Beeks Canyon Creek (Klickitat River Subbasin, Washington) Rapid Aquatic Habitat Assessment Stream Report

Confederated Tribes and Bands of the Yakama Nation
Yakama Nation Fisheries Program, Yakima/Klickitat Fisheries Project
Klickitat Subbasin Research, Monitoring, and Evaluation Project
Klickitat Watershed Enhancement Project
Klickitat Field Office
1575 Horseshoe Bend Rd
Klickitat, WA 98628

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Prepared by:
Nicolas Romero

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Prepared for:
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Bonneville Power Administration
P.O. Box 3621
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BPA Project Number: 1995-063-35

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Yakima Klickitat Fisheries Project-Klickitat Monitoring and Evaluation Project (KM&E) and Klickitat Watershed Enhancement Project (KWEP)-Rapid Aquatic Habitat Assessment Stream Report

Stream: Beeks Canyon Creek **LLID:** 1211053458989

Basin: Klickitat River **HUC Number:** 17070106

Ecoregion: Columbia River Gorge **Watershed Area:** 11.9 km^{-2}

Survey Dates: Reach 1 – May 1 & 2, 2012

Survey Crew: Reach 1-Nicolas Romero and David Lindley

Report Prepared By: Nicolas Romero

Introduction:

The Rapid Aquatic Habitat Assessment Protocol (RAHAP) is designed to provide quantitative information on stream habitat and fish distribution at the watershed scale. Data collected from the stream inventory surveys are used to provide baseline information for fisheries biologists, hydrologists, and foresters to guide natural resources management and land use practices on Yakama Nation Southern Ceded lands. This protocol establishes hierarchical spatial context and fish habitat relationships at habitat unit, reach, and basin scales. The spatially continuous method is useful when the scale(s) necessary to detect pattern are unknown. This level of pattern detection is useful to managers for refining study designs; locating, identifying, and prioritizing projects; and establishing reference or control sites for project design. Existing stream inventory protocols were reviewed during the development of the RAHAP methodology. Upon review, two widely used Pacific Northwest stream classification systems, Washington Timber, Fish, and Wildlife (TFW) Monitoring Program and the Aquatic Inventory Project (AIP), were incorporated into the RAHAP methodology (Moore et al. 2010, Pleus et al. 1999, and Schuett-Hames et al. 1999).

RAHAP quantifies both the abiotic and biotic state of aquatic habitat. The abiotic components are: geomorphic reach segments, habitat units, bedrock features, wood pieces, wood jams, and streamflow. These physical parameters are coupled with a separate one-pass fish survey that ties fish abundance to habitat. The geomorphic reach and habitat unit level delineation methodology was derived primarily from AIP (Moore et al. 2010). The wood piece and wood jam inventories follow protocols established by Schuett-Hames et al. 1999. Yakama Nation Fisheries personnel identified bedrock features as habitat of interest and subsequently developed survey methodologies. Refer to Romero and Lindley 2012 for the complete RAHAP protocol.

Reach/Survey Level Descriptions:

Reach 1 began at the confluence with the Klickitat River (rkm 41.2) and extended upstream approximately 1.1 kilometers. The habitat survey ended at a waterfall barrier that delineated the

upstream extent to salmonid anadromy. The reach was characterized by a narrow v-shaped valley. The stream channel was generally constrained by alternating terrace and hillslope. Two side channels were encountered on the survey. The stream gradient was 7.9%.

The total wetted area quantified for the primary channel was 3,422.8 m^{-2}. The average wetted and bankfull widths for the primary channel were 3.3 and 5.2 meters, respectively. Cobble was the dominant reach substrate comprising 35% of the wetted area. Boulder, gravel, and sand comprised an additional 31%, 25% and 7% of the quantified substrate, respectively. Cascades were the most common primary channel geomorphic unit delineated comprising 46% of the reach wetted area and 48% of the reach length. A total of 35 pools were quantified in the primary channel. The average primary channel residual pool depth was 0.34 meters. The number of primary channel pools/kilometer was estimated at 30.5. There were no pools with a depth ≥1 meter. Pool frequency in the primary channel was measured at 6.3 (bankfull widths/pool).

Oregon White Oak and Ponderosa Pine were the most common upslope and valley bottom trees. Oregon White Oak and Big Leaf Maple were the dominant and sub-dominant riparian vegetation in the primary channel. The canopy covered approximately 22.7% of the primary channel wetted area. A total of 15 primary channel wood pieces were counted resulting in a frequency of 1.3 pieces/100 meters and a volume of 0.6 m^{-3}/100 meters. Of the 15 large wood pieces, 8, 9, 9, and 10 were located completely or partially in the wetted channel, within bankfull but outside of the wetted channel, above the bankfull channel, and flood plain/terrace, respectively. Deciduous trees accounted for 9 of 15 pieces and 58% of the wood volume. Logs accounted for all 15 of the quantified wood pieces. Of the pieces exhibiting a level of stability, buried and pinned stability forms were observed in 47% and 79% of the pieces, respectively. Approximately half of pieces were unstable. Large wood pieces were most commonly oriented perpendicular (53%) to the stream channel followed by downstream (40%), and parallel (7%). There were no large wood jams observed.

A total of two distinct bedrock features were quantified. Both bedrock features were located along the right bank. The bedrock features were characterized as slopes that projected into the wetted channel but did not control vertical surface flow. The cumulative measured length was 90 meters.

In addition to the primary channel, two side channels were encountered on the survey. The total wetted area quantified for the secondary channels was 62.4 m^{-2}. The two side channels consisted of 5 habitat units consisting of a combined length of 48.7 meters and an average wetted width of 1.3 meters. Oregon White Oak and Big Leaf Maple were the dominant and sub-dominant riparian vegetation in the secondary channel. The canopy covered approximately 75% of the secondary channel wetted area. There were no pools, large wood pieces, or distinct bedrock features quantified in the secondary channel.

References:

Moore, K. K. Jones, J. Dambacher, and C. Stein. 2010. Aquatic Inventories Project: Methods for Stream Habitat Surveys. Oregon Department of Fish and Wildlife, Aquatic Inventories Project, Conservation and Recovery Program, Corvallis, OR 97333.

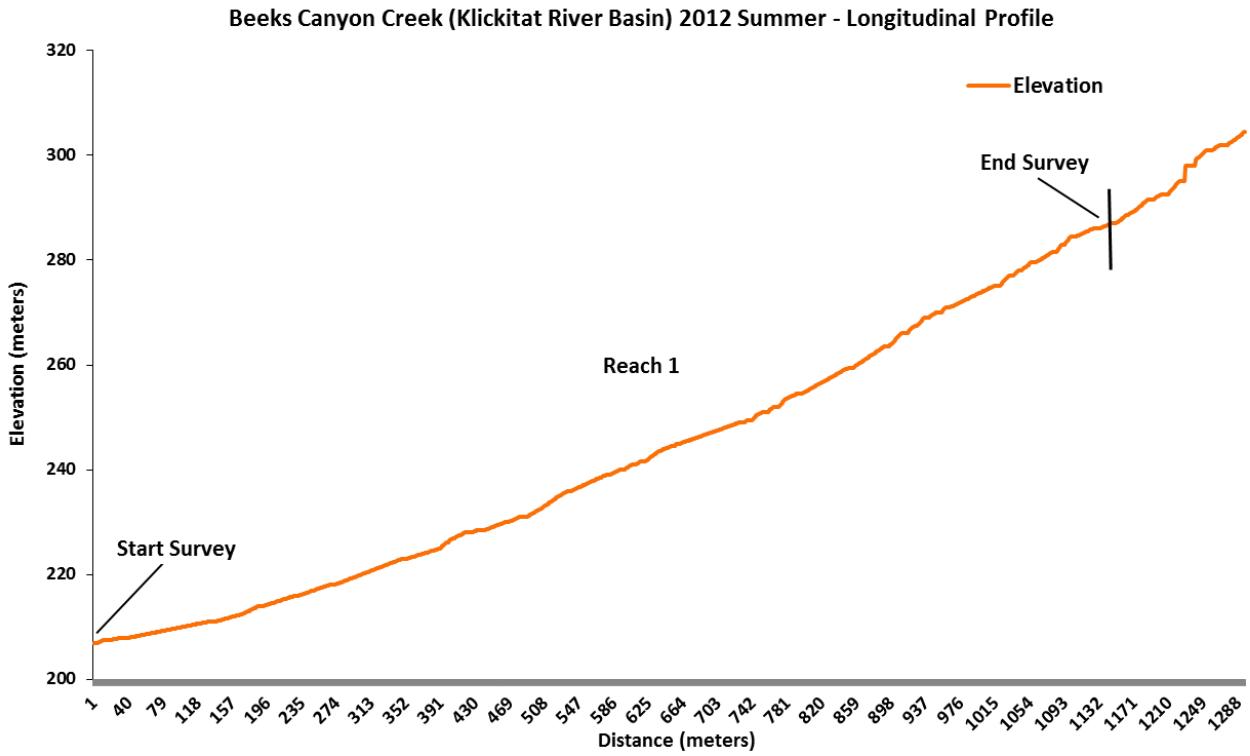
Plues, A.E., D. Schuette Hames, and L. Bullchild. 1999. TFW Monitoring Program methods manual for the habitat unit survey. Prepared for the Washington State Dept. of Natural Resources under the Timber, Fish, and Wildlife Agreement. TFW-AM9-00-003. DNR #105.

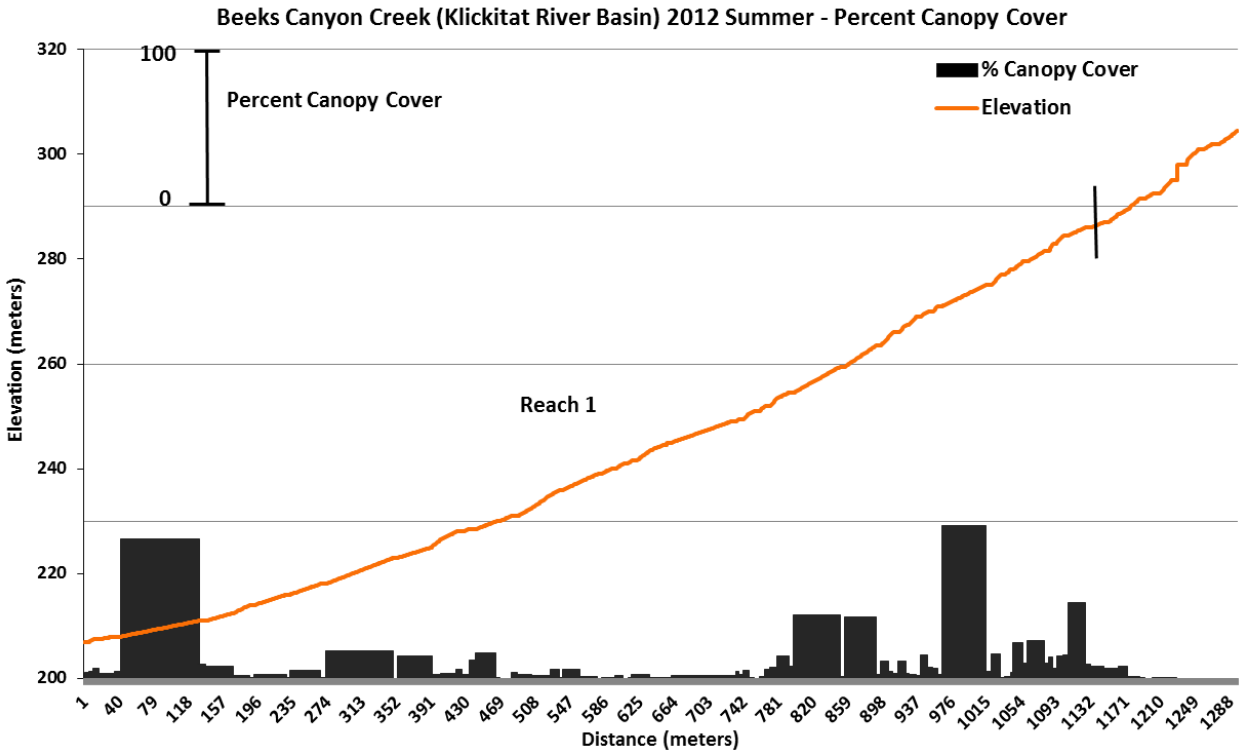
Romero, N., and Lindley, D. 2012. Rapid Aquatic Habitat Assessment Protocol: Methods for Stream Inventory Surveys. Yakima/Klickitat Fisheries Project (YKFP). Yakama Nation, Fisheries Program, Klickitat Washington.

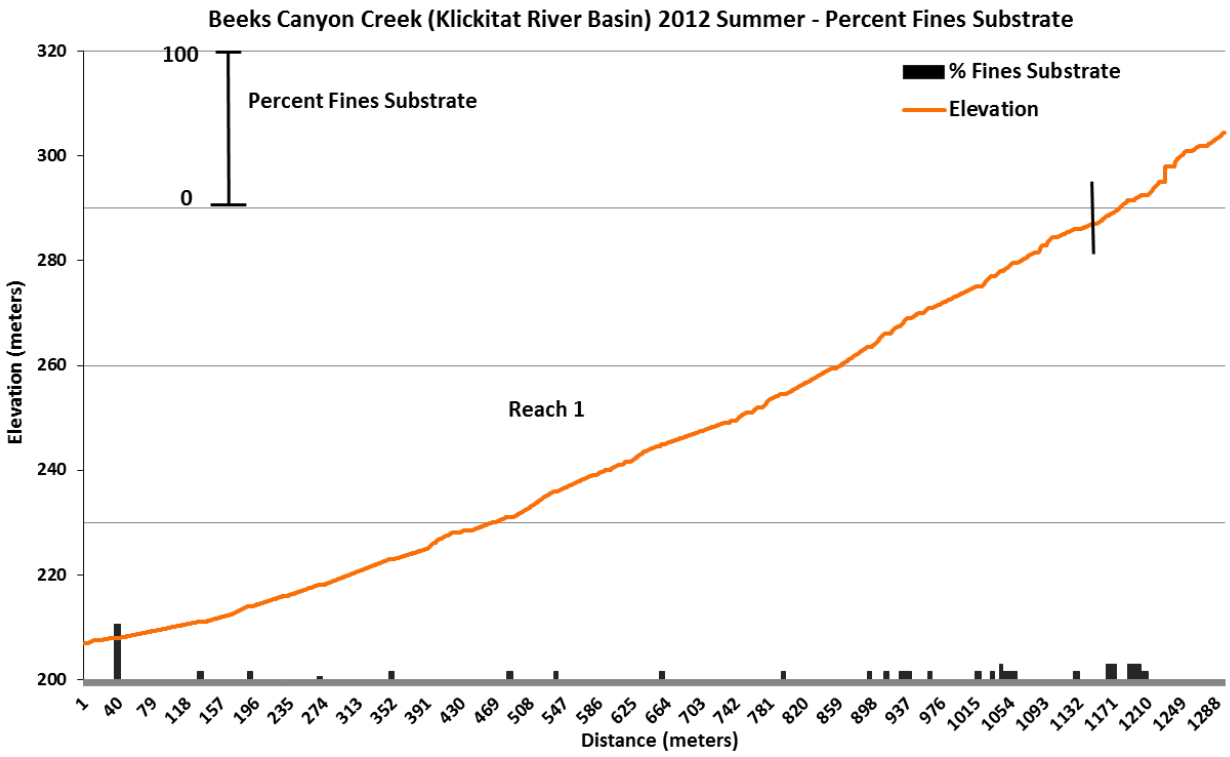
Schuett-Hames, D., A.E. Pleuse, J. Ward, M. Fox, and J. Light. 1999. TFW Monitoring Program method manual for the large woody debris survey. Prepared for the Washington Stare Dept. of Natural Resources under the Timber, Fish, and Wildlife Agreement. TFW-AM9-00-004. DNR #106.

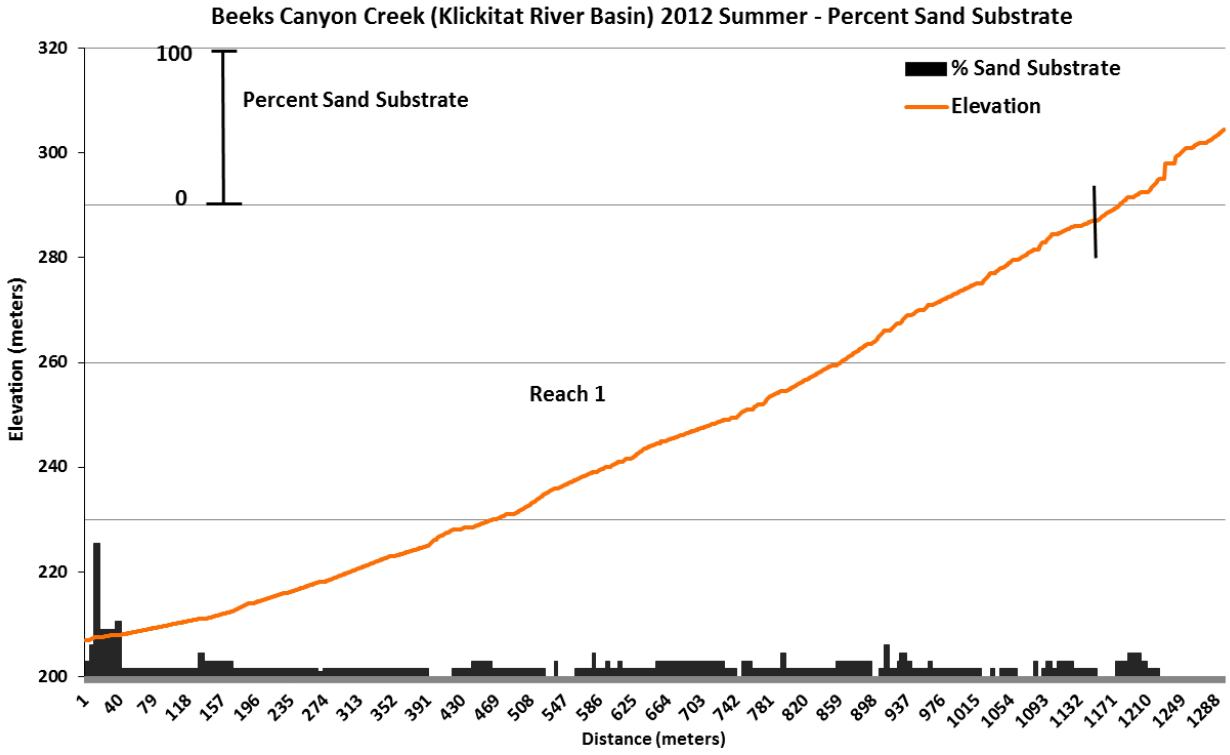
Schuett-Hames, D., A.E. Pleuse, and D. Smith. 1999. TFW Monitoring Program method manual for the salmonid spawning habitat availability survey. Prepared for the Washington Stare Dept. of Natural Resources under the Timber, Fish, and Wildlife Agreement. TFW-AM9-00-007. DNR #109. November.

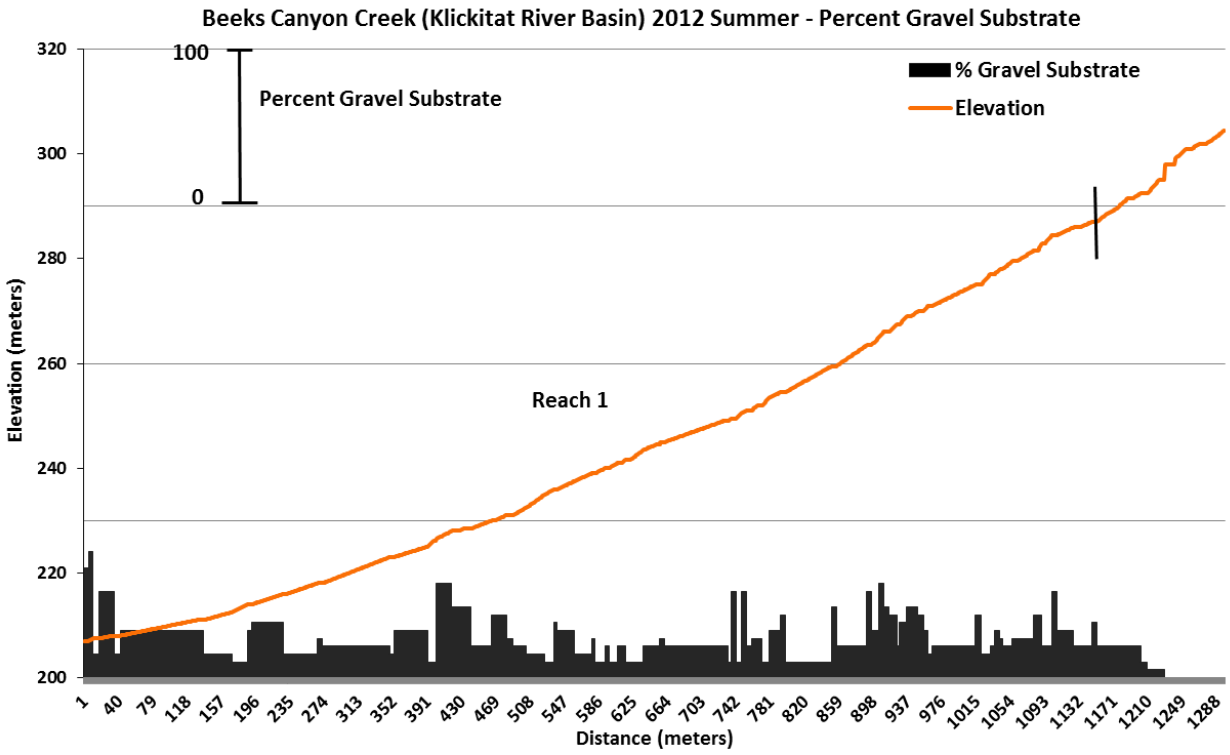
Summary Figures:

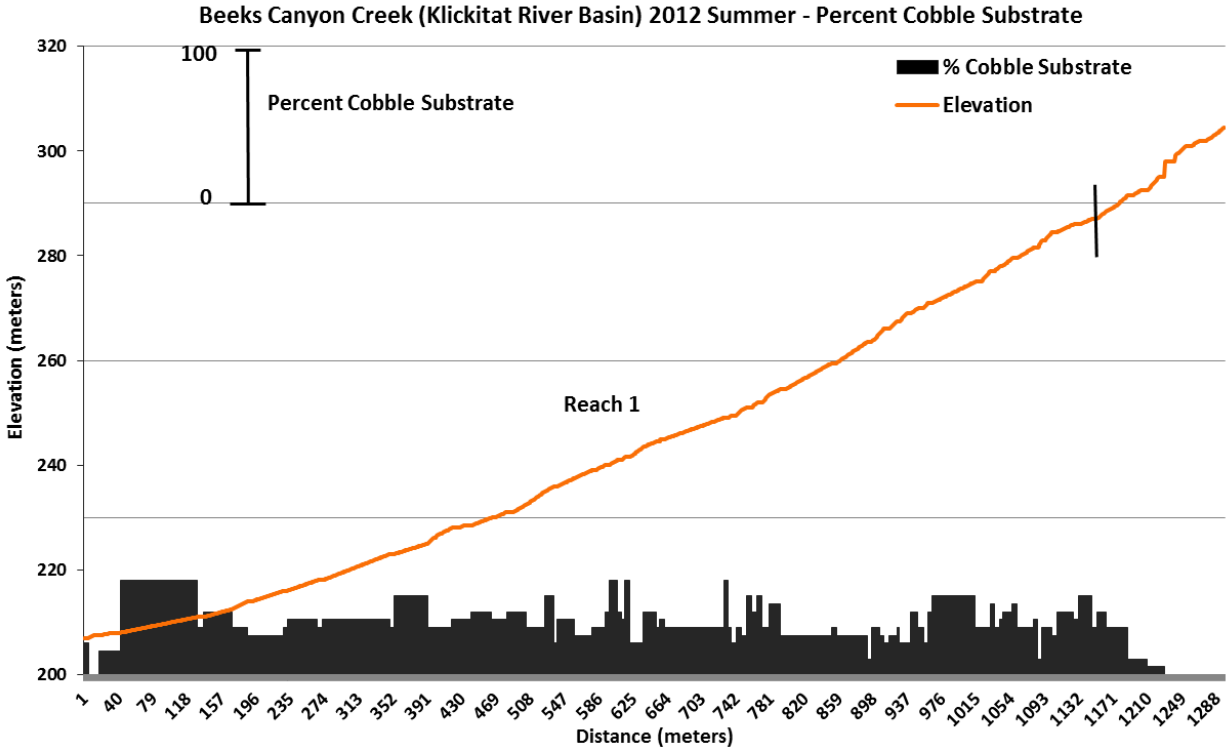


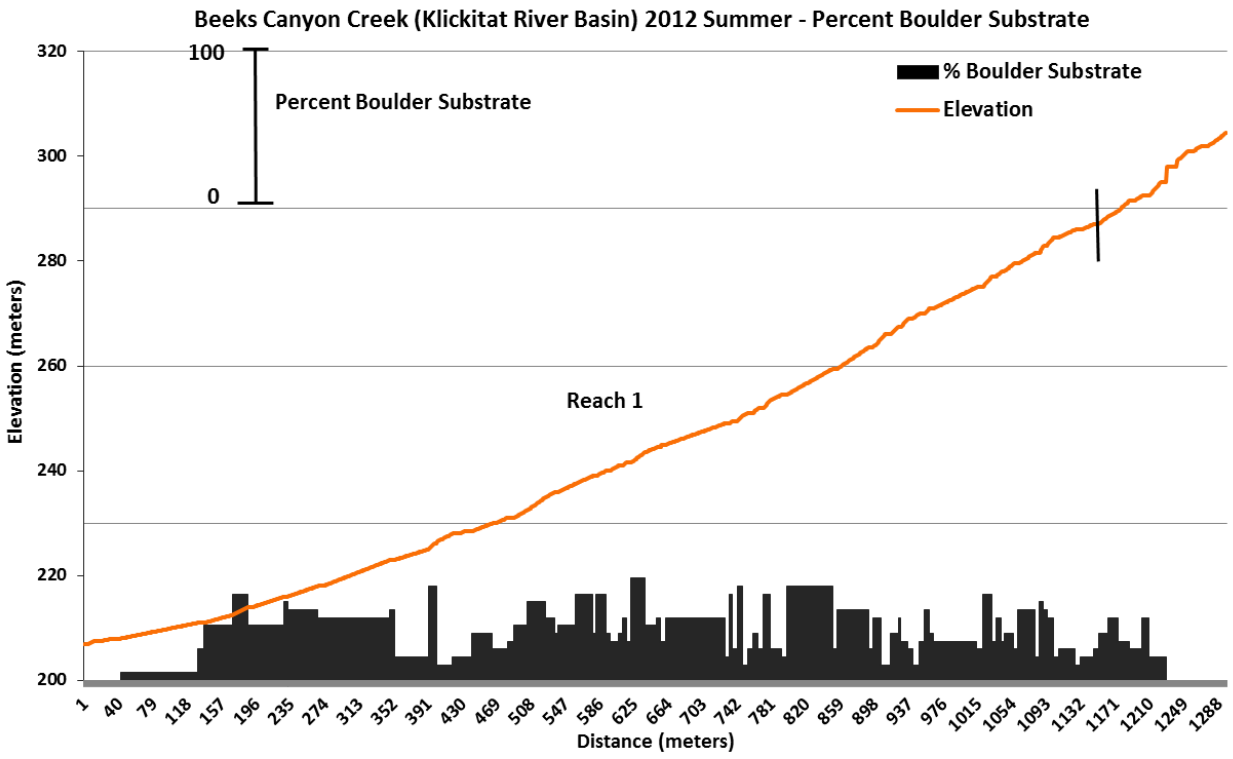


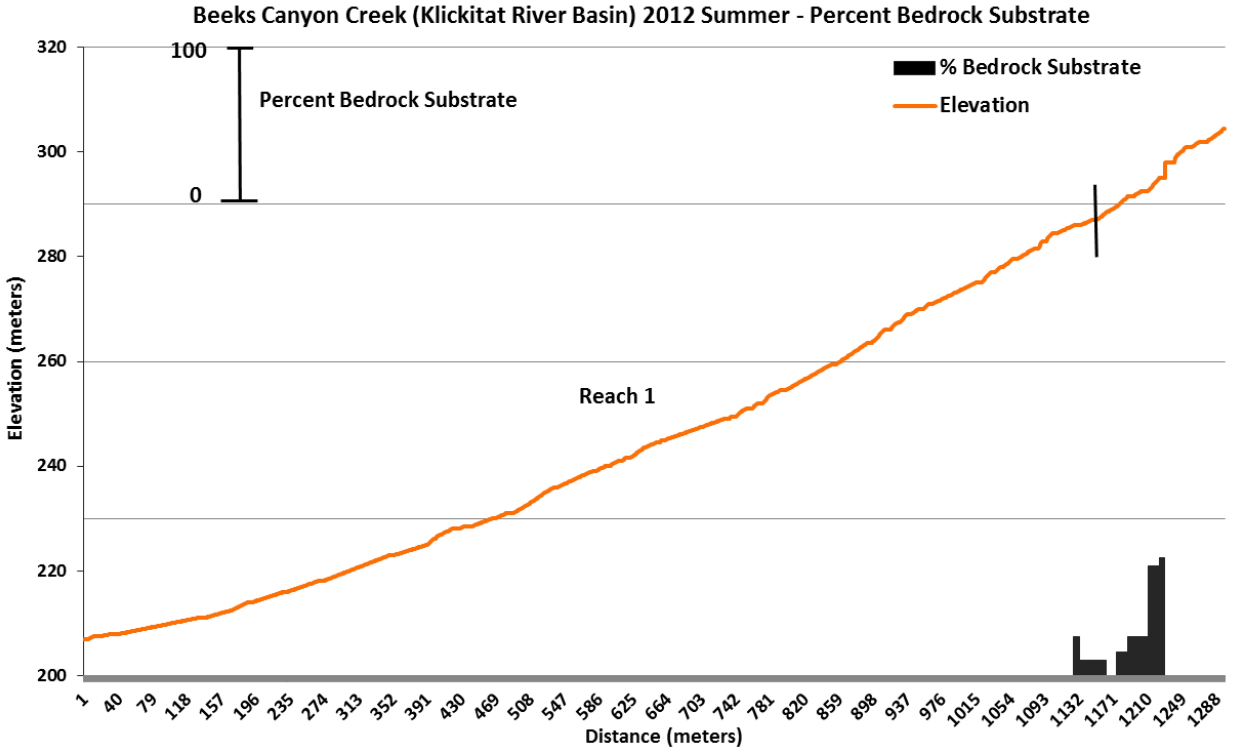

Beeks Canyon Creek (Klickitat River Basin) 2012 Summer - Percent Fines Substrate
100
0
Percent Fines Substrate
% Fines Substrate
Elevation
Reach 1
Elevation (meters)
320
300
280
260
240
220
200
1 40 79 118 157 196 235 274 313 352 391 430 469 508 547 586 625 664 703 742 781 820 859 898 937 976 1015 1054 1093 1132 1171 1210 1249 1288
Distance (meters)

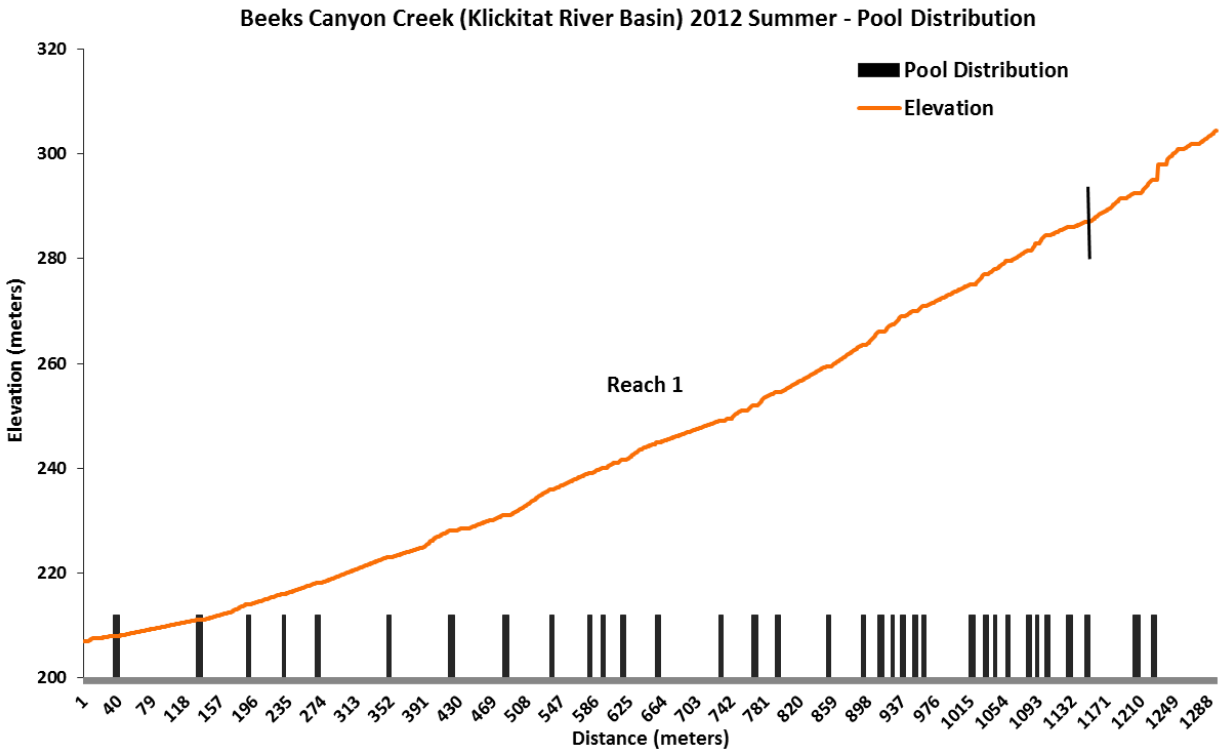

Beeks Canyon Creek (Klickitat River Basin) 2012 Summer - Percent Sand Substrate
100
0
Percent Sand Substrate
% Sand Substrate
Elevation
Reach 1
Elevation (meters)
320
300
280
260
240
220
200
1 40 79 118 157 196 235 274 313 352 391 430 469 508 547 586 625 664 703 742 781 820 859 898 937 976 1015 1054 1093 1132 1171 1210 1249 1288
Distance (meters)

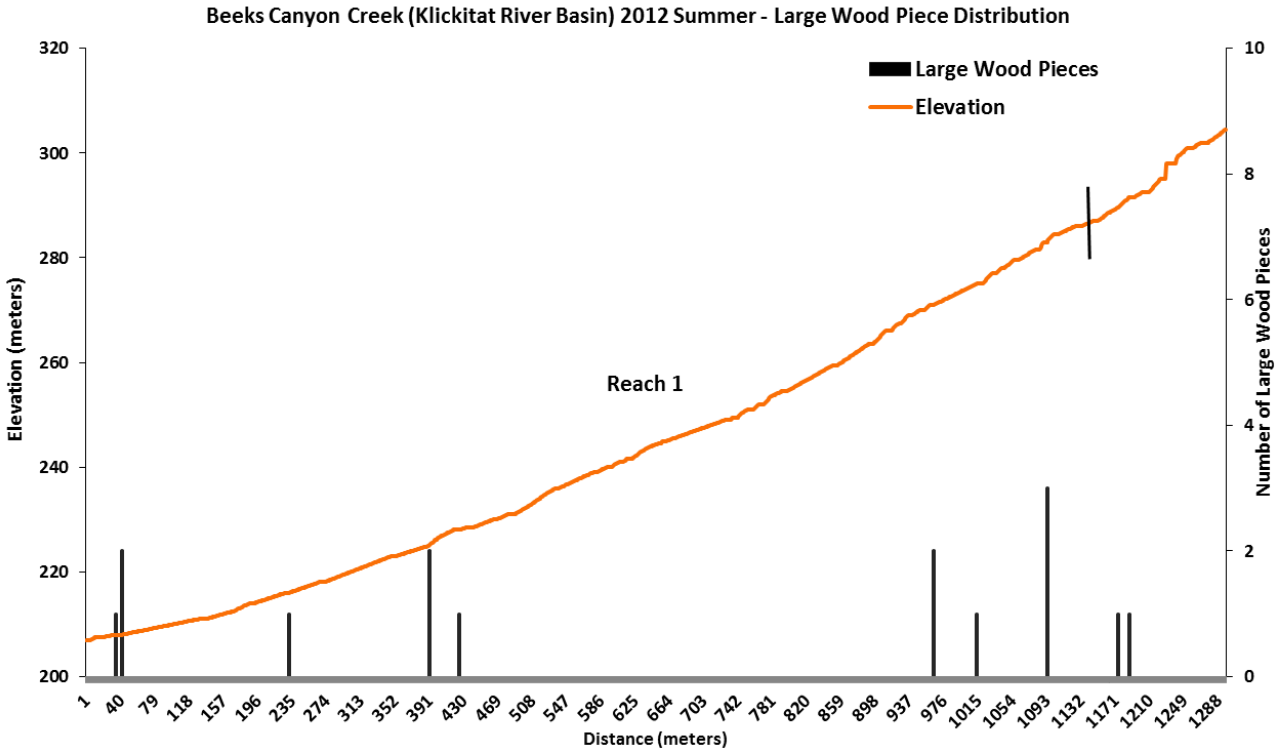

Beeks Canyon Creek (Klickitat River Basin) 2012 Summer - Percent Gravel Substrate
100
0
Percent Gravel Substrate
% Gravel Substrate
Elevation
Reach 1
Elevation (meters)
320
300
280
260
240
220
200
1 40 79 118 157 196 235 274 313 352 391 430 469 508 547 586 625 664 703 742 781 820 859 898 937 976 1015 1054 1093 1132 1171 1210 1249 1288
Distance (meters)

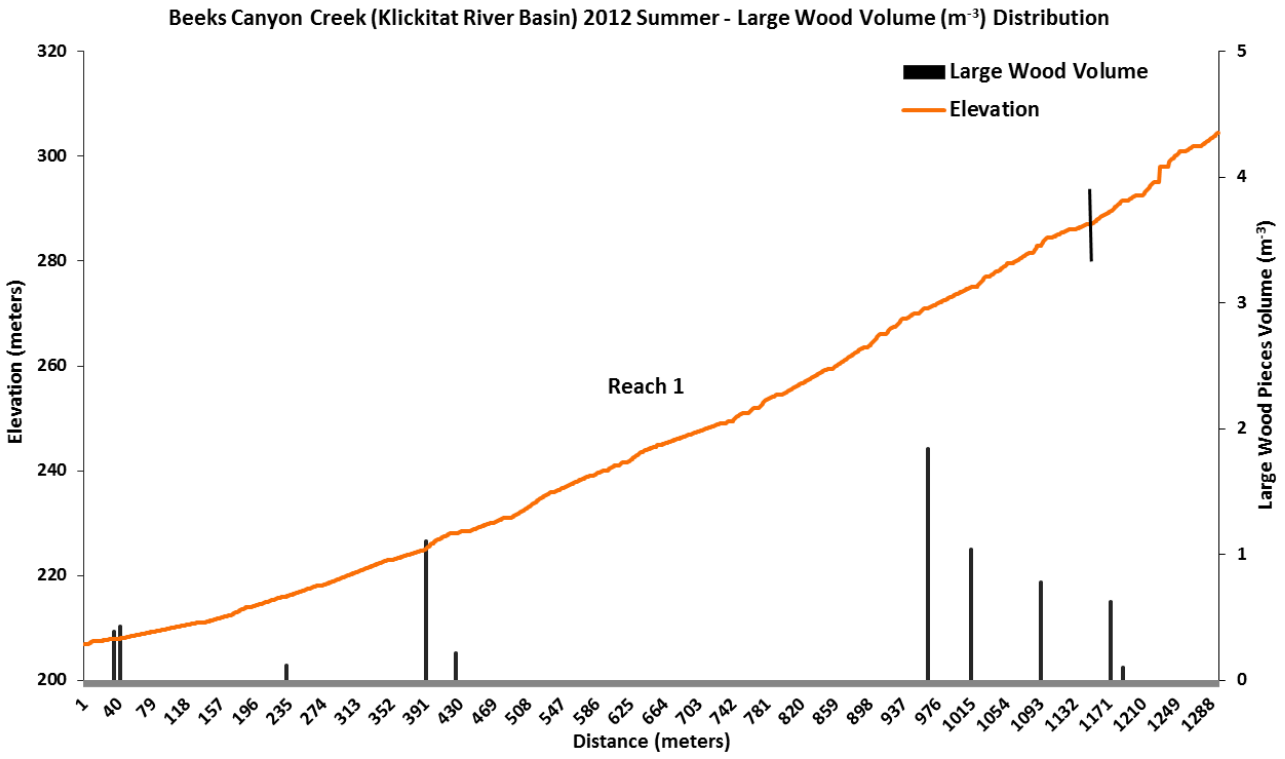

Beeks Canyon Creek (Klickitat River Basin) 2012 Summer - Percent Cobble Substrate
100
0
Percent Cobble Substrate
% Cobble Substrate
Elevation
Reach 1
Elevation (meters)
320
300
280
260
240
220
200
1 40 79 118 157 196 235 274 313 352 391 430 469 508 547 586 625 664 703 742 781 820 859 898 937 976 1015 1054 1093 1132 1171 1210 1249 1288
Distance (meters)

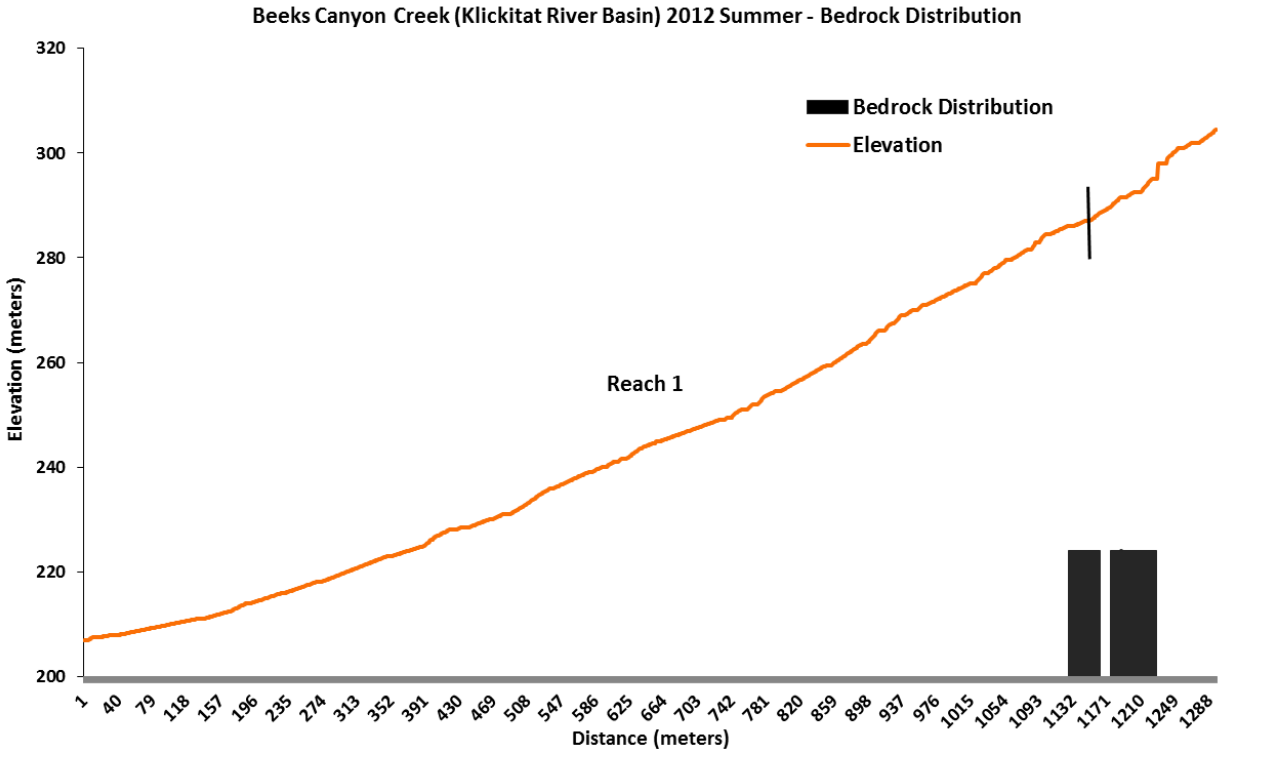

Beeks Canyon Creek (Klickitat River Basin) 2012 Summer - Percent Boulder Substrate
100
0
Percent Boulder Substrate
% Boulder Substrate
Elevation
Reach 1
Elevation (meters)
320
300
280
260
240
220
200
1 40 79 118 157 196 235 274 313 352 391 430 469 508 547 586 625 664 703 742 781 820 859 898 937 976 1015 1054 1093 1132 1171 1210 1249 1288
Distance (meters)


Beeks Canyon Creek (Klickitat River Basin) 2012 Summer - Percent Bedrock Substrate
100
0
Percent Bedrock Substrate
% Bedrock Substrate
Elevation
Reach 1
Elevation (meters)
320
300
280
260
240
220
200
1 40 79 118 157 196 235 274 313 352 391 430 469 508 547 586 625 664 703 742 781 820 859 898 937 976 1015 1054 1093 1132 1171 1210 1249 1288
Distance (meters)


Beeks Canyon Creek (Klickitat River Basin) 2012 Summer - Pool Distribution
Pool Distribution
Elevation
Reach 1
Elevation (meters)
Distance (meters)
320
300
280
260
240
220
200
1 40 79 118 157 196 235 274 313 352 391 430 469 508 547 586 625 664 703 742 781 820 859 898 937 976 1015 1054 1093 1132 1171 1210 1249 1288


Beeks Canyon Creek (Klickitat River Basin) 2012 Summer - Large Wood Piece Distribution
Large Wood Pieces
Elevation
Reach 1
Elevation (meters)
Number of Large Wood Pieces
Distance (meters)
320
300
280
260
240
220
200
10
8
6
4
2
0
1 40 79 118 157 196 235 274 313 352 391 430 469 508 547 586 625 664 703 742 781 820 859 898 937 976 1015 1054 1093 1132 1171 1210 1249 1288


Beeks Canyon Creek (Klickitat River Basin) 2012 Summer - Large Wood Volume (m-3) Distribution
Large Wood Volume
Elevation
Reach 1
Elevation (meters)
Large Wood Pieces Volume (m-3)
Distance (meters)


Beeks Canyon Creek (Klickitat River Basin) 2012 Summer - Bedrock Distribution
Bedrock Distribution
Elevation
Reach 1
Elevation (meters)
Distance (meters)

Summary Tables:

Klickitat Monitoring and Evaluation Project and Klickitat Water Enhancement Project
Habitat Inventory

Survey Stream: Beeks Canyon Creek
Reach: 1
Report Date: 10/06/2020
Survey Date: 05/01-05/02/2012
Start Location: 45.89922004, -121.10874454
End Location: 45.90320279, -121.12040729
Start Elevation: 207.0 m
End Elevation: 298.0 m
Reach Forming Agent: Tributary Junction
Reach Ending Agent: Waterfall Barrier

CHANNEL SUMMARY

Channel Characteristics (m)

Type	No. Units	Length (m)	Area (m^{-2})	Gradient (%)	Dry Units
Primary	97	1,145.8	3,422.8	7.9	0
Secondary	5	48.7	62.4	-	0

Channel Dimensions (m)

Type	Unit Avg. Length	Avg. Wetted Width	Avg. Bankfull Width	LB Undercut Bank Length	RB Undercut Bank Length
Primary	11.8	3.3	5.2	0.0	0.0
Secondary	9.7	1.3	-	0.0	0.0

Substrate Summary

	Substrate Percent Wetted Area						Substrate Wetted Area					
Hab Type	Fin	Snd	Grv	Cbl	Bld	Bdrk	Fin	Snd	Grv	Cbl	Bld	Bdrk
Pools	3.9	8.3	28.6	30.9	23.8	4.4	17.0	36.2	124.7	134.6	103.8	19.2
Glides	3.6	17.6	31.5	28.1	15.1	4.1	3.6	17.8	32.0	28.6	15.3	4.2
Runs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Riffles	0.4	5.8	29.9	40.7	21.8	0.5	5.2	89.6	395.7	539.0	288.4	6.5
Rapids	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cascades	0.4	5.8	18.6	31.4	42.2	1.7	5.7	93.7	302.5	509.1	684.8	28.0
Steps	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Backwater	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Alcoves	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Iso Pools	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Obscured	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dry	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Culverts	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	0.9	6.8	24.5	34.8	31.3	1.7	31.6	237.3	854.9	1,211.2	1,092.3	58.0

Klickitat Monitoring and Evaluation Project and Klickitat Water Enhancement Project
Habitat Inventory

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Reach: 1
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Survey Date: 05/01-05/02/2012
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End Location: 45.90320279, -121.12040729
Start Elevation: 207.0 m
End Elevation: 298.0 m
Reach Forming Agent: Tributary Junction
Reach Ending Agent: Waterfall Barrier

HABITAT SUMMARY

Geomorphic Habitat Type Summary

	Primary Channel (PC)					Secondary Channel (SC)				
Habitat Type	No. Units	Length (m)	Avg. Width (m)	Wetted Area (m^{-2})	% Wetted Area (m^{-2})	No. Units	Length (m)	Avg. Width (m)	Wetted Area (m^{-2})	% Wetted Area (m^{-2})
Pools	35	155.1	2.8	434.4	12.7	0	0.0	0.0	0.0	0.0
Glides	8	39.2	2.5	96.7	2.8	1	5.4	0.9	4.9	7.9
Runs	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Riffles	24	405.8	3.2	1,324.5	38.7	0	0.0	0.0	0.0	0.0
Rapids	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Cascades	29	545.7	2.9	1,566.1	45.8	4	43.3	1.3	57.5	92.1
Steps	2	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Backwater	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Alcoves	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Isolated Pools	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Obscured	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Dry Channel	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Culvert	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Total	**98**	**1,145.8**	**11.4**	**3,422.7**	**100**	**5**	**48.7**	**2.2**	**62.4**	**100**

Pool Summary

Variable	Total Pool #	PC Pool #	SC Pool #	# Pools/KM	# PC Pools/KM	# SC Pools/KM
All Pools	35	35	0	29.3	30.5	0
Pools ≥1m	0	0	0	0.0	0.0	0.0
Pool frequency (channel widths/pool)	6.6	6.3	0			
Residual pool depth (avg)	0.34	0.34	0			

Klickitat Monitoring and Evaluation Project and Klickitat Water Enhancement Project
Habitat Inventory

Survey Stream: Beeks Canyon Creek
Reach: 1
Report Date: 10/06/2020
Survey Date: 05/01-05/02/2012
Start Location: 45.89922004, -121.10874454
End Location: 45.90320279, -121.12040729
Start Elevation: 207.0 m
End Elevation: 297.0 m
Reach Forming Agent: Tributary Junction
Reach Ending Agent: Waterfall Barrier

STREAM CHANNEL AND HABITAT SUMMARY

Channel Summary

Channel Type	No. Units	Total Length (m)	Wetted Area (m^{-2})	Avg Width (m)	Avg Bankfull Width (m)	% Gradient	% Fin	% Snd	% Grv	% Cbl	% Bldr	% Bdrk
PC	97	1,145.8	3,422.8	3.3	5.2	7.9	0.8	6.7	24.4	34.9	31.4	1.7
SC	5	48.7	62.4	1.3	-	-	7.8	11.0	30.2	25.6	25.4	0.0

Geomorphic Habitat Type Summary

	Primary Channel (PC)					Secondary Channel (SC)				
Habitat Type	No. Units	Length (m)	Avg. Width (m)	Wetted Area (m^2)	% Wetted Area (m^2)	No. Units	Length (m)	Avg. Width (m)	Wetted Area (m^2)	% Wetted Area (m^2)
Pools	35	155.1	2.8	435.4	12.7	0	0.0	0.0	0.0	0.0
Glides	8	39.2	2.5	96.7	2.8	1	5.4	0.9	4.9	7.9
Runs	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Riffles	24	405.8	3.2	1,324.5	38.7	0	0.0	0.0	0.0	0.0
Rapids	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Cascades	29	545.7	2.9	1,566.1	45.8	4	43.3	1.3	57.5	92.1
Steps	2	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Backwater	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Alcoves	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Isolated Pools	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Obscured	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Dry Channel	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Culvert	0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0
Total	**97**	**1,145.8**	**2.9**	**3,422.7**	**100**	**5**	**48.7**	**1.3**	**62.4**	**100**

Pool Summary

Variable	Total Pool #	PC Pool #	SC Pool #	# Pools/KM	# PC Pools/KM	# SC Pools/KM
All Pools	35	35	0	29.3	30.5	0.0
Pools ≥1m	0	0	0	0.0	0.0	0.0
Pool frequency (channel widths/pool)	6.6	6.3	0.0			
Residual pool depth (avg)	0.34	0.34	-			

Klickitat Monitoring and Evaluation Project and Klickitat Water Enhancement Project Habitat Inventory

Survey Stream: Beeks Canyon Creek
Reach: 1
Report Date: 10/06/2020
Survey Date: 05/01-05/02/2012
Start Location: 45.89922004, -121.10874454
End Location: 45.90320279, -121.12040729
Start Elevation: 207.0 m
End Elevation: 297.0 m
Reach Forming Agent: Tributary Junction
Reach Ending Agent: Waterfall Barrier

RIPARIAN AND LARGE WOOD PIECES SUMMARY

Riparian Characteristics

Type	Total Canopy Cover Area (m^2)	Total % Canopy Cover	Unit Avg. % Canopy Cover	Dom Canopy Species	Sub-dom Canopy Species
Primary	775.3	22.7	27.0	Oregon White Oak	Big Leaf Maple
Secondary	46.7	74.8	68.0	Oregon White Oak	Big Leaf Maple

Large Wood Piece Inventory Summary

Channel Type	Primary Channel	#Pieces	Volume (m^{-3})	Pieces/100 m	Volume (m^{-3})/100 m
Primary	All Pieces[1]	15	6.7	1.3	0.6
	Key Pieces[2]	0	0.0	0.0	0.0
	Logs	15	6.7	1.3	0.6
	Rootwads	0	0..0	0.0	0.0
	Conifer	6	2.8	0.5	0.2
	Deciduous	9	3.9	0.8	0.3
Secondary	All Pieces[1]	0	0.0	0.0	0.0
	Key Pieces[2]	0	0.0	0.0	0.0
	Logs	0	0.0	0.0	0.0
	Rootwads	0	0.0	0.0	0.0
	Conifer	0	0.0	0.0	0.0
	Deciduous	0	0.0	0.0	0.0

[1]Large Wood Piece (≥2 m x ≥0.10 m dia.); [2] Minimum Qualifying Key Piece (≥2.5 m^{-3})

Large Wood Piece Zone Location Summary

Channel Type	Total Pieces	# Zone 1 (%)	# Zone 2 (%)	# Zone 3 (%)	# Zone 4 (%)
Primary	15	8 (53.3)	9 (60.0)	9 (60.0)	10 (66.7)
Secondary	0	-	-	-	-

*Pieces may span multiple zones
*Zone 1 (wetted channel); Zone 2 (within bankfull); Zone 3 (above bankfull); Zone 4 (flood plain/terrace/hillslope)

Large Wood Piece Stability and Pool Forming Summary

Channel Type	Total Pieces	# Rooted (%)	# Buried (%)	# Pinned (%)	# Unstable (%)	# Pool Forming (%)
Primary	15	0 (0.0)	7 (46.7)	1 (6.7)	7 (46.7)	0 (0.0)
Secondary	0	-	-	-	-	-

Large Wood Piece Orientation Summary

Channel Type	Total Pieces	# Parallel (%)	# Perpendicular (%)	# Downstream (%)	# Upstream (%)
Primary	15	1 (6.7)	8 (53.3)	6 (40.0)	0 (0.0)
Secondary	0	-	-	-	-

Klickitat Monitoring and Evaluation Project and Klickitat Water Enhancement Project Habitat Inventory

Survey Stream: Beeks Canyon Creek
Reach: 1
Report Date: 10/06/2020
Survey Date: 05/01-05/02/2012
Start Location: 45.89922004, -121.10874454
End Location: 45.90320279, -121.12040729
Start Elevation: 207.0 m
End Elevation: 297.0 m
Reach Forming Agent: Tributary Junction
Reach Ending Agent: Waterfall Barrier

LARGE WOOD JAM SUMMARY

Large Wood Jam Inventory Summary

Channel Type	Total Jams	# Pieces	Avg # Pieces	Jam Frequency[1]	# Jams/KM
Primary	0	-	-	-	-
Secondary	0	-	-	-	-

[1]Jam frequency (total bankfull channel widths/jam)

Large Wood Jam Composition Summary

			Large Wood Piece Size					
Channel Type	Total Jams	Total Pieces	#Rootwad (Dia≥20cm)	#Log (Dia≥10>20cm)	#Log (Dia20<50cm)	#Log (Dia≥50cm)	#Rtwd Key Pieces	#Log Key Pieces
Primary	0	-	-	-	-	-	-	-
Secondary	0	-	-	-	-	-	-	-

Large Wood Piece Zone Location and Pool Forming Summary

Channel Type	Total Jams	Wetted Channel Area (%)	Bankfull Channel Area (%)	Flood plain/Terrace Area (%)	Pool Forming (%)
Primary	0	-	-	-	-
Secondary	0	-	-	-	-

*A jam was assigned to wetted or bankfull zone if a LWD piece extended 0.1 meters into a zone

Klickitat Monitoring and Evaluation Project and Klickitat Water Enhancement Project
Habitat Inventory

Survey Stream: Beeks Canyon Creek
Reach: 1
Report Date: 10/06/2020
Survey Date: 05/01-05/02/2012
Start Location: 45.89922004, -121.10874454
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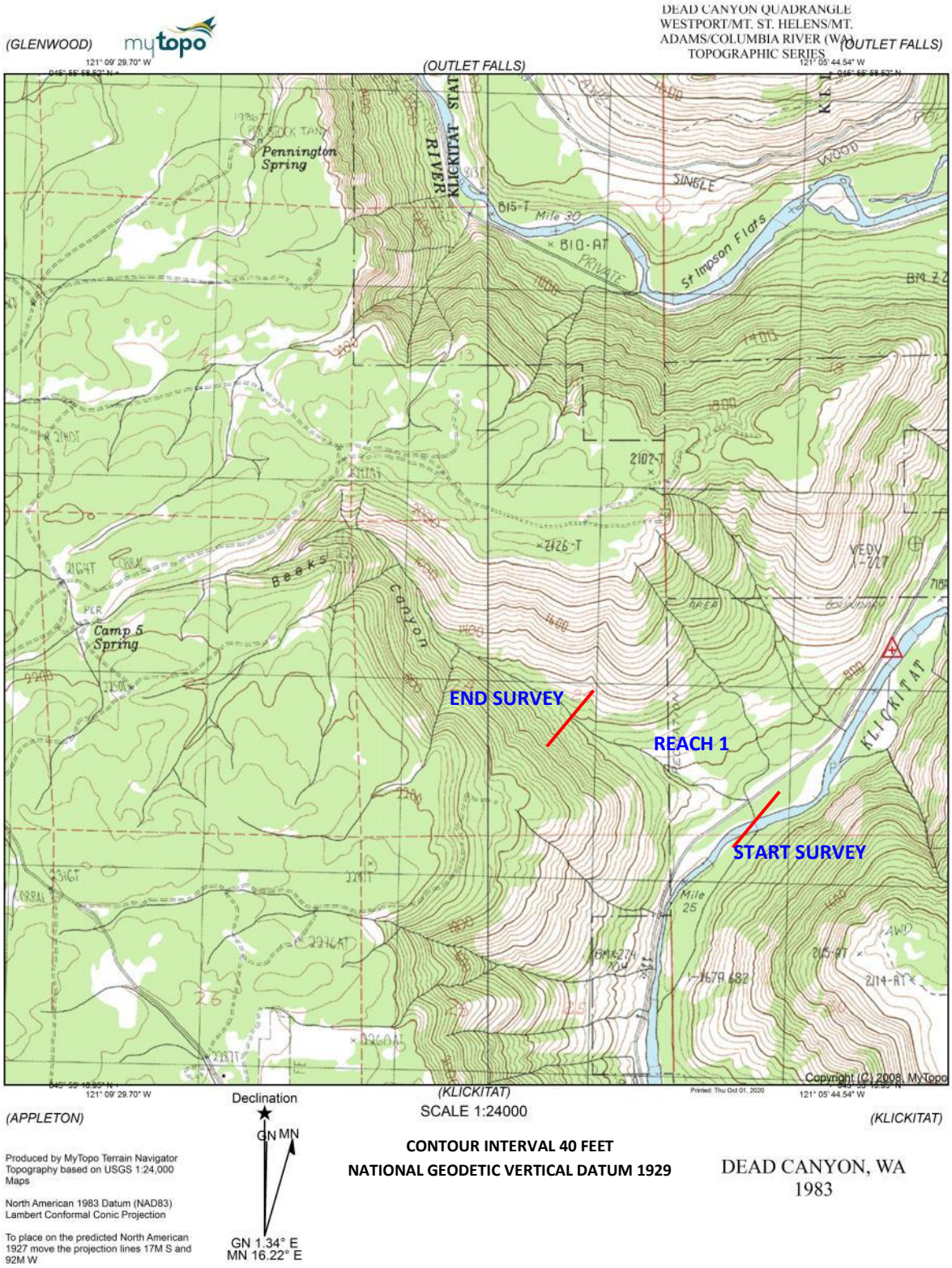
BEDROCK FEATURE SUMMARY

Bedrock Feature Inventory Summary

Channel Type	Total #	# Left Bank Loc	# Right Bank Loc	# Channel Bottom Loc	# Channel Span Loc	Total Length (m)
Primary	2	0	2	0	0	90.0
Secondary	0	-	-	-	-	-

Bedrock Feature Characteristic Summary

Channel Type	# Ledge	# Slope	# Cliff	# Projecting	# Non-projecting	# Surface Control
Primary	0	2	0	2	0	0
Secondary	-	-	-	-	-	-


DEAD CANYON QUADRANGLE
WESTPORT/MT. ST. HELENS/MT. ADAMS/COLUMBIA RIVER (WA)
TOPOGRAPHIC SERIES
(GLENWOOD)
(OUTLET FALLS)
(OUTLET FALLS)
Pennington Spring
KLICKITAT RIVER
Mile 30
Simpson Flats
PRIVATE
Beaks Canyon
Camp 5 Spring
END SURVEY
REACH 1
START SURVEY
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North American 1983 Datum (NAD83)
Lambert Conformal Conic Projection
To place on the predicted North American 1927 move the projection lines 17M S and 92M W
CONTOUR INTERVAL 40 FEET
NATIONAL GEODETIC VERTICAL DATUM 1929
DEAD CANYON, WA
1983

Beeks Canyon Creek (Klickitat River Basin) 2012 Summer Habitat Survey – Reach 1 Photos

Unit 3 – Upstream view of stream crossing Haul Rd.

Unit 8 – Upstream view of riffle

Unit 14 – Upstream view of boulder scour pool

Unit 18 – Upstream view of cascade and deciduous LWD

Unit 48 – Upstream view of glide

Unit 50 – Upstream view of riffle

Beeks Canyon Creek (Klickitat River Basin) 2012 Summer Habitat Survey – Reach 1 Photos

Unit 51.2 – Upstream view of side channel glide

Unit 67 – Upstream view of pool

Unit 84 – Upstream view of cascade

Unit 86 – Upstream view of riffle

Unit 97 – Survey ending pool and barrier

Unit 98 – Survey ending barrier