#	Category	EDT Habitat Attribute	Definition/Data need	Typical source	Habitat Where Applied	Preliminary data gap priority (high/med/low)
	Channel configuration	Channel width by month	Bankfull width, measured or modeled, baseflow wetted width measurements	Modeled widths, habitat survey data	all	not mentioned in ICF report
		Obstructions	Obstruction coordinates; passage ratings by life stage and month. Obstructions to fish passage by physical barriers (not dewatered channels or hindrances to migration caused by pollutants or lack of oxygen).	WDFW database; other sources	all	not mentioned in ICF report
		Withdrawals affecting wetted width	Channel extent affected by diversion, effect on BFW and wetted width, flow pattern	Available survey data & best professional judgement	all	
1	Channel Morphometry	Gradient	Reach-scale gradient	Modeled from DEM	Riverine	low
2	Confinement	Confinement: Artificial	% of reach length with hydromods (each bank). The extent that man-made structures within or adjacent to the stream channel constrict flow (as at bridges) or restrict flow access to the stream's floodplain (due to streamside roads, revetments, diking or levees) or the extent that the channel has been ditched or channelized, or has undergone significant streambed degradation due to channel incision/entrenchment (associated with the process called "headcutting").	Dike/levee/revetment surveys; aerial imagery	Riverine	high
3		Confinement: Natural	Reach-scale valley width to BFW ratio	Modeled from DEM	Riverine	low
4	Sediment	Total Suspended Solids	Sufficient turbidity data to calculate SEV index	STF water quality monitoring data, other data sources; best professional judgement rating	Riverine	high
5		Embeddedness	% embeddedness in large cobble riffle habitats. The extent that larger cobbles or gravel are surrounded by or covered by fine sediment, such as sands, silts, and clays. Embeddedness is determined by examining the extent (as an average %) that cobble and gravel particles on the substrate surface are buried by fine sediments. This attribute only applies to riffle and tailout habitat units and only where cobble or gravel substrates occur.	Ocular surveys	Riverine	high
6		Fine Sediment	% fines in spawning habitat (pool tails, glides, small cobble riffles)	Ocular surveys, pebble counts, McNeil core, NetMap model, best professional judgement	Riverine	high

7	Hydrologic	Flow: Inter-Annual High Flow Var.	The extent of relative change in average peak annual discharge compared to an undisturbed watershed of comparable size, geology, orientation, topography, and geography (or as would have existed in the pristine state).	Historical and current flow data. USGS Gage data; RMRS VIC model outputs	Riverine	medium
8		Flow: Inter-Annual Low Flow Var.	The extent of relative change in average daily flow during the normal low flow period compared to an undisturbed watershed of comparable size, geology, and flow regime (or as would have existed in the pristine state). Evidence of change in low flow can be empirically-based where sufficiently long data series exists, or known through flow regulation practices, or inferred from patterns corresponding to watershed development.	Historical and current flow data. USGS Gage data; RMRS VIC model outputs	Riverine	medium
9		Flow: Intra-Annual Variation	The average extent of intra-annual flow variation during the wet season -- a measure of a stream's "flashiness" during storm runoff. Flashiness is correlated with % total impervious area and road density, but is attenuated as drainage area increases.	Historical and current flow data. USGS Gage data; RMRS VIC model outputs	Riverine	medium
10		Water Withdrawals	Entrainment/impingement risk (# of screened/unscreened diversions present in reach), he number and relative size of water withdrawals in the stream reach.	Available survey data & assessments	Riverine	high
11	Temperature	Temperature: Daily Maximum	Daily temperature monitoring, extensive data record	STF temperature monitoring data, other data sources	Reservoir, Riverine	medium
12		Temperature: Daily Minimum	Daily temperature monitoring, extensive data record	STF temperature monitoring data, other data sources	Riverine	medium
13		Temperature: Spatial Variation	Reaches with hyporheic & groundwater influence. The extent of water temperature variation (cool or warm water depending upon season) within the reach as influenced by inputs of groundwater or tributary streams, or the presence of thermally stratified deep pools.	Mapped groundwater input zones; NetMap model; other data sources	Riverine	medium
14	Chemistry	Dissolved Oxygen	DO monitoring data by month; proxy indicators of depressed DO	Water quality monitoring data; best professional judgement	Reservoir, Riverine	high
15		Alkalinity	Alkalinity, or acid neutralizing capacity (ANC), measured as milliequivalents per liter or mg/l of either HCO3 or CaCO3	Water quality monitoring data (ECY, STF, other sources)	Riverine	medium
16		Nutrient Enrichment	Chlorophyll a and/or Total N, Total P, NO3, NH3. The extent of nutrient enrichment (most often by either nitrogen or phosphorous or both) from anthropogenic activities. Nitrogen and phosphorous are the primary macro-nutrients that enrich streams and cause build ups of algae.	Water quality monitoring data	Riverine	high
17	Riparian & channel	Bed scour	Average depth of bed scour in salmonid spawning areas (i.e., in pool-tailouts and small cobble-gravel riffles) during the annual peak flow event over approximately a 10-year period. The range of annual scour depth over the period could vary substantially.	ICF bed scour model; Interpolated ratings based on channel configuration	Riverine	high

18	integrity	Riparian Function	Veg cover by category, LWD recruitment potential, riparian zone width, % human infuence, % bank erosion	NetMap/LEMMA, habitat surveys, aeirial imagery, assessments, best professional judgement	Riverine	medium
19		Woody Debris	Wood >0.1 m diameter and >2 m length, # per unit of channel length	Habitat surveys, assessments, NetMap LWD recruitment potential ratings, best professional judgement	Reservoir, Riverine	medium
20	Biological	Benthic Richness	Measure of the diversity and production of the benthic macroinvertebrate community. Three types of measures are given (choose one): a simple EPT count, Benthic Index of Biological Integrity (B-IBI)—a multimetric approach (Karr and Chu 1999), or a multivariate approach using the BORIS (Benthic evaluation of Oregon RIverS) model (Canale 1999). B-IBI rating definitions from Morley (2000) as modified from Karr et al. (1986). BORIS score definitions based on ODEQ protocols, after Barbour et al. (1994).	Macroinvert surveys, B-IBI ratings	Riverine	high
21		Fish Community Richness	Measure of the richness of the fish community (no. of fish taxa, i.e., species).	Fish community composition surveys, other data sources, best professional judgement	Riverine	high
22		Fish Species Introductions	Extent of introductions of exotic fish species in the vicinity of the stream reaches under consideration	Same as above	Riverine	high
23		Predation Risk	Qualitative rating based on available information	Same as above, other data sources, best professional judgement	Reservoir, Riverine	high
24		Hatchery Fish Outplants	The magnitude of hatchery fish outplants made into the drainage over the past 10 years. "Drainage" here is defined loosely as being approximately the size that encompasses the spawning distribution of recognized populations in the watershed.		Riverine	high
25		Fish Pathogens	Carcass counts, escapement estimates	best professional judgement rating. Currently no marine-derived nutrients reaching target watersheds.	Riverine	high
26	Habitat type	Limnetic	Habitat composition as % of wetted reach area	Habitat surveys, assessments	Reservoir	medium
27		Littoral	Habitat composition as % of wetted reach area	Habitat surveys, assessments	Reservoir	medium
28		Backwater Pools	Habitat composition as % of wetted reach area	Habitat surveys, assessments	Riverine	high
29		Beaver Ponds	Habitat composition as % of wetted reach area	Habitat surveys, assessments	Riverine	medium
30		Glides	Habitat composition as % of wetted reach area	Habitat surveys, assessments	Riverine	medium
31		Large Cobble Riffles	Habitat composition as % of wetted reach area	Habitat surveys, assessments	Riverine	medium
32		Off Channel Habitat Factor	Habitat composition as % of BFW area	Habitat surveys, assessments	Riverine	medium
33		Pool Tails	Habitat composition as % of wetted reach area	Habitat surveys, assessments	Riverine	medium
34		Scour Pools	Habitat composition as % of wetted reach area	Habitat surveys, assessments	Riverine	medium
35		Small Cobble Riffles	Habitat composition as % of wetted reach area	Habitat surveys, assessments	Riverine	medium