NOTES:
This workbook contains habitat actions data downloaded directly from the Taurus database. Actions include those documented during the **Look Back** process covering the **2012-2015** work window.

Individual sheets contain habitat actions data for individual populations for Chinook.

ESU	Population	Code	Assessment Unit	2012 Standardized Limiting Factor	Action	Work Element	Metric	Metric Plan Value	Plan Comment
Upper Columbia Spring Chinook	Entiat River	ERC3A	Middle Entiat	5.2: Peripheral and Transitional Habitats: Floodplain Condition	2012 Tyee 3A: Levee removal, riparian plantings, livestock exclusion fencing, ELS/LWM installed, cons. easement	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0.25 mile	1,800 feet Per 2012 LF: +75 acres protected
Upper Columbia Spring Chinook	Entiat River	ERC3A	Middle Entiat	6.1: Channel Structure and Form: Bed and Channel Form	2012 Tyee 3A: Levee removal, riparian plantings, livestock exclusion fencing, ELS/LWM installed, cons. easement	180. Enhance Floodplain/Remove, Modify, Breach Dike	1565. # of miles of dike removed or modified in the freshwater area	0.25 miles	Per 2012 LF: 75 acres, +34 structures added
Upper Columbia Spring Chinook	Entiat River	ERC3A	Middle Entiat	6.1: Channel Structure and Form: Bed and Channel Form	2012 Dillwater project	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.29 miles	Per 2012 LF: 4 ELJs 0.5 mi sidechannel reconnected for lower flowsfrom yurt to Dill Ck bridge
Upper Columbia Spring Chinook	Entiat River	ERC1	Lower Entiat	6.2: Channel Structure and Form: Instream Structural Complexity	2014 Harrison Adaptive Maintenance	29. Increase Aquatic and/or Floodplain Complexity	1388. # of structures installed	0.13 miles (700 ft) / 5 structures	Per 2012 LF: This only includes biological benefits in addition to those from the original project
Upper Columbia Spring Chinook	Entiat River	ERC1	Lower Entiat	6.1: Channel Structure and Form: Bed and Channel Form	2014 ENFH Habitat Channel Phase 2	29. Increase Aquatic and/or Floodplain Complexity	1388. # of structures installed	0.1 miles	(3 structures) Per Entiat River Subbasin report: Provide resting and holding areas, summer and winter rearing habitat, augment side channel complexity to provide high flow refugia, connect existing off-channel habitat, and install instream complexity for juvenile and adult salmonids. Project treatments include; split flow channel inlet excavation to connect at lower flows near RM 6.8, one boulder cluster at RM 6.8 to direct flow into the split channel, one ELJ at the head of the split channel island, 15 habitat logs with boulders along channel margin, connection of off-channel alcove at RM 6.73, and install pedestrian footbridge over reconnected alcove.
Upper Columbia Spring Chinook	Entiat River	ERC3A	Middle Entiat	4.1: Riparian Condition: Riparian Vegetation	2012 Tyee 3A: Levee removal, riparian plantings, livestock exclusion fencing, ELS/LWM installed, cons. easement	47. Plant Vegetation	1403. # of riparian acres treated	0.25 mile	Per 2012 LF: 0.25 mi treated +0.5 mi planting +75 acres protected
Upper Columbia Spring Chinook	Entiat River	ERC3A	Middle Entiat	6.2: Channel Structure and Form: Instream Structural Complexity	2012 Dillwater project	29. Increase Aquatic and/or Floodplain Complexity	1388. # of structures installed	0.29 miles	Per 2012 LF: 4 ELJs. 0.5 mi sidechannel reconnected for lower flowsfrom yurt to Dill Ck bridge
Upper Columbia Spring Chinook	Entiat River	ERC2	Mad River	1.1: Habitat Quantity: Anthropogenic Barriers	2013 Tillicum Cr. Culvert Replacement Project #2	85. Remove/Breach Fish Passage Barrier	1441. # of miles of habitat accessed to the next upstream barrier(s) or likely limit of habitable range	0	Per 2012 LF: 0.5 miles of habitat made assecible as well as allowed for the transportation of substrate and woody debris. 2012-86. (lower): Replaced two undersized culverts (two 38" diameter concrete pipes) with a crossing that allows for fish passage of juveniles and adults at low and high flows for an additional 0.5 miles; provides for the transportation of substrate and woody debris; will accommodate a 100 yr. flood event. The preferred replacement structure is a bridge. Follow-up engineering assessment will make that determination of bridge vs. bottomless arch culvert. (lower 2 culverts) 2015:1.0 mile (1 barrier) As per 2.25.16 EP lookback, Chinook do not make it up this far, therefore, the metric was zero'ed out and there was no benefit attributed from this action. EWL
Upper Columbia Spring Chinook	Entiat River	ERC3A	Middle Entiat	6.1: Channel Structure and Form: Bed and Channel Form	2012 Entiat 3-D Habitat Enhancement Project	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.31 miles	Per 2012 LF: 3 channels, 1 mile. LB EP updated to 0.25 miles. The 3-D project will re-establish habitat diveristy and complexity in this mile of reach that is otherwise devoid of any substantial pieces of lwm or associated scour pools. In addition the site lends itself accordingly with enhancing the relic bacwater alcoves that populate this stretch of the river. The 3-D project will seek to replace lwm that would naturally occur in this stretch of the Entiat, but has been extirpated over the years by multiple forest fires and man-made logging activities. The proposed project will provide habitat for staging, spawning, and rearing juvenile salmonids during both summer and winter low flow conditions. A total of seven lwm structures will be created to provide cover and resting habitat as well as scour pool complexity; total pieces of wood for the structures is approximatley 650 18-24" dbh logs within the mainstem of the Entiat River. : Enhance three backwater channels/ alcoves
Upper Columbia Spring Chinook	Entiat River	ERC3A	Middle Entiat	6.2: Channel Structure and Form: Instream Structural Complexity	2012 Entiat 3-D Habitat Enhancement Project : Enhance three backwater channels	29. Increase Aquatic and/or Floodplain Complexity	1388. # of structures installed	0.56 miles	Per 2012 LF: 1 mile improved stream complexity, 7 instream structures installed, 7 pools created, The 3-D project will re-establish habitat diveristy and complexity in this mile of reach that is otherwise devoid of any substantial pieces of lwm or associated scour pools. In addition the site lends itself accordingly with enhancing the relic bacwater alcoves that populate this stretch of the river. The 3-D project will seek to replace lwm that would naturally occur in this stretch of the Entiat, but has been extirpated over the years by multiple forest fires and man-made logging activities. The proposed project will provide habitat for staging, spawning, and rearing juvenile salmonids during both summer and winter low flow conditions. / alcoves by both deeping and providing cover habitat with large woody material (lwm) that will additionally provide roughness to the channels. 2015 LB EP updated metric to 0.56 miles. 3 channels may be longer total. -MAH2.25.2016
Upper Columbia Spring Chinook	Entiat River	ERC3A	Middle Entiat	6.2: Channel Structure and Form: Instream Structural Complexity	2012 Tyee 3A: Levee removal, riparian plantings, livestock exclusion fencing, ELS/LWM installed, cons. easement	29. Increase Aquatic and/or Floodplain Complexity	1388. # of structures installed	0.7 miles	Per LF 2012: 34 structures, and metric for Work Element 5 is incorrect, Planned Metric Value is for # acres protected
Upper Columbia Spring Chinook	Entiat River	ERC1	Lower Entiat	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	2014 Harrison Adaptive Maintenance	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0.04 mile	
Upper Columbia Spring Chinook	Entiat River	ERC1	Lower Entiat	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	2014 ENFH Habitat Channel Phase 2	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0.1 mile	Per Entiat River Subbasin reporting
Upper Columbia Spring Chinook	Entiat River	ERC1	Lower Entiat	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	2014 Keystone to Kiosk	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0.11 miles	Per Entiat R Subbasin reporting: . Project treatments include; side channel connection at RM 0.8, 7 boulder clusters at RM 1.1, 2 boulder clusters at RM 2.2, 23 habitat logs with boulders at RM 1.6 side channel, side channel excavation to connect at lower flows at RM 1.6, and 3 habitat log structures along main stem channel margin. 2015 LB EP revised the metric to 0.11 miles. -MAH2.25.16
Upper Columbia Spring Chinook	Entiat River	ERC1	Lower Entiat	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	2014 Foreman Sidechannel (CCNRD)	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0.12 miles	RM 1.9-2.3, river left - 400ft. Revised 2/9/16MH. LB EP revised the metric from 0.08 miles (400 ft) to 0.12 miles
Upper Columbia Spring Chinook	Entiat River	ERC1	Lower Entiat	6.1: Channel Structure and Form: Bed and Channel Form	2014 Keystone to Kiosk	29. Increase Aquatic and/or Floodplain Complexity	1388. # of structures installed	0.25 miles	(13 structures)
Upper Columbia Spring Chinook	Entiat River	ERC1	Lower Entiat	6.2: Channel Structure and Form: Instream Structural Complexity	2014 YN Entiat RM 2.6-3.5 Habitat Enhancement	29. Increase Aquatic and/or Floodplain Complexity	1388. # of structures installed	0.9 miles	The treatments were designed to address the ecological concerns from the biological strategy, such as lack of in-stream complexity and diversity as well as adding hydraulic variability for the Lower Entiat. This was accomplished through the creation of margin wood structures (22) and boulder clusters (43). 65 structures
Upper Columbia Spring Chinook	Entiat River	ERC1	Lower Entiat	4.1: Riparian Condition: Riparian Vegetation	2014 Harrison Adaptive Maintenance	47. Plant Vegetation	1406. # of riparian miles treated	0.2 miles	Improve off-channel habitat connection to 1300â€™ of side channel. Add 5 LWD structures along 700 feet of main stem shoreline to increase habitat complexity. Increase riparian cover along 1000â€™ of shoreline.
Upper Columbia Spring Chinook	Entiat River	ERC2	Mad River	1.1: Habitat Quantity: Anthropogenic Barriers	2014 Indian Creek Fish passage - Tillicum creek	85. Remove/Breach Fish Passage Barrier	1441. # of miles of habitat accessed to the next upstream barrier(s) or likely limit of habitable range	0	2015:>1.0 mile As per 2.25.16 EP lookback, Chinook do not make it up this far, therefore, the metric was zero'ed out and there was no benefit attributed from this action. EWL
Upper Columbia Spring Chinook	Entiat River	ERC1	Lower Entiat	6.1: Channel Structure and Form: Bed and Channel Form	2014 YN Entiat RM 2.6-3.5 Habitat Enhancement	29. Increase Aquatic and/or Floodplain Complexity	1388. # of structures installed	0.9 miles	Added to LF6.1 65 structures (0.9 miles) 2/9/16MH
Upper Columbia Spring Chinook	Entiat River	ERC1	Lower Entiat	5.2: Peripheral and Transitional Habitats: Floodplain Condition	2014 Harrison Adaptive Maintenance	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0.04 miles	Added to LF5.2 during LB EP. -MAH.2.25.2016
Upper Columbia Spring Chinook	Entiat River	ERC1	Lower Entiat	6.1: Channel Structure and Form: Bed and Channel Form	2014 Harrison Adaptive Maintenance	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.13 miles	
Upper Columbia Spring Chinook	Entiat River	ERC1	Lower Entiat	6.2: Channel Structure and Form: Instream Structural Complexity	2014 ENFH Habitat Channel Phase 2	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.1 miles	
Upper Columbia Spring Chinook	Entiat River	ERC1	Lower Entiat	6.2: Channel Structure and Form: Instream Structural Complexity	2014 Keystone to Kiosk	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.25 miles	

ESU	Population	Code	Assessment Unit	2012 Standardized Limiting Factor	Action	Work Element	Metric	Metric Plan Value	Plan Comment
Upper Columbia Spring Chinook	Entiat River	ERC3A	Middle Entiat	4.1: Riparian Condition: Riparian Vegetation	2012 Dillwater project	47. Plant Vegetation	1406. # of riparian miles treated	0.2 miles	Added to LF4.1 during LB EP. -MAH2.25.16
Upper Columbia Spring Chinook	Entiat River	ERC3A	Middle Entiat	5.2: Peripheral and Transitional Habitats: Floodplain Condition	2012 Dillwater project	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0.2 miles	
Upper Columbia Spring Chinook	Entiat River	ERC3A	Middle Entiat	5.2: Peripheral and Transitional Habitats: Floodplain Condition	2012 Entiat 3-D Habitat Enhancement Project	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0.31 miles	
Upper Columbia Spring Chinook	Entiat River	ERC1	Lower Entiat	5.2: Peripheral and Transitional Habitats: Floodplain Condition	2014 ENFH Habitat Channel Phase 2	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0	0.1 miles, but 2015 Expert Panel decided not to count this project for this limiting factor. EWL 3.15.16
Upper Columbia Spring Chinook	Entiat River	ERC1	Lower Entiat	5.2: Peripheral and Transitional Habitats: Floodplain Condition	2014 Keystone to Kiosk	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0	0.11 miles but 2015 Expert Panel decided not to count this project for this limiting factor. EWL 3.15.16
Upper Columbia Spring Chinook	Entiat River	ERC1	Lower Entiat	5.2: Peripheral and Transitional Habitats: Floodplain Condition	2014 Foreman Sidechannel (CCNRD)	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0	0.12 miles but 2015 Expert Panel decided not to count this project for this limiting factor. EWL 3.15.16

ESU	Population	Code	Assessment Unit	2012 Standardized Limiting Factor	Action	Work Element	Metric	Metric Plan Value	Plan Comment
Upper Columbia Spring Chinook	Methow River	MEC1	Beaver / Bear Creek	1.1: Habitat Quantity: Anthropogenic Barriers	2014 Fort/Thurlow Phase II			0 - O&M only	Per EP LB 2015: This was a repair on an existing project that already received credit. 0.25 miles. No uplift. -MAH2.25.16
Upper Columbia Spring Chinook	Methow River	MEC1	Beaver / Bear Creek	9.2: Water Quantity: Decreased Water Quantity	2013-2015 Upper Beaver Creek 1,2,3 Late Season in-stream flow	164. Acquire Water Instream	1452. Amount of water secured in acre-feet/year	2.08 cfs	Per 2015 LB EP: Added during 2015 LB EP. 10cfs target, 3.47 cfs permanent lease reported. 2.08cfs believed actual. WWP-TU project. -MAH2.25.16
Upper Columbia Spring Chinook	Methow River	MEC1	Beaver / Bear Creek	1.1: Habitat Quantity: Anthropogenic Barriers	2013 Upper Beaver Creek - 1 partial barrier removed	84. Remove/Install Diversion	1441. # of miles of habitat accessed to the next upstream barrier(s) or likely limit of habitable range	2.8 miles	Per 2015 LB EP: Replaced the Beaty diversion dam, a partial barrier.
Upper Columbia Spring Chinook	Methow River	MEC1	Beaver / Bear Creek	1.1: Habitat Quantity: Anthropogenic Barriers	2015 Beaver Creek - Stokes Ranch	184. Install Fish Passage Structure	1441. # of miles of habitat accessed to the next upstream barrier(s) or likely limit of habitable range	3.6 miles	Per 2012 LF: Stokes Ranch Culvert Replacement: Remove double barrel culvert that is impairing fish passage and trapping mobile wood and replace with bridge or natural bottom arch. Culvert impairs upstream juvenile fish migration and traps mobile wood; wood is then removed and is not available for downstream habitat complxity in lower beaver Creek. Culvert to Bridge. / Per 2015 LB EP: Updated the metric from 10 miles down to 3.6miles, up to next partial barrier.
Upper Columbia Spring Chinook	Methow River	MEC1	Beaver / Bear Creek	2.3: Injury and Mortality: Mechanical Injury	2013 Upper Beaver Creek - Upgrade fish screen	84. Remove/Install Diversion	1480. # of screens addressed	1 screen	
Upper Columbia Spring Chinook	Methow River	MEC1	Beaver / Bear Creek	4.1: Riparian Condition: Riparian Vegetation	2013 Old Schoolhouse FEP Project	47. Plant Vegetation	1403. # of riparian acres treated	0.5 mile	2015 LB updated metric
Upper Columbia Spring Chinook	Methow River	MEC1	Beaver / Bear Creek	4.1: Riparian Condition: Riparian Vegetation	2013 Upper Beaver Creek Habitat Improvement	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.5 miles	
Upper Columbia Spring Chinook	Methow River	MEC1	Beaver / Bear Creek	6.1: Channel Structure and Form: Bed and Channel Form	2013 MSRF Upper Beaver Creek Habitat Improvement Project	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0.5 miles	
Upper Columbia Spring Chinook	Methow River	MEC1	Beaver / Bear Creek	6.1: Channel Structure and Form: Bed and Channel Form	2013 YN Old Schoolhouse Habitat Improvement Project	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0.9 miles	Added to LF6.1 during LB EP. MH
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	4.1: Riparian Condition: Riparian Vegetation	WDFW Chewuch Campground	47. Plant Vegetation	1406. # of riparian miles treated	0.1 miles treated	as per YN EP lookback meeting 4.27.16
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	8.1: Water Quality: Temperature	WDFW Chewuch Campground	29. Increase Aquatic and/or Floodplain Complexity	1388. # of structures installed	3 structures	Revised 2/9/16MH. Exclusion of people - campground improvements & livestock management
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	6.2: Channel Structure and Form: Instream Structural Complexity	2012 Pete Creek Complexity	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.3 miles	Per 2012 LF: Formerly known as Lawrence/Windhaven. PLANNED IN 2009+ fence 5 wetland acres +4 acres riparian veg planting. : Reconnect off channel habitat, increase stream bank complexity, plant and protect riparian vegetation at RM 3.3 on the Chewuch River.
Upper Columbia Spring Chinook	Methow River	MEC7	Lower Twisp	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	2013 MSRP Right Elbow Floodplain	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0.3 miles	Per 2012 LF: Work on River Left adds to prior Elbow Coulee project completed in 2008. right habitat reconnection: Reconnect alcove and off channel habitat on the right bank of the Twisp River at Rivermile 6.5
Upper Columbia Spring Chinook	Methow River	MEC7	Lower Twisp	6.2: Channel Structure and Form: Instream Structural Complexity	2014 Poorman Creek Road FEP LWD	29. Increase Aquatic and/or Floodplain Complexity	1388. # of structures installed	0.2 miles	Added # of structures per UCHRP revisions 2/9/16mh 2 structures (< 1.0 acre)
Upper Columbia Spring Chinook	Methow River	MEC7	Lower Twisp	6.2: Channel Structure and Form: Instream Structural Complexity	2014 Twisp RM 3 FEP LWD	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.1 miles	Added 3 structures per UCHRP revisions 2/9/16mh. Per 2012 LF: Twisp RM 3 Side Channel Restoration: We will enhance a high flow channel of the Twisp River to convey groundwater and irrigation ditch tail out water at low flow stages. We will enhance the channel with large woody material, enhance a large boulder riprap bank with large woody material, and replant native woody vegetation in an old horse pasture within the flooplain.
Upper Columbia Spring Chinook	Methow River	MEC7	Lower Twisp	9.2: Water Quantity: Decreased Water Quantity	TU-WWP Twisp River Instream flow enhancement (#02-LTW-2011-1)	164. Acquire Water Instream	1453. Flow of water returned to the stream as prescribed in the water acquisition in cubic-feet per second (cfs)	1 cfs	Diversion was removed, increasing flow up to 4.5 cfs. Actual probably closer to 4cfs. -MAH2.25.2016 6.23.16. discussion about how much flow is actually put back into river and modified accordingly
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	1.1: Habitat Quantity: Anthropogenic Barriers	2012 Barkley Temporary Pump Station	85. Remove/Breach Fish Passage Barrier	1441. # of miles of habitat accessed to the next upstream barrier(s) or likely limit of habitable range	0 miles	Per 2012 LF: M2 Barkley: Barkley - Eliminate the need for push up irrigation diversion dam in the Methow River; reduce fish entrainment, stranding and mortatlity in the intake canal. Reduce inchannel wood removal at irrigation intake. Reduce riparian and wetland disturbance caused by ditch maintenance. Could include an alternative water source for the Barkley canal and or piping the ditch. Barkley intake canal also creates a barrier to upstream fish passage into Bear Creek and this project would eliminate that barrier. Juvenile fish entrained includes spring Chinook, steelhead, bull trout,cutthroat and Pacific lamprey. Per 2015 LB EP: Not a significant fish passage barrier. No uplift.
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	4.1: Riparian Condition: Riparian Vegetation	2013 M2 WDFW Obanion	47. Plant Vegetation	1403. # of riparian acres treated	0.7 miles	Per 2012 LF: 12 acres, Habitat complexity, floodplain rehabilitation, off channel reconnection project on WDFW lands at RM 46.75. June 2016: metric modified as per EP. EWW 7.29.16
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	2.3: Injury and Mortality: Mechanical Injury	2012 Barkley Temporary Pump Station	85. Remove/Breach Fish Passage Barrier	1441. # of miles of habitat accessed to the next upstream barrier(s) or likely limit of habitable range	0.12 mile	Per 2012 LF: M2 Barkley: Barkley - Eliminate the need for push up irrigation diversion dam in the Methow River; reduce fish entrainment, stranding and mortatlity in the intake canal. Reduce inchannel wood removal at irrigation intake. Reduce riparian and wetland disturbance caused by ditch maintenance. Could include an alternative water source for the Barkley canal and or piping the ditch. Barkley intake canal also creates a barrier to upstream fish passage into Bear Creek and this project would eliminate that barrier. Juvenile fish entrained includes spring Chinook, steelhead, bull trout,cutthroat and Pacific lamprey. HF estimate based on opportunity to eliminate heavy equipment maintenance of push-up dams & eliminate fish accessibility to intake at Barkley diversion. Collaboration among WDFW screen shop/TU/ Reclamation & YN.
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	4.1: Riparian Condition: Riparian Vegetation	2014 Eagle Rocks Cottonwood Restoration	47. Plant Vegetation	1403. # of riparian acres treated	0.3 miles	Revised metric to 0.3 miles per UCHRP updates 2/9/16mh. Per 2012 LF: agle Rocks Riparian Restoration: We will plant native woody vegetation (cottonwoods and native shrubs) on nearly 6 acres of Methow River floodplain (nearly 1/4 mile of stream bank) within an abandoned pasture where rapid bank erosion is occurring. The intent of the project is to recruit more woody vegetation on the floodplain so that as erosion continues, the river encounters a rougher bank with large woody debris, decreasing erosion rates and increasing river margin habitat for juvenile salmon. This area was historically cleared for agricultural production and represents a good opportunity to restablish a cottonwood gallery along the margins of the Methow River. June 2016: metric modified as per EP. EWW 7.29.16
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	4.1: Riparian Condition: Riparian Vegetation	2014 1890s Side Channel Project	181. Create, Restore, and/or Enhance Wetland	1403. # of riparian acres treated	1.0 miles	2016: metric modified as per EP. EWW 7.29.16 2012: & 0.8 riparian miles planted/treated, 6 wetland acres treated. We will add perennial flow into 0.8 miles of a large disconnected side channel of the Methow River where roads and development have isolated the channel from the river at moderate river stages, allowing it to fill in over time with fine sediments conveyed during high water events. We will use a groundwater gallery to passively convey Methow River hyporehic flow into the head of an enhanced sidechannel in the existing filled in channel alignment. We will deepen the e. The geomorphic potential of this sub-reach has been dramatically compromised by historic and current development constraining the historic channel migration zone.

ESU	Population	Code	Assessment Unit	2012 Standardized Limiting Factor	Action	Work Element	Metric	Metric Plan Value	Plan Comment
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	4.1: Riparian Condition: Riparian Vegetation	2014 Two Channels Side Channel Restoration / LW Enhancement	47. Plant Vegetation	1406. # of riparian miles treated	0.1 miles	2016: Miles treated modified by EP. EWW 7.29.16 2012 LF: 5 riparian acres & 0.2 wetland acres treated, 0.2 riprian miles treated. The lower half of a 0.7 mile long high flow conveyance side channel will be restored to maintain a perennial flow and surface connection with the main channel of the Methow River. We will use a groundwater gallery to passively convey Methow River hyporehic flow into the head of the enhanced portion of the sidechannel. We will deepen the existing channel and improve the substrate conditions by removing fine sediments. We will create pool/riffle and backwater. The geomorphic potential of this sub-reach has been dramatically compromised by historic and current development constraining the historic channel migration zone.
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	2013 M2 WDFW Obanion	29. Increase Aquatic and/or Floodplain Complexity	1388. # of structures installed	0.3 miles	Per 2012 LF: M2 Obanion: Habitat complexity, floodplain rehabilitation, off channel reconnection project on WDFW lands at RM 46.75. " + Realign, Connect, and/or Create Channel- 8.5 acres + Enhance Floodplain/Remove, Modify, Breach Dike" PLANNED IN 2009, formerly remove, modify breach dike
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	6.2: Channel Structure and Form: Instream Structural Complexity	2012 M2 Whitefish	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.2 miles	Habitat complexity, floodplain rehabilitation, off channel reconnection project on private lands at RM 48.8. 2016: Expert Panel adjusted treatment length
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	2012 Whitefish Island	30. Realign, Connect, and/or Create Channel	1473. # of acres of wetland affected by treatment	0.3 miles	
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	2014 1890s Side Channel Project	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0.8 miles	Per 2012 LF: 0.8 miles channel reconnect, 10 instream structures installed, 5 pools created, 6 riparian acres & 6 wetland acres treated/restored.We will add perennial flow into 0.8 miles of a large disconnected side channel of the Methow River where roads and development have isolated the channel from the river at moderate river stages, allowing it to fill in over time with fine sediments conveyed during high water events. We will use a groundwater gallery to passively convey Methow River hyporehic flow into the head of an enhanced sidechannel in the existing filled in channel alignment. We will deepen the e. The geomorphic potential of this sub-reach has been dramatically compromised by historic and current development constraining the historic channel migration zone. Our project creates 0.8 miles of new alcove side channel habitat in an area currently lost to natural riverine processes using existing groundwater resources that provide high quality temperature conditions for juveni
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	6.2: Channel Structure and Form: Instream Structural Complexity	2013 M2 WDFW Obanion	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.3 miles	2016: Expert Panel adjusted treatment length M2 Obanion: Habitat complexity, floodplain rehabilitation, off channel reconnection project on WDFW lands at RM 46.75. + Realign, Connect, and/or Create Channel- 8.5 acres + Enhance Floodplain/Remove, Modify, Breach Dike
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	6.2: Channel Structure and Form: Instream Structural Complexity	2012 M2 RM46	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.2 miles	2016: Expert Panel adjusted treatment length
Upper Columbia Spring Chinook	Methow River	MEC8B	Upper-Middle Methow	6.2: Channel Structure and Form: Instream Structural Complexity	2015 Fender Mill Side Channel Restoration	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.5 miles (3 acres)	
Upper Columbia Spring Chinook	Methow River	MEC8B	Upper-Middle Methow	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	2015 Fender Mill Side Channel Restoration	30. Realign, Connect, and/or Create Channel	1477. # of stream miles before treatment	0.5 miles (3 acres)	
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	4.1: Riparian Condition: Riparian Vegetation	2015 Chewuch River Right	47. Plant Vegetation	1406. # of riparian miles treated	0.5 miles	
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	9.2: Water Quantity: Decreased Water Quantity	2014 Chewuch Canal Conveyance Efficiency Project	164. Acquire Water Instream	1453. Flow of water returned to the stream as prescribed in the water acquisition in cubic-feet per second (cfs)	10-15 cfs	
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	7.2: Sediment Conditions: Increased Sediment Quantity	2015 Cub Creek Road Decommmission (Lower Chewuch River WA)	33. Decommission Road/Relocate Road	1394. # of miles of road improved or decommissioned in a riparian area	2 miles	
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	9.2: Water Quantity: Decreased Water Quantity	2015 Methow-Chewuch Groundwater Evaluation	164. Acquire Water Instream	1438. # of miles of primary stream reach improvement	0.9 miles	
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	9.2: Water Quantity: Decreased Water Quantity	2015 Chewuch River Instream Flow Project (TU)	164. Acquire Water Instream	1453. Flow of water returned to the stream as prescribed in the water acquisition in cubic-feet per second (cfs)	0.5 cfs	Revised 2/9/16MH
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	4.1: Riparian Condition: Riparian Vegetation	*2014 Buck Forest and Fuels Project	47. Plant Vegetation	1406. # of riparian miles treated		1.44 miles; project removed during 6.23.16 EP meeting due to no action agency funding
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	4.1: Riparian Condition: Riparian Vegetation	2015 Methow Riparian Planting	47. Plant Vegetation	1406. # of riparian miles treated	0.68 miles	
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	6.2: Channel Structure and Form: Instream Structural Complexity	2015 Methow River Car/Debris removal	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0	2015 LB EP: 0.17 mile stretch. Not considered as a benefit to this LF, but left in the system. -MAH2.25.2016
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	6.2: Channel Structure and Form: Instream Structural Complexity	2014 M2 3R Project	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.3 miles	2016: Expert Panel adjusted treatment length
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	4.1: Riparian Condition: Riparian Vegetation	2012 M2 RM46	180. Enhance Floodplain/Remove, Modify, Breach Dike	1403. # of riparian acres treated	0.05 miles	
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	9.2: Water Quantity: Decreased Water Quantity	2015 Chewuch River No.3 permanent flow enhancement	164. Acquire Water Instream	1453. Flow of water returned to the stream as prescribed in the water acquisition in cubic-feet per second (cfs)	9.5 cfs	Revised 2/9/16MH
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	4.1: Riparian Condition: Riparian Vegetation	2012 Chewuch 8 Mile Ranch Project - Planting/Fence	40. Install Fence	1401. # of miles of fence installed in a riparian area	0.75 miles	Added 2/9/16mh. Panel confirmed .75 mile of streambank protection fencing was constructed.
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	6.2: Channel Structure and Form: Instream Structural Complexity	2012 Chewuch 8 Mile Ranch Project	29. Increase Aquatic and/or Floodplain Complexity	1388. # of structures installed	0.75 miles treated	Added project 2/9/16mh
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	6.2: Channel Structure and Form: Instream Structural Complexity	2012 Chewuch RM 10 Project	29. Increase Aquatic and/or Floodplain Complexity	1388. # of structures installed	0.8 miles treated	Added project 2/9/16mh
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	2012 Chewuch RM 10 Project	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0.23 miles	0.23 miles side channel created. Added project 2/9/16mh
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	6.1: Channel Structure and Form: Bed and Channel Form	2012 Chewuch RM 10 Project	29. Increase Aquatic and/or Floodplain Complexity	1388. # of structures installed	0.23 miles (1 structure)	Added project 2/9/16mh
Upper Columbia Spring Chinook	Methow River	MEC7	Lower Twisp	4.1: Riparian Condition: Riparian Vegetation	2012 Twisp Ponds Left Bank Riparian Plantings	47. Plant Vegetation	1515. # of acres of upland non-wetland habitat treated	0.2 miles	Added per UCHRP revisions 2/9/16mh. 2 acres, but updated metric during 2015 LB EP. -MAH2.25.2016. Modified metric during EP lookback with YN 4.27.16
Upper Columbia Spring Chinook	Methow River	MEC7	Lower Twisp	6.2: Channel Structure and Form: Instream Structural Complexity	2012 Twisp Ponds Left Bank Large Wood Enhancement	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.5 miles / 3 structures	Added per UCHRP revisions 2/9/16
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	8.1: Water Quality: Temperature	2014 1890s Side Channel	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0.8 miles	Added/attributed to LF8.1 per UCHRP revisions 2/9/16mh
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	6.2: Channel Structure and Form: Instream Structural Complexity	2012 Eagle Rocks Large Wood Enhancement	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.1 miles	Added action 2/9/16mh
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	6.2: Channel Structure and Form: Instream Structural Complexity	2013 Sugar Dike Large Wood Enhancement	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.5 miles	Added project 2/9/16mh
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	4.1: Riparian Condition: Riparian Vegetation	2013 Chewuch R. RM 11.75-13 river-left Fish Enhancement Project	47. Plant Vegetation	1406. # of riparian miles treated	0.25 miles	Added action 2/9/16mh
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	6.2: Channel Structure and Form: Instream Structural Complexity	2013 Chewuch R. RM 11.75-13 river-left Fish Enhancement Project	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.6 miles	Added action 2/9/16mh
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	6.1: Channel Structure and Form: Bed and Channel Form	2013 Chewuch R. RM 11.75-13 river-left Fish Enhancement Project	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.6 miles	Added action 2/9/2016
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	2013 Chewuch R. RM 11.75-13 river-left - Side channel	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0.1 mile	Added action 2/9/16mh
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	2015 Chewuch River Right	30. Realign, Connect, and/or Create Channel	1473. # of acres of wetland affected by treatment	0.47 miles	Added action 2/9/16mh

ESU	Population	Code	Assessment Unit	2012 Standardized Limiting Factor	Action	Work Element	Metric	Metric Plan Value	Plan Comment
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	6.1: Channel Structure and Form: Bed and Channel Form	2015 Chewuch River Right	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.5 miles	Added action 2/9/16mh
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	6.2: Channel Structure and Form: Instream Structural Complexity	2015 Chewuch River Right	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.2 miles	Added action 2/9/16mh
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	8.1: Water Quality: Temperature	2015 Chewuch River Right	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0.5 miles	Added action 2/9/16mh
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	6.1: Channel Structure and Form: Bed and Channel Form	2015 Chewuch RM13-15.5	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.25 miles	Action added 2/9/16mh
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	6.2: Channel Structure and Form: Instream Structural Complexity	2015 Chewuch RM13-15.5	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	2.5 miles	Action added 2/9/16 mh
Upper Columbia Spring Chinook	Methow River	MEC1	Beaver / Bear Creek	6.2: Channel Structure and Form: Instream Structural Complexity	2013 MSRF Upper Beaver Creek Habitat Improvement Project	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.5 miles	Added during 2015 LB EP. -MAH2.25.16
Upper Columbia Spring Chinook	Methow River	MEC1	Beaver / Bear Creek	6.2: Channel Structure and Form: Instream Structural Complexity	2013 YN Old Schoolhouse project including cottonwood falling	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	1 miles	12 structures over 0.9 miles. Added during 2015 LB EP. -MAH2.25.16
Upper Columbia Spring Chinook	Methow River	MEC1	Beaver / Bear Creek	8.1: Water Quality: Temperature	2013-2015 Upper Beaver Creek 1,2,3 Late Season in-stream flow	164. Acquire Water Instream	1453. Flow of water returned to the stream as prescribed in the water acquisition in cubic-feet per second (cfs)	2.08cfs	Added during 2015 LB EP. -MAH2.25.16
Upper Columbia Spring Chinook	Methow River	MEC7	Lower Twisp	8.1: Water Quality: Temperature	2013 Twisp River Point of Diversion Change/ Instream flow enhancement (#02-LTW-2011-1)	164. Acquire Water Instream	1453. Flow of water returned to the stream as prescribed in the water acquisition in cubic-feet per second (cfs)	4.0 cfs	Per 2015 LB EP: Actual diversion removal could increase 4.5cfs, but likely actual closer to 4.0cfs after landowner use. -MAH2.25.16
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	6.2: Channel Structure and Form: Instream Structural Complexity	2014 1890s Side Channel Project	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0.8 miles	
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	6.1: Channel Structure and Form: Bed and Channel Form	2014 M2 3R Project	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.3 miles	Added during EP LB. 2.25.16 2016: treatment length modified during lookforward review of lookback
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	6.1: Channel Structure and Form: Bed and Channel Form	2013 M2 WDFW Obanion			0.3 miles	Added during EP LB. 2.25.16
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	6.1: Channel Structure and Form: Bed and Channel Form	2012 M2 RM 46	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.4 miles	Added during EP LB. 2.25.16
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	6.1: Channel Structure and Form: Bed and Channel Form	2012 Whitefish Island			0.2 miles	Added during EP LB. 2.25.16 2016: treatment miles modified during lookforward review of lookback
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	8.1: Water Quality: Temperature	2014 M2 3R	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.3 miles	2016: treatment length adjusted by full expert panel
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	8.1: Water Quality: Temperature	2012 Whitefish Island	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.3 miles	
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	4.1: Riparian Condition: Riparian Vegetation	2012 Pete Creek Complexity	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.17 miles	
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	WDFW Chewuch Campground	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0.1	
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	6.1: Channel Structure and Form: Bed and Channel Form	2012 Chewuch 8 mile ranch	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	TBD - need mile metric	
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	6.2: Channel Structure and Form: Instream Structural Complexity	WDFW Chewuch Campground	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.3 miles treated	
Upper Columbia Spring Chinook	Methow River	MEC11	Upper Twisp	6.2: Channel Structure and Form: Instream Structural Complexity	2014: Scaffold Camp Giant Spruce Protection			0.1 miles treated	added large wood
Upper Columbia Spring Chinook	Methow River	MEC5	Lower Chewuch	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	2015: Chewuch RM 13-15.5			0.2 miles created	added as per YN lookback 4.27.16
Upper Columbia Spring Chinook	Methow River	MEC7	Lower Twisp	4.1: Riparian Condition: Riparian Vegetation	2012: Twisp River Fencing Project (Little Bridge Creek and Buttermilk Creek)	40. Install Fence		7.8 miles treated	added by YN as per EP lookback 4.27.16
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	4.1: Riparian Condition: Riparian Vegetation	M2 3R (2014)	47. Plant Vegetation		0.2	
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	M2 3R (2014)			0.2 side channel miles	
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	4.1: Riparian Condition: Riparian Vegetation	2012 Whitefish Island	47. Plant Vegetation		0.71 miles	
Upper Columbia Spring Chinook	Methow River	MEC8A	Middle Methow	6.2: Channel Structure and Form: Instream Structural Complexity	2014: Two Channels LW Enhancement			0.2 miles treated	added as per YN lookback 4.27.16
Upper Columbia Spring Chinook	Methow River	MEC8B	Upper-Middle Methow	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	2015: Fender Mill Side Channel Restoration - Stansbury flow improvement	30. Realign, Connect, and/or Create Channel		0.2 side channel miles	added as per YN lookback 4.27.16
Upper Columbia Spring Chinook	Methow River	MEC1	Beaver / Bear Creek	9.2: Water Quantity: Decreased Water Quantity	2014 Fort/Thurlow Phase II			0 - O&M only	AS per 2016 EP: From 1.1. Per EP LB 2015: This was a repair on an existing project that already received credit. 0.25 miles. No uplift. -MAH2.25.16. This water right is not being enforced, if it was, it wouldn't be a problem. Because it is not being enforced, the Upper Beaver Creek lease is not being fully realized.

ESU	Population	Code	Assessment Unit	2012 Standardized Limiting Factor	Action	Work Element	Metric	Metric Plan Value	Plan Comment
Upper Columbia Spring Chinook	Wenatchee River	WEC10	White	6.2: Channel Structure and Form: Instream Structural Complexity	White River LWD Atonement Project	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	1.7 miles	~18 structures; BPA funds design, Actual treatment length is 1.7 miles but plan was 3.5 miles. -MAH
Upper Columbia Spring Chinook	Wenatchee River	WEC5	Lower Wenatchee	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	2013 Lower Wenatchee IF Enhancement (Pioneer Dam)	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.65 mile	2015 LB EP updated metric from 0.1 mile to 0.65 mile benefit to side channel using GIS data. -MAH.2.24.2016
Upper Columbia Spring Chinook	Wenatchee River	WEC2	Chumstick	1.1: Habitat Quantity: Anthropogenic Barriers	Upper Chumstick Barriers - Removal of 4 barrier culverts in 2012; Ott, Baumann, Cann, and Saliby (2013), providing 1.8 miles of passage on Chumstick Creek	85. Remove/Breach Fish Passage Barrier	1441. # of miles of habitat accessed to the next upstream barrier(s) or likely limit of habitable range	1.8 miles	Per EP LF2012: 3 provide access to 1.5 mi; Saliby only a partial barrier but improves passage for 4 more miles
Upper Columbia Spring Chinook	Wenatchee River	WEC5	Lower Wenatchee	6.2: Channel Structure and Form: Instream Structural Complexity	2012 YN Sunnyslope ELJ	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.15 miles	Per 2012 EP LF: 6 structures. Approximately 45 logs, greater than 18 inches DBH, will be used in each of the six large woody material structures. Once exposed by the Wenatchee river, the structures could scour holes upto eight feet deep and will provide cover habitat. In addition the native riparian restoration will provide future ecological benefit. s the river continues to erode the stream bank, the wood will come in contact with the river producing instream habitat complexity. The site will be revegetated with native riparian species for future ecological benefit. 6 LWD structures in the flood plain adjacent to the Wenatchee river
Upper Columbia Spring Chinook	Wenatchee River	WEC5	Lower Wenatchee	9.2: Water Quantity: Decreased Water Quantity	2013 Lower Wenatchee Instream (Pioneer Dam)	164. Acquire Water Instream	1453. Flow of water returned to the stream as prescribed in the water acquisition in cubic-feet per second (cfs)	38.3 CFS	Per 2012 LF: Project identified in 2009, still in progress (7.5 mi original estimate). / Per 2015 LB EP: Originally listed in EP materials as projected 15 CFS surface diversion removal, but Panel updated to 38.3 cfs actual as-constructed. Also include change in POD, improve side channel habitat; removal of Pioneer dam on side channel. 0.6 miles of side channel were opened by removal of dam. -MAH2.24.2016
Upper Columbia Spring Chinook	Wenatchee River	WEC7	Nason	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	2014 Nason Creek RM 4.6	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0.06 miles	Per 2012 LF: Reestablish hydro-geomorphic connectivity between Nason Creek and its floodplain and restore and enhance stream channel, riparian, and wetland habitat functions for ESA-listed salmonidsIncorperate both ELJ's and cover habitat for complexity in the main stem Nason Creek. The proposed project will provide habitat for staging, spawning, and rearing juvenile salmonids during both summer and winter low flow conditions.
Upper Columbia Spring Chinook	Wenatchee River	WEC7	Nason	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	2012 Lower White Pine: Reconnect Nason Creek to tributaries and habitat cut off by BNSF	30. Realign, Connect, and/or Create Channel	1520. # of acres of freshwater wetland habitat treated	1 mile	Per 2012 LF: 1.7 miles, includes all of DIZ-2 and DOZ-4 and half of both DIZ-1 and DOZ-2. barrier removal (8S) applies to Roaring and Coulter creeks. Previously identified in 2009, still in progress +1.75 mi access from breaching levee +64 wetland acres enhanced +26 riparian acres enhanced BELONGS IN LF 1.1 BUT ACCESS (LF 1.1) IS NOT A RECOGNIZED PRIMARY LF FOR THIS AU-EP WILL NEED TO EVALUATE THE BENEFITS OF THIS ACTION RELATED TO THE PRIMARY LFs 2015 LB EP: For this LF, EP determined Roaring creek was not applicable as a side channel, so removed 0.5 miles from the total 1.5 miles. So metric is 1.0 mile.
Upper Columbia Spring Chinook	Wenatchee River	WEC7	Nason	6.2: Channel Structure and Form: Instream Structural Complexity	2015 YN Upper White Pine, Sites 3-4	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.7 miles	
Upper Columbia Spring Chinook	Wenatchee River	WEC7	Nason	6.2: Channel Structure and Form: Instream Structural Complexity	2013 YN First Bend	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0.16 miles	Per 2012 LF: 0.1 miles of realigned Nason Ck, 0.4 miles of off-channel and in-channel habitat wood placement, 3.30 riparian acres restored .Nason LWP We will reactivate a historic alignment of Nason Creek. We will add large woody material along an eroding bank within the current alignment, in order reudce sheer stress, and we will revegetate the bank with native plant species. In addion, large woody material structures will be placed to stabilize the new alignment and improve fish habitat allowing the riparian vegetation an opportunity to establish. Retaining an existing natural log jam at this site will be accomplished0.1 miles of realigned Nason creek. 0.4 miles of off-channel and in-channel habitat wood placement. and 3.30 acres of restored riparian.
Upper Columbia Spring Chinook	Wenatchee River	WEC8	Peshastin	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	2012 YN Peshastin RM 0.8 Project	30. Realign, Connect, and/or Create Channel	1476. # of stream miles after treatment	0.2 miles (3 acres)	Per 2012 LF: : YN will modify and enhance an existing side channel on Peshastin Creek to provide high-quality habitat for listed fish species. The project will involve removing a 48-inch culvert at the upstream end of an existing side channel, modifying the levee and excavating the 735-foot long side channel to accommodate increased flow. Seven log structures will also be constructed as part of this Project. Log structures are planned at both the inlet and outlet of the new side chan. 0.2 miles channel treated/enhanced, 7 log structures installed. Log structures are planned at both the inlet and outlet of the new side channel, as well as scattered along the length of the side channel. Streambed material will be augmented to provide stable material under a re-connected hydrologic regime, and log structures will be built to maintain channel position and create habitat throughout the channelâ€™s length
Upper Columbia Spring Chinook	Wenatchee River	WEC8	Peshastin	6.2: Channel Structure and Form: Instream Structural Complexity	2012 YN Peshastin RM 0.8 Project	29. Increase Aquatic and/or Floodplain Complexity	1388. # of structures installed	7 structures (0.15 miles)	Per 2012 LF: YN will modify and enhance an existing side channel on Peshastin Creek to provide high-quality habitat for listed fish species. The project will involve removing a 48-inch culvert at the upstream end of an existing side channel, modifying the levee and excavating the 735-foot long side channel to accommodate increased flow. Seven log structures will also be constructed as part of this Project. Log structures are planned at both the inlet and outlet of the new side chan. 0.2 miles channel treated/enhanced, 7 log structures installed. Log structures are planned at both the inlet and outlet of the new side channel, as well as scattered along the length of the side channel. Streambed material will be augmented to provide stable material under a re-connected hydrologic regime, and log structures will be built to maintain channel position and create habitat throughout the channelâ€™s length.
Upper Columbia Spring Chinook	Wenatchee River	WEC7	Nason	1.1: Habitat Quantity: Anthropogenic Barriers	2013 Lower White Pine Reconnection	85. Remove/Breach Fish Passage Barrier	1441. # of miles of habitat accessed to the next upstream barrier(s) or likely limit of habitable range	1.5 miles	2015 LB EP determined 152 acres metric was 1.5 miles of linear benefit. -MH2.24.2016
Upper Columbia Spring Chinook	Wenatchee River	WEC7	Nason	1.1: Habitat Quantity: Anthropogenic Barriers	2014 Coulter Creek Culvert	85. Remove/Breach Fish Passage Barrier	1441. # of miles of habitat accessed to the next upstream barrier(s) or likely limit of habitable range	0 miles* (1.6 miles total, but no benefit for Chinook, Steelhead only)	2015 LB EP: Determined Coulter Creek is upstream of known Chinook use, and was not used in uplift calculations.
Upper Columbia Spring Chinook	Wenatchee River	WEC7	Nason	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	2015 YN Upper White Pine, Sites (sub-reaches) 3-4	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.38 miles	
Upper Columbia Spring Chinook	Wenatchee River	WEC9B	Upper Wenatchee	1.1: Habitat Quantity: Anthropogenic Barriers	2014 Beaver Creek Well conversion: Replaces a surface diversion with wells	82. Install Well	1438. # of miles of primary stream reach improvement	2.5 miles	
Upper Columbia Spring Chinook	Wenatchee River	WEC7	Nason	4.1: Riparian Condition: Riparian Vegetation	2015 Nason Creek UWP Horseshoe Bend Acquisitions	5. Land Purchase and/or Conservation Easement	1380. # of riparian acres protected	10.3 acres	
Upper Columbia Spring Chinook	Wenatchee River	WEC7	Nason	4.1: Riparian Condition: Riparian Vegetation	2015 Nason Creek RM1.8-2.4 Protection: Grant PUD Acquisition	5. Land Purchase and/or Conservation Easement	1380. # of riparian acres protected	63 acres	
Upper Columbia Spring Chinook	Wenatchee River	WEC7	Nason	4.1: Riparian Condition: Riparian Vegetation	2015 Lower Nason Creek MC Protection	5. Land Purchase and/or Conservation Easement	1380. # of riparian acres protected	10 acres	
Upper Columbia Spring Chinook	Wenatchee River	WEC7	Nason	4.1: Riparian Condition: Riparian Vegetation	2014 CDLT Nason Creek Lower White Pine Alcove Acquisition	5. Land Purchase and/or Conservation Easement	1380. # of riparian acres protected	5-20 acres	
Upper Columbia Spring Chinook	Wenatchee River	WEC9B	Upper Wenatchee	6.2: Channel Structure and Form: Instream Structural Complexity	2015 Natapoc Project Wenatchee River RM 51.7	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.17 mile	included 1 large cover jam and 6 smaller complexity jams
Upper Columbia Spring Chinook	Wenatchee River	WEC2	Chumstick	4.1: Riparian Condition: Riparian Vegetation	2015 Chumstick Creek RM8.5 Riparian planting	47. Plant Vegetation	1406. # of riparian miles treated	0.3 mile	
Upper Columbia Spring Chinook	Wenatchee River	WEC2	Chumstick	9.2: Water Quantity: Decreased Water Quantity	2014 Chumstick Creek flow	164. Acquire Water Instream	1452. Amount of water secured in acre-feet/year	18 acre-feet (0.06 CFS for 5-months a year)	

ESU	Population	Code	Assessment Unit	2012 Standardized Limiting Factor	Action	Work Element	Metric	Metric Plan Value	Plan Comment
Upper Columbia Spring Chinook	Wenatchee River	WEC9B	Upper Wenatchee	1.1: Habitat Quantity: Anthropogenic Barriers	2014 Beaver Creek Fish Passage and Instream Flow Enhancement	164. Acquire Water Instream	1453. Flow of water returned to the stream as prescribed in the water acquisition in cubic-feet per second (cfs)	0.5 cfs	
Upper Columbia Spring Chinook	Wenatchee River	WEC8	Peshastin	4.1: Riparian Condition: Riparian Vegetation	2014 Peshastin Road Decommisioning - Tronsen Creek	33. Decommission Road/Relocate Road	1394. # of miles of road improved or decommissioned in a riparian area	0 mile > 1 mile	2015 LB EP: Upstream of Chinook use, not a benefit to Chinook.
Upper Columbia Spring Chinook	Wenatchee River	WEC7	Nason	5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions	2013 YN First Bend	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.13 miles	Added to LF5.1 on 2/9/16mh
Upper Columbia Spring Chinook	Wenatchee River	WEC7	Nason	4.1: Riparian Condition: Riparian Vegetation	2013 YN First Bend	47. Plant Vegetation	1406. # of riparian miles treated	0.13 miles	Added to LF4.1 per UCHRP revisions on 2/9/16mh
Upper Columbia Spring Chinook	Wenatchee River	WEC8	Peshastin	1.1: Habitat Quantity: Anthropogenic Barriers	2012 YN Peshastin Fishway Repairs	184. Install Fish Passage Structure	1441. # of miles of habitat accessed to the next upstream barrier(s) or likely limit of habitable range	0.06 miles* (*YN/Brandon needs to confirm project details during QA/QC to determine uplift)	Added per UCHRP revisions on 2/9/16mh. No LF2.3 in this AU, added to LF1.1 instead. # of blockages modified and/or removed
Upper Columbia Spring Chinook	Wenatchee River	WEC2	Chumstick	8.1: Water Quality: Temperature	2014 Chumstick Creek flow	164. Acquire Water Instream	1453. Flow of water returned to the stream as prescribed in the water acquisition in cubic-feet per second (cfs)	0.06 CFS (5 months of the year, during irrigation season) / 18 acre-ft	Added during 2015 LB EP. - MAH2.24.16
Upper Columbia Spring Chinook	Wenatchee River	WEC5	Lower Wenatchee	8.1: Water Quality: Temperature	2013 Lower Wenatchee Instream (Pioneer Dam)	164. Acquire Water Instream	1453. Flow of water returned to the stream as prescribed in the water acquisition in cubic-feet per second (cfs)	38.3 CFS	2015 LB EP: See notes for LF9.2
Upper Columbia Spring Chinook	Wenatchee River	WEC7	Nason	6.1: Channel Structure and Form: Bed and Channel Form	2013 YN First Bend	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.13 miles	
Upper Columbia Spring Chinook	Wenatchee River	WEC7	Nason	6.1: Channel Structure and Form: Bed and Channel Form	2014 Nason Creek RM 4.6	29. Increase Aquatic and/or Floodplain Complexity	1387. # of miles of stream with improved complexity	0.06 miles	
Upper Columbia Spring Chinook	Wenatchee River	WEC7	Nason	6.1: Channel Structure and Form: Bed and Channel Form	2015: YN Upper White Pine Sites 3-4			0.38	added as per YN EP lookb ack 4.27.16