APPENDIX B.
SUMMARY OF GEOGRAPHIC INFORMATION SYSTEM SOURCES AND METHODS

Feature	Data Sources and Methods	Limitations or Data Gaps
Agriculture	**Wenatchee Basin:** Cascadia Conservation District, 2013 **Chelan, Entiat, and Squilchuck-Stemilt:** The agriculture data was created manually in ArcGIS using several sets of aerial base map images, Washington State Department of Agriculture (WSDA), and United States Department of Agriculture (USDA) datasets as references. The WSDA crop section layer was used to define the extent for visual identification of agricultural production (i.e. a guide for which sections contain agriculture); we then used aerial imagery to visually scan each section for agriculture. General crop categories (e.g., orchard/vineyard, pasture, fallow, etc.) were assigned based primarily on the aerial imagery, as well as in reference to parcel agriculture current use taxation status, and USDA and WSDA designations.	The Chelan, Entiat, and Squilchuck-Stemilt results should be verified by the Working Group and Stakeholders given the scale of the USDA and WSDA resources and use of aerial photos. Rangeland data is based on Washington State Department of Natural Resources (DNR), Washington Department of Ecology (Ecology), and US Bureau of Land Management (BLM) sources.
Fish and wildlife habitat conservation areas	Class I Fish and Wildlife Habitat Conservation Areas. • Habitat which have a primary association with species listed by federal agencies as endangered or threatened or species listed by state agencies as endangered: Priority Habitats and Species Maps, via Washington Department of Fish and Wildlife (WDFW) (2014). Also the Stemilt-Squilchuck Community Vision habitat mapping has been included. • State natural area preserves (NAPs) and natural resource conservation areas: Not shown. There are three NAPs, Camas Meadows, Entiat Slopes, Upper Dry Gulch. Class II Fish and Wildlife Habitat Conservation Areas: • Naturally occurring ponds under twenty acres; waters of the state; lakes, ponds, streams, and rivers planted with game fish: DNR Watercourse (2006) and DNR Waterbody (2006) layers provide by Chelan County. • Priority habitats and species, including priority fish distribution and riparian zones: Priority Habitats and Species Maps, via Washington Department of Fish and Wildlife (WDFW) (2014). Also the Stemilt-Squilchuck Community Vision	State natural area preserves (NAPs) and natural resource conservation areas: Not shown. The Washington State DNR has provided GIS layers for high quality terrestrial and wetlands habitats, but use restrictions allow creation of a map for the County alone, and it cannot be published.

Feature	Data Sources and Methods	Limitations or Data Gaps
	habitat mapping has been included. • Mule deer and/or elk winter range and migration corridors: Priority Habitats and Species Maps, via Washington Department of Fish and Wildlife (WDFW) (2014). Also the Stemilt-Squilchuck Community Vision habitat mapping has been included.	
Wetlands	National Wetland Inventory (2014) downloaded from USFWS website.	The data set underlying the layer is dated.
Frequently Flooded Areas	FEMA (1996) downloaded via Ecology's website.	
Geologically Hazardous Areas	Erodible Soils: NRCS (USDA) (2013) from Chelan County. NRCS delineations of "Severe" and "Very Severe" erosion hazard are shown. Steep Slopes: NRCS (USDA) (2013) from Chelan County. Potential Landslide Hazard: DNR (2008) and via DNR website. Mapped Landslides: DNR (2010) and via DNR website. Channel Migration Zones (not included in County code; included as referenced in WAC 365-190-120 – not mapped in the Squilchuck-Stemilt basin): Source: The Watershed Company and Ecology 2011.	
Critical Aquifer Recharge Areas	Public Wells: Department of Health (2013) via Chelan County FTP. Potential Wellhead Protection Zone: BERK (2014) using recommended area per State of Washington Department of Ecology (Ecology) Critical Aquifer Recharge Areas Guidance Document. January 2005, Publication Number 05-10-028: https://fortress.wa.gov/ecy/publications/publications/0510028.pdf. The Department of Health indicates 1,000 foot is used in their mapping sets for all Group B water systems, and any small Group A systems that have not calculated fixed radii or delineations for their sources. State law sets requirements for wellhead protection area zones (WAC 246-290-130 and 246-290-135). Possible Aquifer Borders: BERK (2014) per Ecology CARA Guidance (2005). Contour lines downloaded from County FTP and USGS Topo maps were used as reference in digitizing possible aquifer borders. Surficial Alluvial Geology: Division of Geology and Earth Resources (DGER), a part	Information depicted represents suggested data layers per the Ecology published CARA Guidance document (2005). CARA mapping depicted is potentially representative of physical features related to CARA but it is not a substitute for a certified geohydrologist created and DOE approved map.

Feature	Data Sources and Methods	Limitations or Data Gaps
	of DNR (2010) and downloaded via DGER site.	
Other Informational Layers	Hydrologic Study Area (100 Ft as mapped; 25, 50 and 100 feet in table data): BERK (2014) using Streams, Waterbodies, and Wetlands datasets. Watershed Boundaries**:** Ecology (2011) 303d Waters: Ecology (2012) Zoning: Chelan County (2014)	

APPENDIX C. VSP WORK PLAN DEVELOPMENT – JOBS AND SIDEBOARDS

COUNTY	VSP GROUP	COMMMISSION AND TECHNICAL PANEL	STATE ADVISORY COMMITTEE
DO	**DO**	**DO**	**DO**
Opt-in Designate Participating Watersheds Nominate Priority Watersheds Solicit Letters of Interest for VSP Group Accept $ / Contract from CC Director Confer with Tribal Governments and Stakeholders Designate VSP Work Group(s) Designate Administration Entity Protect Critical Areas under Section 9 if Plan not approved within 3 years of funding	Develop 10-Year Plan to ***protect critical areas while maintaining and enhancing the viability of agriculture*** Seek input from tribes, agencies, and stakeholders Determine planning area, where Agricultural activities overlap with designated Critical Areas Designate Tech Assist Provider & Producer Participation TA Process Ensure Technical Assistance Provided to Operators Develop Individual Stewardship Plan Approach Set Protect & Enhance Goals & Benchmarks designed to result in protection of critical areas and voluntary enhancement of critical areas within 10-Years of funding	Technical Panel has 45 days after plan submission to make recommendation to Director on Approval *Approve if*--at end of 10 Years, considering Work Plan and other plans and regs: a) *Critical Areas* will be *Protected*; and b) *Ag Viability* will be *Maintained* and *Enhanced* If SAC recommends Approval Director Must Approve. Director determines whether Work Plan Goals & Benchmarks are being met for: a) Protection and b) Enhancement	Determine Priority Watersheds. Resolve Approval Disagreements—If Plan not approved within 2 Yrs, 9 months of funding, Plan goes to Statewide Advisory Committee for Resolution Consult with Director on whether Goals & Benchmarks are being met

DO (cont'd) .	DO (cont'd) .	DO (cont'd) .	DO (cont'd) .
Protect Critical Areas under Section 9 if Plan Goals and Benchmarks not met after adaptive management efforts	Incorporate Development Regs into Plan (existing as of Opt-in date) Review, rely upon and incorporate existing programs, plans and data related to water quality, watershed management, farmland protection and species recovery Establish CA Protection baseline and *baseline monitoring* plan Ensure ISP process contributes to meeting goals and benchmarks Submit Biennial Status Reports to County and Commission on VSP Plans and Accomplishments; and 5-Year Goals & Benchmarks Report to County and Director Do Adaptive Mgmt if Protection Goals & Benchmarks not being met Determine additional Voluntary Stewardship actions and funding needed if VSP enhancement goals and benchmarks not being met Account for potential withdrawals when establishing goals and benchmarks.		

DON'T	DON'T	DON'T	DON'T
Don't regulate critical areas on lands used for ag activities (unless narrow exceptions apply) Don't require ag operations to discontinue ag activities legally existing before July 11, 2011 Don't prevent an operator from withdrawing from the program Don't require operator to continue voluntary measures after expiration of applicable contract VSP doesn't interfere with/supplant ability of operator to work with CD or participate in conservation programs; VSP doesn't prohibit voluntary sale or lease of land for conservation purposes; VSP doesn't limit authority of a state agency, local government or landowner to carry out obligations under any other federal, state or local law; VSP doesn't grant counties or state agencies additional authority to regulate critical areas on lands used for agricultural activities	Don't develop stewardship practices that may have unintended adverse consequences for other habitats, species and critical areas. Don't administer the program in a manner that prevents eligibility for environmental incentives Don't require operators to implement additional practices if watershed group determines that additional or different practices are needed to achieve goals and benchmarks: Operators implementing individual stewardship plans are presumed to be working toward protection and enhancement of critical areas Operators may volunteer to implement such additional or different practices, and are eligible for funding to revise practices upon volunteering;		

APPENDIX D

List of Conservation Practices in Use in Chelan County

NATURAL RESOURCE CONSERVATION SERVICE PRACTICES

In Exhibit 1, use of Natural Resources Conservation Service (NRCS) Conservation Practices is identified. Practices employed during a 2011-2014 period after the Voluntary Stewardship Program baseline date of July 22, 2011.

Exhibit 1. NRCS Practices 1996-2014

Program	Range of Practices	Year Start	Year End	Approx. Acreage - Can Overlap Multiple Periods
Environmental Quality Incentives Program (EQIP)		1999	2007	2,192
1996	Irrigation System, Microirrigation			
1999-2007	Irrigation Water Management			
	Nutrient Management			
	Pest Management			
EQIP 2002	Critical Area Planting	2004	2009	6,495
Sign Up 2004	Irrigation System, Microirrigation			
	Irrigation Water Management			
	Nutrient Management			
	Pest Management			
	Pond			
	Pond Sealing or Lining, Flexible Membrane			
	Pumping Plant			
	Structure for Water Control			
	Tree/Shrub Establishment			
	Tree/Shrub Site Preparation			
EQIP 2002	Forest Stand Improvement	2005	2010	1,022
Sign Up 2005	Irrigation System, Microirrigation			
	Irrigation Water Management			
	Nutrient Management			
	Pest Management			
	Spring Development			
	Tree/Shrub Establishment			
	Upland Wildlife Habitat Management			
	Wildlife Watering Facility			
	Windbreak/Shelterbelt Establishment			
EQIP 2002	Irrigation System, Microirrigation	2006	2010	2,607
Sign Up 2006	Irrigation Water Management			
	Nutrient Management			
	Critical Area Planting			
	Forest Stand Improvement			
	Pest Management			
	Pipeline			

Program	Range of Practices	Year Start	Year End	Approx. Acreage - Can Overlap Multiple Periods
	Pond			
	Pond Sealing or Lining, Flexible Membrane			
	Spring Development			
	Structure for Water Control			
	Tree/Shrub Establishment			
	Tree/Shrub Site Preparation			
	Upland Wildlife Habitat Management			
	Wildlife Watering Facility			
	Windbreak/Shelterbelt Establishment			
EQIP 2002	Forest Slash Treatment	2008	2010	139
Sign Up 2008	Forest Stand Improvement			
	Irrigation System, Sprinkler			
	Irrigation Water Management			
	Nutrient Management			
	Pest Management			
	Restoration and Management of Rare and Declining Habitats			
	Tree/Shrub Pruning			
	Upland Wildlife Habitat Management			
Conservation Security Program (CSP) 2002	Enhancement - Energy Management	2005	2014	4,979
	Enhancement - Forestry			
2005-2014	Enhancement - Grazing Management			
	Enhancement - Habitat Management			
	Enhancement - Nutrient Management			
	Enhancement - Pest Management			
	Enhancement - Soil Management			
	Enhancement - Water Management			
EQIP 2008	Forest Stand Improvement	2011	2013	1,189
	Irrigation Water Management			
	Nutrient Management			
	Pest Management			
	Prescribed Grazing			
	Tree/Shrub Establishment			
	Tree/Shrub Site Preparation			
EQIP 2008	Forest Slash Treatment	2011	2013	305
2009 Sign Up Year	Forest Stand Improvement			
	Hedgerows			
	Irrigation System, Microirrigation			
	Mulching			
	Nutrient Management			
	Pest Management			
	Tree/Shrub Pruning			
	Upland Wildlife Habitat Management			
EQIP 2008	Forest Slash Treatment	2011	2014	377
2010 Sign Up Year	Forest Stand Improvement			

Program	Range of Practices	Year Start	Year End	Approx. Acreage - Can Overlap Multiple Periods
	Hedgerows Irrigation System, Microirrigation Mulching Nutrient Management Pest Management Tree/Shrub Pruning Upland Wildlife Habitat Management			
EQIP 2008 2011 Sign Up Year	Forest Slash Treatment Forest Stand Improvement Hedgerows Irrigation System, Microirrigation Irrigation Water Conveyance Mulching Nutrient Management Pest Management Seasonal High Tunnel Tree/Shrub Pruning Upland Wildlife Habitat Management	2012	2014	220
EQIP 2008 2012 Sign Up Year	Forest Slash Treatment Forest Stand Improvement Irrigation System, Microirrigation Irrigation Water Conveyance Pumping Plant Seasonal High Tunnel Tree/Shrub Pruning	2013	2014	107
EQIP 2008 / 2013 Sign Up Year	Farm Energy Plan (1 Site)	2013		
EQIP 2008 /2014 Sign Up Year	Prescribed Grazing	2014	2014	1,575
Wildlife Habitat Incentive Program (WHIP) / 2011 Sign Up	Restoration and Management of Rare and Declining Habitats	2014	2014	200

CONSERVATION PRACTICES FUNDED BY CASCADIA CONSERVATION DISTRICT

All NRCS practice standards are eligible for cost sharing. The Conservation District annually ranks their highest natural resource priority. As a result there is some fluctuations as to which practice standards are funded. For example, Practices 595 – Integrated Pest Management and 590 – Nutrient Management do not typically rank high (and are subsequently not funded). The last three years (as of spring 2015) Forest Health has been Chelan County's highest resource concern. This is reevaluated annually. Therefore if practice standards specific or supportive of VSP are ranked higher, then those practices would rank higher and have a higher likelihood of funding. The Conservation District funding application and criteria could include a question and point in the ranking of applications that is specific to VSP.

The NRCS practices eligible for 75% cost share include:

106 CAP - Forest Management Plan

666 – Forest Stand Improvement

660 – Tree/Shrub Pruning

384 – Woody Residue Treatment

391 – Riparian Forest Buffer

612 – Tree/Shrub Site Preparation

490 – Tree/Shrub Establishment

734 – Fish & Wildlife Structures

The NRCS practices eligible for 50% cost share include:

449 – Irrigation Water Management

441 – Irrigation System, Micro irrigation

442 – Irrigation System, Sprinkler

430 – Irrigation Pipeline

533 – Pumping Plant

Since July 2011 CCD has assisted landowners with installing the following acres of riparian restoration in the identified Watershed Resource Inventory Areas (WRIAs), some of which may represent projects accounted in the Habitat Work Schedule where salmon recovery actions are tracked:

- WRIA 45: 6 acres
- WRIA 46: 9.4 acres

DESCRIPTIONS OF CONSERVATION PRACTICES

See Section IV in eFOTG to access all of Washington Conservation Practices with the standards and specifications: http://efotg.sc.egov.usda.gov/treemenuFS.aspx

The listed practices have been used in Washington State. See descriptions above for practices applied in Chelan County as shown in the Exhibits above. Others may be used informally outside of the program.

1. Agricultural Energy Management Plan-Landscape (AgEMP) (124)
2. Access Control (AC) (472)
3. Access Road (FT) (560)
4. Agrichemical Handling Facility (NO) (309)
5. Air Filtration and Scrubbing (NO) 371
6. Alley Cropping (AC) (311)
7. Amendments for Treatment of Agricultural Waste (AU) (591)
8. Anaerobic Digester (NO) (366)
9. Animal Mortality Facility (NO) (316)
10. Anionic Polyacrylamide (PAM) Application (AC) (450)
11. Aquaculture Ponds (AC) (397)
12. Aquatic Organism Passage (Mi.) (396)
13. Atmospheric Resources Quality Management (AC) (370)
14. Bedding (AC) (310)
15. Brush Management (AC) (314)
16. Building Envelope Improvement (NO) (672)
17. Channel Bank Vegetation (AC) (322)
18. Channel Bed Stabilization (FT) (584)
19. Clearing and Snagging (FT) (326)
20. Combustion System Improvement (NO) 372
21. Composting Facility (NO) (317)
22. Conservation Cover (AC) (327)
23. Conservation Crop Rotation (AC) (328)
24. Constructed Wetland (NO) (656)
25. Contour Buffer Strips (AC) (332)
26. Contour Farming (AC) (330)
27. Contour Orchard and Other Fruit Areas (AC) (331)
28. Cover Crop (AC) (340)
29. Critical Area Planting (AC) (342)
30. Cross Wind Ridges (AC) (588)
31. Cross Wind Trap Strips (AC) (589C)
32. Dam (NO. and AC-FT) (402)
33. Dam, Diversion (NO.) (348)
34. Deep Tillage (AC) (324)
35. Dike (FT) (356)
36. Diversion (FT) (362)
37. Drainage Ditch Covering (FT) (775)
38. Drainage Water Management (AC) (554)
39. Dry Hydrant (NO) (432)
40. Dust Control from Animal Activity on Open Lot Surfaces (AC) 375
41. Dust Control on Unpaved Roads and Surfaces (FT2) 373
42. Early Successional Habitat Development/Management (AC) (647)
43. Farmstead Energy Improvement (NO) 374
44. Feed Management (AU) (592)
45. Fence (FT) (382)
46. Field Border (FT) (386)
47. Filter Strip (AC) (393)
48. Firebreak (FT) (394)
49. Fish Raceway or Tank (FT) (398)
50. Fishpond Management (NO) (399)
51. Forage and Biomass Planting (AC) (512)
52. Forage Harvest Management (AC) (511)
53. Forest Stand Improvement (AC) (666)
54. Forest Trails and Landings (AC) (655)
55. Fuel Break (AC) (383)
56. Grade Stabilization Structure (NO) (410)
57. Grassed Waterway (AC) (412)
58. Grazing Land Mechanical Treatment (AC) (548)
59. GroundwaterTesting (NO) (355)
60. Heavy Use Area Protection (AC) (561)
61. Hedgerow Planting (FT) (422)
62. Herbaceous Weed Control (Ac.) (315)
63. Herbaceous Wind Barriers (FT) (603)
64. Hillside Ditch (FT) (423)
65. Integrated Pest Management (IPM) (AC) (595)
66. Irrigation Canal or Lateral (FT) (320)
67. Irrigation Ditch Lining (FT) (428)
68. Irrigation Field Ditch (FT) (388)
69. Irrigation Land Leveling (AC) (464)
70. Irrigation Pipeline (FT) (430)
71. Irrigation Reservoir (AC-FT) (436)
72. Irrigation System, Microirrigation (AC) (441)
73. Irrigation System, Surface and Subsurface (AC) (443)
74. Irrigation System, Tailwater Recovery (NO) (447)
75. Irrigation Water Conveyance, Ditch and Canal Lining, Flexible Membrane (FT) (428B)
76. Irrigation Water Conveyance, Ditch and Canal Lining, Galvanized Steel (FT) (428C)

77. Irrigation Water Conveyance, Pipeline, Aluminum Tubing (FT) (430AA)
78. Irrigation Water Conveyance, Pipeline, High-Pressure, Underground, Plastic (FT) (430DD)
79. Irrigation Water Conveyance, Pipeline, Low-Pressure, Underground, Plastic (FT) (430EE)
80. Irrigation Water Conveyance, Pipeline, Nonreinforced Concrete (FT) (430CC)
81. Irrigation Water Conveyance, Pipeline, Reinforced Plastic Mortar (FT) (430GG)
82. Irrigation Water Conveyance, Pipeline, Steel (FT) (430FF)
83. Irrigation Water Management (AC) (449)
84. Land Clearing (AC) (460)
85. Land Reclamation, Abandoned Mined Land (AC) (543)
86. Land Reclamation, Landslide Treatment (NO and AC) (453)
87. Land Reclamation, Toxic Discharge Control (NO) (455)
88. Land Smoothing (AC) (466)
89. Lighting System Improvement (NO) (670)
90. Lined Waterway or Outlet (FT) (468)
91. Livestock Pipeline (FT) (516)
92. Mine Shaft and Adit Closing (NO) (457)
93. Mole Drain (FT) (482)
94. Monitoring Well (NO) (353)
95. Mulching (AC) (484)
96. Multi-Story Cropping (AC) (379)
97. Nutrient Management (AC) (590)
98. Obstruction Removal (AC) (500)
99. On Farm Secondary Containment Facility (NO) (319)
100. Open Channel (FT) (582)
101. Pond (NO) (378)
102. Pond Sealing or Lining, Bentonite Sealant (NO) (521C)
103. Pond Sealing or Lining, Compacted Clay Treatment (NO) (521D)
104. Pond Sealing or Lining, Flexible Membrane (NO) (521A)
105. Pond Sealing or Lining, Soil Dispersant (NO) (521B)
106. Precision Land Forming (AC) (462)
107. Prescribed Grazing (AC) (528)
108. Pumping Plant (NO.) (533)
109. Range Planting (AC) (550)
110. Recreation Area Improvement (AC) (562)
111. Recreation Land Grading and Shaping (AC) (566)
112. Residue and Tillage Management, No-Till (AC) (329)
113. Residue and Tillage Management, Reduced Till (AC) (345)
114. Residue Management, Ridge Till (AC) (346)
115. Residue Management, Seasonal (AC) (344)
116. Restoration and Management of Rare or Declining Habitats (AC) (643)
117. Riparian Forest Buffer (AC) (391)
118. Riparian Herbaceous Cover (AC) (390)
119. Road/Trail/Landing Closure and Treatment (FT) (654)
120. Rock Barrier (FT) (555)
121. Roof Runoff Structure (NO) (558)
122. Roofs and Covers (NO) (367)
123. Row Arrangement (AC) (557)
124. Salinity and Sodic Soil Management (AC) (610)
125. Seasonal High Tunnel System for Crops (FT2) (798)
126. Sediment Basin (NO.) (350)
127. Shallow Water Management for Wildlife (AC) (646)
128. Short Term Storage of Animal Waste and Byproducts (CY) (318)
129. Silvopasture Establishment (AC) (381)
130. Sinkhole and Sinkhole Area Treatment (NO) (527)
131. Spoil Spreading (AC) (572)
132. Spring Development (NO) (574)
133. Sprinkler System (AC) (442)
134. Storm Runoff Control (NO and AC) (570)
135. Stream Crossing (NO) (578)
136. Stream Habitat Improvement and Management (AC) (395)
137. Streambank and Shoreline Protection (FT) (580)
138. Stripcropping (AC) (585)
139. Structure for Water Control (NO) (587)
140. Structures for Wildlife (NO) (649)
141. Subsurface Drain (FT) (606)
142. Surface Drain, Field Ditch (FT) (607)
143. Surface Drain, Main or Lateral (FT) (608)
144. Surface Roughening (AC) (609)
145. Terrace (FT) (600)
146. Trails and Walkways (FT) (575)
147. Tree/Shrub Establishment (AC) (612)
148. Tree/Shrub Pruning (AC) (660)
149. Tree/Shrub Site Preparation (AC) (490)
150. Underground Outlet (FT) (620)
151. Upland Wildlife Habitat Management (AC) (645)
152. Vegetative Barrier (FT) (601)
153. VegetativeTreatment Area (AC) (635)
154. Vertical Drain (NO) (630)
155. Waste Facility Closure (NO) (360)
156. Waste Recycling (Tons) (633)
157. Waste Separation Facility (NO) (632)
158. Waste Storage Facility (NO) (313)
159. Waste Transfer (NO) (634)
160. Waste Treatment (NO) (629)

161. Waste Treatment Lagoon (NO.) (359)
162. Water and Sediment Control Basin (NO.) (638)
163. Water Harvesting Catchment (NO) (636)
164. Water Well (NO) (642)
165. Watering Facility (NO) (614)
166. Waterspreading (AC) (640)
167. Well Decommissioning (NO) (351)
168. Wetland Creation (AC) (658)
169. Wetland Enhancement (AC) (659)
170. Wetland Restoration (AC) (657)
171. Wetland Wildlife Habitat Management (AC) (644)
172. Wildlife Watering Facility (648)
173. Windbreak/Shelterbelt Establishment (FT) (380)
174. Windbreak/Shelterbelt Renovation (FT) (650)
175. Woody Residue Treatment (AC) (384)

APPENDIX E. SUMMARY OF WATERSHED RESOURCE INVENTORY AREA PLANS

Chelan, Entiat, Wenatchee and Squilchuck/Stemilt Watersheds

INTRODUCTION & PURPOSE

The Voluntary Stewardship Program (VSP) is an optional, incentive-based approach to protecting critical areas while promoting agriculture. The VSP is allowed under the Growth Management Act (GMA) as an alternative to traditional approaches to critical areas protection, such as "no touch" buffers. A goal is to promote plans to protect and enhance critical areas where agricultural activities are conducted, while maintaining and improving the long-term viability of agriculture and reducing the conversion of farmland to other uses. In order to establish the program, a watershed work program is required and must contain goals and benchmarks for the protection and enhancement of critical areas. The work program must be approved by the Washington State Conservation Commission Director and the Departments of Fish and Wildlife, Ecology, and Agriculture.

The work plan must include several items, including applicable existing water quality, watershed management, farmland protection, and species recovery data and plans. It must also create measurable benchmarks through voluntary, incentive-based measures. As well, individual stewardship plans described in the program law are to contribute to the goals and benchmarks of the work plan; for the purposes of its efforts, Chelan County and partners intent to develop "stewardship checklists" to focus on simplicity and rely on many available conservation practices rather than detailed stewardship plans.

Chelan County has developed watershed plans for each Watershed Resource Inventory Area (WRIA) in the county including Chelan, Entiat, Wenatchee, and Squilchuck/Stemilt. These plans are a source of potential objectives and strategies that can be incorporated into the VSP Plan and the individual VSP "stewardship checklists" to be produced.

This document provides a high-level summary of WRIA defined issues and strategies, intending to focus on those relevant to critical areas, agriculture, and general watershed issues. For each watershed, a summary table is provided. For complete context and details on the strategies, each plan should be consulted.

LIST OF REFERENCES

Watershed plans and associated reports reviewed for this summary include:

- Entiat Watershed
  - Entiat WRIA 46 Management Plan, October 2004.
  - Chelan County Conservation District, February 2006. Detailed Implementation Plan Entiat Water Resource Inventory Area (WRIA) 46, prepared for Entiat Watershed Planning Unit.
  - Upper Columbia Salmon Recovery Board, May 28, 2004. Entiat Subbasin Plan, Prepared for the Northwest Power and Conservation Council

- Lake Chelan Watershed
  - Upper Columbia Salmon Recovery Board, May 28, 2004, Lake Chelan Subbasin Plan, Prepared for the Northwest Power and Conservation Council
  - RH2 Engineering, Inc. January 2012, Lake Chelan Watershed Plan (WRIA 47) Final Draft. Prepared for Lake Chelan Watershed Planning Unit.
- Squilchuck/Stemilt Watershed
  - RH2 Engineering, Inc. MAY 2007. WRIA 40A Watershed Plan Final. Prepared for WRIA 40A – Squilchuck/Stemilt Planning Unit.
  - Trust for Public Land, Core GIS, and The Stemilt Partnership Chelan County, September 2008. Stemilt-Squilchuck Community Vision.
  - Upper Columbia Salmon Recovery Board, May 28, 2004. Upper Middle Mainstem Subbasin Plan, Prepared for the Northwest Power and Conservation Council.
- Wenatchee Watershed
  - WRIA 45 Planning Unit, April 26, 2006, Final Wenatchee Watershed Management Plan.
  - Wenatchee Watershed Planning Unit, April 2008 Wenatchee Watershed Planning Phase IV – Detailed Implementation Plan
  - Upper Columbia Salmon Recovery Board, May 28, 2004. Wenatchee Subbasin Plan, Prepared for the Northwest Power and Conservation Council.

ENTIAT WATERSHED

Issues	Strategies/Objectives	Monitoring Plans or Recommendations	Implementation Status / Actions (highlights)
Water Quality			
• As of 2006, Entiat River was listed as water quality impaired for pH - on 303(d) list	• Promote and implement projects that improve water temperature conditions for aquatic species • Educational events about Best Management Practices related to herbicide and pesticide application, nutrient management, and potential water quality issues associated with farming and livestock. • Reassess and map areas of livestock access to streams • Maintain current efforts and practices.	• Continue ambient water quality monitoring of all water quality parameters (nutrients, nitrates, pH, temperature, fecal coliform, etc.) at Ecology site 46A070 • Monitor toxics bioaccumulation levels in fish • Use existing FLIR data to help evaluate cold-water influences as thermal refugia for salmonids during periods of high water temperature within the system	• Water quality monitoring of all water quality parameters (nutrients, nitrates, pH, temperature, fecal coliform, etc.) at Ecology site 46A070 • See 2009 Report on monitoring activity

Issues	Strategies/Objectives	Monitoring Plans or Recommendations	Implementation Status / Actions (highlights)
Water Quantity			
• Disparity between actual water use and the amount of water represented by rights and claims. • Documentation that most closely reflects actual water use is necessary for effective water resource management. • Some water right holders in the Entiat River watershed may not currently be exercising some/all of their water rights, yet while others need water. • Water conservation in the Entiat River watershed will help meet management goals and provide additional water for in stream and out-of-stream uses.	• Create a water resource management program that includes a reserve of water for future uses prioritized by use type • Implement Planning Unit Instream Flow recommendations and associated habitat and water quality actions. • Reserve water for new commercial, agricultural and light industrial enterprises should be limited to use in the lower Entiat River. • Establish tracking system with County for wells associated with new construction. • Track water rights applications, permits, claims, etc. and associated geographic and water volumes. • Address uncertainties in the water rights and claims records. • Share information about WRIA 46 water rights and claims data. • Ecology should continue to provide technical assistance and cost share on equipment for water metering. • CCCD should establish a reporting mechanism. • Develop a detailed water conservation, trust water, and water acquisition program for the Entiat River subbasin. • The NRCS and other partners should continue to provide technical and financial assistance to improve on-farm irrigation application efficiency, scheduling, and promote/improve water conservation.	• Streamflow monitoring • Promote community water metering to record actual water use and monitor gains and efficiency and losses attributable to new uses or changes in system operation.	Program took effect in Sept. 2005 which established administrative instream flows to protect aquatic resources in the Entiat and Mad River watersheds. These flows are monitored at three control points: • Entiat River near Entiat (Keystone gage) • Entiat River near Ardenvoir (Stormy gage) • Mad River at Ardenvoir (Mad near Mill Camp gage)

Issues	Strategies/Objectives	Monitoring Plans or Recommendations	Implementation Status / Actions (highlights)
Habitat			
• Channel geometry in the lower Entiat River (RM 16.2 to mouth) has been modified by past human activities including bank armoring, channelization, woody debris removal.	• Restore channel shape, width-to-depth ratios, and aquatic habitat complexity through strategic implementation of instream structures and Large Woody Debris complexes, and reconnection of side-channel habitats and floodplain where feasible. • Continue active restoration work in the "Bridge to Bridge" reach (~RM 3.2 - 4.5) to capitalize on connectivity to existing instream habitat restoration sites, and proceed upstream from there.	• Cooperative monitoring of existing instream structures, associated channel geometry, and fish species utilization on an annual basis.	• Installation of instream structures including rock cross-vanes, rock and wood clusters, barbs, and engineered log jams to restore aquatic habitat complexity, reduce accelerated bank erosion, and improve channel width-to-depth ratios; • Construction of two (2) new off-channel areas and a rearing pond to benefit juvenile salmonids
• Some existing surface water diversions and culverts in the Entiat River watershed are problematic for fish.	• Prioritize replacing surface water diversions and culverts that present fish passage problems, and address unscreened or inadequately screened pumps and diversions as necessary.		
• Riparian condition and bank stability has been altered by natural (fire) and human disturbances (agricultural encroachment, overgrazing, timber harvesting, recreation, timber road construction, and removal of vegetation). Riparian vegetation is necessary for bank stabilization, large woody debris recruitment, and stream temperature moderation.	• Implement targeted riparian restoration and enhancement projects, based on priorities (see Entiat Ch. 9- Recommendations table- General stream bank planting recommendations from 1995 NRCS study). • Restore riparian habitat through streamside revegetation projects with willing landowners. • Perform public outreach to inform community members about benefits of maintaining riparian vegetation, Conservation Reserve Enhancement Program (CREP) and other options for cost share on revegetation projects or easement renting.	• Abundance and distribution studies of native fish species of interest • Macroinvertebrate community composition and population in the Entiat subbasin • Continue annual fine sediment monitoring (via McNeil core samples) using existing reaches and transect sites.	• Annual fine sediment monitoring (via McNeil core samples) using existing reaches and transect sites. • Native shrub and tree planting along > 1000 feet of stream bank to help restore riparian function and shading.

Issues	Strategies/Objectives	Monitoring Plans or Recommendations	Implementation Status / Actions (highlights)
• Past grazing and land use activities have resulted in extreme bank instability and exacerbated rates of erosion and sediment delivery.	• Pursue conservation easement, lease, and options other than outright property acquisition with willing landowners to protect larger, undisturbed riparian areas. • Pursue funding and/or use existing partnerships to monitor new habitat improvement projects. • Monitoring results should be used to refine management recommendations as necessary. • Coordinate road management with major land owners in intermingled ownership areas to help reduce erosion and sediment from road sources.		
• Winter habitat conditions have been identified as a factor limiting salmonid survival in the Entiat River watershed. Of particular concern are the effects of cold water temperatures and anchor ice on egg and fry survival.	• Pursue grant funding to implement riparian planting and channel geomorphology restoration projects in the bridge-to bridge reach and other areas where enhancement of riparian and geomorphic condition might significantly enhance over-winter and other salmonid habitat conditions.	• Thermograph deployment and monitoring of winter temperatures and the effects of anchor ice on salmonid survival. • Monitor the effects of additional riparian vegetation and in-channel projects on winter water temperatures and anchor ice formation.	

Issues	Strategies/Objectives	Monitoring Plans or Recommendations	Implementation Status / Actions (highlights)
• The Entiat subbasin is utilized by salmonids protected as threatened and endangered under the Endangered Species Act (ESA).	Goal: • Protection and restoration of fish habitat sufficient to assure adequate habitat for salmonid recovery and to provide certainty for land and water users in the watershed under the ESA. Strategies: • Assure that actions are taken to implement channel geometry and riparian restoration recommendations, irrigation diversion structure improvements, and screening improvements. • Develop a Habitat conservation Plan (HCP) and/or salmon recovery plan to gain certainty under the ESA.	• Continue habitat and species monitoring. • Annual salmon carcass collection and DNA sampling. • Monitor salmonid outmigration via smolt traps • Probabilistic habitat monitoring consistent with Upper Columbia Salmon Recovery Board (UCSRB) Regional Technical Team (RTT) "Monitoring Strategy for the Upper Columbia Basin" (Hillman 2004, draft) or revised guidance	• Integrated Status and Effectiveness Monitoring Program – Entiat River[1]
• Wetlands along the upper mainstem Entiat River adjacent to the reach above the Potato Creek moraine serve important hydrologic and biologic functions in the Entiat River. • Wetlands along the lower reach of the river have been modified by flood control work and development and only a few wetlands exist.	• Assure that land use actions comply with existing regulations related to wetlands protection. • Local, state, federal, and other partners should assist landowners with voluntary maintenance of existing wetlands, or enhancement of the few remaining wetlands and their function. • Community outreach about benefits of wetlands, etc.		

[1] http://www.fws.gov/midcolumbiariverfro/pdf/2011_USFWS_Final_BPA_Report_01-31-2012.pdf

Issues	Strategies/Objectives	Monitoring Plans or Recommendations	Implementation Status / Actions (highlights)
• Fish habitat in the Entiat River watershed is adversely affected by excessive fine sediment, which can suffocate redds and cause substrate embeddedness.	• Use monitoring results to refine management recommendations as necessary.	• USFS and partners should continue annual fine sediment monitoring (via McNeil core samples) using existing reaches and transect sites.	
• Watershed and riverine resource management is driven by a number of natural processes including sediment. The sediment budget, bedload transport dynamics, and its relationship to channel geomorphology in the mainstem Entiat River are not completely understood.	• Initiate sediment budget, sediment transport, and/or analysis of bedload dynamics using acceptable methods (e.g. scour chains) to improve our understanding of this aspect of the system. • Continue its support of the ongoing assessment of gravel clusters, and results of the study should be presented to the EWPU.		
• Noxious weed infestations are common in disturbed areas throughout the WRIA, especially along roads and right of ways, and in abandoned pastures and cultivated fields. Noxious weeds reduce the biotic integrity and diversity in the watershed effecting quality of life for people, fish, and wildlife.	• Develop a comprehensive weed control program with landowners, the County Weed Control Board, and State and other federal agencies. • Encourage voluntary landowner efforts to control noxious weeds on their properties. • Explore potential for use of biological agents (e.g., weevils) for noxious weed control.		

Issues	Strategies/Objectives	Monitoring Plans or Recommendations	Implementation Status / Actions (highlights)
Wildlife			
Wildlife species protected as threatened or endangered under the Endangered Species Act use habitat on public lands and some private lands within the Entiat WRIA. Known species in the Entiat subbasin: *Threatened (Federal designation):* • Bald eagle • Canada lynx • Gray wolf • Grizzly bear • Marbled murrelet • Northern spotted owl *Designated:* • Critical habitat for the northern spotted owl	• Provide guidance to landowners in the Entiat River subbasin to promote land practices that are beneficial for wildlife; protect and restore riparian and terrestrial lands; and provide information about how to mitigate land use actions such that riparian and terrestrial species thrive. • Continue to apply for grant funds for priority riparian and terrestrial habitat projects.	• Monitor the success of habitat improvement projects.	
Mule deer inhabit the watershed and are a focal species of interest due to significant economic, recreational, and cultural value. Maintaining populations is limited in part by habitat loss due to development and overgrazing and deer control efforts necessitated by agricultural damage.	Objective: • The population management objective for mule deer will be to increase or maintain populations within the limitations of available mule deer habitat and landowner tolerance (agricultural damage). Strategies: • Model the Chelan PMU mule deer population (which extends beyond the subbasin border).	• Monitor harvest level of bucks and antlerless deer using mandatory hunter report system. • Use winter aerial and ground surveys to classify mule deer to determine post-hunt buck/fawn to doe ratios, spring fawn to adult ratios, and population size trends.	
Plant species that are listed under the ESA and/or are species of concern for State and Federal agencies are present within the Entiat WRIA. Plants with cultural resource significance also exist.	• Provide information to the public regarding the identification, significance, and protection of plant resources in the Entiat WRIA.		

LAKE CHELAN WATERSHED

Issues	Strategies/Objectives	Monitoring Plans or Recommendations	Implementation Status / Actions
Water Quality			
• Elevated concentrations of organochlorine pesticides, PCBs, and dioxins/furans in fish tissues, and elevated water quality constituents including phosphorous, pH, dissolved oxygen, and invasive exotic plants.	• Minimize movement of contaminants in Lake Chelan and Roses Lake and its tributaries (residues persist in soils, most often agricultural lands) • Meet Lake Chelan Total Maximum Daily Load for DDT/PCB • Meet Lake Chelan Total Maximum Daily Load for Total Phosphorous • Managing irrigation drain return flows that discharge to surface water • Develop Long Term Monitoring Plan	• Monitor fish tissue concentrations	
Water Quantity			
• Need additional data and analysis to quantify beneficial use and return flow estimates to support water quality modeling, water use planning, and watershed management. • Most available water used is discharged through Lake Chelan and used for power generation. • Conversion of lands and beneficial uses of water in the Wapato, Manson and lower Lucerne sub-basins from irrigation to domestic use will affect groundwater recharge, base flow, and water quality in these sub-basins.	• Improve the documentation of beneficial water use • Use improved water balance estimates • Promote joint comprehensive analysis and prioritization of future municipal/domestic use • Evaluate regional growth patterns • Evaluate potential future irrigation demand	• Initiate surface water and groundwater monitoring	

Issues	Strategies/Objectives	Monitoring Plans / Recommendations	Implementation Status / Actions
Habitat			
• Shrub steppe: Degradation of mule deer and Brewer's sparrow habitat from intensive grazing • Eastside Riparian wetlands: Beaver and red-eyed vireo habitat degradation from livestock overgrazing which can widen channels, raise water temperatures, reduce understory cover • Ponderosa pine: Habitat diversity and function has been lost from invasion of exotic vegetation and grazing • Fish: Fish population impacts include habitat degradation and loss; land development, conversion, and management; agricultural practices; fish-passage barriers; dam operations; flooding; species introductions; interspecific breeding; competition for resources; disease; harvest; and hatchery and stocking operations. Development of barriers at tributary mouths has negatively affected spawning and subsequent fry survival of WSCT (trout).	*Objectives* • Maintain and/or enhance habitat by improving agricultural practices, livestock grazing practices, and road construction in/on/adjacent to habitat • Provide sufficient quantity and quality shrubsteppe habitat to support the diversity of wildlife as represented by sustainable focal species populations *Strategies* • Implement habitat stewardship projects with private landowners • Develop and implement a coordinated, cross-jurisdictional comprehensive weed control • Develop and implement a coordinated, cross-jurisdictional road management plan • Support the Lake Chelan Fishery Plan (LCFP) objectives • Support habitat restoration efforts to improve limiting factors for both fish and wildlife. • Support developing a detailed implementation plan that includes prioritized fish and wildlife actions.	• Support the monitoring and understanding of habitat and species interactions and reproduction by coordinating LTMP activities with Lake Chelan Fishery Forum (LCFF)	

SQUILCHUCK/STEMILT WATERSHED

Issues	Strategies/Objectives	Monitoring Plans / Recommendations	Implementation Status / Actions
Water Quality			
Primary concerns include levels of dissolved gases, changes in stream temperatures, turbidity levels and exposure to environmental contaminates above biological thresholds for fish species utilizing the river.			
Water Quantity			
• The need for adequate water supplies (including storage) to provide reliable supplies for existing out-of-stream (domestic, **agriculture**, municipal, commercial, industrial and fire suppression) needs; • The need for adequate water supplies (including storage) for future uses of water in the watershed, including domestic, **agriculture**, municipal, commercial, industrial;	• Monitor stream flow and groundwater levels to update water balance of the quantities of runoff, recharge, water use and return flow • Document water diversion, storage and actual water use to update water balance estimates and increase the benefits of new storage opportunities		
Water Storage			
• Over half of total storage capacity in the watershed is lost due to seepage from active reservoirs in WRIA 40A • Water lost to free water evaporation • Water lost from leakage of water in ditches and evaporation in ditches	• Significant storage opportunities exist to minimize storage system loss • Improve diversion, storage and conveyance monitoring • Improve storage and conveyance efficiency • Improve reliability of water supplies • Expand existing storage capacity • Rehabilitate inactive reservoirs • Modify storage operations		

	• Construct new reservoirs • Collaboration with WDFW		
Habitat and Wildlife Resources			
Focal habitats are impacted by land use and human actions. Public and private land management should support conservation of wildlife resources—including focal habitats.	Objectives: • Maintain and/or enhance the function of focal habitats by improving agricultural practices, fire management, weed control, livestock grazing practices, and road management • Provide biological and other conservation measures to sustain focal species populations Strategies: • Conduct studies to determine the necessary amount, quality, and connectivity of focal habitats • Work with CCNRD and other State and local agencies to protect identified wetland, riparian and ground water recharge areas • Implement habitat stewardship projects with private landowners • Consider using conservation easements to limit development and provide for sustainable harvest and forestry practices to enhance habitat and provide for wildlife resources protection. • Implement federal, state, and tribal management plans, other conservation plans, or recovery plans to conserve the focal species • Develop and implement a coordinated, cross-jurisdictional comprehensive weed control management plan (e.g., Moses Coulee Cooperative Weed Management Area) • Develop and implement a coordinated, cross-jurisdictional road management plan	• Select survey protocol and measure abundance of focal species • Select survey protocol and measure diversity and richness of species assemblages • Use probabilistic sampling procedure to determine selection of monitoring and evaluation sites • Establish permanent census stations to monitor bird population and habitat changes	

Aquatic/Fish			
Three ESA listed fish species can be found in the Columbia River and middle Columbia watershed. Human activities impact the habitat for these focal species.	Objectives: • Ensure (and reduce threats to) the long-term persistence of self-sustaining, complex interacting groups (or multiple local populations that may have overlapping spawning and rearing areas) of bull trout distribution across the species' native range, so that the species can eventually be delisted	Develop a monitoring plan that addresses: • Current habitat conditions; abundance, distribution, life-stage survival, and age-composition of ESA-listed fish in the Upper Columbia Basin (status monitoring); • How these factors change over time (trend monitoring); • Effects that tributary habitat actions have on fish populations and habitat conditions (effectiveness monitoring)	

WENATCHEE WRIA WATER BASIN

Issues	Strategies	Monitoring Plan / Recommendations	Implementation Status/Actions
Water Quality			
Stream temperature exceeds state/fed water quality-on 303(d)) list		• Continued monitoring	• Lake Wenatchee Water Quality Monitoring program[2] • Monitoring station on Wenatchee River at Wenatchee[3] • Monitoring station on Wenatchee River at Levenworth[4]
Dissolved oxygen (DO) exceed federal water quality standards (303(d))	• Consider/implement management practices		
Fecal coliform exceeds state/fed standards - on 303(d) list	• Identify and mitigate sources	• Continued monitoring	
pH exceeds state or federal water quality standards - on 303(d) list	• Consider/implement management practices		
DDT exceeds fed/state water quality standards- on 303(d) list	• Preventing bank erosion and limiting transport of soils to streams, particularly when developing old orchards • Filtration by riparian areas and wetlands • Phased monitoring approach • Comprehensive groundwater monitoring		
Water Quantity			
Low to non-existent instream flows (either seasonal or year-round)	• Implementation of the instream flow rule • Management of reservation • Continued monitoring • Track water availability and meter new uses		• Six active water quantity monitoring stations.[5]

[2] http://www.co.chelan.wa.us/nr/water_resources/resources_management/waterquality.htm

[3] http://www.ecy.wa.gov/apps/watersheds/riv/station.asp?sta=45A070

[4] http://www.ecy.wa.gov/apps/watersheds/riv/station.asp?theyear=&tab=notes&scrolly=0&sta=45A110

[5] https://fortress.wa.gov/ecy/wrx/wrx/flows/station.asp?wria=45

Issues	Strategies	Monitoring Plan / Recommendations	Implementation Status/Actions
	• Increase water availability for instream flows • Maintain instream flows • Exempt wells: assess the influence of groundwater withdrawals on surface water		
Habitat			
• Riparian and off-channel habitat have been significantly lost or degraded • Floodplain function has been impaired • Loss of stream sinuosity • Loss of channel sinuosity • Loss of floodplain function	Objectives: • Maintain and/or enhance the function of focal habitats by improving agricultural practices, fire management, weed control, livestock grazing practices, and road management • Provide biological and other conservation measures to sustain focal species populations Strategies: • Conduct studies to determine the necessary amount, quality, and connectivity of focal habitats • Restore watershed, riparian, wetland, habitat diversity (e.g. riparian plantings) • Emphasize conservation connectivity of high-quality riparian wetlands habitat • Achieve permanent protection of riparian wetlands through acquisition, conservation easement, cooperative agreements, etc • Increase riparian vegetation where needed (methods: control noxious weeds, use livestock fencing) • Protect existing stream banks, floodplain and riparian vegetation, upland and wetland habitat • Promote local planning and zoning to maintain or enhance riparian wetlands habitat	• Establish permanent census stations to monitor bird population and habitat changes. • Use rigorous sampling methods to establish links between habitat enhancement prescriptions, changes in habitat conditions, and target wildlife population responses	•
• Channelization- any activity that moves,	• Implement channel migration zone, channel connectivity,		

Issues	Strategies	Monitoring Plan / Recommendations	Implementation Status/Actions
straightens, shortens, cuts off, diverts, or fills a stream channel, whether naturally or previously altered • Roads and railroads cut off habitat	off-channel study projects		
• Barriers to Fish migration (culverts, etc.)	• Provide improved fish passage		• Fish passage: Dual-frequency Identification Sonar (DIDSONTM) camera at Leavenworth National Fish Hatchery6
• Increased sedimentation • Sediment delivery	• Reduce sediment inputs/sedimentation		
Large woody debris and gravel recruitment	• Enhance woody debris		

Note: See Wenatchee Tributary Issues/Strategies in Attachment

[6] http://www.fws.gov/midcolumbiariverfro/pdf/Fish%20Passage%20Report%202013_Final.pdf

ATTACHMENT: STRATEGIES FOR TRIBUTARIES IN THE WENTACHEE WATERSHED

Strategies	Lower Wenatchee	Mission (AG)	Peshastin (AG)	Chumstick	Icicle (AG)	Upper Wenatchee/ Chiwaukum	Chiwawa	Nason	White, Little Wenatchee, Lake Wenatchee
Water Quality									
Stream temperature: continued monitoring	x	x	x	x	x				
Dissolved oxygen : consider/implement BMPs	x								
Fecal coliform: continued monitoring		x		x					
Fecal coliform: identify and mitigate sources				x					
pH: consider/implement BMPs	x								
DDT									
Phosphorous levels									
Water Quantity									
Implementation of the instream flow rule									
Management of reservation									
stream flow: continued monitoring	x		x		x				
Track water availability and meter new uses		x	x	x	x				
Increase water availability for instream flows		x	x	x	x				
Maintain instream flows						x			
Habitat									
Restore watershed, riparian, wetland, habitat diversity (e.g. riparian plantings)	x	x	x	x	Category 2 for salmon recovery		Category 1		
Increase riparian vegetation where needed (methods: control noxious weeds, use livestock fencing)	x	x	x	x	x				
Protect existing stream banks, floodplain and riparian vegetation, upland and wetland habitat	x	x	x	x	x	x			
Implement channel migration zone, channel connectivity, off-channel study projects	x								
Reduce sediment inputs/sedimentation				x	x				
Provide improved fish passage					x				
Enhance woody debris						x			
Policy, Education									
Educate the public/Public outreach on water limitations, water conservation, water quality issues	x			x					
Coordinate interaction with landowners and public		x							

APPENDIX F. EXISTING REGULATIONS AND VOLUNTARY PROGRAMS

1.0 FEDERAL REGULATIONS

Federal laws including the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Food Quality Protection Act regulate use of pesticides. The Clean Water Act (CWA), Safe Drinking Water Act (SDWA), and National Pollution Discharge Elimination System (NPDES) regulate water quality, though most regulatory actions are the responsibility of Washington State.

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

Label use restrictions and registration requirements from EPA put limitations on pesticide usage, storage, and disposal.

http://www.epa.gov/agriculture/lfra.html

Clean Water Act (CWA) National Pollutant Discharge Elimination System (NPDES)

NPDES Permits are required for concentrated animal feeding operations, Dredge and Fill permits for activities on wetlands, etc. A federal general NPDES permit restricts pesticide application near waterbodies. No federal biosolid application permit is required, though state requirements and water quality standards do apply. Farms must meet regulatory requirements for pollutant limits, reporting, and other requirements.

http://water.epa.gov/lawsregs/guidance/wetlands/section402.cfm

Endangered Species Act (ESA)

ESA prohibits the "take" of species listed as threatened or endangered and protects their habitats. Specific limitations imposed though ESA consultation requirements include pesticide no-spray buffers of twenty to one hundred yards (depending on application) from salmon bearing waterways. In Chelan County, this rule applies to propagate application.

http://www.fws.gov/endangered/laws-policies/

US Department of Agriculture (USDA) Farm Bill

The 2014 Agricultural Act (formerly 1985 Food Security Act) includes a "Swampbuster" conservation compliance provision to prohibit agricultural land owners participating in Farm Bill programs from converting wetlands to cropland. A "Sodbuster" provision also requires participating producers to maintain specified levels of conservation. The CWA also prohibits wetland conversion, however agricultural operations farming wet areas converted to cropland prior to the act are generally exempt from federal permitting requirements under "prior converted cropland" provisions.

http://www.usda.gov/wps/portal/usda/usdahome?navid=farmbill

Environmental Protection Agency Laws

The U.S. Environmental Protection Agency (EPA) produced a document in 2007 that highlights existing EPA laws and programs that may have an impact on farmers and agricultural producers. It provides a

summary matrix of essential environmental laws and regulations pertinent to agriculture and agricultural practices.

EPA. 2007. "Major Existing EPA Laws and Programs that Could Affect Agricultural Producers" Available at: http://www.epa.gov/oecaagct/agmatrix.pdf.

2.0 WASHINGTON STATE REGULATIONS

Revised Code of Washington (RCW)

RCW Title 15: Agriculture and Marketing

Regulates agricultural practices generally, with specific reference to pest and disease control, fertilizers, and crop-specific commissions.

15.08 RCW- Horticultural Pests and Diseases

Horticultural premises include orchards, vineyards, berry farms, vegetable farms, and others (see section for more explicit detail). This section outlines regulations for the disinfection of fruit trees, the disposal of cuttings, records of premises disinfected, and prohibits the dumping of any infected products. See section for more details.

- **15.08.020- Disinfection of fruit trees**
    - Methods for disinfecting fruit trees shall follow official published recommendations of the Washington State University for proper prevention, control and eradication of pests and diseases of fruit trees

15.28.015 RCW- Regulating Soft Tree Fruits

Provides information on the regulation of soft fruit trees, the creation of the Washington state fruit commission, and applicable laws that apply to the production of soft fruit trees. 15.28.015 (6) letters (a) through (v) highlight federal and state regulations and restraints applicable to the soft fruit tree industry.

http://apps.leg.wa.gov/rcw/default.aspx?cite=15.28

15.58.020 RCW- Washington Pesticide Control Act

Regulates the formulation, distribution, storage, transportation, and disposal of any pesticide and the dissemination of accurate scientific information as to the proper use, or nonuse, of any pesticide in the interest of maintaining a high level of public health and welfare both immediate and future.

(http://apps.leg.wa.gov/RCW/default.aspx?cite=15.58.020)

RCW Title 16: Animals and Livestock

Regulates livestock practices generally, including stock on state or federal lands, fence practices, etc.

16.60 RCW- Fences

Regulates the type of fence, erection, removal, value, damages to and from fences.

http://apps.leg.wa.gov/rcw/default.aspx?cite=16.60&full=true

RCW Title 17: Weeds, Rodents and Pests

Establishes and regulates pest control, agricultural pest districts, etc.

17.12 RCW- Agricultural Pest Districts

Allows the board of county commissioners of any WA State county to create a pest district(s) for the purpose of destroying or exterminating various animal pests that may destroy or interfere with crops, fruit trees, and other agricultural products.

http://apps.leg.wa.gov/rcw/default.aspx?cite=17.12.010

17.21 RCW- Washington Pesticide Application Act

Regulates the application and the control of the use of various pesticides to maintain a high level of public health and welfare both immediate and future.

(http://apps.leg.wa.gov/RCW/default.aspx?cite=17.21)

RCW Title 70: Public Health and Safety

Establishes and regulates issues that affect public health and safety standards and includes provisions of the Washington Clean Air Act.

70.94 RCW- Washington Clean Air Act

Preserves and protects air quality for current and future generations by regulating air pollution and complies with the requirements of the federal clean air act.

70.94.6514 RCW- Outdoor burning-Areas where prohibited-Exceptions

Allows for burning that is normal, necessary and customary to ongoing agricultural activities. Allows for outdoor burning of cultivated orchard trees as an ongoing agricultural activity.

http://apps.leg.wa.gov/rcw/default.aspx?cite=70.94.6514

70.94.6528 RCW- Agricultural burning practices

Fires related to agricultural activities need a permit from an air pollution control authority, the department of ecology, or a local entity delegated permitting authority.

http://apps.leg.wa.gov/rcw/default.aspx?cite=70.94.6528

RCW Title 77: Fish and Wildlife

Establishes Department of Fish and Wildlife including enforcement code, hydraulic project approval permits, salmon recovery, and invasive species.

http://apps.leg.wa.gov/rcw/default.aspx?Cite=77

RCW 86.16: Floodplain Management

http://apps.leg.wa.gov/rcw/default.aspx?cite=86.16

Statewide floodplain management regulation shall be exercised through: (1) Local governments' administration of the national flood insurance program regulation requirements, (2) the establishment of minimum state requirements for floodplain management that equal the minimum federal requirements

for the national flood insurance program, and (3) the issuance of regulatory orders. This regulation shall be exercised over the planning, construction, operation and maintenance of any works, structures and improvements, private or public, which might, if improperly planned, constructed, operated and maintained, adversely influence the regimen of a stream or body of water or might adversely affect the security of life, health and property against damage by flood water.

RCW Title 87: Irrigation

Establishes and regulates irrigation and rehabilitation districts.

http://apps.leg.wa.gov/rcw/default.aspx?Cite=87

RCW Title 89: Reclamation, Soil Conservation, and Land Settlement

Establishes conservation districts, farmland preservation, watershed restoration, and farm plans.

89.10 RCW- Farmland Preservation

Recognizes the importance of farmland preservation to long-term sustainability of the state's people and economy and also recognizes the need and desire to retain agricultural land and ensure the future opportunities to farm these lands. Also creates the office of farmland preservation.

http://apps.leg.wa.gov/rcw/default.aspx?cite=89.10

RCW Title 90: Water Rights – Environment

Regulates water rights, water use and flow levels, water pollution, nutrient management, wetlands mitigation, shoreline management, aquatic rehabilitation, and Columbia River basin waters.

90.66 RCW- Family Farm Water Act

In order to preserve necessary water for agriculture, Washington state voters enacted this act in 1977 mandating that among potential agricultural water users only the family farm will be given priority status. Although irrigated large-scale landholdings will remain intact, their future expansion is curtailed.

http://apps.leg.wa.gov/rcw/default.aspx?cite=90.66

RCW 90.58 Shoreline Management Act

The Shoreline Management Act (SMA) addresses shoreline uses, conservation, and public access along shoreline waterbodies that meet certain size or flow criteria in the Shoreline Management Act (SMA). These shorelines include rivers and streams with mean annual flow over 20 cubic feet per second. The shoreline jurisdiction extends 200 feet landward of these waters and additionally includes associated wetlands, floodways, and up to 200 feet of floodway-contiguous floodplains. In Chelan County these include numerous waterbodies (80 streams/rivers and 53 lakes), most prominently Lake Chelan, Lake Wenatchee, Wapato Lake, Dry Lake, Roses Lake, Cortez Lake, Meadow Lake, Columbia River, Wenatchee River, Icicle Creek, Peshastin Creek, Entiat River, Mad River, and Colockum Creek and many others that run through and along agricultural and rangeland areas.

The SMA requires local agencies including Chelan County to prepare Shoreline Master Programs (SMPs). When SMPs are comprehensively updated they include regulations to address critical areas [WAC 173-26-221(2)]. The GMA clarifies that critical area regulations transfer to the SMP after a comprehensive update (RCW 36.70A.480(3)(d)). GMA-based critical area~~s~~ regulations are either incorporated by reference or

adapted for inclusion into SMPs. However, the SMA does not allow updated SMPs to require modification of or limit agricultural activities on agricultural lands (RCW 90.58.065(1)). The SMP only applies to agriculture when new land is brought into production (relatively rare) or when a new development is added (WAC 173-26-241(3)(a). SMPs do not apply to replacement, maintenance, or repair of existing agricultural facilities [RCW 90.58.065(2)a)].

The SMP does not need to incorporate the VSP work plan. The SMP cannot limit or modify agricultural activities as defined in the SMA (essentially existing, ongoing agriculture). The VSP should apply wherever agriculture and critical areas exist inside or outside of shoreline jurisdiction.

3.0 WASHINGTON STATE ADMINISTRATIVE CODE

WAC Title 16: Department of Agriculture (WSDA)

Regulates many aspects of agriculture including marketing, standards, fertilizer and pesticide use, nutrient management, etc. WACs 16-200 through 16-232 set general and location-specific standards for fertilizer and pesticide usage. Regulations of particular importance to Chelan County include:

16-201 WAC Fertilizer Bulk Storage and Operational Area Containment Rules.

Regulates the primary and secondary containment of liquid bulk fertilizers; operational area containment of liquid bulk fertilizers; dry bulk fertilizer storage and handling; backflow prevention; fertilizer spills; maintenance, inspection and recordkeeping requirements; and spill response plan.

http://apps.leg.wa.gov/WAC/default.aspx?cite=16-201&full=true

16-202 WAC Application of Pesticides and Plant Nutrients through Irrigation Systems

Establishes the performance standards of chemigation that are protective of existing and future uses of surface water and groundwater quality.

http://app.leg.wa.gov/WAC/default.aspx?cite=16-202-1001

Chapters 16-228-1238, 16-228-1264, and 16-228-1266 WAC General Pesticide Rules

Outline the restrictions and requirements for use of pesticides specific to fruit orchards and vines.

- Specific to fruit orchards and vines:
    - **16-228-1238** outlines the restrictions on application of ziram to Bosc pears.
    - **16-228-1264 and 16-228-1266** outlines the restrictions and requirements of use of pesticides containing active ingredient thiamethoxam (including use on apples and pears)
- http://app.leg.wa.gov/WAC/default.aspx?cite=16-228

16-230 WAC (600-675) Use of Chemicals and Chemically Treated Materials in Certain Counties

Establishes restricted herbicides- their use, sale, mixing, loading, conditions, storage, etc. in Eastern Washington (including Chelan County).

Chapter 16-231-800 Restrictions for herbicide use in Douglas and Chelan counties

restricts specific herbicide usage within Chelan and Douglas counties. Outlines that the distribution, use, and application of use restricted herbicides shall comply with rules relating to the use of pesticides in chapter **16-228** (see above), **16-230-600** through **16-230-675** (see above).

http://app.leg.wa.gov/WAC/default.aspx?cite=16-231-805

WAC Title 173: Department of Ecology (DOE)

Responsible for regulation of numerous relevant environmental features including floodplains, shorelines, ground and surface waters, biosolids, and air quality.

Chapters 173-18 through 173-27

Define and designate the Shoreline Management Act (SMA). The County currently implements a Shoreline Master Program (SMP) and will be updating it in the next couple of years. See the discussion under RCW 90.58 regarding applicability to agricultural activities. The most relevant rules include those guiding the development of Shoreline Master Programs, here:

http://apps.leg.wa.gov/WAC/default.aspx?cite=173-26

Chapter 173-152 and 173-153 Water Rights

Regulate water rights; chapters 173-166, 173-170 and 173-173 describe drought relief, agricultural water supply, and water use reporting requirements.

http://app.leg.wa.gov/WAC/default.aspx?cite=173-152

Chapter 173-158 Flood Plain Management

Regulates floodplain management and includes restrictions regarding farm infrastructure within floodplains and recommendations for wetland management.

http://app.leg.wa.gov/WAC/default.aspx?cite=173-158

Chapter 173-201A Water Quality Standards for Surface Waters of the State of Washington

Regulates water quality and application of best management practices (BMPs) to comply with water quality regulations under the federal Clean Water Act.

http://app.leg.wa.gov/WAC/default.aspx?cite=173-201A

Chapter 173-430 Agricultural Burning

Regulates agricultural burning practices.

http://app.leg.wa.gov/WAC/default.aspx?cite=173-430

Chapter 173-500 Water Resources Management Program

Water resource and instream management regulations for state waterways including the Columbia and Wenatchee rivers are described in chapters 173-500 through 173-591.

http://app.leg.wa.gov/WAC/default.aspx?cite=173-500

WAC Titles 220 and 232 – Department of Fish and Wildlife (WDFW).

Responsible for regulating marine and freshwater fisheries (220) and other wildlife (232) throughout the state.

http://app.leg.wa.gov/WAC/default.aspx?cite=220

http://app.leg.wa.gov/WAC/default.aspx?cite=232

Chapter 220-660 WAC Hydraulic Code Rules

Now Replaced with Chapter 220-660 as of December 2014. WDFW regulates construction projects or activities (e.g. bank protection, culvert replacement, outfalls, water diversions) in or near state waters through an environmental permit called the Hydraulic Project Approval (HPA).

http://app.leg.wa.gov/WAC/default.aspx?cite=220-660

Chapter 220-140 Regional Fisheries Enhancement Groups

Defines Voluntary Cooperative Fish and Wildlife Enhancement Programs, including the Upper Columbia Regional Fisheries Enhancement Group.

http://app.leg.wa.gov/WAC/default.aspx?cite=220-140

Chapter 232-36 Wildlife Interaction Regulations

Describes wildlife interaction rules, including those governing commercial crop and livestock damage.

http://app.leg.wa.gov/WAC/default.aspx?cite=232

Selected Manuals and Guides

The following are selected manuals and guides produced by Washington state agencies that offer technical assistance in navigating some of the regulations listed above.

Orchard Pesticide Use Restriction Information

Several currently used orchard pesticides have label statements that restrict their use near water. These restrictions are legal requirements that must be followed. This technical assistance bulletin is being distributed to inform applicators of these restrictions, and to prevent pesticides from getting into water.

(http://agr.wa.gov/PestFert/Pesticides/docs/OrchardUseRestrAsst.pdf)

Washington Pesticide Laws and Related Regulations Hand-Out Booklet

Describes the license and application requirements of pesticide use.

http://agr.wa.gov/PestFert/Pesticides/docs/PesticLawsBooklet.pdf

WSDA Pesticide/Pest Inspector Licensing and Fact Sheet

These fact sheets contain information about the licensing program administered by WSDA.

http://agr.wa.gov/pestfert/docs/Form4375.pdf

http://agr.wa.gov/pestfert/licensinged/licensing.aspx

Washington State University Extension: 2014 Crop Protection Guide for Tree Fruits in Washington

This guide provides information on pesticide safety, management strategies, bee protection, pesticide resistance management, specific information for apple and pear crop protection programs, nutrients, bioregulator sprays, weed control, and additional topics.

http://www.tfrec.wsu.edu/pages/cpg/Home

Washington State University Extension: Orchard Pest Management (OPM) Online

This guide explains the concepts of integrated pest management (IPM), which rooted in the principles of ecology. In practice, it aims to minimize harmful effects on the environment while also avoiding crop loss.

http://jenny.tfrec.wsu.edu/opm/displaySpecies.php?pn=-10

4.0 WASHINGTON STATE PROJECTS

WA State Department of Fish and Wildlife (WDFW)

Priority Habitats and Species (PHS)

The Washington Department of Fish and Wildlife publishes a Priority Habitats and Species (PHS) list. The PHS List is a catalog of habitats and species considered to be priorities for conservation and management.

Priority species require protective measures for their survival due to their population status, sensitivity to habitat alteration, and/or recreational, commercial, or tribal importance. Priority species include State Endangered, Threatened, Sensitive, and Candidate species; animal aggregations (e.g., heron colonies, bat colonies) considered vulnerable; and species of recreational, commercial, or tribal importance that are vulnerable.

Numerous individuals and groups use the PHS List as well as associated PHS products (e.g., PHS Data) to inform conservation-related activities. Typical users include cities and counties that use PHS to fulfill planning requirements under the **Growth Management Act** and **Shoreline Management Act**, non-profit organizations such as land trusts that use PHS information to prioritize habitat protection, community groups working on local biodiversity planning initiatives, as well as other state and federal government agencies.

http://wdfw.wa.gov/conservation/phs/list/)

WA State Department of Ecology (DOE)

Water Quality Improvement Projects (WQIs)

The Department of Ecology works to make measurable improvements in water quality. These projects identify pollutions problems and develop a total maximum daily load (s) and implementation strategies.

For specific Chelan County WQIs, visit:

http://www.ecy.wa.gov/programs/wq/tmdl/TMDLsbyCounty/chelan.html

Manuals and Guides

Clean Water on Agricultural Lands

This section of the DOE website provides information specific to agriculture and agricultural activities that affect water quality.

(http://www.ecy.wa.gov/programs/wq/nonpoint/Agriculture/agnpssolutions.html)

5.0 CHELAN COUNTY REGULATIONS

The following County Code chapters are pertinent to agriculture and agricultural practices.

Chapter 3: Building Regulations

Chapter 3.20 Flood Hazard Development

The purpose of this chapter is to promote public health and safety by minimizing losses from flooding and flood conditions in specific areas by providing design standards. Normal agricultural practices, except structures, are exempt (see below).

3.20.030 (4) Exemptions

Normal agricultural practices, such as plowing, storing materials, etc. normal to farm operation, but not including structures, are exempt from the provisions of 3.20.

http://www.codepublishing.com/wa/chelancounty.html

Chapter 5: Business Regulations and Licenses

Chapter 5.36 Right to Farm

"A farm operation shall not be found to be a public or private nuisance if the farm or farm operation conforms to generally accepted agricultural and management practices."

Chapter 11: Zoning

Chapter 11.30 Commercial Agricultural Lands

Outlines the permitted, accessory and conditional uses in this district. This includes development and design standards such as lot size, building height, lot coverage, setbacks, parking, landscape standards, etc.

Chapter 11.80 Frequently Flooded Areas Overlay District (FFOD)

Those areas located within the one-hundred-year floodplain as defined by the Federal Emergency Management Agency are classified as frequently flooded areas. (Res. 2007-97 (part), 7/2/07: Res. 2000-129 (part), 10/17/00).

Chapter 11.84 Wetland Areas Overlay District (WOD)

To protect the ecological and environmental functions of wetlands and protect the public health, safety and welfare benefits provided by wetlands by preventing the continual loss of wetlands and, where practical, enhancing or restoring wetland functions and values. (Res. 2007-97 (part), 7/2/07).

Chapter 11.86 Geologically Hazardous Areas Overlay District (GHOD)

This designates and regulates geologically hazardous critical areas consistent with the Growth Management Act and Chapter 395-190 WAC, Minimum Guidelines to Classify Agricultural, Forest, Mineral Lands and Critical Areas. (Res. 2007-97 (part), 7/2/07).

(http://www.codepublishing.com/WA/chelancounty/?Chelco15/Chelco1570.html&?f)

Chapter 11.88.170 (1A) Accessory uses and structures (fences)

Fences shall not exceed a height of 6 feet in side and rear yard area and 4 feet in front yard, except corner lots.

Chapter 11.88.170 (8 and 9) Accessory uses and structures (Agricultural worker housing)

Both temporary and permanent agricultural worker housing, occupied seasonally or year-round, is permitted following consistency with zoning and that additional conditions are met. See code for further details.

Chapter 11.88.170 (11-E) Governing Standards

Accessory buildings that are barns or similar agricultural buildings shall not exceed 50 feet in height.

Chapter 11.88.260 (2) Roadside Stands

Roadside stands, nurseries, and value-added operations less than 1,000 square feet are permitted provided additional criteria are met. See code for further details.

Chapter 11.88.030 Livestock

Describes regulations associated with livestock including fences, animal densities, accessory and housing structures for livestock, sanitation conditions and maintenance, etc.

6. VOLUNTARY PROGRAMS

Agricultural producers participate in numerous voluntary industry programs that may contribute to the protection or enhancement of critical areas. It is important to note that these programs are dynamic and influenced by changing federal regulations, industry norms, and market conditions.

- **Global G.A.P.** is a voluntary certification program for agricultural producers around the world. The program encourages use of safe and sustainable agricultural practices. Specific certification requirements include waste management protocols and the development of wildlife and habitat conservation plans, though the measures are broadly stated. (http://www.globalgap.org/uk_en/for-producers/crops/FV/)
- **Safe Quality Food Institute (SQF-I)** provides certification in food safety and quality. The code includes requirements for several relevant good agricultural and livestock practices including water

management, the storage of hazardous chemicals, soil management and use of fertilizers, and waste disposal. (http://www.sqfi.com/)

- **PrimusLabs GAP** provides tools and audit programs (checklists) to support good agricultural practices relating to site selection, adjacent land use, fertilizer usage, water sourcing and usage, pest control and pesticide monitoring, and harvesting practices. (http://www.primuslabs.com/Services/StandardGAP.aspx)
- **USDA Harmonized Produce GAPs** consist of audit checklists to ensure food safety standards. Relevant topics include water quality and chemical use. (http://www.ams.usda.gov/AMSv1.0/HarmonizedGAP)

Beyond these existing programs there are industry specific programs. For example, in California there is the following:

- **California Sustainable Winegrowing Program (Voluntary Sustainable Practices):** www.sustainablewinegrowing.org

APPENDIX G. ROLE OF TECHNICAL PROVIDERS

1.0 OVERVIEW

The Voluntary Stewardship Program (VSP) places emphasis on outreaching through technical assistance providers that support agricultural operators in the watersheds as a work plan is prepared to develop goals and benchmarks to protect critical areas and maintain and enhance agriculture.

Work plans created under the program are in turn required to designate one or more entities to provide technical assistance to help operators develop or implement individual stewardship plans to contribute to the goals and benchmarks of the work plan. (RCW 36.70A.720). Though their participation is voluntary, "Agricultural operators implementing an individual stewardship plan consistent with a work plan are presumed to be working toward the protection and enhancement of critical areas." RCW 36.70A.750. Some of the goals and benchmarks will address participation. Some will address protecting critical areas (avoiding further degradation of critical area functions and values existing as of July 22, 2011 for a particular critical area). Some will address promotion of voluntary incentive-based critical area enhancements (to improve upon the July 22, 2011 protection baseline). Some will address maintaining and enhancing a viable agricultural industry.

Key federal, state, county, and nonprofit technical providers operating in Chelan County, include, but are not limited to:

- Cascadia Conservation District
- Chelan County Natural Resources Department
- United States Department of Agriculture, Natural Resources Conservation Service
- Washington State University Extension

These providers provide direct assistance to agricultural operators in the County to address conservation practices that improve the environment and help productivity. The following table summarizes the key technical assistance the listed agencies provide.

Table 1. Summary of Key Technical Assistance Providers in Chelan County

Agency	Highlighted Technical Assistance Programs
Cascadia Conservation District (CCD) http://cascadiacd.org/	Landowner Assistance Program - Countywide: CCD can pay up to 50% of the total project cost for irrigation-related projects and up to 75% of the total project cost for forest health and riparian practices. Wenatchee Watershed Water Quality Improvement Program: Soil testing and associated technical assistance for nutrient planning for citizens with livestock, agricultural land or residential lawns; riparian plantings of native trees and shrubs; pasture health and riparian livestock exclusion fencing. CCD is the designated Lead Agency for administering and coordinating the watershed planning processes for the Entiat Basin (WRIA 46).

Agency	Highlighted Technical Assistance Programs
Chelan County Natural Resources Department (CCNRD) http://www2.co.chelan.wa.us/nr/	Chelan County is the designated Lead Agency for administering and coordinating the watershed planning processes for the Stemilt/Squilchuck (WRIA 40a), Wenatchee (WRIA 45) and Chelan (WRIA 47) Watersheds. CCNRD develops and implements with willing landowners fish passage barrier removal and habitat complexity projects coordinated with Upper Columbia Salmon Recovery Planning Board.
United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) http://www.usda.gov/wps/portal/usda/usdahome	NRCS offers the Natural Resource Conservation Planning Program, where its staff work with agricultural operators to assess conditions on their property, help identify conservation practices that can ameliorate environmental conditions affecting the operation (e.g. erosion), and monitor practices. Conservation practices are designed for local property conditions following a site specific assessment. The NRCS has developed objectives and standards for numerous conservation practices addressing common agricultural activities or environmental conditions. NRCS offers financial assistance to help agricultural producers install and maintain conservation improvements on their land.
Washington State University Extension (WSU) http://county.wsu.edu/chelan-douglas/agriculture/Pages/default.aspx http://county.wsu.edu/chelan-douglas/agriculture/treefruit/Pages/default.aspx	WSU Extension maintains a local office in Chelan County. WSU provides the following services: • Education and research, turning results into best practices regarding irrigation, weed management, pesticide application, pest management, • Opportunities for certifications, such as pesticide application certification, online certificate in organic farming, and • Training and outreach such as Hort Days.

Additionally, there are industry associations and state commissions providing education and training as well as advocacy for the local agricultural industries. These include:

- Washington State Tree Fruit Association
- Washington Tree Fruit Research Commission
- Washington Association of Conservation Districts
- Washington Conservation Commission
- Washington Association of Wheat Growers
- Washington Cattlemen's Association
- Washington Dairy Federation
- Washington Farm Bureau
- North Central Washington Fieldmen's Association

Sections 2 and 3 provide more information on the key technical assistance providers and other associations that assist landowners with practices that could benefit critical areas protection and agricultural production.

DRAFT

2.0 TECHNICAL ASSISTANCE PROVIDERS: DETAILS OF MISSION AND PROGRAMS

2.1 Cascadia Conservation District (CCD)

Mission or Role

We are a non-regulatory political subdivision of the State of Washington. Our district includes all of Chelan County except for the incorporated cities of Wenatchee and Chelan. Our mission is to encourage wise stewardship and conservation of all natural resources for current and future residents of Chelan County. We work toward cooperative solutions that result in the greatest benefit for the greatest number of people.

Website

http://cascadiacd.org/

Range of Services

Education & Outreach: Educational programming and outreach materials help to demonstrate how natural environments function, how our activities can impact those environments, and how we can best mitigate those impacts. Cascadia Conservation District (CCNRD) participates in a number of education and outreach efforts including the annual Kids in the Creek program and the Wenatchee River Salmon Festival. We also produce a seasonal Newsletter and other outreach materials.

GIS Mapping & Soils Reports: Links to federal soil survey and agricultural map products. The CCD also prepared geographic information system data regarding agricultural lands in the Wenatchee watershed.

Landowner Assistance: Private landowners within the boundary of CCD are eligible for the Landowner Assistance Program to install best management practices to minimize impacts on fish and wildlife as well as conserve fragile natural resources. Landowners with 2.5 acres or more who are within CCD are eligible to apply for cost share. Cascadia Conservation District can pay up to 50% of the total project cost for irrigation-related projects and up to 75% of the total project cost for forest health and riparian practices. Landowners would submit a cost-share application, photos of the project, an estimated budget, and any corresponding planning documents and specifications such as a forest stewardship plan and forest health management specifications as appropriate. Landowners install the project after it is approved by the CCD board of supervisors and you have signed a contract/agreement. They are reimbursed following an inspection. The project must be installed by June 15 and the landowner would provide appropriate financial documents at that time. The CCD Example projects include:

- Forest Management Plan
- Forest Stand Improvement
- Tree/Shrub Pruning, Site Preparation, Establishment
- Woody Residue Treatment
- Riparian Forest Buffer
- Irrigation Water Management
- Irrigation System, Microirrigation
- Irrigation System, Sprinkler

- Irrigation Pipeline and/or Pumping Plant
- *Other projects may also be eligible

All NRCS practice standards are eligible for cost sharing. The Conservation District annually ranks their highest natural resource priority.

Since July 2011 CCD has assisted landowners with installing the following acres of riparian restoration in the identified Watershed Resource Inventory Areas (WRIAs), some of which may represent projects accounted in the Habitat Work Schedule where salmon recovery actions are tracked:

- WRIA 45: 6 acres
- WRIA 46: 9.4 acres

CCD's Wenatchee Watershed Water Quality Improvement Program helps to implement the federal Water Cleanup Plan or TMDL [Total Maximum Daily Load]. CCD supports water quality improvements in the Wenatchee watershed through information, coordination of cleanup activities, and funding through the above landowner assistance programs. The range of offerings include:

- **Education:** Irrigation Information Packet.
- **Coordinating river cleanup activities.** Local watershed associations, landowners, citizens, businesses, and public officials are engaging in cleanup efforts. The Wenatchee watershed TMDLs are being coordinated with other water resources and fish recovery efforts.
- **Landowner assistance with:**
    - Soil testing and associated technical assistance for nutrient planning for citizens with livestock, agricultural land or residential lawns
    - Riparian plantings of native trees and shrubs
    - Pasture health and riparian livestock exclusion fencing

An example project highlighted by CCD includes:

> *Cascadia CD was awarded funding from the Department of Ecology's Husseman Account for a riparian restoration project on Colockum Creek.*
>
> *This project works to help a local landowner recover (restore his property) from the 80,000-acre wildfire and large-scale flood events last fall by: re-building pasture fence, improving water quality, removing invasive weed species, restoring wildlife habitat, and reducing erosion.*

Native Plants

CCD sponsors an annual native plant sale. In 2015 the offering includes 14 different plant species suitable for a variety of planting projects, and which are also fire resistant to support the FireWise program.

CCD also provides a "Native Planting 101" Workshop that free workshop features local plant and natural resource experts and covers: restoration, yardscaping, pollinator generating plants, weed law, weed identification, and integrated weed management

Entiat Enhanced Stream Flow Monitoring

The CCD notes that

"Stream flow data are essential to determining the amount of water available to meet in-stream and out-of-stream resource needs. Discharge data are also an important part of water quality and flood emergency monitoring efforts.

After working with the State Department of Ecology (Ecology) to install eight continuous recording gages and six staff gages in the Entiat River watershed, the CCD continues with funding to assist Ecology with the operation and maintenance of the Entiat gaging network, and collection of stream flow data. The flow data are automatically imported into a stream flow database and published to the Department of Ecology's flow monitoring website.

Watershed Planning

CCD is the Lead Agency for the Entiat, or WRIA 46, watershed planning effort. CCD also participates in the watershed planning for other basins in the County.

As lead entity in the Entiat Watershed the CCD helps coordinate meetings of the Entiat Watershed Planning Unit, a collaborative body of landowners, tribes, and agencies, and helps implement watershed plans through priority monitoring and restoration projects. The Entiat Watershed Planning Unit has successfully implemented a variety of important habitat, water quality and water quantity restoration projects in the watershed. CCD is often the sponsoring entity that carries out the planning unit's priority implementation projects. Examples include:

- CCD 2008 Lower Entiat Riparian Restoration (03-LER-2008-02). Started on Dec 14, 2007 | Completed on Sep 30, 2009. CCD worked with eight landowners to develop this project into two separate sites along the Entiat River to improve riparian habitat and reduce water temperature exceedences.
- CCD Entiat ARRA Surface to Wells Conversion (03-LER-2010-3). Started on Jan 04, 2010 | Completed on Jun 01, 2011. The ARRA surface water to wells conversion replaced a 1.5 cfs surface water diversion for the Gaines Ditch in the lower Entiat River with four irrigation wells. Replacing the surface water diversion avoids fish entrainment and mortality, as well as providing water savings through higher delivery efficiencies. The conversion also keeps surface water in stream during low flow, peak irrigation use periods in late summer and fall.

In 2010 additional habitat improvement projects and monitoring efforts began and will continue through to 2020:

The Entiat Valley is legendary for its natural beauty and strong sense of community and a healthy river is a fundamental part of this beauty. That's why public agencies and Entiat landowners are working together to protect and restore the Entiat River. These activities include: providing new habitat for juvenile steelhead and Chinook salmon, planting miles of new riparian vegetation and assisting agricultural producers with irrigation efficiencies.

In order to determine whether these efforts are providing the benefits they were designed for, in particular salmon habitat, a program of restoration and monitoring began in the Entiat in 2010. This program established a schedule of habitat restoration project location and timing coordinated with intensive monitoring efforts. This strategy is referred to as an Intensively Monitored Watershed, or IMW, and relies heavily on the cooperation of project partners and private landowners.

Under the Entiat IMW approach, construction of habitat restoration projects and monitoring are tightly coordinated to maximize the ability to detect responses of the fish to changes in their habitat. Project implementation will occur in batches, with all actions in a given year focused in selected reaches. The IMW will accelerate project

implementation above past levels and help partners to determine what types of habitat restoration actions did and didn't work. All in all, this information will help ensure that future funding is directed toward restoration actions that provide the "biggest bang for our buck".

The first focus of the Entiat IMW will be the upper Entiat and Stillwater reaches when construction of three large habitat restoration projects will be constructed this summer. Ongoing monitoring efforts will continue until project implementation is completed in 2020 and beyond if necessary.

Wildfire Preparedness

CCD develops both individual community and county-wide wildfire protection plans to help avoid the spread of fire from trees and vegetation to structures and to plan on evacuation routes. As funding permits, CCD offers free wild fire risk assessments to interested landowners, participates in wildfire education and outreach efforts, and provide support to neighborhoods seeking FireWise Communities/USA recognition. Completed Community Wildfire Protection Plans can be used by communities to acquire grant funding for wildfire prevention and protection projects.

2.2 Chelan County Natural Resources Department (CCNRD)

Mission or Role

The Natural Resource Department administers watershed planning and salmon recovery efforts within Chelan County through a variety of state, federal, and local project and planning grants. The Natural Resources Department also supports a regional salmon recovery effort, the Upper Columbia Salmon Recovery Board, and staffs the Chelan County Water Conservancy Board.

Website

http://www2.co.chelan.wa.us/nr/

Range of Services

Watershed Planning and Project Implementation

Chelan County is the designated Lead Agency for administering and coordinating the watershed planning processes for the Stemilt/Squilchuck (WRIA 40a), Wenatchee (WRIA 45) and Chelan (WRIA 47) Watersheds.

For the Wenatchee and Entiat Watersheds, development and implementation of the watershed plans are closely coordinated with Upper Columbia Salmon Recovery Planning.

Since 2005, the Chelan County Natural Resources Department (CCNRD) has implemented a series of fish passage barrier removal and habitat complexity projects listed below. Example projects led by Chelan County that implement watershed plans and salmon recovery efforts include:

- CCNRD Chumstick/Eagle Riparian Restoration 2007 (04-CSK-2006-1). Started on Mar 01, 2006 | Completed on Nov 01, 2007. Riparian enhancement planting along Chumstick and Eagle Creek to address water quality issues. Native plants were installed on private properties with 16 different willing landowners.
- CCNRD Wenatchee River Riparian Enhancement RM 1.4 (04-LWR-2009-3). Started on Sep 27, 2009 | Completed on Sep 26, 2010. The project site is located near Wenatchee, Washington along the right

bank of the Wenatchee River at river mile 1.4. The project is located on private property that is currently managed by the landowner as an apple and pear orchard. The current landowner is the third generation owner of the property and intends to remain managing the parcel for agriculture uses over the long term. The project consisted of installing native plants, an irrigation system and herbivory protection (exclusion fencing) along 5 separate planting areas where the existing riparian vegetation was minimal or non-existing. The combination of the five planting areas totals approximately 1,375 linear feet (or 1.26 ac) with an average planting buffer width of 35 feet, although some of the planting areas may have a buffer ranging from 50 to 75 feet. The 5 planting areas were planted with 679 native trees and shrubs in early April 2010 by the Washington Conservation Crew (WCC). The WCC replaced and fixed portions of the wildlife exclusion fence by adding in additional fence posts and fence fabric as needed. The purpose of the fence is to minimize the impacts of beaver activity to the riparian planting project and the landowner's adjacent orchard.

- CCNRD Peshastin Irrigation Pipeline Schedule B (04-PES-2011-4). Started on Jan 01, 2011 | Completed on Dec 31, 2011. In 2010, approximately 6000 ft of Peshastin Irrigation District Canal was converted from an open canal to a closed pipeline (Schedule A). In 2011, another 3300 ft of the ditch will be converted from an open canal to a closed pipeline. The construction of this pipeline will eliminate seepage in that reach. The upstream end of the proposed pipeline ties into a pipeline constructed in 2005 by Peshastin Irrigation District. Once completed, with Schedule A &B, this project will save a conservatively estimated 1.2 cfs which is a significant amount during low flows in Peshastin Creek that can go down to 3.5 cfs in late summer. This water savings will reduce diversions from Peshastin Creek and increase instream flow for fish passage.

The County works to implement the water resource recommendations in watershed plans including conducting water quality and water quantity (stream flow) monitoring studies to fill critical data gaps. For example, the County and Ecology operate and maintain streamflow monitoring gauges throughout the Wenatchee watershed.

Additionally, the County works with the watershed planning units and other agencies and stakeholders to achieve conservation:

- In spring 2007, Chelan County established the Stemilt Partnership (Partnership) which is a broad coalition of agriculture, wildlife, recreation, development, and conservation interests working together to prevent privatization of 2,500 acres of public land in the Stemilt basin. Protecting this land, currently owned by the Washington Department of Natural Resources (DNR), would ensure a healthy water supply, protect wildlife habitat, and provide recreation access in this growing community. The Partnership and Chelan County worked with DNR to stop the sale and pursue an alternate approach: creating a plan for the landscape based upon the needs and wants of the community.
- Chelan County and Washington Department of Ecology's (DOE) Office of Columbia River have co-convened the Icicle Work Group to work collaboratively to identify and provide input on opportunities that would address Icicle Creek water resource and fisheries concerns. The Icicle Work Group has been meeting regularly since December 2012 on this effort.

Education and Outreach

CCNRD works with several other non-profit organizations and government agencies within the County to staff outreach events held throughout the year. The County also coordinates the Wenatchee Watershed Planning Unit and Habitat Sub-committee meetings which bring stakeholders together to plan and implement watershed stewardship activities within the County. Recent events include:

- Spring 2014 Community Meetings

- Wenatchee River Clean Up Saturday August 9, 2014 9-12
- Large Wood Workshop, November 30 - December 1, 2011, CTC, Wenatchee

The County has also provided information and guidance on stewardship, including:

- Icicle Stewardship Guide
- Icicle Creek Riparian Plant list
- Riparian Plant Guide
- Riparian Plant Care Guide

2.3 Natural Resources Conservation Service (NRCS)

Mission or Role

> *NRCS is an agency committed to "helping people help the land"—our mission is to provide resources to farmers and landowners to aid them with conservation. Ensuring productive lands in harmony with a healthy environment is our priority. With operations in the United States, the Virgin Islands, Puerto Rico, and Guam, our agency touches the lives of a diverse range of individuals.*

Websites

http://www.usda.gov/wps/portal/usda/usdahome

http://offices.sc.egov.usda.gov/locator/app?service=page/ServiceCenterSummary&stateCode=53&cnty=007

Technical Assistance

Natural Resources Conservation Service (NRCS) offers voluntary Farm Bill conservation programs created to benefit both agricultural producers and the environment. Below are the three categories of assistance:

- Financial and technical assistance is provided to help agricultural producers make and maintain conservation improvements on their land.
- Easement programs to eligible landowners to conserve working agricultural lands, wetlands, grasslands and forestlands.
- NRCS works with partners to leverage additional conservation assistance for agricultural producers and landowners in priority conservation areas.

The Natural Resources Conservation Service (NRCS) offers assistance with planning, funding, and implementing conservation activities. Each category of activities is described below.

NRCS field staff work with agricultural operators to assess conditions on their property, help identify conservation practices that can ameliorate environmental conditions affecting the operation (e.g. erosion), and monitor practices.

> *Financial and technical assistance is the help NRCS and its partners provide to land users to address opportunities, concerns, and problems related to the use of natural resources and to help land users make sound natural resource management decisions on private, tribal, and other non-federal lands.*
>
> *This assistance can help land users:*

- *Maintain and improve private lands and their management*
- *Implement better land management technologies*
- *Protect and improve water quality and quantity*
- *Maintain and improve wildlife and fish habitat*
- *Enhance recreational opportunities on their land*
- *Maintain and improve the aesthetic character of private land*
- *Explore opportunities to diversify agricultural operations and*
- *Develop and apply sustainable agricultural systems*

This assistance may be in the form of resource assessment, practice design, resource monitoring, or follow-up of installed practices.

Conservation practices are designed for local property conditions following a site specific assessment. The NRCS has developed objectives and standards for numerous conservation practices addressing common agricultural activities or environmental conditions, available here:

http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/references/?cid=nrcs143_026849

Examples include:

- Conservation cover: Establishing and maintaining permanent vegetative cover, such as to reduce sedimentation
- Filter strip: A strip or area of herbaceous vegetation that removes contaminants from overland flow
- Fencing: This practice facilitates the accomplishment of conservation objectives by providing a means to control movement of animals and people, including vehicles
- Irrigation pipeline: A pipeline and appurtenances installed to convey water for storage or application, as part of an irrigation water system.

2.4 Washington State University Extension Service

Mission or Role

Overview Mission Statement

Washington State University Extension engages people, organizations and communities to advance knowledge, economic well-being and quality of life by fostering inquiry, learning, and the application of research.

Agriculture

It's a partnership that has made the state of Washington one of the largest and most successful agriculture enterprises in the world. From the beginning, Washington farmers and Washington State University Extension have joined forces to bring the power of research-based information to bear to improve the productivity, efficiency, and safety of products coming from the state's fields and pastures, orchards, processing plants, and vineyards and wineries.

WSU Extension educators are the critical link between science and research generated at Washington State University and the hands-on work of growing food, fuel, and fiber.

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Because our educators are located in every county of the state, they ensure that new information is locally relevant and applicable. They test and translate research results into best practices that benefit the bottom line by increasing profits and cutting costs. Our educators also inform new research by sharing the challenges farmers face with the University's scientists spawning new research leading to additional relevant solutions.

Washington State is the second most agriculturally diverse state in the union, growing everything from potatoes to peppermint, apples to azaleas, wine grapes to wheat. Agriculture is the state's largest employer and the largest single sector of its economy. WSU Extension's goal is to enhance economic opportunities for the state's agricultural industries while ensuring that Washington's precious natural resources are sustained and enhanced for future generations.

Websites

http://county.wsu.edu/chelan-douglas/agriculture/Pages/default.aspx

http://county.wsu.edu/chelan-douglas/agriculture/treefruit/Pages/default.aspx

Range of Services

Washington State University (WSU) Extension maintains a local office in Chelan County. WSU provides the following services:

- Education and research, turning results into best practices regarding irrigation, weed management, pesticide application, pest management,
- Opportunities for certifications, such as pesticide application certification, online certificate in organic farming, and
- Training and outreach such as Hort Days.

Each effort is described below.

Education and Research

Example research provides recommendations on irrigation, nutrient application, pest management, and other aspects of production that are designated to improve productivity and also conserve resources:

Irrigating_Tree_Fruits_for_Top_Quality

Estimating_Usable_Water_Applied

Soil Water-Holding

Scheduling Irrigation Based on Average Water Use

Irrigating_Tree_Fruits_for_Top_Quality

Estimating_Usable_Water_Applied

Long-Term_Record_of_Yearly_Water_Use

Drought_Spot_of_Apple

Irrigation_and_Iron_Chlorois_in_Orchards

SchedulingIrrigationBasedonAverageWaterUse

Planting_and_Care_of_New_Orchards

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Irrigation_and_Iron_Chlorois_in_Orchards

Nutrients_for_Fruit_Color_Enhancement

Compost_Trials_in_Newly_Planted_Orchards

Late-Summer_Early-Fall_Nitrogen_Applications_to_Apple

Orchard_Soil_Fumigation

Lime_and_Orchard_pH_Management

Rootstock Effects on Deficit-Irrigated Winegrapes in a Dry Climate: Grape and Wine Composition

Irrigation Basics for Eastern Washington Vineyards

Certifications and Training

WSU Extension offers or sponsors testing, training or certification. Pesticide license testing is offered at extension offices:

Pesticide License Testing

Education on IPM and pesticide application is provided:

WSU Urban IPM and Pesticide Safety Education Program

Internet Recertification Courses

Online coursework towards a certification is also provided, including:

Online organic farming certificate

Sustainable agriculture graduate certificate

3.0 OTHER SOURCES OF TECHNCIAL ASSISTANCE

This section provides additional agencies that may assist in education or recruiting of voluntary stewardship participants.

Washington State Tree Fruit Association. http://www.wahort.org/. The mission of the Washington State Tree Fruit Association is to advance the tree fruit industry by providing education and training programs to meet the changing needs of the industry. WSHA also serves as the advocate on issues affecting the tree fruit industry, particularly legislation and regulation.

Example training opportunities include food safety training classes addressing:

- HACCP for Agriculture and Produce Operations
- Basics of SQF Systems for Produce
- Understanding GLOBALG.A.P.
- Internal Auditor Training

Washington Tree Fruit Research Commission. The Washington Tree Fruit Research Commission was established by the Washington legislature in 1969 to "promote and carry on research and administer specific industry service programs, . . . which will or may benefit the planting, production, harvesting, handling, processing or shipment of tree fruit of this state . . . " The act further provides for coordination with other state, federal, and private agencies conducting similar research. To read the complete act, Chapter 15.26 RCW, link to the Washington State web page at

http://apps.leg.wa.gov/RCW/default.aspx?cite=15.26. The Research commission has a searchable database where website visitors can search through commission-funded projects by crop, disorder or researcher.

Washington Association of Conservation Districts. http://www.wadistricts.org/. The Association provides support to conservation districts including technical capacity development, leadership training, government relations, planning, funding, legislation and other activities. The support to the districts allows the districts to meet their missions to work with governments and willing landowners to implement conservation practices and provide technical assistance. The Association manages a Plant Materials Center growing conservation grade plants and shrubs that can be ordered.

Washington Conservation Commission. http://scc.wa.gov/. The Commission is the coordinating state agency for all 45 conservation districts in Washington State. In addition to encouraging intergovernmental coordination and collaboration and advising on operations and elections, the Commission determines the distribution of state funds to conservation districts and monitors their expenditures. Programs include the following, largely implemented through the local conservation districts:

- The Conservation Reserve Enhancement Program (CREP) is a joint federal and state funded program that restores riparian (streamside) habitat for salmon and protects that habitat for 10-15 years. Most of the funding (80%) comes from the Farm Service Agency with the remainder through the Conservation Commission. The landowners are paid rent for allowing their land to be used for fish and wildlife improvements and receive a monetary bonus for signing up.
- Washington's Irrigation Efficiencies Grant Program (IEP) restores instream flows in rivers and streams determined to not have enough water for fish populations and other competing needs. The Washington State Conservation Commission (SCC) works with conservation districts to provide financial incentives – up to 85 percent of total project costs – to landowners willing to install irrigation systems that save water.
- The Professional Engineering Services Grants Program is a partnership between the Washington State Conservation Commission (SCC) and Washington's 45 conservation districts to help support safe, effective conservation practices. A group of conservation districts covering a geographic area coordinate a grant application to the SCC to hire and share the services of a professional engineer. Engineering services include investigations, feasibility studies, assessments, evaluations, surveys, designs, construction management, inspection, and engineering contract oversight and management. These services may address streambank stabilization, culverts and bridges, Livestock and waste management practices to protect water quality, and others.
- The Water Quality Implementation Grants Program is a partnership between the Conservation Commission and Washington State's 45 Conservation Districts that promotes and supports local water quality protection efforts. Based on local long-range and annual planning, conservation districts utilize the funding appropriated to the Commission by the Legislature to conduct outreach activities, provide technical and financial assistance to landowners for implementation of best management practices, participate in watershed planning, and coordinate water quality monitoring activities.

Washington Association of Wheat Growers. http://wawg.org/wawg. This non-profit trade association provides education and outreach to wheat farmers. Workshops are provided through the Agricultural Marketing and Management Organization, and address safety, hazardous materials compliance, marketing and other matters. The association also provides research guides and other information.

Washington Cattlemen's Association. http://www.washingtoncattlemen.org/. This non-profit association promotes agriculture and the cattle industry. The agency promotes protection of water rights, and works to resolve water quality issues for livestock operators.

Washington State Dairy Federation. http://wastatedairy.com/. This trade association provides information and advocates for initiatives that support dairy farmers. Information and resources addressing livestock management are found on the website.

Washington State Farm Bureau. http://wsfb.com/. The Washington State Farm Bureau is a "an independent, non-governmental, voluntary organization governed by and representing farm and ranch families united for the purpose of analyzing their problems and formulating action to achieve educational improvement, economic opportunity and social advancement and, thereby, to promote the national well-being." The organization promotes policies supporting farmers, and provides educational resources. The convene meetings to prepare a legislative agenda. They hold workshops in the winter season focusing on safety training.

North Central Washington Fieldmen's Association, which is an association of persons who are liaisons between fruit packing operations or agricultural assocations and growers, to help improve fruit quality and expand practices that improve produce (e.g. pest management). The Fieldman's Association sponsors Hort Days along with WSU and other organizations. [Confirm/Amend this]

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