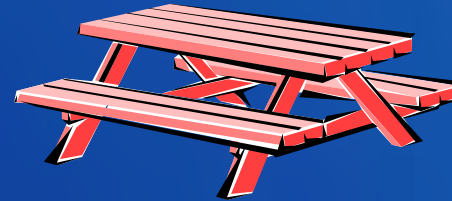


AA Timelines & Processes



RECLAMATION

[illegible]

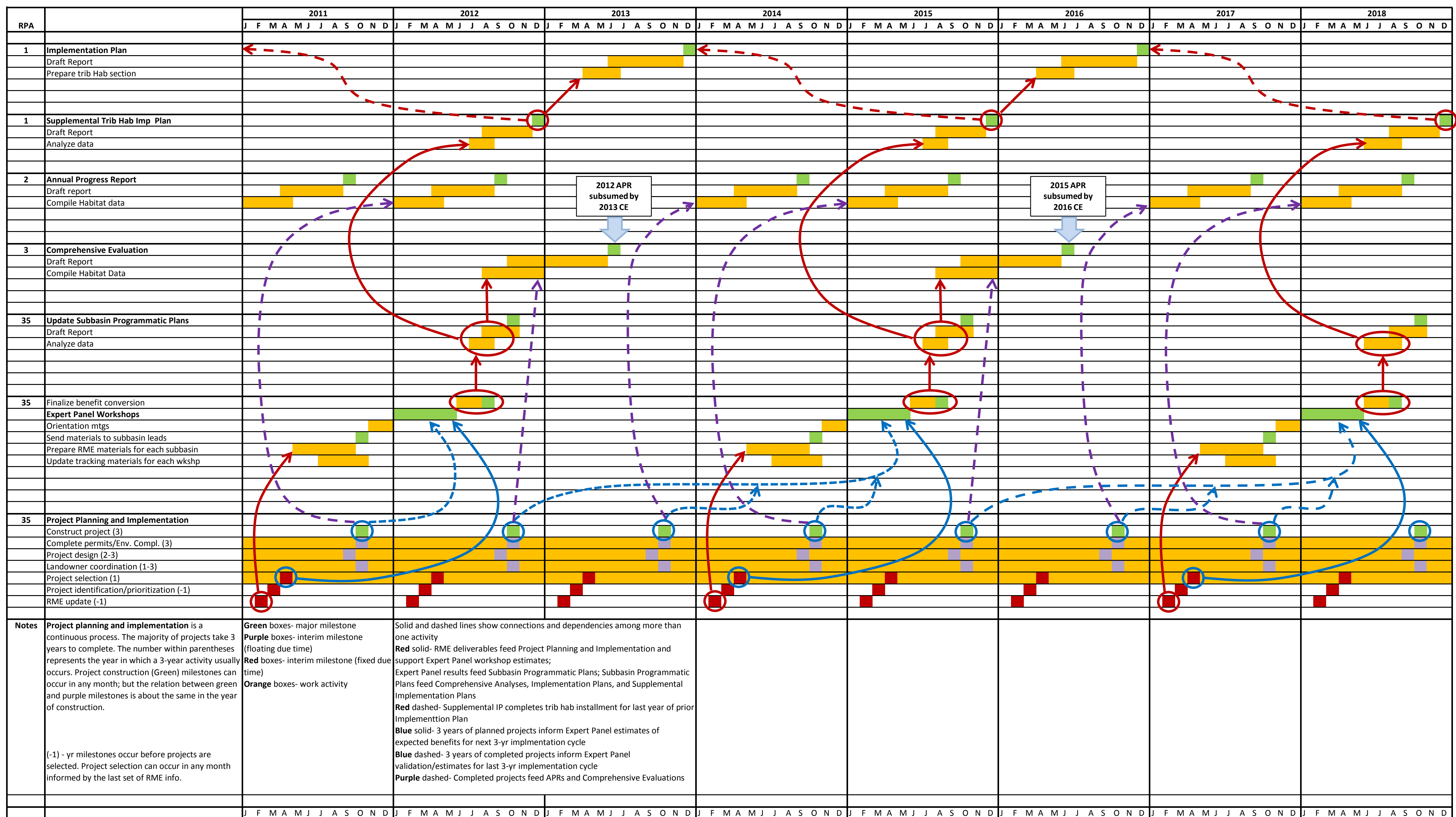


Table 15a.-- Completed 2007-09 tributary habitat actions and metrics for the Entiat River population of Upper Columbia River steelhead and Upper Columbia River spring Chinook salmon.

Assessment Unit (AU)	Primary Limiting Factor(s) (PLF) by AU	Actions	2007	2007	2008	2008	2009	2009	Comments
			Metric	Actual Value	Metric	Actual Value	Metric	Actual Value	
Lower Entiat	Low Stream flow	Continue Knapp-Wham and Hanan Detwiler irrigation ditch consolidation effort			acre feet/year of water conserved	1446 acre feet (KW-HD)	miles of primary stream reach improved	5.8 miles (KW-HD)	
Lower Entiat		Continue exploring extension of Entiat Irrigation District line upstream to serve PUD canal/system users							Actions are only well replacements.
Lower Entiat		Pursue other water conveyance efficiency and diversion improvements	miles of river restored	0.2 miles (B2B Phase 1)					
Lower Entiat		Improve on-farm irrigation application efficiency, scheduling, and general water conservation.			cubic feet per second (CFS) of water flow conserved	2 cfs (KW-HD)			
Lower Entiat		Provide technical and cost-share assistance for water metering and reporting							
Lower Entiat		Continue conversion of surface water diversions to ground water/well withdrawals, when feasible			cubic feet per second (CFS) of water flow conserved		miles of primary stream reach improved	4 miles (Four Mile Wells)	
Lower Entiat	Riparian condition	Implement riparian planting projects with willing landowners							
Lower Entiat		Work with willing landowners to protect larger, undisturbed riparian areas by first pursuing conservation easement, lease, and options other than outright property acquisition							
Lower Entiat	Floodplain connectivity	Implement Ecosystem Diagnosis and Treatment (EDT) Alternative 5 related to side-channel options			miles of floodplain reconnected	0.5 miles (Harrison)			Will be increasing the upper bookend for the 2010-2012 period.
Lower Entiat	Habitat diversity	Implement EDT Alternative 5, focusing on pool forming structures	miles of river treated	0.3 miles (Milne ~12 individual structures); 1 Pool (Hannan/Detwiler)				Below the bridge - hydraulic diversity.	Milne project accomplished less than what was planned in 2006.
Lower Entiat	Habitat quantity	Implement EDT Alternative 5, focusing on pool forming structures		1 Pool (Hannan/Detwiler).					
Lower Entiat	Side-channel connectivity	Implement Ecosystem Diagnosis and Treatment (EDT) Alternative 5 related to side-channel options				0.5 miles (Harrison)			Keystone and lower off-channel not completed.
Lower Entiat	Excessive fine sediments								
Lower Entiat	Obstructions/entrainment	Screen and/or upgrade existing screens on pumps/diversion intakes							

Table 16a.-- Planned 2010-12 tributary habitat actions and metrics for the Entiat River population of Upper Columbia River steelhead and

(AU)	(PLF) by AU	Actions	Metric	Planned Value	Metric	Planned Value	Metric	Planned Value	Comments
Lower Entiat	Low Stream flow	Continue Knapp-Wham and Hanan Detwiler irrigation ditch consolidation effort							
Lower Entiat		Continue exploring extension of Entiat Irrigation District line upstream to serve PUD canal/svstem users							
Lower Entiat		Pursue other water conveyance efficiency and diversion improvements	cubic feet/second restored to stream	2 cfs (McKenzie); USBR stimulus well conversions ~ 2 cfs; Roaring Cr. Well conversion ~ 1.5 cfs; BOR					Surface water effect, savings will be somewhat less.
Lower Entiat		Improve on-farm irrigation application efficiency, scheduling, and general water conservation.		2 cfs (McKenzie); USBR stimulus well conversions ~ 2 cfs; Roaring Cr. Well conversion ~ 1.5 cfs; BOR					Surface water effect, savings will be somewhat less.
Lower Entiat		Provide technical and cost-share assistance for water metering and reporting							
Lower Entiat		Continue conversion of surface water diversions to ground water/well withdrawals, when feasible	cubic feet/second restored to stream	1 cfs (surface to wells)					
Lower Entiat	Riparian condition	Implement riparian planting projects with willing landowners							
Lower Entiat		Work with willing landowners to protect larger, undisturbed riparian areas by first pursuing conservation easement, lease, and options other than outright property acquisition							
Lower Entiat	Floodplain connectivity	Implement Ecosystem Diagnosis and Treatment (EDT) Alternative 5 related to side-channel options	miles of river restored	0.2 miles (Foreman)	miles of river restored	0.3 miles (hatchery)			
						CMB review comment: planned for implementation in 2010			
Lower Entiat	Habitat diversity	Implement EDT Alternative 5, focusing on pool forming structures	miles of river treated	0.2 miles (lower screw trap); 0.2 miles (Foreman); 0.3 miles (B2B Phase 3)	miles of river restored	0.3 miles (4 mile bridge); 0.3 miles (hatchery); 0.3 miles (LBS); 0.3 miles (Keystone)			
						CMB review comment: implement action in next cycle, 2014, per IMW decision			

Table 15b2.-- Biological benefits associated with completed 2007-09 and planned 2010-12 tributary habitat actions for the Entiat River population of Upper Columbia River spring Chinook salmon.

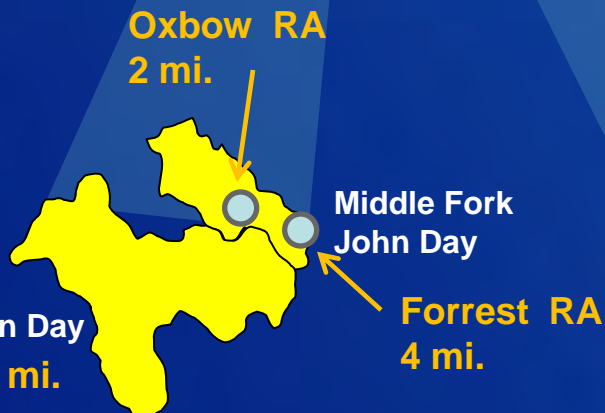
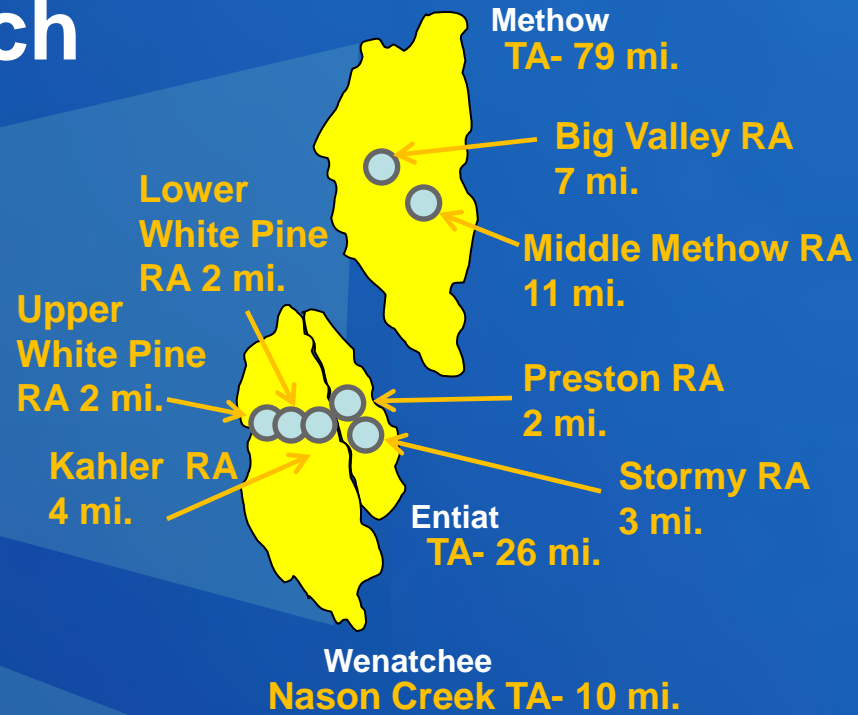
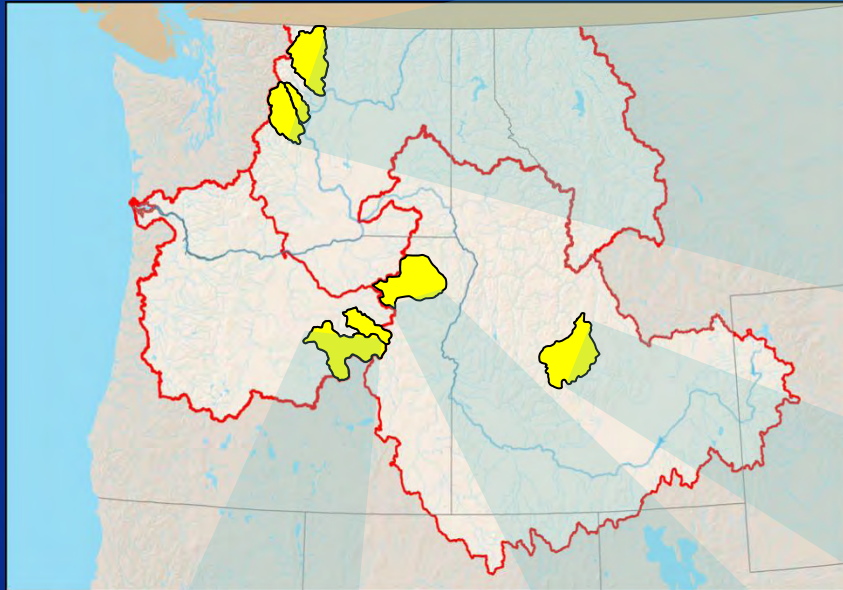
Spring Chinook - Entiat River

Code	Assessment Unit	Limiting Factor	2007-2009 VALUES								2010-2012 VALUES					
			Low Bookend	Original 07-09 values		High Bookends		LF Weight	Updated 07-09 values		Starting Low Bookend	10-12 Estimates		Updated High Bookends		Updated LF Weight
				2018	2033	2018	2033		2018	2033		2018	2033	2018	2033	
ERC1	Lower Entiat	Excessive Fine Sediment									23	24	24	30	30	10
ERC1	Lower Entiat	Floodplain connectivity	20	20	20	21	21	16.67	20.2	20.2	20	21	21	21	21	6
ERC1	Lower Entiat	Habitat diversity	15	23	23	41	41	16.67	17	17	15	19	19	41	41	20
ERC1	Lower Entiat	Habitat quantity	15	23	23	41	41	16.67	17	17	15	19	19	41	41	35
ERC1	Lower Entiat	Low Stream flow	80	84	84	87	87	16.67	84	84	80	85	85	87	87	2
ERC1	Lower Entiat	Obstructions/entrainment ¹														
ERC1	Lower Entiat	Riparian condition	30	33	36	35	40	16.67	30	30	30	30	30	35	40	2
ERC1	Lower Entiat	Side-channel connectivity	10	12	12	15	15	16.67	11	11	10	12	12	15	15	25
ERC2	Mad River	Habitat diversity	90	90	90	97	99	33.33	91	91	91	91	91	97	99	33.33
ERC2	Mad River	Habitat quantity	90	90	90	97	99	33.33	90	90	90	90	90	97	99	33.33
ERC2	Mad River	Improve streamflow ¹														
ERC2	Mad River	Two obstructing pipes in Tillicum	98	98	98	100	100	33.33	98	98	98	98	98	100	100	33.33
ERC3	Middle Entiat	Excessive Fine Sediment									23	24	24	30	30	40
ERC3	Middle Entiat	Habitat diversity	60	65	70	65	70	33.33	60	60	60	62	62	70	80	35
ERC3	Middle Entiat	Riparian condition	80	85	90	85	90	33.33	80	80	80	81	82	85	90	20
ERC3	Middle Entiat	Stormy obstructions to passage	93	99	99	99	99	33.33	93	93	93	93	93	99	99	5
ERC3	Middle Entiat	Water Quantity ¹														

1. Added new LF in 2009 Expert Panel Workshop but did not establish low/high bookends or LF Weights

	Updated 2007-09 values greater than corresponding Initial 2007-09 values
	2010-12 estimate values greater than corresponding Updated 2007-09 values
	Updated bookend value greater than corresponding prior bookend value
	Updated Limiting Factor Weight different from prior Limiting Factor Weight
	Value less than corresponding prior value

USBR Tributary and Reach Assessments, 2011



Grande Ronde

Catherine Creek TA- 59 mi.

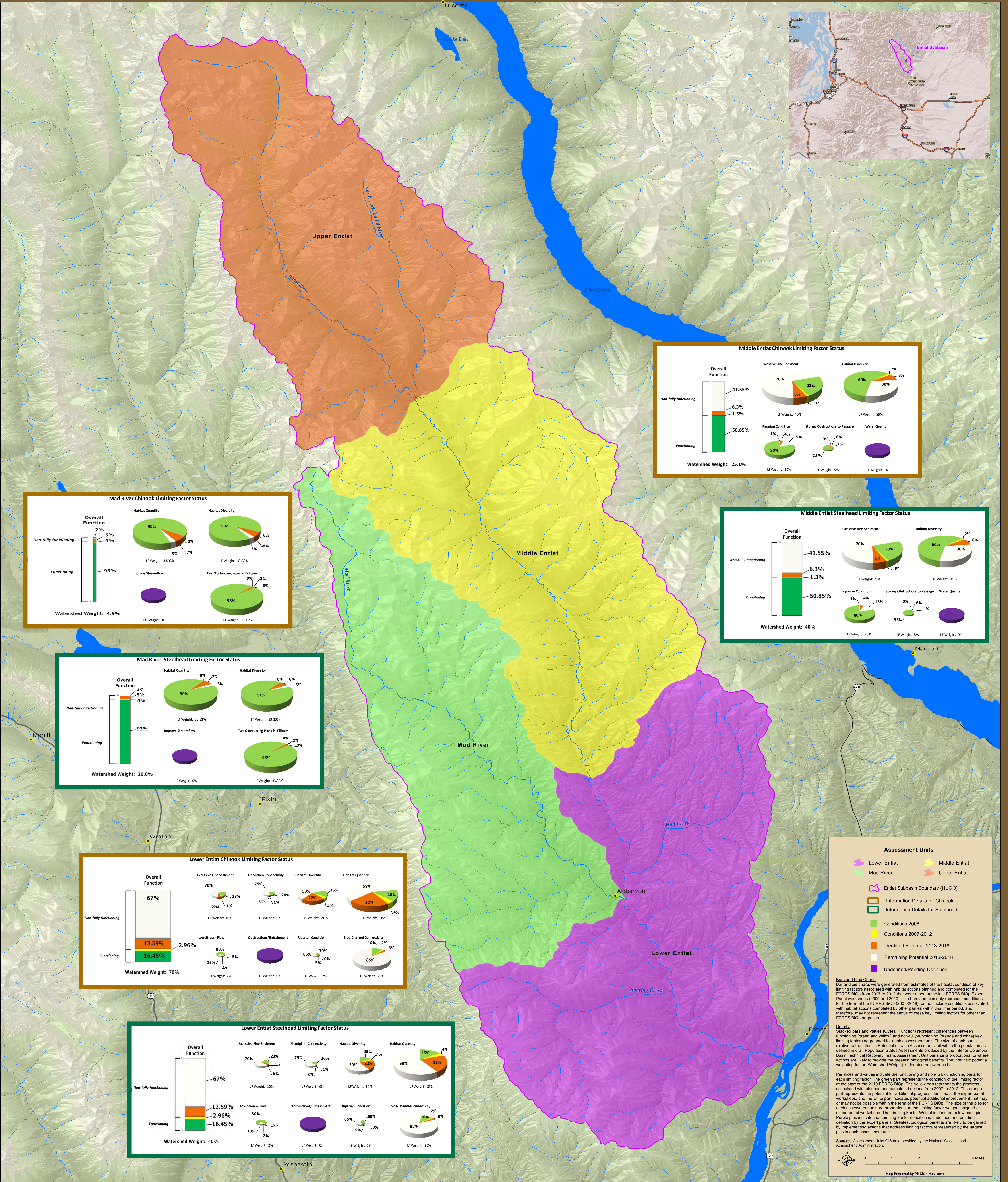


RECLAMATION

Pie Maps



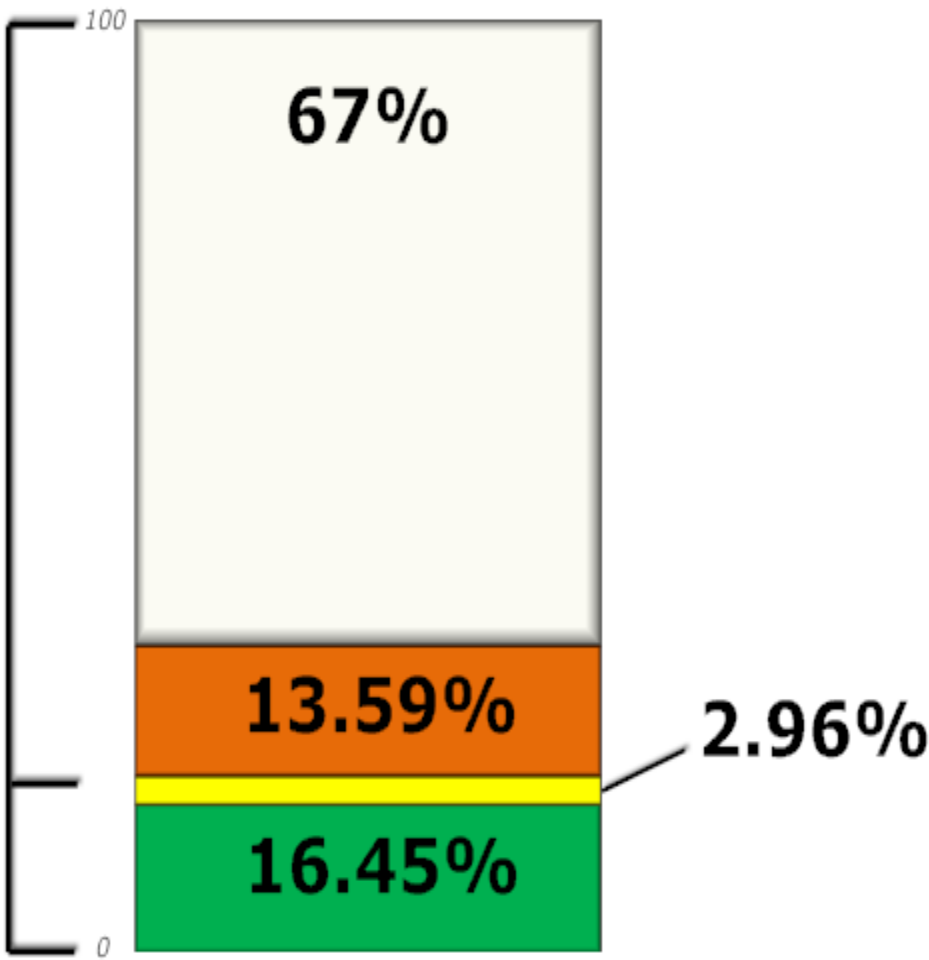
RECLAMATION



Lower Entiat Chinook Limiting Factor Status

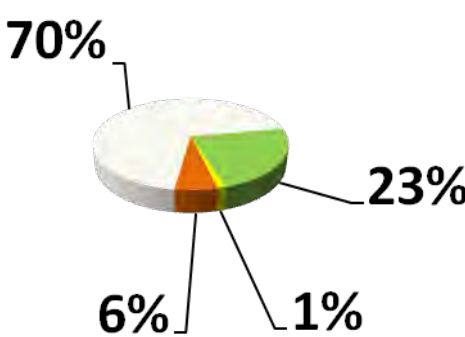
H1

Overall Function



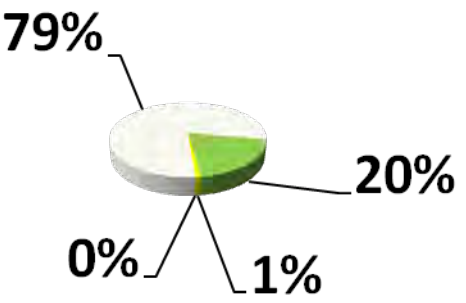
Watershed Weight: 70%

Excessive Fine Sediment



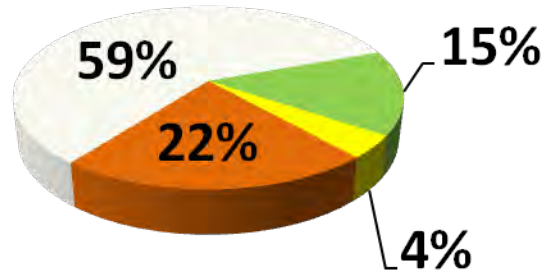
LF Weight: 10%

Floodplain Connectivity



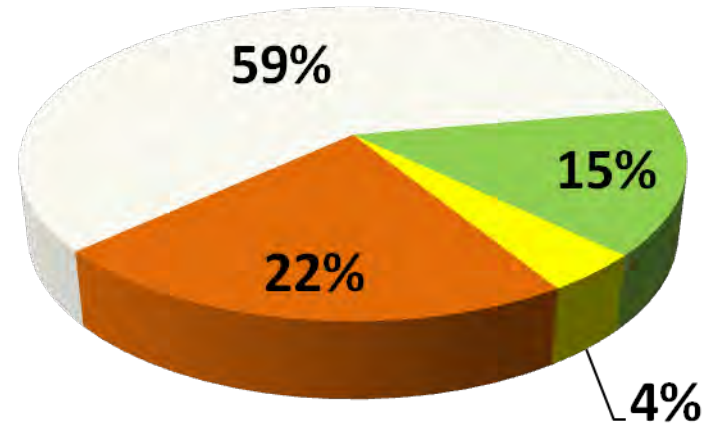
LF Weight: 6%

Habitat Diversity



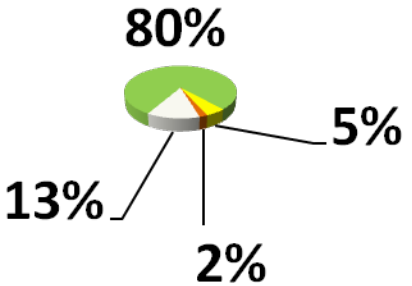
LF Weight: 20%

Habitat Quantity



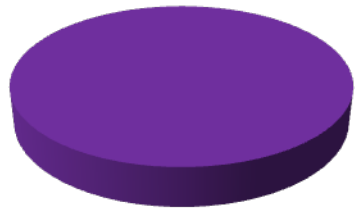
LF Weight: 35%

Low Stream Flow



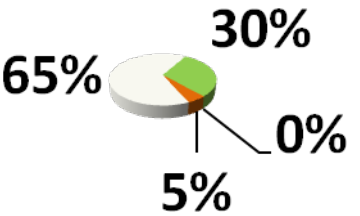
LF Weight: 2%

Obstructions/Entrainment



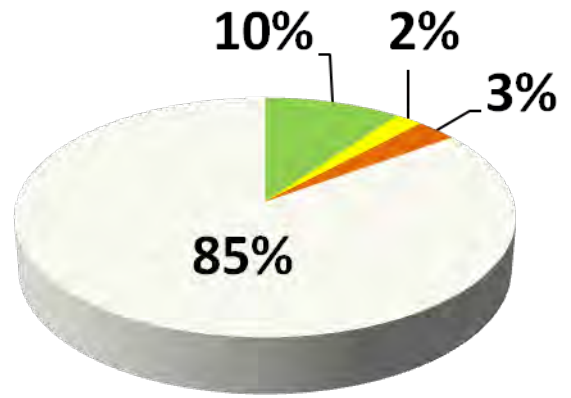
LF Weight: 0%

Riparian Condition



LF Weight: 2%

Side-Channel Connectivity



LF Weight: 25%

Mad River Chinook Limiting Factor Status

H2

