating:** Poor Fair Good
Riparian Condition (inner width; harvested; unmanaged; rec. sites)	**Rating:** Poor Fair Good



Name: ASHLAND
Date: 8/12/101
Scale: 1 inch equals 2000 feet

Location: 042° 08' 58.5" N 122° 42' 58.9" W
Caption: West Fork Ashland Creek 2001 Stream Survey Field Map



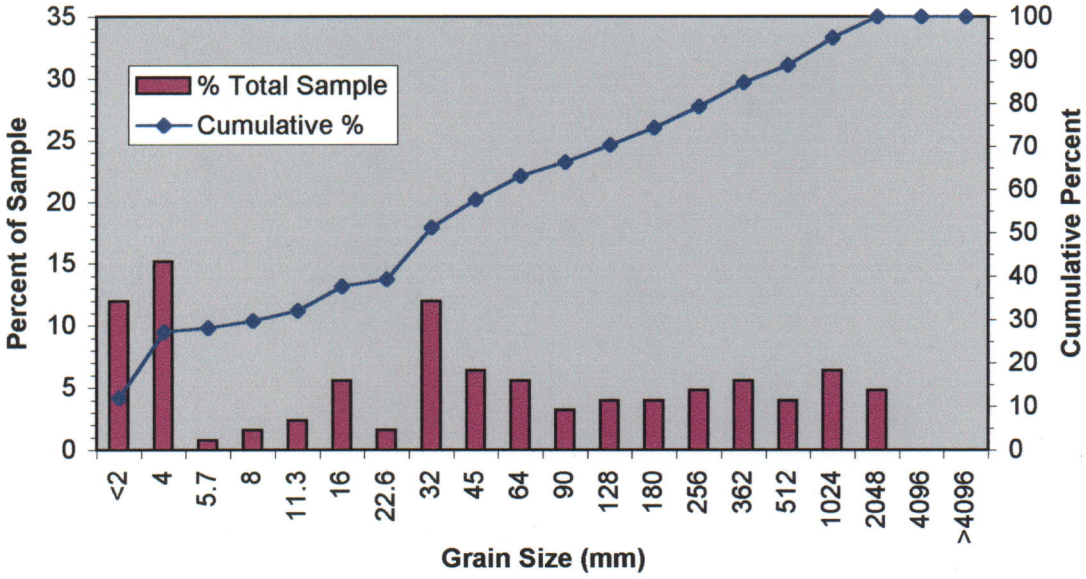
Name: MT ASHLAND
Date: 8/12/101
Scale: 1 inch equals 2000 feet

Location: 042° 06' 01.4" N 122° 43' 24.4" W
Caption: West Fork Ashland Creek 2001 Stream Survey Field Map

APPENDIX D

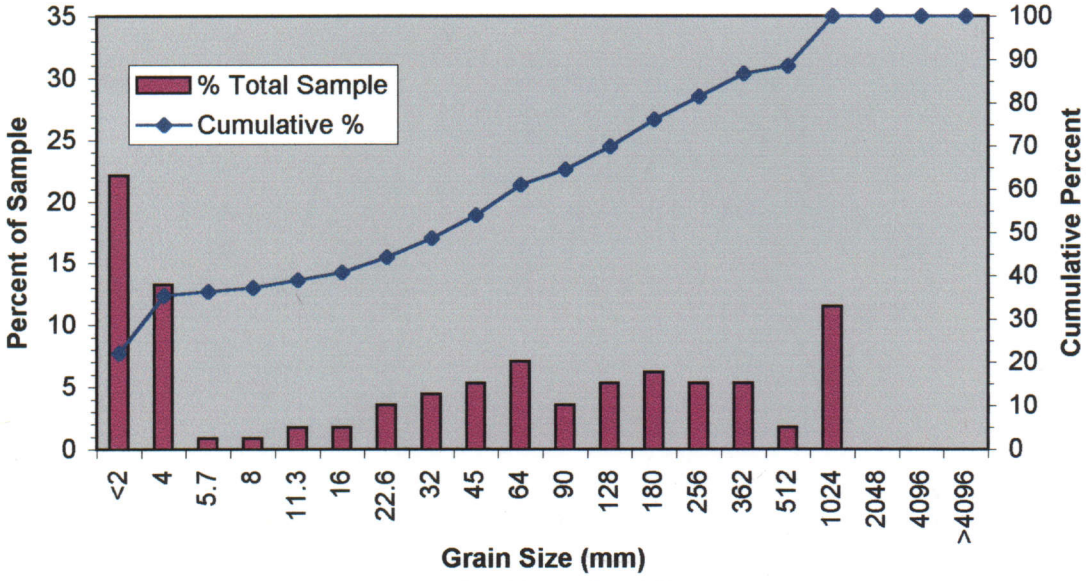
WEST FORK ASHLAND CREEK WOLMAN PEBBLE COUNT GRAPHS

Wolman Pebble Count
West Fork Ashland Creek
Reach 1 NSO 17 RR 9

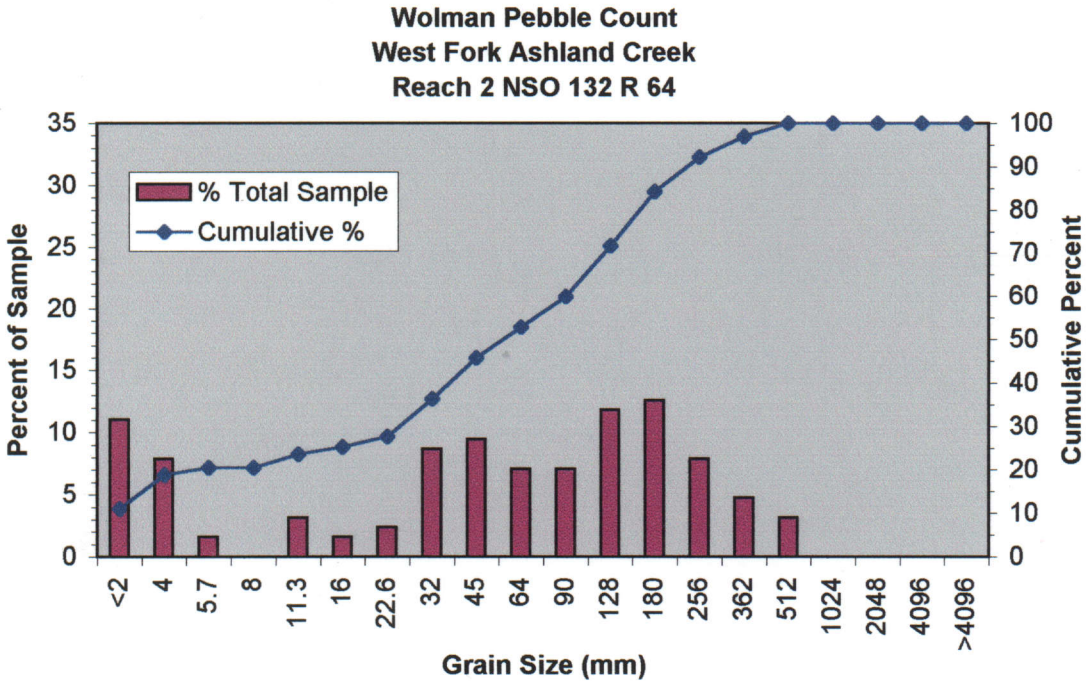


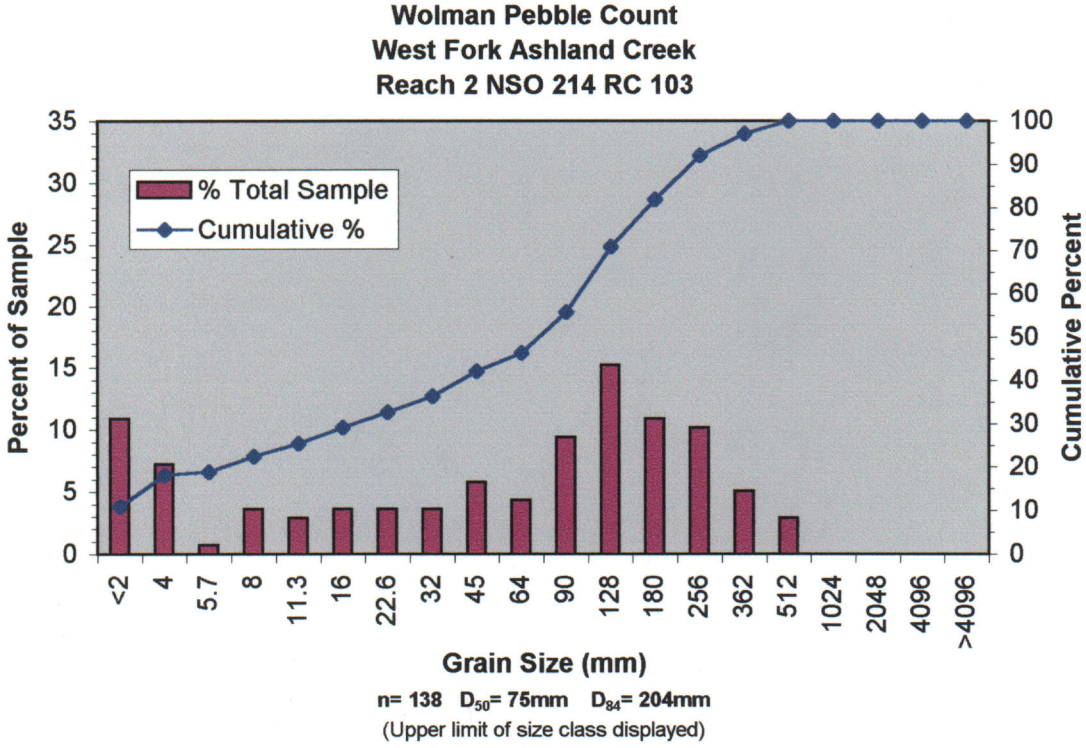
n= 125 D_{50}= 31mm D_{84}= 362mm
(Upper limit of size class displayed)

Wolman Pebble Count
West Fork Ashland Creek
Reach 1 NSO 93 RR 45



n= 113 D_{50}= 35mm D_{84}= 312mm
(Upper limit of size class displayed)


Wolman Pebble Count
West Fork Ashland Creek
Reach 2 NSO 132 R 64
% Total Sample
Cumulative %
Percent of Sample
Cumulative Percent
Grain Size (mm)
<2
4
5.7
8
11.3
16
22.6
32
45
64
90
128
180
256
362
512
1024
2048
4096
>4096
n= 127 D50= 57mm D84= 190mm
(Upper limit of size class displayed)


Wolman Pebble Count
West Fork Ashland Creek
Reach 2 NSO 214 RC 103
% Total Sample
Cumulative %
Percent of Sample
Cumulative Percent
Grain Size (mm)
<2
4
5.7
8
11.3
16
22.6
32
45
64
90
128
180
256
362
512
1024
2048
4096
>4096
n= 138 D50= 75mm D84= 204mm
(Upper limit of size class displayed)

APPENDIX E

WEST FORK ASHLAND CREEK FISH DENSITY AND HABITAT AREA CALCULATION TABLES

Salmonid Density Calculation Table for West Fork Ashland Creek Reach 1, 2001 Level II Stream Inventory
(Produced by Siskiyou Research Group)

Hab #	Snorkeled Habitat Area Table: Pools length (ft)	Pools width (ft)	Pool Area (ft²)	Riffles length (ft)	Riffles width (ft)	Riffle Area (ft²)
1	26	18	468	54	14	756
2	33	14	462	203	14	2842
3	36	16	576	33	14	462
4	31	11	341	91	16	1456
5	42	16	672	289	16	4624
6	32	14	448			0
7	29	11	319			0
8	18	13	234			0
9	18	13	234			0
10			0			0
11			0			0
12			0			0
13			0			0
14			0			0
15			0			0
16			0			0
17			0			0
18			0			0
19			0			0
20			0			0
21			0			0
22			0			0
23			0			0
24			0			0
25			0			0
26			0			0
27			0			0
28			0			0
29			0			0
30			0			0
31			0			0
32			0			0
33			0			0
34			0			0
35			0			0
36			0			0
37			0			0
38			0			0
39			0			0
40			0			0
Total Pool Area (ft²)			3754	Total Riffle Area (ft²)		10140
Total Pool Area (yd²)			417.111	Total Riffle Area (yd²)		1126.667

Salmonid Tally Table: POOLS	ONMY			ONCL			ONTS			ONKI		
Hab #	0+	1+	>2+	0+	1+	>2+	0+	1+	>2+	0+	1+	>2+
1				3	6							
2				1	3							
3				3	17	6						
4				2	2	1						
5				8	12	15						
6				6	4							
7				4	5	1						
8				2	2	2						
9				3	4	2						
10												
11												
12												
13												
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15												
16												
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31												
32												
33												
34												
35												
36												
37												
38												
39												
40												
	0	0	0	32	55	27	0	0	0	0	0	0

Salmonid Tally Table: RIFFLES	ONMY			ONCL			ONTS			ONKI		
Hab #	0+	1+	>2+	0+	1+	>2+	0+	1+	>2+	0+	1+	>2+
1				2	2							
2				10	13	7						
3				3	2	1						
4				4	3	2						
5				33	9	10						
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
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33												
34												
35												
36												
37												
38												
39												
40												
	0	0	0	52	29	20	0	0	0	0	0	0

Total 0+ ONMY in Pools	0
Total ≥1+ ONMY in Pools	0
Total 0+ ONCL in Pools	32
Total ≥1+ ONCL in Pools	82
Total 0+ ONTS in Pools	0
Total ≥1+ ONTS in Pools	0
Total 0+ ONKI in Pools	0
Total ≥1+ ONKI in Pools	0

Total ONMY in Pools	0
Total ONCL in Pools	114
Total ONTS in Pools	0
Total ONKI in Pools	0

Total 0+ ONMY in Riffles	0
Total ≥1+ ONMY in Riffles	0
Total 0+ ONCL in Riffles	52
Total ≥1+ ONCL in Riffles	49
Total 0+ ONTS in Riffles	0
Total ≥1+ ONTS in Riffles	0
Total 0+ ONKI in Riffles	0
Total ≥1+ ONKI in Riffles	0

Total ONMY in Riffles	0
Total ONCL in Riffles	101
Total ONTS in Riffles	0
Total ONKI in Riffles	0

Total ONMY for Reach	0
Total ONCL for Reach	215
Total ONTS for Reach	0
Total ONKI for Reach	0

Total Salmonids in Pools	114
Total Salmonids in Riffles	101
Total Salmonids in Reach	215
Total 0+ in Reach	84
Total ≥1+ in Reach	131

Other Fish		
Species	#	Habitat Type
COXX		

SMART Reach Pool Area (ft²)	18564
SMART Reach Riffle Area (ft²)	99139

% Reach	Pool	Area	Snorkeled	20.22
% Reach	Riffle	Area	Snorkeled	10.23
% Reach	Habitat	Area	Snorkeled	11.80

Salmonid Species Density (fish/yd²)

	ONMY 0+	ONMY ≥1+	ONCL 0+	ONCL ≥1+
Pools	0.000	0.000	0.077	0.197
Riffles	0.000	0.000	0.046	0.043

	ONTS 0+	ONTS ≥1+	ONKI 0+	ONKI ≥1+
Pools	0.000	0.000	0.000	0.000
Riffles	0.000	0.000	0.000	0.000

Total Salmonid Species Density (fish/yd²) for Reach

ONMY	ONCL	ONTS	ONKI
0.000	0.139	0.000	0.000

Total Salmonid Density (fish/yd²) for Reach

Pools	0.273
Riffles	0.090
0+	0.064
≥1+	0.085
Reach	0.139

Salmonid Density Calculations Based on Snorkeled Habitats Only at a Minimum 10% Sampling Frequency
(For Reaches Snorkeled Above/Below Fish Limit, Calculations Based on Fish-Bearing Segment Only)

Salmonid Density Calculation Table for West Fork Ashland Creek Reach 2, 2000 Level II Stream Inventory
(Produced by Siskiyou Research Group)

Hab #	Snorkeled Habitat Area Table: Pools length (ft)	Pools width (ft)	Pool Area (ft^2)	Riffles length (ft)	Riffles width (ft)	Riffle Area (ft^2)	Salmonid Tally Table: POOLS ONMY 0+	ONMY 1+	ONMY >2+	ONCL 0+	ONCL 1+	ONCL >2+	ONTS 0+	ONTS 1+	ONTS >2+	ONKI 0+	ONKI 1+	ONKI >2+	RIFFLES ONMY 0+	ONMY 1+	ONMY >2+	ONCL 0+	ONCL 1+	ONCL >2+	ONTS 0+	ONTS 1+	ONTS >2+	ONKI 0+	ONKI 1+	ONKI >2+
1	39	9	351	81	13	1053				1	1	3										6	4	2						
2	17	11	187	93	14	1302						2										9	2							
3	15	16	240	38	6	228				2	1	1																		
4	20	12	240	102	9	918				2	1											5	1	1						
5	25	11	275	139	9	1251				2	1	1																		
6	24	8	192	24	8	192				3	1																			
7	14	9	126	85	10	850				1												3								
8	31	10	310	141	8	1128				2		2																		
9	11	0	0			0																								
10	17	9	153			0						1																		
11	21	10	210			0						1																		
12	18	9	162			0				2																				
13	28	11	308			0						1																		
14	25	9	225			0						1																		
15	13	7	91			0						1																		
16	11	14	154			0																								
17	11	8	88			0																								
18			0			0																								
19			0			0																								
20			0			0																								
21			0			0																								
22			0			0																								
23			0			0																								
24			0			0																								
25			0			0																								
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34			0			0																								
35			0			0																								
36			0			0																								
37			0			0																								
38			0			0																								
39			0			0																								
40			0			0																								
	Total Pool Area (ft^2)		3312	Total Riffle Area (ft^2)		6922	0	0	0	15	5	14	0	0	0	0	0	0	0	0	0	23	7	3	0	0	0	0	0	0
	Total Pool Area (yd^2)		368.000	Total Riffle Area (yd^2)		769.111																								

SMART	Reach	Pool	Area	(ft^2)	17160
SMART	Reach	Riffle	Area	(ft^2)	113862
%	Reach	Pool	Area	Snorkeled	19.30
%	Reach	Riffle	Area	Snorkeled	6.08
%	Reach	Habitat	Area	Snorkeled	7.81

Total 0+ ONMY in Pools	0
Total ≥1+ ONMY in Pools	0
Total 0+ ONCL in Pools	15
Total ≥1+ ONCL in Pools	19
Total 0+ ONTS in Pools	0
Total ≥1+ ONTS in Pools	0
Total 0+ ONKI in Pools	0
Total ≥1+ ONKI in Pools	0

Total ONMY in Pools	0
Total ONCL in Pools	34
Total ONTS in Pools	0
Total ONKI in Pools	0

Total 0+ ONMY in Riffles	0
Total ≥1+ ONMY in Riffles	0
Total 0+ ONCL in Riffles	23
Total ≥1+ ONCL in Riffles	10
Total 0+ ONTS in Riffles	0
Total ≥1+ ONTS in Riffles	0
Total 0+ ONKI in Riffles	0
Total ≥1+ ONKI in Riffles	0

Total ONMY in Riffles	0
Total ONCL in Riffles	33
Total ONTS in Riffles	0
Total ONKI in Riffles	0

Total ONMY for Reach	0
Total ONCL for Reach	67
Total ONTS for Reach	0
Total ONKI for Reach	0

Salmonid Species Density ($fish/yd^2$)

	ONMY 0+	ONMY ≥1+		ONCL 0+	ONCL ≥1+
Pools	0.000	0.000	Pools	0.041	0.052
Riffles	0.000	0.000	Riffles	0.030	0.013

	ONTS 0+	ONTS ≥1+		ONKI 0+	ONKI ≥1+
Pools	0.000	0.000	Pools	0.000	0.000
Riffles	0.000	0.000	Riffles	0.000	0.000

Total Salmonid Species Density ($fish/yd^2$) for Reach

ONMY	ONCL	ONTS	ONKI
0.000	0.059	0.000	0.000

Total Salmonid Density ($fish/yd^2$) for Reach

Pools	0.092
Riffles	0.043
0+	0.033
≥1+	0.026
Reach	0.059

Other Fish		
Species	#	Habitat Type
COXX		

Total Salmonids in Pools	34
Total Salmonids in Riffles	33
Total Salmonids in Reach	67
Total 0+ in Reach	38
Total ≥1+ in Reach	29

Salmonid Density Calculations Based on Snorkeled Habitats Only at a Minimum 10% Sampling Frequency
(For Reaches Snorkeled Above/Below Fish Limit, Calculations Based on Fish-Bearing Segment Only)

APPENDIX F

WEST FORK ASHLAND CREEK PHOTOGRAPHS AND PHOTOGRAPH LOG

Appendix F

West Fork Ashland Creek Photograph Log
2001 Level II Stream Survey

Photo #	Description
1	**NSO 1, R 1, view upstream.** Begin survey at confluence of West Fork Ashland Creek with Reeder Reservoir (Roll 1, negative 15).
2	**NSO 5, RR 3, view upstream.** Typical canyon morphology for lower section of reach 1. Note moss line indicating stage of bankfull discharge (Roll 1, negative 16).
3	**NSO 14, PP 7, view upstream.** Typical pool habitat in reach 1 is relatively shallow and burdened with decomposed granite (Roll 1, negative 17).
4	**NSO 24, PP 12, view upstream.** Representative aquatic and riparian habitat found in lower reach 1 (Roll 1, negative 18).
5	**NSO 29, PP 14, view upstream.** Plunge pool depth reduced from aggradation of decomposed granite (Roll 1, negative 19).
6	**NSO 35, RC 16, view downstream.** Debris jam and top of side channel. Debris jam is hung up on island and is diverting flow into side channel. Side channel is 391 feet in length and is at left in photograph. (Roll 1, negative 20).
7	**NSO 48, RR 23, view downstream.** Typical long rapid in reach 1. Note the narrow colluvial canyon (Roll 1, negative 21).
8	**NSO 59, PR 29, view upstream.** Shallow granite-filled pool is typical in reach 1 (Roll 1, negative 22).
9	**NSO 70, RC 34, view downstream.** Material in debris jam came from adjacent streamside landslide (Roll 1, negative 23).
10	**NSO 80, PP 39, view upstream.** Small plunge pool is undercutting mature Douglas fir tree located in top right of photograph. Pool is relatively deep at 3.7 feet (Roll 1, negative 24).
11	**NSO 89, RR 43, view downstream.** Representative of aquatic habitat, riparian vegetation, and substrate composition (Roll 1, negative 25).
12	**NSO 96, T 2, view upstream.** Tributary 2 (Weasel Creek) marks the end of reach 2. T 2 contributes approximately 30% of flow to WF Ashland Creek (Roll 2, negative 0).
13	**NSO 95, RR 46, view downstream.** End of reach 1 (Roll 2, negative 1).
14	**NSO 97, RR 47, view upstream.** Begin reach 2 (Roll 2, negative 2).
15	**NSO 109, RR 53, view upstream.** Reach 2 contains decreased stream flow, increased stream gradient, and increased substrate size compared to reach 1 (Roll 2, negative 3).
16	**NSO 112, PP 54, view upstream.** Relatively large but shallow pool. Pools in lower reach 2 are aggrading with decomposed granite (Roll 2, negative 4).
17	**NSO 119, RR 58, view downstream.** Atypical riffle habitat. Downstream material is retaining small substrate and aggrading channel (Roll 2, negative 5).
18	**NSO 123, T 3, view upstream.** T 3 contributes 30% flow to WF Ashland Creek and is fish bearing (Roll 2, negative 6).
19	**NSO 128, RR 62, view upstream.** Old culvert remaining in channel that was used in passing WF Ashland Creek under Forest Service road 100 (Roll 2, negative 7).
20	**NSO 149, PP 72, view upstream.** LWM promoting pool formation and channel scour and retarding bedload transport. LWM is more common in reach 2 (Roll 2, negative 8).
21	**NSO 160, PP 77, view upstream.** Granite-filled step pools in bedrock area (Roll 2, negative 9).
22	**NSO 174, PP 84, view upstream.** Typical aquatic habitat and substrate composition found in reach 2 (Roll 2, negative 10).

Appendix F

West Fork Ashland Creek Photograph Log
2001 Level II Stream Survey

Photo #	Description
23	**NSO 191, F 1, view upstream.** F 1 is a 22-foot long, 70% gradient bedrock chute that is a barrier to upstream fish passage at most flows. Fish observed above this feature (Roll 2, negative 11).
24	**NSO 192, view upstream.** This debris plug is located at the mouth of a dry tributary channel at F 2. The plug is approximately 30'LX15'WX10'H. F 2 is a 8-foot bedrock waterfall that is a barrier to upstream fish passage at most stream flows. Fish were observed upstream of F 2 (Roll 2, negative 12).
25	**NSO 209, RC 100, view upstream.** LWM found at the top of this stair-stepped cascade adds to the steepness making this habitat an impediment to upstream fish passage (Roll 2, negative 13).
26	**NSO 216, PR 100, view upstream.** Typical pool found in mid reach 2. Pools in mid and upper reach 2 contain considerably less decomposed granite (Roll 2, negative 14).
27	**NSO 218, F 3 and F 4, view upstream.** F 3 is a 6-foot boulder/bedrock waterfall and F 4 (in background of photograph) is an 11-foot bedrock waterfall. Both special case habitats are considered barriers to upstream fish passage at most stream flows (Roll 2, negative 15).
28	**NSO 230, F 5, view upstream.** Special case habitat F 5 is a logjam dam that is 9-feet high and is considered a temporary migration barrier. Fish were observed above all special case habitats identified (Roll 2, negative 16).
29	**NSO 246, T 6, view upstream.** Tributary 6 contributes 7% flow to WF Ashland Creek and may contain fish for a short distance upstream (Roll 2, negative 17).
30	**NSO 267, F 6, view upstream.** F 6 is a 7-foot logjam dam. F 6 is considered a temporary fish migration barrier at most flows, however, the sustained steep gradient of this upper section of reach 2 does limit fish distribution.
31	**NSO 270, RC 129, view downstream.** Typical channel morphology and cascade habitat found in upper reach 2. No fish were observed in this area and this area appears to be above the fish limit (Roll 2, negative 19).
32	**NSO 274, RC 131, view downstream.** End survey near Forest Service road 2060 (Roll 2, negative 20).
33	**NSO 276, PP 124, view upstream.** Channel upstream of survey end point (Roll 2, negative 21).

Photo 1 WF Ashland Cr.
Reach 1 September 2001

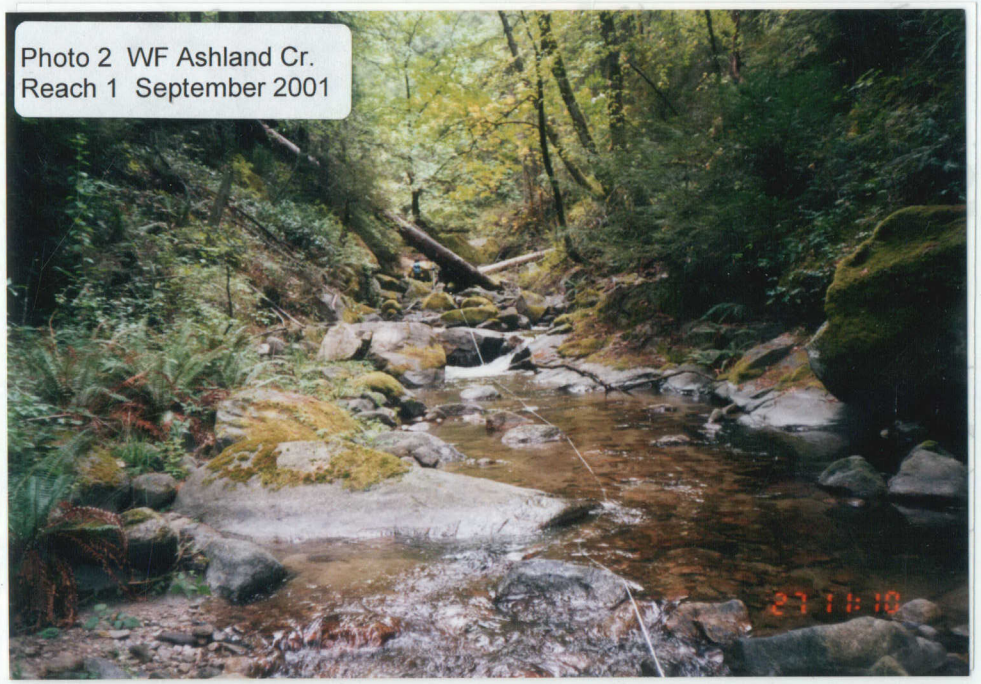

Photo 2 WF Ashland Cr.
Reach 1 September 2001

Photo 3 WF Ashland Cr.
Reach 1 September 2001

Photo 4 WF Ashland Cr.
Reach 1 September 2001


Photo 5 WF Ashland Cr.
Reach 1 September 2001


Photo 6 WF Ashland Cr.
Reach 1 September 2001

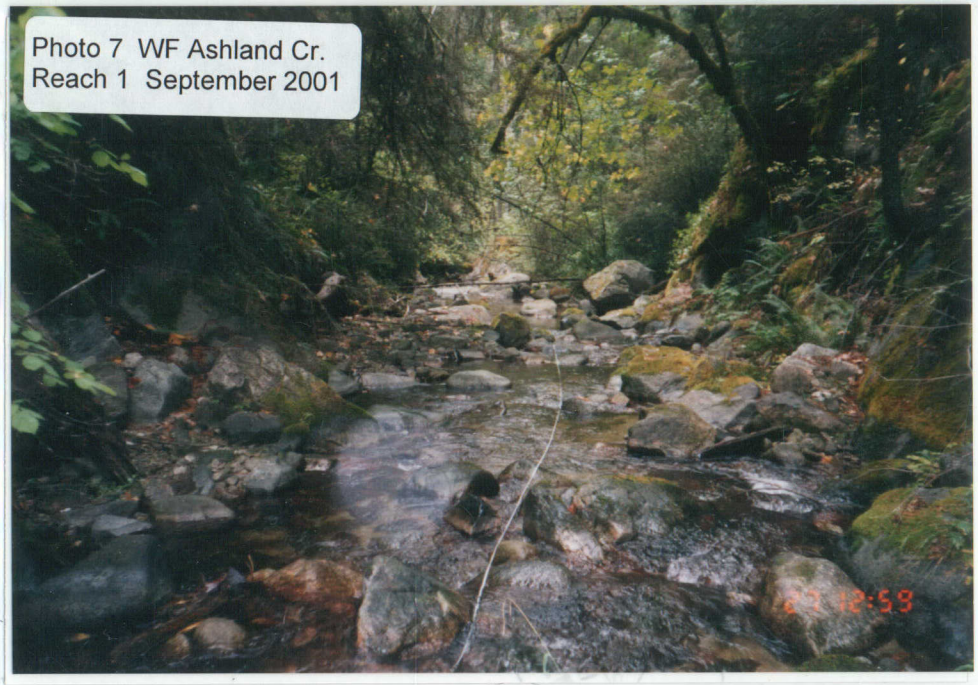
Photo 7 WF Ashland Cr.
Reach 1 September 2001

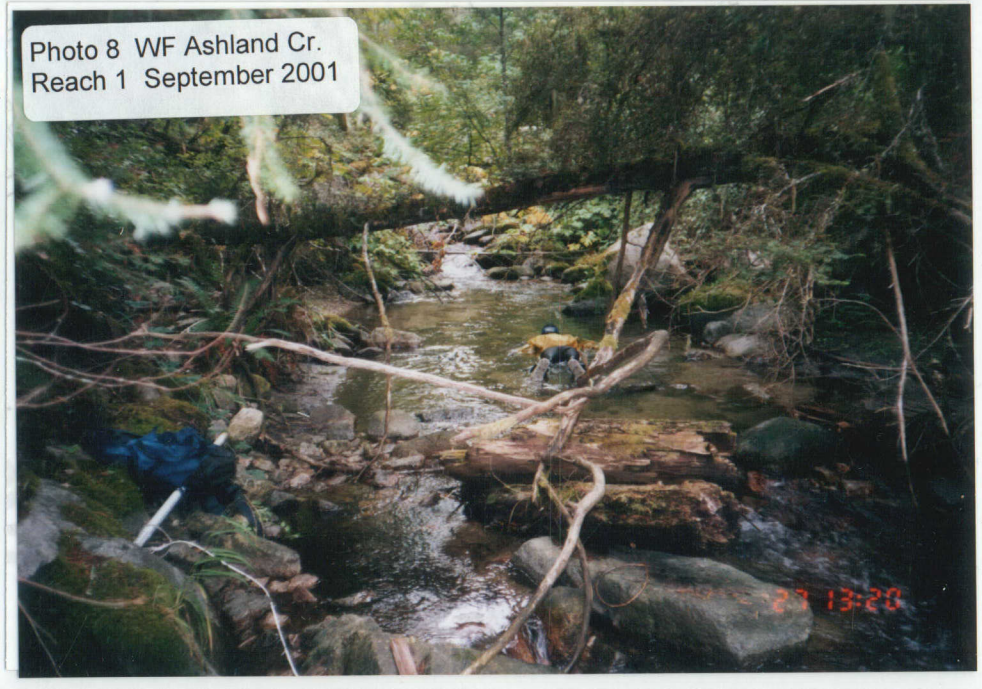
Photo 8 WF Ashland Cr.
Reach 1 September 2001

Photo 9 WF Ashland Cr.
Reach 1 September 2001

Photo 10 WF Ashland Cr.
Reach 1 September 2001

Photo 11 WF Ashland Cr.
Reach 1 September 2001

Photo 12 WF Ashland Cr.
Reach 1 September 2001

Photo 13 WF Ashland Cr.
Reach 1 September 2001

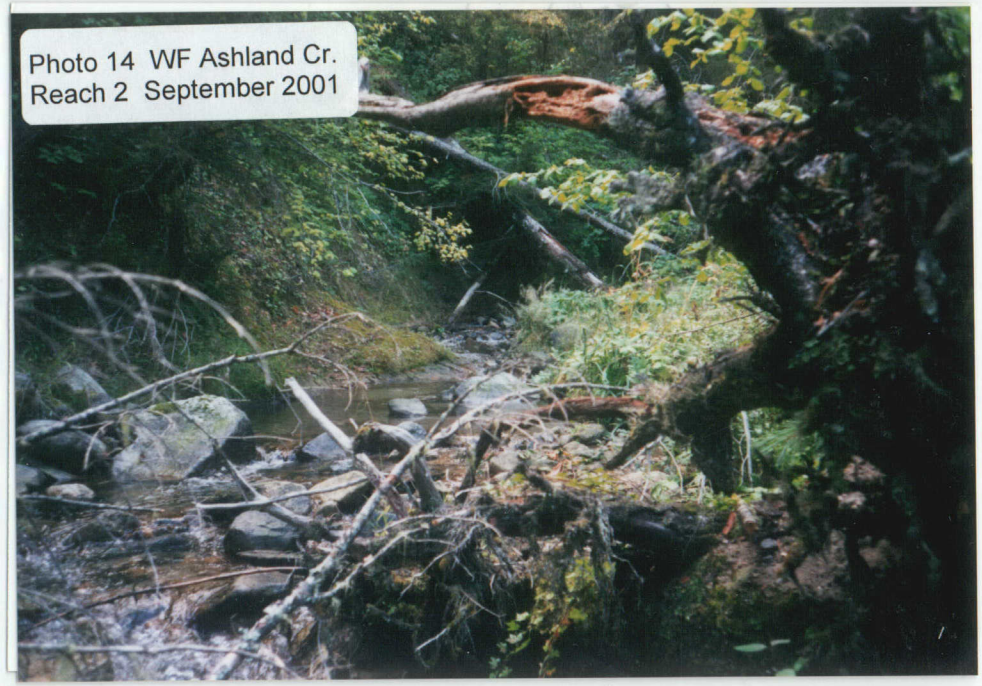

Photo 14 WF Ashland Cr.
Reach 2 September 2001

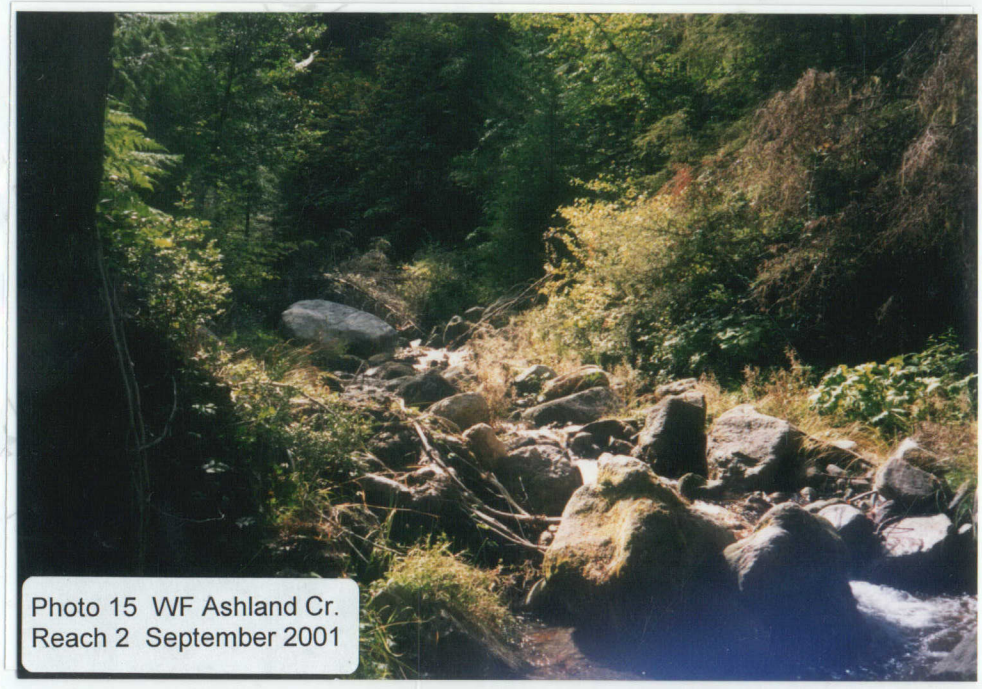

Photo 15 WF Ashland Cr.
Reach 2 September 2001

Photo 16 WF Ashland Cr.
Reach 2 September 2001


Photo 17 WF Ashland Cr.
Reach 2 September 2001

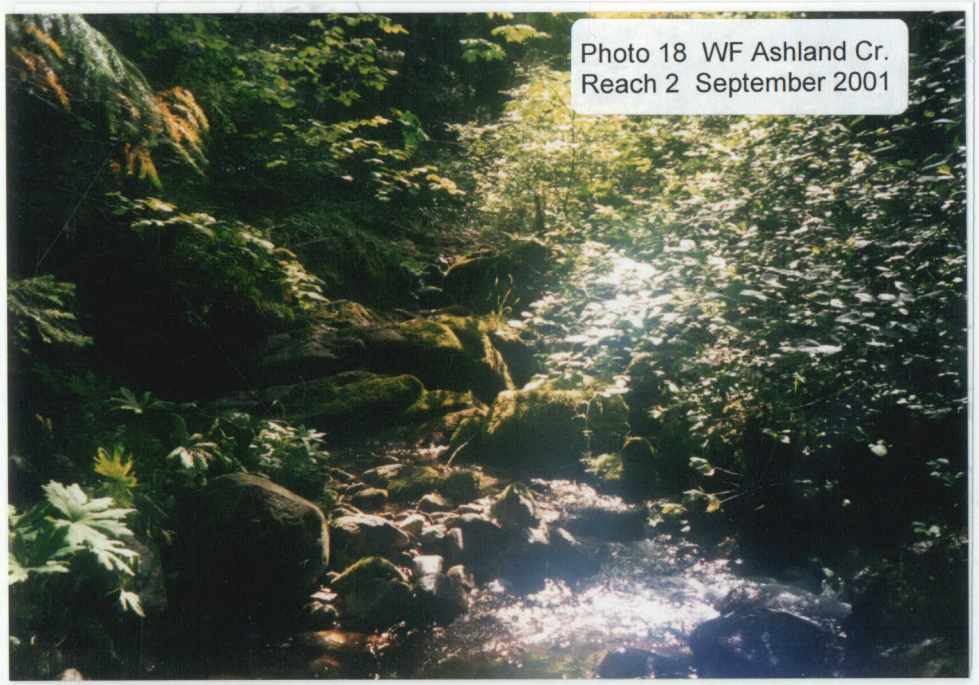
Photo 18 WF Ashland Cr.
Reach 2 September 2001


Photo 19 WF Ashland Cr.
Reach 2 September 2001

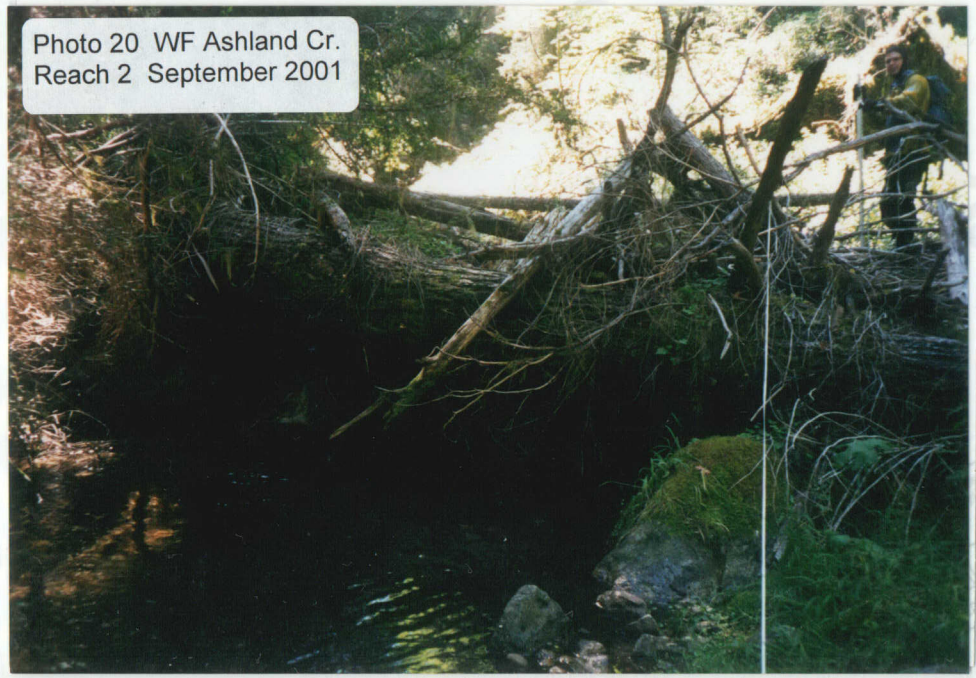
Photo 20 WF Ashland Cr.
Reach 2 September 2001


Photo 21 WF Ashland Cr.
Reach 1 September 2001


Photo 22 WF Ashland Cr.
Reach 1 September 2001


Photo 23 WF Ashland Cr.
Reach 1 September 2001


Photo 24 WF Ashland Cr.
Reach 1 September 2001

Photo 26 WF Ashland Cr.
Reach 2 September 2001

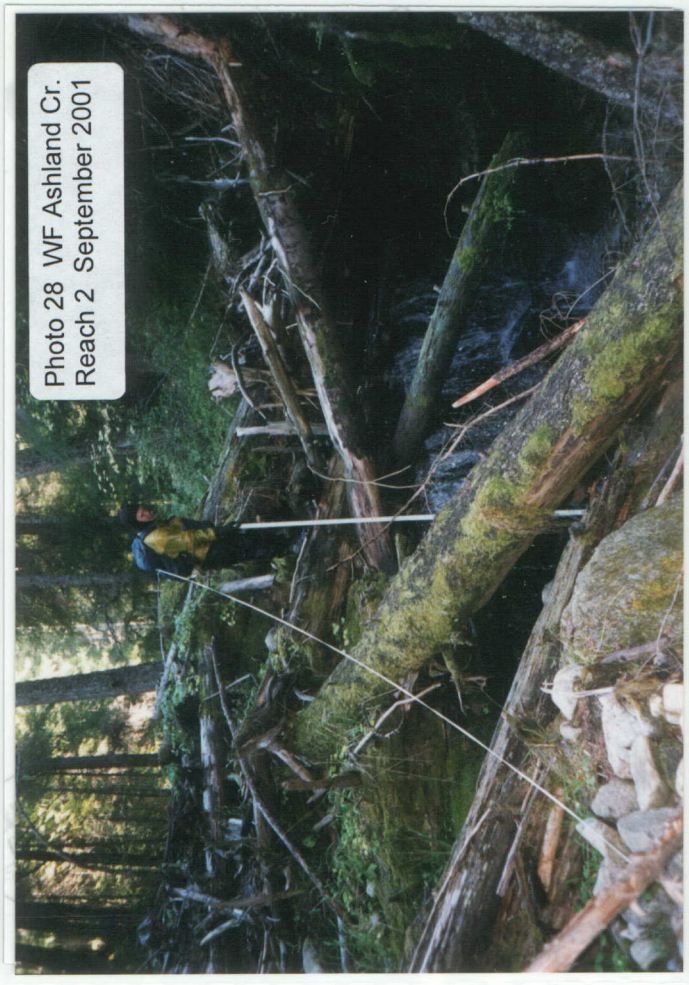

Photo 28 WF Ashland Cr.
Reach 2 September 2001

Photo 25 WF Ashland Cr.
Reach 2 September 2001

Photo 27 WF Ashland Cr.
Reach 2 September 2001

Photo 29 WF Ashland Cr.
Reach 2 September 2001

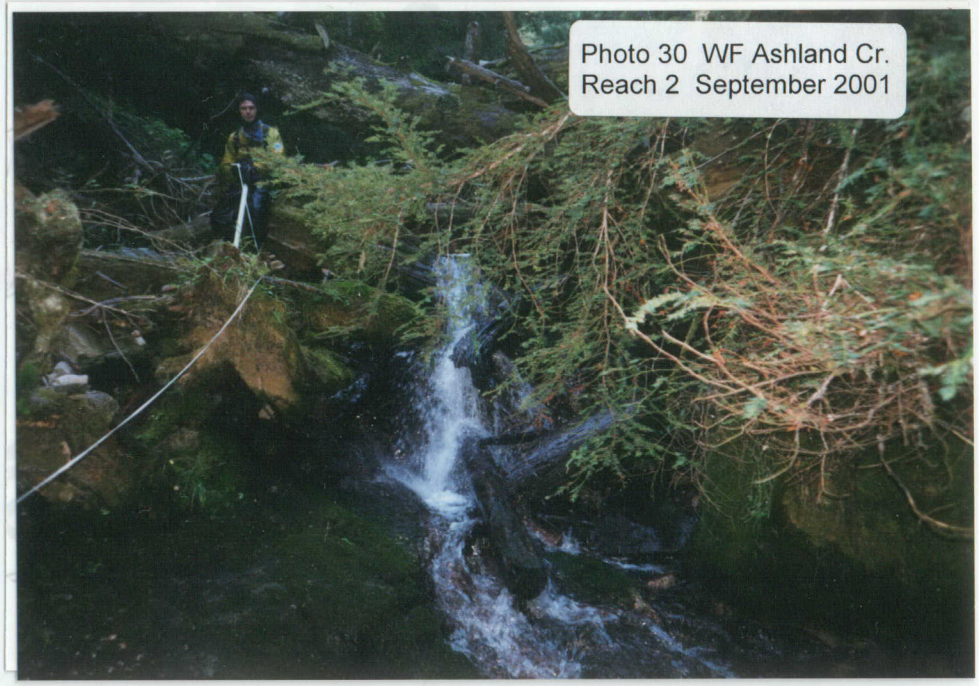

Photo 30 WF Ashland Cr.
Reach 2 September 2001

Photo 31 WF Ashland Cr.
Reach 2 September 2001

Photo 32 WF Ashland Cr.
Reach 2 September 2001

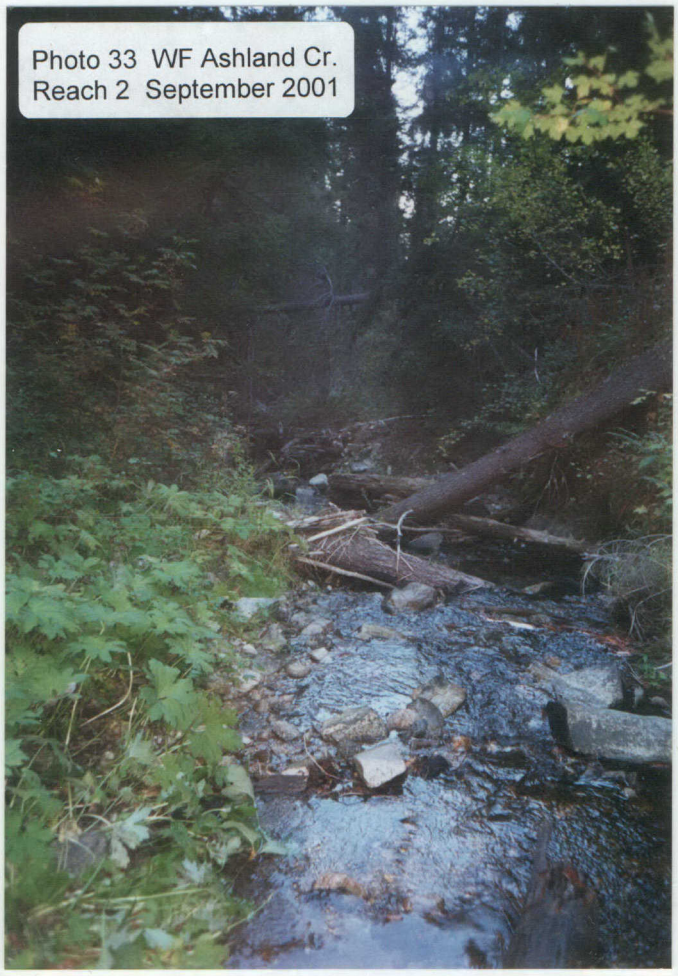
Photo 33 WF Ashland Cr.
Reach 2 September 2001