Draft

Chelan County

VOLUNTARY STEWARDSHIP PROGRAM

WHITE PAPER | June, 2014

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VOLUNTARY STEWARDSHIP PROGRAM

WHITE PAPER: AGRICULTURE, CRITICAL AREAS & PROTECTION ALTERNATIVES

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1.0 INTRODUCTION & PURPOSE

Chelan County is about 2,920 acres in size and contains a diverse landscape from the forested crest of the Cascade Mountains to the semi-arid banks of the Columbia River. Chelan County is home to a population of 73,600 persons (OFM 2013), as well as to diverse fish and wildlife species that share the landscape. The steep terrain and rivers also result in potential areas of geologic hazards as well as frequently flooded areas.

Federal and state lands are the majority of the County's 1.9 million acres. Private ownership lands (about 272,000 acres or 409 square miles or about 14 percent) are focused along the Wenatchee River, Columbia River, Entiat River, and Lake Chelan. (Chelan County 2014)

Within this same relatively narrow portion of the landscape, agriculture and range land is prevalent, and a key part of the economy. In 2012 the US Census of Agriculture reported the market value of agricultural products sold was $206,479,000. As in prior Censuses, in 2012, the majority of the value was in crops ($202,854,000) versus livestock ($3,625,000). The top crop items were pears, apples, and cherries. The County ranked ninth of 39 Washington counties in terms of its crop value. In terms of the acreage in pears, the County ranked first among state counties with that crop and second among United States counties with that crop. It is also in the top counties of the US for its acreage in sweet cherries (5th) and apples (11th).

Given the value of Chelan County's natural resources and its agricultural resources, and the narrow band within which agricultural activity occurs along rivers and lakes, achieving an appropriate balance in promoting agriculture and protecting environmentally critical areas is important to Chelan County residents, businesses, and stakeholders.

1.1 WHAT IS THE VOLUNTARY STEWARDSHIP PROGRAM?

The Voluntary Stewardship Program (VSP) is an optional, incentive-based approach to protecting critical areas while promoting agriculture. The VSP is allowed under the Washington State Growth Management Act (GMA; RCW 36.70A.700-760) as an alternative to traditional approaches to critical areas protection, such as "no touch" buffers.

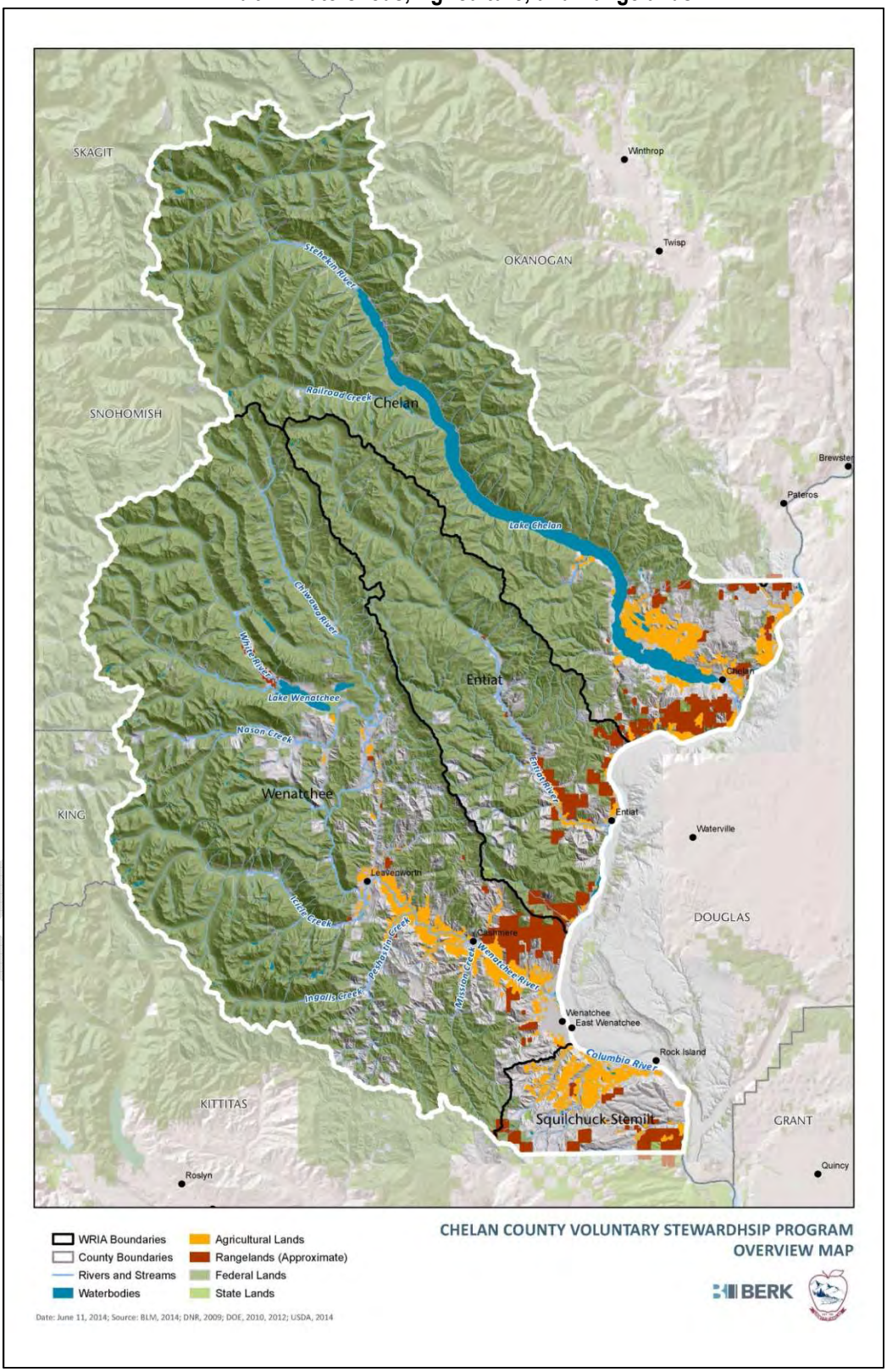
Twenty eight counties have "opted in" to the VSP by nominating one or more watersheds in their county where the program would apply. Chelan County is one of two pilot counties (including Thurston County) provided funding to develop a VSP Watershed Work Plan.

Chelan County nominated all four watersheds in its boundaries in Resolution 2012-03 in 2012. Watersheds are shown in Exhibit 1, and include, from north to south:

- Chelan basin, Watershed Resource Inventory Area (WRIA) 47,
- Entiat basin, WRIA 46
- Wenatchee basin, WRIA 45, and
- Squilchuck/Stemilt basin, WRIA 40a.

A map folio is provided in Appendix A identifying for each watershed various potential critical areas and the location of mapped agricultural and range land.

Exhibit 1. Watersheds, Agriculture, and Rangelands



Sources: Washington State Departments of Ecology and Natural Resources, US Department of Agriculture, Bureau of Land Management, and BERK Consulting 2014

The goals of the VSP are to:

- Promote plans to protect and enhance critical areas where agricultural activities are conducted, while maintaining and improving the long-term viability of agriculture in the state of Washington and reducing the conversion of farmland to other uses,
- Focus and maximize voluntary incentive programs to encourage good riparian and ecosystem stewardship as an alternative to historic approaches used to protect critical areas,
- Leverage existing resources by relying upon existing work and plans in counties and local watersheds, as well as existing state and federal programs to the maximum extent practicable to achieve program goals,
- Encourage and foster a spirit of cooperation and partnership among county, tribal, environmental, and agricultural interests to better assure program success, and
- Improve compliance with other laws designed to protect water quality and fish habitat
- Rely upon voluntary stewardship practices as the primary method of protecting critical areas and not require the cessation of agricultural activities. (RCW 36.70A.700)

In general, a stakeholder-based VSP Watershed Work Group designated by the County would:

- Develop a Watershed Work Plan to protect critical areas while maintaining the viability of agriculture in the watershed,
- Include goals and benchmarks for the protection of critical areas and their enhancement where appropriate through voluntary, incentive-based measures, and
- Use existing plans to assist in the VSP, such as applicable water quality, watershed management, farmland protection, and species recovery data, plans, goals and measurable benchmarks.

1.2 WHAT IS THE PURPOSE OF THIS WHITE PAPER?

Chelan County has opted into the VSP, and has reached out to stakeholders to help form a VSP Watershed Work Group. The VSP Watershed Work Group will prepare a VSP Watershed Work Plan designed to provide goals, measurable objectives, and incentives, leveraging existing watershed plans and other programs, to protect critical areas and promote agriculture.

To support the preparation of a VSP Watershed Work Plan, this White Paper provides descriptions and data about critical areas and agriculture in Chelan County, particularly where they intersect, as well as a description of VSP requirements to support the Watershed Group in forming its proposed Watershed Work Plan. White Paper topics include:

- Definitions and examples of critical areas,
- Mapping of watersheds, agricultural activities, and critical areas and their intersection,
- Descriptions of how critical areas are managed under Growth Management Act (GMA), Shoreline Management Act (SMA) and the VSP,
- Descriptions of how agriculture is treated as an allowed use under the various laws and programs,
- Other alternatives to standard critical areas regulations highlighted in the VSP law (e.g. Clallam, Clark, King, or Whatcom counties),
- Information from other relevant County planning initiatives (e.g. WRIA plans),
- Future contents and decision-making framework of a VSP Watershed Work Plan, and

- Descriptions of different existing producer checklists already in place that could form the basis for an individual VSP stewardship plan checklist.

To address these topics, this White Paper is structured in the following sections:

1. Introduction and Purpose
2. Critical Areas in Chelan County
3. Agricultural Uses in Chelan County
4. Intersection: Agriculture and Critical Areas
5. Comparison: Agriculture and Critical Areas Protection under Different State Laws
6. Future VSP Watershed Work Plan
7. References
8. Appendices

2.0 CRITICAL AREAS IN CHELAN COUNTY

2.1 WHAT ARE CRITICAL AREAS?

The VSP is designed to protect critical areas while promoting agriculture. Critical areas have a particular meaning under GMA. These areas include fish and wildlife habitat conservation areas, wetlands, frequently flooded areas, geologically hazardous areas, and critical aquifer recharge areas used for potable water. GMA critical areas definitions are provided in Exhibit 2 below.

Consistent with GMA, the Chelan County Code (CCC) addresses critical area regulations. See Appendix B summarizing critical area designation and classification criteria in the CCC.

Exhibit 2. Critical Areas Definitions under Growth Management Act

Fish and Wildlife Habitat Conservation Areas

Land and waters managed to maintain populations of fish and wildlife species in suitable habitats within their natural geographic distribution over the long term within connected habitat blocks and open spaces. **Includes:**

- Ranges and habitat elements where federal and state listed endangered, threatened and sensitive species have a primary association
- Lakes, rivers, ponds, streams, inland waters, and underground waters

Does not include (when no salmonids are present):

- Artificial features such as irrigation delivery systems, irrigation infrastructure, irrigation canals, or drainage ditches maintained by a port district or an irrigation district or company

Bald eagles, Chelan County PUD

Icicle Creek Restoration Site, Chelan County Department of Natural Resources

Wetlands, Confluence State Park, Historylink.org

Horan Nature Area, Confluence State Park, Chelan PUD

Wetlands

Areas that are inundated or saturated by surface water or groundwater supporting a prevalence of vegetation adapted for life in saturated soil conditions.

Includes

- Swamps, marshes, bogs, and similar areas

Frequently Flooded Areas

Lands in the flood plain subject to at least a one percent or greater chance of flooding in any given year, or within areas subject to flooding due to high groundwater.

Includes

- Streams, rivers, lakes, wetlands, and areas where high groundwater forms ponds on the ground surface

Colockum Creek Road Washout, WSU Chelan-Douglas Extension

Malaga Mudslide, Komo News

Stehekin Mudslide, King5 News

Geologically Hazardous Areas

Areas susceptible to erosion, sliding, earthquake, or other geological events, where development is not suitable due to public health or safety concerns.

Critical Aquifer Recharge Areas

Areas with a critical recharging effect on aquifers used for potable water, including areas where an aquifer that is a source of drinking water is vulnerable to contamination that would affect the potability of the water, or is susceptible to reduced recharge.

Potential Aquifer and Alluvial Soils, Wenatchee Basin Area

Source: Definitions are adapted from RCW 36.70A and WAC 365-190. See photo sources above. Aquifer map, BERK 2014

2.2 WHAT IS THE PURPOSE OF PROTECTING CRITICAL AREAS?

Each critical area was addressed in the GMA in order to protect environmental functions or protect life and property from hazards:

> *Critical areas perform key functions that enhance our environment and protect us from hazards. The beneficial functions and values provided by critical areas include, but are not limited to, water quality protection and enhancement; fish and wildlife habitat; food chain support; flood storage, conveyance, and attenuation (the slow release) of flood waters; ground water recharge and discharge; erosion control; wave attenuation; protection from natural hazards; historical, archaeological, and aesthetic value protection; and recreation. Identifying the functions and values of local critical areas is essential in defining the purpose of a critical areas protection program. (Washington State Department of Community, Trade and Economic Development et al. 2007)*[1]

2.3 WHERE ARE CRITICAL AREAS FOUND IN CHELAN COUNTY?

Based on GMA and County definitions, available data, and analysis created for this White Paper, critical area maps have been prepared. A map folio is included in Appendix A. These maps should be considered planning-level references rather than precise detailed maps.

Observations include:

- Potential wildlife habitat conservation areas are extensive, largely due to possible mule deer and elk habitat,
- Geologic hazard areas are extensive when considering steep slopes greater than 15% and severe or very severe erodible soils,
- Mapped wetlands and riparian areas are generally contained within stream corridors; many streams, main stem and tributaries, are associated with priority fish species, and
- Potential aquifers and potential wellhead protection zones are generally found at the toe of slopes and river and stream valleys.

As described in Section 4.0 in greater detail, potential wildlife habitat conservation areas and geologic hazard areas are notable for their intersection with range lands and to some degree other agricultural lands in some basins such as the Entiat. Where agricultural activities take place on lower elevations, hydrologic features and fish habitat are key including streams, floodplains, and wetlands, as well as potential aquifer recharge areas.

2.4 LANDSCAPE CONSIDERATIONS

GMA defines critical areas individually, but some of the associated GMA laws and implementing rules reference broader landscape-level considerations around fish and wildlife habitat corridors, biodiversity, and priorities for conservation. Additionally, other state laws that address watershed planning consider water and habitat processes including water quantity, water quality, instream flow and salmon habitat. These broader considerations are summarized below.

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[1]Washington State Department of Community, Trade and Economic Development et al. January 2007. Critical Areas Assistance Handbook: Protecting Critical Areas Within the Framework of the Washington Growth Management Act. Available: http://www.commerce.wa.gov/Documents/GMS-Critical-Areas-Assist-Handbook.pdf. Accessed: June 26, 2014.

Conservation of Anadromous Fisheries: When developing policies and development regulations to protect the functions and values of critical areas, counties and cities must give "special consideration" to conservation or protection measures necessary to preserve or enhance anadromous fisheries. (WAC 360-195-125)

The 2007 Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan indicates human activities and natural occurrences have converged to impact salmon, steelhead, and other at- risk fish species: “Some human activities acting in concert with natural occurrences (e.g., drought, floods, landslides, fires, debris flows, and ocean cycles) have impacted the abundance, productivity, spatial structure, and diversity of Upper Columbia spring Chinook salmon, steelhead, and bull trout populations, resulting in these species being listed under the [federal endangered species act] ESA. Coho salmon and some populations of spring Chinook and bull trout have been lost from the region. Lasting effects from some of these early activities may still act to limit fish production in the Upper Columbia Basin. Threats from some current activities are also present in the Upper Columbia Basin.”

The Upper Columbia Spring Chinook Salmon and Steelhead Recovery Plan also indicates that land and water management are continuing concerns in the Upper Columbia basin: “Although land and water management activities have improved, factors such as dams, diversions, roads and railways, some aspects of agriculture (including livestock grazing) residential development, and some historic forest management continue to threaten spring Chinook, steelhead, and bull trout and their habitat in some locations in the Upper Columbia Basin.”

The Vision Statement for the plan addresses the balancing of natural and human needs and objectives to reach salmon recovery while maintaining a strong agricultural base:

> *Develop and maintain a healthy ecosystem that contributes to the rebuilding of key fish populations by providing abundant, productive, and diverse populations of aquatic species that support the social, cultural, and economic well being of the communities both within and outside the recovery region.*
> *This vision statement includes: (1) meeting recovery goals established for listed populations of spring Chinook, steelhead, and bull trout, (2) achieving sustainable harvests of key species within the recovery region and the Columbia River following recovery, (3) realizing these objectives while recognizing that agriculture and urban development are beneficial to the health of the human environment within the recovery region, (4) continue harvest (tribal and non-tribal) according to existing harvest management processes during the recovery period, and (5) implementing a road map of non-regulatory, voluntary measures that is not intended to override anyone’s authority over habitat, hydropower, hatcheries, and harvest.*

Chelan County participates in the Upper Columbia Salmon Recovery Board (UCSRB). The UCSRB helps coordinate the regional salmon recovery efforts by working with Chelan, Douglas, and Okanogan counties, the Colville Confederated Tribes, and the Yakama Nation. Salmon Recovery plans will be considered in the VSP as existing plans with a source of data, potential goals and measurable objectives.

Biodiversity and Habitat Corridors: Also to be considered in fish and wildlife habitat conservation areas (WAC 365-190-130) are the connections between larger habitat blocks and open spaces and potential for designating areas important for local and ecoregional biodiversity. The extensive Washington State Department of Fish and Wildlife Priority Habitats and Species mapping in Chelan County is reflective of habitat corridors of several species such as mule deer and elk.

In terms of ecoregional biodiversity, Chelan County is located in the East Cascades ecoregion: “The East Cascades ecoregion includes the mountains that lie east of the Cascade crest and the foothills as they flatten

into the Columbia Plateau. In Washington, it stretches from roughly Lake Chelan in the north to the Columbia River Gorge in the south." The biodiversity features of this ecoregion relevant to Chelan County include a high number of rare and endemic plants and diverse coniferous forests. In terms of plants and animals, the area is considered to have an unusually high amount of diversity compared to other ecoregions in the US: "The variety of habitat types in the East Cascades has led to a unique and diverse flora and fauna. An abundance of species are supported by high elevation meadows, parklands and forests: low-elevation dry forests, oak woodlands, cliffs and talus slopes, riparian corridors, and a variety of aquatic habitats. Numerous lakes, reservoirs and marshes characterize the East Cascades, providing exceptional habitat for waterfowl, shorebirds and wading birds, aquatic mammals, amphibians, fish, aquatic plants and invertebrates. In fact, the East Cascades support an unusually high aquatic biodiversity among ecoregions in the U.S., including a large number of endemic freshwater snails and fish." (LandScope America 2014)

Watershed Plans: The Watershed Planning Act (Chapter 90.82 RCW) promotes a cooperative framework to developing local solutions to watershed concerns. The law's purpose is to foster "local development of watershed plans … ensuring that the state's water resources are used wisely, by protecting existing water rights, by protecting instream flows for fish and by providing for the economic well-being of the state's citizenry and communities." In Chelan County, watershed plans have been prepared for each WRIA nominated under the VSP and include data, goals, and measurable objectives addressing water quantity, quality, and fish and wildlife habitat, as sources for the VSP Watershed Work Plan.

See Section 6 and Appendix C for a summary of watershed and other relevant conservation plans for summary charts of issues and strategies in the various planning documents.

3.0 AGRICULTURAL USES IN CHELAN COUNTY

Through a voluntary incentive based approach in the VSP, agriculture is to be promoted while protecting critical areas. The VSP includes requirements that the Watershed Work Plan is to develop goals for participation by agricultural operators conducting *commercial and noncommercial* agricultural activities in the *unincorporated* portions of watersheds. This section reviews the definition and location of agriculture and rangeland in Chelan County. See Appendix D for a discussion of acreage mapped for this VSP White Paper in comparison to the Census of Agriculture information.

3.1 WHAT ARE AGRICULTURAL LANDS UNDER THE VSP?

The definition of agriculture in the VSP is broad, addressing active production of crops and livestock, fallow land, land in a conservation program, etc. as shown below:

> ***"Agricultural activities"*** *means agricultural uses and practices including, but not limited to: Producing, breeding, or increasing agricultural products; rotating and changing agricultural crops; allowing land used for agricultural activities to lie fallow in which it is plowed and tilled but left unseeded; allowing land used for agricultural activities to lie dormant as a result of adverse agricultural market conditions; allowing land used for agricultural activities to lie dormant because the land is enrolled in a local, state, or federal conservation program, or the land is subject to a conservation easement; conducting agricultural operations; maintaining, repairing, and replacing agricultural equipment; maintaining, repairing, and replacing agricultural facilities, provided that the replacement facility is no closer to the shoreline than the*

original facility; and maintaining agricultural lands under production or cultivation; (RCW 90.58.065)

***"Agricultural products"** includes but is not limited to horticultural, viticultural, floricultural, vegetable, fruit, berry, grain, hops, hay, straw, turf, sod, seed, and apiary products; feed or forage for livestock; Christmas trees; hybrid cottonwood and similar hardwood trees grown as crops and harvested within twenty years of planting; and livestock including both the animals themselves and animal products including but not limited to meat, upland finfish, poultry and poultry products, and dairy products; (RCW 90.58.065)*

***"Agricultural equipment" and "agricultural facilities"** includes, but is not limited to: (i) The following used in agricultural operations: Equipment; machinery; constructed shelters, buildings, and ponds; fences; upland finfish rearing facilities; water diversion, withdrawal, conveyance, and use equipment and facilities including but not limited to pumps, pipes, tapes, canals, ditches, and drains; (ii) corridors and facilities for transporting personnel, livestock, and equipment to, from, and within agricultural lands; (iii) farm residences and associated equipment, lands, and facilities; and (iv) roadside stands and on-farm markets for marketing fruit or vegetables; and (RCW 90.58.065)*

***"Agricultural land"** means those specific land areas on which agriculture activities are conducted. (RCW 90.58.065)*

3.2 WHERE ARE AGRICULTURAL LANDS IN CHELAN COUNTY?

Agricultural and range lands are found in all four watersheds in Chelan County. As can be seen in Exhibit 1, the vast majority of Chelan County is in federal ownership and managed for forestry and recreation purposes. However, much of the private land is in agricultural or range land use.

Based on aerial-based mapping of land in agricultural and range land use, there are about 27,616 acres of agricultural land and 76,184 acres of range land. See Exhibit 3.

Exhibit 3. Agricultural and Range Land Acres

WRIA	Agricultural Acreage	Range land Acreage
Chelan	10,102	21,317
Entiat	1,228	17,183
Wenatchee	10,289	22,664
Squilchuck/Stemilt	5,997	15,021
Total	27,616	76,184

Source: Cascadia Conservation District, 2013: Department of Natural Resources (DNR), Washington Department of Ecology (Ecology), and US Bureau of Land Management (BLM), and BERK Consulting 2014

The VSP-referenced agricultural definitions focus on the "activity" of agriculture in unincorporated areas. The associated mapping is based on "production" boundaries and is not parcel based. This is in contrast to other GMA-based definitions, adopted by Chelan County in it Comprehensive Plan, identifying agricultural land of "long-term commercial significance" and using parcel boundaries. Such properties are designated as long-term resource lands and urban uses are generally not allowed. However, unincorporated agricultural and range lands, either commercial or non-commercial, would be addressed in the VSP Watershed Work Plan.

In Chelan County, zoning of Commercial Agriculture (AC) is applied to such agricultural lands of long-term commercial significance, similar to other counties subject to GMA. In some cases land that *is* in production but is not considered of long-term commercial significance is classified by Chelan County with a rural zone. An example of this is in the Squilchuck/Stemilt Basin, where crop-based agriculture is typically zoned Commercial Agriculture but where much of the range land in upper slopes is classified as Rural Residential/ Resource-20.

As shown in Exhibit 4, more than half of the mapped agricultural activity areas are zoned as Commercial Agriculture (~53%). However, another 37% of mapped agricultural activity areas are found within Rural Residential/Resource zones. Within Urban Growth Areas (UGAs) another 8% of agricultural activity is found; it should be noted that the VSP Watershed Work Plan would only apply to those agricultural or range land properties that are located in *unincorporated* UGAs and not in City limits.

Regarding mapped range lands, much of it is located on lands zoned as Rural Residential/Resource 20. In the Wenatchee basin a large percentage of range land also occurs on land zoned Commercial Forest Lands of long-term commercial significance. See Exhibit 5.

Exhibit 4. Zoning Designations - Agricultural Lands by WRIA (Percent)

Zoning Designations	Chelan	Entiat	Squilchuck/ Stemilt	Wenatchee	Total
Commercial Agricultural Lands	58%	54%	54%	46%	53%
Commercial Forest Lands	0%	0%	1%	0%	0.2%
Commercial Mining Lands	0%	0%	0%	0%	0%
Rural Residential/Resource 5	12%	22%	13%	24%	17%
Rural Residential/Resource 10	6%	0%	14%	5%	7%
Rural Residential/Resource 2.5	7%	6%	2%	8%	7%
Rural Residential/Resource 20	6%	3%	10%	4%	6%
Rural Industrial	0%	0%	4%	0%	1%
Rural Village	0%	0%	2%	1%	1%
Rural Recreational and Resource	0%	0%	1%	1%	0.5%
Rural Waterfront	0%	0%	0%	0%	0%
Rural Commercial	0%	0%	0%	0%	0%
Rural Public Lands and Facilities	0%	0%	0%	0%	0%
City Urban Growth Area	9%	15%	1%	10%	8%
Open Water Features	0%	0%	0%	0%	0%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Sources: Chelan County, BERK Consulting 2014

Exhibit 5. Zoning Designations – Range Lands by WRIA (Percent)

Zoning Designations	Chelan	Entiat	Squilchuck/ Stemilt	Wenatchee	Total
Commercial Agricultural Lands	0%	0%	0%	1%	0%
Commercial Forest Lands	0%	2%	8%	41%	10.9%
Commercial Mining Lands	0%	0%	0%	0%	0%
Rural Residential/Resource 5	0%	0%	3%	0%	1%
Rural Residential/Resource 10	1%	1%	3%	2%	2%
Rural Residential/Resource 2.5	0%	0%	0%	0%	0%
Rural Residential/Resource 20	98%	97%	84%	56%	85%
Rural Industrial	0%	0%	0%	0%	0%
Rural Village	0%	0%	0%	0%	0%
Rural Recreational and Resource	0%	0%	1%	0%	0.2%
Rural Waterfront	0%	0%	0%	0%	0%
Rural Commercial	0%	0%	0%	0%	0%
Rural Public Lands and Facilities	0%	0%	0%	0%	0%
City Urban Growth Area	0%	0%	0%	0%	0%
Open Water Features	0%	0%	0%	0%	0%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Sources: Chelan County, BERK Consulting 2014

4.0 INTERSECTION: AGRICULTURE & CRITICAL AREAS

4.1 WHERE DOES AGRICULTURE INTERSECT WITH CRITICAL AREAS?

Though acreage of potential critical areas is fairly expansive across the county, the intersection of critical areas with agriculture is relatively smaller.

The map folio in Appendix A illustrates that:

- A relatively small percentage of agricultural acreage lies in proximity to rivers and streams. Many of these water bodies have priority fish presence. Mapped riparian and wetland areas are often found in association with river and stream corridors.
- There are some agricultural lands within floodplains and channel migration areas.
- There are some locations of agriculture in proximity to public wells and areas that may be potential aquifers.
- There is relatively less agricultural land near landslides, steep slopes and erodible soils given they are often in river valley lowlands, but a higher percentage of range lands in these potential geologic hazard areas since range lands tend to occur on higher elevations.
- Agriculture is sometimes located near mule deer or elk habitat and range land even more so. Some basins have higher percentages of mule deer or elk habitat such as the Entiat and Wenatchee basins.

A set of tables showing the acres of agriculture in relation to critical areas is presented below.

Hydrologic Study Areas: Streams, Wetlands, and Riparian Areas

Depending on the study area distance from the waterbody, the percentage of agriculture and rangelands in hydrologic study areas is between 1 and 4 percent. See Exhibit 6.

Exhibit 6. Agricultural and Range Lands in Relation to Hydrologic Features

Agricultural Lands in 100 ft, 50 ft, and 25 ft Hydrologic Study Areas by WRIA

	Total Acreage	Agricultural Lands Intersecting Hydrologic Study Area (100 Ft)	% in Study Area (100 Ft)	Agricultural Lands Intersecting Hydrologic Study Area (50 Ft)	% in Study Area (50 Ft)	Agricultural Lands Intersecting Hydrologic Study Area (25 Ft)	% in Study Area (25 Ft)
Chelan	10,102	294	3%	131	1%	62	0.6%
Entiat	1,228	123	10%	58	5%	33	3%
Wenatchee	10,289	572	6%	268	3%	150	1%
Squilchuck/Stemilt	5,997	61	1%	24	0.4%	13	0.2%
Total	**27,616**	**1,050**	**4%**	**481**	**1.7%**	**259**	**0.9%**

Rangelands in 100 ft, 50 ft, and 25 ft Hydrologic Study Areas by WRIA

	Total Acreage	Rangelands Intersecting Hydrologic Study Area (100 Ft)	% in Study Area (100 Ft)	Rangelands Intersecting Hydrologic Study Area (50 Ft)	% in Study Area (50 Ft)	Rangelands Intersecting Hydrologic Study Area (25 Ft)	% in Study Area (25 Ft)
Chelan	21,317	336	2%	174	1%	96	0.5%
Entiat	17,183	593	3%	367	2%	248	1%
Wenatchee	22,664	1,527	7%	1,346	6%	1,256	6%
Squilchuck/Stemilt	15,021	235	2%	131	0.9%	81	0.5%
Total	**76,184**	**2,691**	**4%**	**2,018**	**3%**	**1,682**	**2%**

Source: BERK Consulting 2014

Floodplains

While greater in some basins than others, the amount of agricultural and range land within floodplains is relatively small at 2% overall with the greater acreages in the Wenatchee and Chelan basins. See Exhibit 7.

Exhibit 7. Agricultural and Range Lands in Floodplains

Agricultural Lands in Floodplain Study Area by WRIA

	Total Acreage	Agricultural Lands Intersecting 100-year Floodplain	% in Floodplain
Chelan	10,102	179	2%
Entiat	1,228	97	8%
Wenatchee	10,289	282	3%
Squilchuck/Stemilt	5,997	6	0.1%
Total	**27,616**	**564**	**2%**

Rangelands in Floodplain Study Area by WRIA

	Total Acreage	Rangelands Intersecting 100-year Floodplain	% in Floodplain
Chelan	21,317	6	0.0%
Entiat	17,183	24	0.1%
Wenatchee	22,664	1,221	5%
Squilchuck/Stemilt	15,021	8	0.1%
Total	**76,184**	**1,259**	**2%**

Source: BERK Consulting 2014

Critical Aquifer Recharge Areas

There is a relatively greater percentage of agriculture in proximity to potential wellhead protection areas (14%) and in proximity to possible critical aquifer recharge areas (26%) compared with other hydrologic areas. See Exhibit 8 and Exhibit 9.

Exhibit 8. Agricultural and Range Lands in Proximity to Potential Wellhead Protection Areas

Agricultural Lands in Wellhead Protection Areas by WRIA

	Total Acreage	Agricultural Lands Intersecting Wellhead Protection Areas	% in Wellhead Protection Zone
Chelan	10,102	849	8%
Entiat	1,228	132	11%
Wenatchee	10,289	2,305	22%
Squilchuck/Stemilt	5,997	618	10%
Total	**27,616**	**3,904**	**14%**

Rangelands in Wellhead Protection Areas by WRIA

	Total Acreage	Rangelands Intersecting Wellhead Protection Areas	% in Wellhead Protection Zone
Chelan	21,317	91	0.4%
Entiat	17,183	949	6%
Wenatchee	22,664	900	4%
Squilchuck/Stemilt	15,021	49	0.3%
Total	**76,184**	**1,990**	**3%**

Source: BERK Consulting 2014

Exhibit 9. Agricultural and Range Lands in Proximity to Potential CARA Areas

Agricultural Lands in Possible CARA Areas by WRIA

	Total Acreage	Agricultural Lands Intersecting Possible CARA Areas	% in Possible CARA Areas
Chelan	10,102	1,537	15%
Entiat	1,228	996	81%
Wenatchee	10,289	4,440	43%
Squilchuck/Stemilt	5,997	287	5%
Total	**27,616**	**7,261**	**26%**

Rangelands in Possible CARA Areas by WRIA

	Total Acreage	Rangelands Intersecting Possible CARA Areas	% in Possible CARA Areas
Chelan	21,317	799	4%
Entiat	17,183	1,035	6%
Wenatchee	22,664	1,974	9%
Squilchuck/Stemilt	15,021	39	0.3%
Total	**76,184**	**3,847**	**5%**

Source: BERK Consulting 2014

Priority (Fish and Wildlife) Habitats and Species Areas

There is a higher percentage of agricultural and range land in proximity to potential priority habitats and species areas because of the extent of the county's quality habitats that are home to numerous species as well as the wide range of potential mule deer and elk corridors. See Exhibit 10.

Exhibit 10. Agricultural and Range Land in Proximity to Priority Habitats and Species Areas

Agricultural Lands in PHS Areas by WRIA

	Total Acreage	Agricultural Lands Intersecting PHS Areas	% in PHS Areas
Chelan	10,102	3,628	36%
Entiat	1,228	1,117	91%
Wenatchee	10,289	5,282	51%
Squilchuck/Stemilt	5,997	1,200	20%
Total	**27,616**	**11,226**	**41%**

Rangelands in PHS Areas by WRIA

	Total Acreage	Rangelands Intersecting PHS Areas	% in PHS Areas
Chelan	21,317	20,215	95%
Entiat	17,183	16,838	98%
Wenatchee	22,664	20,967	93%
Squilchuck/Stemilt	15,021	10,948	73%
Total	**76,184**	**68,968**	**91%**

Source: BERK Consulting 2014

More detailed mapping of high quality mule deer and elk habitat shows a smaller percentage of coverage in the Squilkchuck/Stemilt Basin. Such focused mapping is not available for other basins. See Exhibit 11.

Exhibit 11. Agricultural and Range Land in Proximity to Mule Deer and Elk Habitat – Squilchuck/Stemilt WRIA

Agricultural Lands in Mule Deer Habitat Areas by WRIA

	Total Acreage	Agricultural Lands Intersecting Mule Deer Habitat	% in Mule Deer Habitat
Squilchuck/Stemilt	5,997	88	1%
Total	**5,997**	**88**	**1%**

Agricultural Lands in Elk Habitat Areas by WRIA

	Total Acreage	Agricultural Lands Intersecting Elk Habitat	% in Elk Habitat
Squilchuck/Stemilt	5,997	450	8%
Total	**5,997**	**450**	**8%**

Rangelands in Mule Deer Habitat Areas by WRIA

	Total Acreage	Rangelands Intersecting Mule Deer Habitat	% in Mule Deer Habitat
Squilchuck/Stemilt	15,021	106	1%
Total	**15,021**	**106**	**1%**

Rangelands in Elk Habitat Areas by WRIA

	Total Acreage	Rangelands Intersecting Elk Habitat	% in Elk Habitat
Squilchuck/Stemilt	15,021	723	5%
Total	**15,021**	**723**	**5%**

Source: BERK Consulting 2014

Geologic Hazard Areas

Across the county geologic hazard areas are extensive. Erodible soils mostly affect range lands (~70%) since they tend to occur on higher elevations. See Exhibit 12.

Exhibit 12. Agricultural Lands and Erodible Soils

Agricultural Lands in Erodible Soil Areas by WRIA

	Total Acreage	Agricultural Lands Intersecting Erodible Soils	% in Erodible Soils
Chelan	10,102	754	7%
Entiat	1,228	44	4%
Wenatchee	10,289	612	6%
Squilchuck/Stemilt	5,997	715	12%
Total	**27,616**	**2,125**	**8%**

Rangelands in Erodible Soil Areas by WRIA

	Total Acreage	Rangelands Intersecting Erodible Soils	% in Erodible Soils
Chelan	21,317	14,352	67%
Entiat	17,183	14,309	83%
Wenatchee	22,664	18,196	80%
Squilchuck/Stemilt	15,021	6,300	42%
Total	**76,184**	**53,157**	**70%**

Source: BERK Consulting 2014

Steep slope areas mapped per Chelan County' critical areas regulations encompass large areas of agricultural (~67%) and especially range lands (~97%). See Exhibit 13. Mapped landslide areas are not particularly expansive. See Exhibit 14.

Exhibit 13. Agricultural Lands and Slope Greater than 15%

Agricultural Lands in CAO Steep Slope Areas by WRIA

	Total Acreage	Agricultural Lands Intersecting Steep Slope Areas	% in Steep Slopes
Chelan	10,102	6,873	68%
Entiat	1,228	807	66%
Wenatchee	10,289	6,214	60%
Squilchuck/Stemilt	5,997	4,667	78%
Total	**27,616**	**18,561**	**67%**

* includes 250 ft buffer on slopes >15% and >40%

Rangelands in CAO Steep Slope Areas by WRIA

	Total Acreage	Rangelands Intersecting Steep Slope Areas	% in Steep Slopes
Chelan	21,317	21,194	99%
Entiat	17,183	17,064	99%
Wenatchee	22,664	21,296	94%
Squilchuck/Stemilt	15,021	14,405	96%
Total	**76,184**	**73,959**	**97%**

* includes 250 ft buffer on slopes >15% and >40%

Source: BERK Consulting 2014

Exhibit 14. Agricultural Lands and Potential Landslide Hazard Areas

Agricultural Lands in Potential Landslide Hazard Areas by WRIA

	Total Acreage	Agricultural Lands Intersecting Potential Landslide Hazard Areas	% in Potential Landslide Area
Chelan	10,102	0	0%
Entiat	1,228	-	0%
Wenatchee	10,289	374	4%
Squilchuck/Stemilt	5,997	2,567	43%
Total	**27,616**	**2,941**	**11%**

Rangelands in Potential Landslide Hazard Areas by WRIA

	Total Acreage	Rangelands Intersecting Potential Landslide Hazard Areas	% in Potential Landslide Area
Chelan	21,317	196	1%
Entiat	17,183	174	1%
Wenatchee	22,664	3,217	14%
Squilchuck/Stemilt	15,021	3,992	27%
Total	**76,184**	**7,580**	**10%**

Source: BERK Consulting 2014

Potential channel migration zones are associated with rivers and do not affect a high percentage of agricultural land countywide, but is more prevalent in the Entiat basin and the Wenatchee basin. See Exhibit 15.

Exhibit 15. Agricultural Lands and Channel Migration Zone Areas

Agricultural Lands in Channel Migration Zone Areas by WRIA

	Total Acreage	Agricultural Lands Intersecting Channel Migration Zone	% in Channel Migration Zone
Chelan	10,102	0	0%
Entiat	1,228	132	11%
Wenatchee	10,289	425	4%
Squilchuck/Stemilt	5,997	-	0%
Total	**27,616**	**557**	**2.0%**

Rangelands in Channel Migration Zone Areas by WRIA

	Total Acreage	Rangelands Intersecting Channel Migration Zone	% in Channel Migration Zone
Chelan	21,317	7	0.0%
Entiat	17,183	93	0.5%
Wenatchee	22,664	1,278	6%
Squilchuck/Stemilt	15,021	-	0%
Total	**76,184**	**1,378**	**2%**

Source: BERK Consulting 2014

4.2 STRESSORS AND SOLUTIONS

Where agriculture intersects critical areas, it is appropriate to consider the potential relationships between agriculture and critical areas, particularly potential stressors or adverse effects of agricultural activities on critical areas. If there are potential adverse effects, conservation practices can be identified to protect critical areas while promoting agriculture in accordance with the VSP purpose.

To conceptually address potential critical area stressors as well as conservation practices and applicable non-critical area regulations, a matrix has been compiled. See Appendix E.

Typical agricultural activities that could stress critical areas may include:

- Building of roads, buildings, creation of impervious area
- Installation of fences
- Use of fertilizer / pesticides
- Storage or use of hazardous materials
- Altering hydrology due to ditches, canals, and other irrigation facilities; creation of artificial stormwater ponds
- Irrigation
- Flood control facilities and floodplain fill

- Clearing of vegetation, including riparian and wetland conversion, or location of agriculture related structures in riparian and wetland critical areas
- Shade trees replacing shrub-steppe
- Planting of agricultural lands (in areas not previously under agricultural production) or replanting
- Allowing livestock in riparian areas

These agricultural activities may, *if not designed or managed properly*, could result in:

- Changes to stormflow volume, peak flow intensity and frequency, and channel erosion
- Armoring banks, reduced bank stability and loss of bank habitat structure and complexity
- Reduction in water available to wetlands, decrease in the amount of water that flows naturally in streams and rivers, and interrupted groundwater flow
- Physical movement barriers to migrating animals, loss of habitat connectivity, and loss/simplification of breeding habitat, active season habitat, overwintering habitat, and refugia
- Excess nutrients and pesticides transported to surface and ground waters
- Increased fish predation and mortality, and absorption by amphibians and reptiles of pollutants
- Erosion from vegetation removal and clearing
- Placement of structures in hazard areas
- Erosion, sedimentation, slope stability
- Trampling and grazing, causing loss of cover and forage, destruction of bank structure, compaction of soil, trampling of burrows

While there is a potential for agricultural activities to cause stress to critical areas, there are a number of federal, state, and local laws (independent of critical area regulations) and conservation practices, including producer checklists, which seek to avoid impacts. Some examples of activities, conservation practices and case studies are listed below in Exhibit 16, and shown more fully in Appendix E.

Exhibit 16. Sample Conservation Practices and Case Studies

Agricultural Activity	Example Conservation Practice	Example Case Study
Use of synthetic or organic fertilizer / pesticides	Is the application of all fertilizers done according to the specific needs of the crop and soil condition? (Global Gap CB 5.1.1) Has assistance with implementation of IPM systems been obtained through training or advice? (Global Gap CB 7.1) Fertilizer Storage: In a dry area? The storage area for all inorganic fertilizers (e.g. powders, granules or liquids), is well ventilated and free from rainwater or heavy condensation. Storage cannot be directly on the soil. As long as the storage requirements on the material safety data sheet are complied with, bulk liquid fertilizers can be stored outside in containers. (Global Gap CB 5.4.4)	Jesus Limón of Limón and Sons Orchard in Wenatchee has successfully implemented integrated pest management (IPM) practices on his orchard. Over the course of three years, Limón was able to convert to completely organic practices. He credits his transition to education through local classes on IPM, citing that "knowledge is the best thing you can acquire." His success did not go unnoticed and spurred similar action at the farms nearby. Limón says that focusing on how the bug populations' function helped him look at the whole picture of how other critters, such as hawks, mice, and snakes, interact with the property as well. (American Farmland Trust, Friends of Farmland 2010)

Agricultural Activity	Example Conservation Practice	Example Case Study
Altering hydrology due to ditches, canals, and other irrigation facilities; creation of artificial stormwater ponds	Irrigation pipeline installed to convey water for storage or application, as part of an irrigation water system. The purpose of this practice is to efficiently deliver or convey water from a source of supply to points of application or storage to facilitate management of irrigation water. The practice reduces erosion, conserves water, and protects water quality. Underground pipelines serve as an integral part of the irrigation water distribution system and significantly improve the overall efficiency of the system. (NRCS Conservation Practice 430)	Chelan County PUD owns and operates a surface water irrigation system which delivers water to seven (7) landowners through a pipeline and open channel system located between Entiat River Miles (RM) 1.49 and 3.45. The system diverts 4.52 cfs in the mainstream Entiat River, while actual water need has been established at 2.24 cfs. Additionally, 8-9 cfs savings will be realized along the 0.15 mile long diversion structure. Objectives of this project are to decommission the PUD irrigation pipeline and delivery system, upgrade to modern and efficient delivery systems located closer to the point of use (creating water savings), improve lower Entiat River instream flow conditions, enhance off-channel habitat conditions, and prevent juvenile fish entrainment. (CCD 2013)
Irrigation	Farmers can reduce NPS pollution from irrigation by improving water use efficiency. They can measure actual crop needs and apply only the amount of water required. Farmers may also choose to convert irrigation systems to higher efficiency equipment. (USEPA)[3] Is there a water management plan to optimize water usage and reduce waste? There must be a written action plan, which aims to optimize water usage on the farm. This can be either an individual plan or a regional activity if the farm is participating in and/or covered by such. (Global Gap CB 6.2.2)	WSU Study Regarding Vineyards in Eastern Washington: "Deficit irrigation, when done properly, can improve grape quality…Deficit irrigation benefits include substantial savings in irrigation water, limiting unnecessary shoot growth, manipulating berry size, and modifying wine style in the vineyard. Having a more open canopy sets off a chain of positive events—better fruit exposure and air circulation in the fruit zone leads to reduced disease pressure and improved fruit -quality." (Good Fruit Grower)
Clearing of vegetation, including riparian and wetland conversion, or location of agriculture related structures in riparian and wetland critical areas	Has consideration been given to the conversion of unproductive sites (e.g. low lying wet areas, woodlands, headland strip or areas of impoverished soil, etc.) to conservation areas for the encouragement of natural flora and fauna? (Global Gap AF 6.2.1) Improve riparian conditions by increasing filtration capacity through vegetation planting, CREP enrollment, selected livestock fencing, and similar practices, including intermittent streams that contribute to priority areas. (UCSRB)	The Wenatchee River Riparian Enhancement project is located on a private apple and pear orchard. The third generation owner of the property intends to continue 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 project 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 landowners adjacent orchard. (CCNRD 2010)

Agricultural Activity	Example Conservation Practice	Example Case Study
Allowing livestock in riparian areas	Limit animal access to waterways, fence off and concentrate agricultural activities away from streams, wetlands, and riparian areas, and prevent water runoff of farm or animal waste to streams. (WDFW 2009) Maintain or improve fencing or fish friendly stream crossing structures to prevent livestock access to riparian zones and streams. (UCSRB 2007)	The primary objective of the Tillicum Creek Fence project is to restore degraded riparian and stream channel areas while continuing to provide grazing opportunities. The Tillicum Creek Fence project excludes livestock from those portions of Tillicum and Indian Creeks that are immediately adjacent to temporary livestock handling locations. The fencing protects approximately 0.7 miles of streambank and riparian vegetation along steelhead spawning areas, as well as protects newly restored 750 linear feet along Tillicum Creek and 250 linear feet along Indian Creek to the confluence of Tillicum Creek. Plantings that occurred along these creeks in fall 2010 restored nearly 0.8 acres of native trees, shrubs and grasses. (CCD 2007)

Sources: Cascadia Conservation District (CCD 2007 and 2013); Chelan County Department of Natural Resources (CCNRD 2010); Global Gap (2013); Natural Resource Conservation Service (NRCS 2008), United States Department of Agriculture (USDA). 2014. Upper Columbia Salmon Recovery Board (UCSRB 2007); Washington Department of Fish and Wildlife (WDFW) (2009).

5.0 COMPARISON: AGRICULTURE & CRITICAL AREAS PROTECTION UNDER DIFFERENT STATE LAWS

This section compares how agricultural uses are addressed and how critical areas are protected under different state laws.

5.1 GROWTH MANAGEMENT ACT

The Growth Management Act (GMA) was passed by the Washington State Legislature in 1990 and 1991 with the following purpose:

> *The legislature finds that uncoordinated and unplanned growth, together with a lack of common goals expressing the public's interest in the conservation and the wise use of our lands, pose a threat to the environment, sustainable economic development, and the health, safety, and high quality of life enjoyed by residents of this state. It is in the public interest that citizens, communities, local governments, and the private sector cooperate and coordinate with one another in comprehensive land use planning. Further, the legislature finds that it is in the public interest that economic development programs be shared with communities experiencing insufficient economic growth.*

GMA requires that counties and cities:

- Cooperatively prepare countywide planning policies for coordinated planning.
- Develop comprehensive plans including Land Use, Rural, Housing, Transportation, Utilities, Capital Facilities, Parks and Recreation, and Economic Development Elements.
- Create a land use plan that protects agricultural, forestry and mineral lands of long-term commercial significance, identifies and maintains the rural character of rural lands, and designates urban growth areas (UGAs) with adequate capacity for 20-years of population growth and associated infrastructure and public services. Chelan County has the responsibility to allocate population and size UGAs in consultation with the cities.
- Develop consistent development regulations including regulations protecting resource lands of long-term commercial significance and protecting critical areas based on consideration of the best available science.

Chelan County has adopted a comprehensive plan and development regulations to meet GMA requirements and updates it as needed. Chelan County applies its land use plan and development regulations to all unincorporated lands in the County.

As described in Section 3.2, Chelan County has designated resource lands of long-term commercial significance for agriculture, forestry, and mineral lands. Maps showing the resource designations in relation to lands with agricultural activity are included in Appendix A, Map Folio.

The County defines agriculture in the zoning code based on the activity – and agricultural uses are allowed in every County zone – not just in the Commercial Agriculture zone:

> *"Agricultural use" means the tilling of the soil, the raising of crops, forestry, horticulture, gardening, keeping or raising of livestock and poultry and any agricultural industry or business such as dairies, nurseries, wholesale greenhouses or similar uses. (CCC 14.98.130)*

Additionally, Chelan County has adopted critical area regulations to protect fish and wildlife habitat conservation areas, wetlands, frequently flooded areas, geologically hazardous areas, and critical aquifer recharge areas used for potable water. Definitions and mapping criteria are included in Appendix B. Exhibit 17 provides a summary of the critical area protection standards that are applicable to development.

Development is defined as:

> *"Development" means the construction or exterior alteration of a structure or structures, dredging, drilling, dumping, filling, removal of natural resources or vegetation, placing of obstructions, any project of a permanent nature or changes in the use of land or preparation for the change of use of land except as allowed by the provisions of this title. (CCC 14.98.550 Development)*

The County's critical area regulations typically include exemptions such as maintenance, repair, or operation of existing facilities and improved areas including drainage ditches, pumping stations and irrigation facilities, passive recreation and trails, habitat restoration, noxious weed control and others. Variances may be granted to allow reasonable use of property.

New agricultural structures and irrigation facilities, new clearing of vegetation such as riparian areas, and bringing new land into production would be subject to the critical area regulations. [Confirm]

For development activities that are subject to critical area regulations, there is often a requirement that the activity demonstrate how the proposal avoids, minimizes, reduces and compensates for impacts by:

(1) Avoiding the impact altogether by not taking a certain action or parts of an action;

(2) Minimizing impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps, such as project redesign, relocation or timing, to avoid or reduce impacts;

(3) Rectifying the impact to fish and wildlife conservation areas by repairing, rehabilitating, or restoring the affected environment to the historic conditions or the conditions at the time of the initiation of the project;

(4) Minimizing the impact by restoring or stabilizing the area through engineered or other methods;

(5) Reducing the impact over time by preservation and maintenance operation during the life of the action;

(6) Compensating for the impact by replacing, enhancing or providing substitute resources or environments; and

(7) Monitoring the required mitigation and taking remedial action when necessary.

The typical protection standards associated with each critical area are summarized in Exhibit 17. The full code should be consulted for any activity to determine the full set of requirements, definitions, and context.

Exhibit 17. Summary of Chelan County Critical Area Regulations

<table>
<tr><th>Critical Area</th><th>Summary of Protection Standards</th></tr>
<tr><td>Fish and Wildlife Habitat Conservation Areas</td><td>Class I wildlife habitat conservation area:
Major Development: Notice to pertinent agencies, habitat management and mitigation plan
Minor development: Notice to agencies, administrator may condition development following review of comments, additional standards to revegetate disturbed areas, limits to disturbance, fencing, erosion and drainage control plan, etc.
Class II wildlife habitat conservation area standards: Similar to Minor development in Class I.
Special allowances and standards for roadways and water crossings, bulkheads and retaining walls, wells, tunnels, utilities and on-site septic systems, pedestrian/bike/equestrian trails, fencing, emergencies.
Riparian Buffers: Standard buffers listed. Averaging may be allowed. May be reduced by 25% for lots less than 300 feet in depth subject to habitat management plan.
<table>
<tr><th rowspan="2">Stream Type</th><th colspan="2">Buffer Width</th></tr>
<tr><th>High Intensity (feet)</th><th>Low Intensity (feet)</th></tr>
<tr><td>Type F (Fish Bearing)</td><td>200</td><td>150</td></tr>
<tr><td>Type Np (Perennial)</td><td>150</td><td>100</td></tr>
<tr><td>Type Ns (Seasonal)</td><td>50</td><td>50</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Critical Area</th><th>Summary of Protection Standards</th></tr>
<tr><td>Wetlands</td><td>Wetlands are classified into one of four categories, using the Eastern Washington rating system, from the most unique, rare, intact and difficult to replace to those that are lower functioning.

Standard buffers listed. Averaging may be allowed. May be increased due to particular species, erosion concerns, etc. Buffers may be reduced up to 50% on lots created prior to January 5, 1999 subject to report and mitigation plan.
<table>
<tr><th rowspan="2">Wetland Category</th><th colspan="2">Buffer Width (feet)</th></tr>
<tr><th>High Intensity (feet)</th><th>Low Intensity (feet)</th></tr>
<tr><td>Category 1</td><td>300</td><td>200</td></tr>
<tr><td>Category 2</td><td>200</td><td>100</td></tr>
<tr><td>Category 3</td><td>150</td><td>75</td></tr>
<tr><td>Category 4</td><td>50</td><td>50</td></tr>
</table>
</td></tr>
<tr><td>Aquifer Recharge Areas</td><td>The applicant determines the vulnerability rating for any development permit, not otherwise exempted from this chapter, if the site or development meets criterion (1), (2), (3), or (4) or meets two or more of the remaining criteria below:
(1) Within a wellhead protection area designated under Chapter 246-290 WAC;
(2) Within an aquifer recharge area mapped and identified by a qualified groundwater scientist;
(3) The site will be utilized for hazardous substance (… defined in RCW 70.105D.020(7)) processing, storage or handling in applications or quantities larger than is typical of household use;
(4) The site will be utilized for hazardous waste treatment and storage as set forth in Chapter 70.105 RCW, Hazardous Waste Management, …;
(5) The site contains highly permeable soils, which include soil types 1a, 1b and 2a under WAC 246-272-11001, Table II;
(6) Within a sole source aquifer recharge area designated pursuant to the Federal Safe Drinking Water Act;
(7) Within an area established for special protection pursuant to a groundwater management program, Chapters 90.44, 90.48 and 90.54RCW, and Chapters 173-100 and 173-200 WAC;
(8) The development involves a major or short subdivision and … present or future plans to construct three or more dwelling units where the dwelling units will not be connected to a public sewer system and any of the lots are <1 net acre in size;
(9) The proposed commercial and industrial site is not on a public sewer system and the main structure exceeds four thousand square feet;
(10) The proposed use is as a commercial feedlot;
(11) The development is within two hundred feet of the ordinary high water mark of a perennial river, stream, lake or pond.

After determining the susceptibility and contaminant loading ratings for the proposed use and site, the applicant determines the vulnerability rating.

There are special standards for agricultural activities, landfills, junkyards, salvage yards, and auto wrecking yards, parks, schools and recreation facilities, commercial, industrial and mining uses, utilities, aboveground application of sewage or sludge, residential land subdivisions, wood treatment facilities, and underground injection</td></tr>
</table>

Critical Area	Summary of Protection Standards
	wells. The agricultural activities standards are listed below: Agricultural Activities. Agricultural activities shall incorporate best management practices concerning waste disposal, fertilizer use, pesticide use, and stream corridor management. If necessary, farmers shall seek technical assistance from the Chelan County Conservation District, WSU cooperative extension agent and local fieldmen.
Frequently flooded areas	New lots allowed if there is buildable area outside the floodway. All improvements including parking areas to be outside the floodway. Roads may cross the floodway if there is no other route. No residential structures may be located in the floodway. Development is subject to flood hazard development regulations (Chapter 3.20) and the Shoreline Master Program.
Geologically Hazardous Areas	Areas with known or suspected risk (severe erosion, landslide hazards, snow avalanche) required to prepare a geologic site assessment. After site assessment prepared, development subject to performance standards: (A) Construction methods should be used which minimize risks to structures and do not increase the risk to the site, or to adjacent properties and their structures… (B) Site planning should minimize disruption of existing topography and vegetation, and should incorporate opportunities for phased clearing. (C) Disturbed areas shall be replanted within one year of project completion... (D) Impervious surface coverage shall be minimized. (E) Excavation and grading shall be minimized. A clearing and grading schedule shall consider limitations based upon seasonal weather conditions. (F) Detailed drainage plans may be required for projects affecting areas of geologic hazard. … (G) Any limitations to site disturbance, such as clearing restrictions, imposed as a condition of development approval should be marked in the field and approved by the county prior to undertaking the project. (H) A monitoring program should be prepared for construction activities ... (I) All authorized clearing for roads, utilities, etc., should be limited to the minimum necessary to accomplish engineering design. … (J) An erosion control plan shall be submitted by the applicant for a development, prior to approval of the proposal. … (K) To maintain the natural integrity of landslide hazard areas and to protect the environment, and the public health and safety, adequate vegetation shall be maintained around all sides of the landslide hazard area. (L) Development proposals that involve altering land upon areas identified as landslide or avalanche hazard areas must demonstrate the following for approval: (i) There is no evidence of recent landslides or avalanches in the vicinity of the proposed development and quantitative analysis of slope stability and/or other pertinent factors indicate no significant risk to the proposed development or other properties. (ii) The landslide or avalanche hazard areas can be modified or the project can be designed so that the landslide or avalanche hazard to the project is eliminated. (iii) The development proposal would cause no increase in surface water discharge, sedimentation, or avalanche hazard to other properties, and will not decrease slope stability on other properties.

Critical Area	Summary of Protection Standards
	(iv) Disturbance of trees and vegetation shall be the minimum necessary in order to prevent erosion and/or an increase in avalanche hazard, to stabilize slopes, and preserve the natural character of the area. (v) Structures and improvements shall be located to preserve the most sensitive portion of the site and its natural landforms and vegetation. (M) Projects in snow avalanche hazard areas shall provide technical studies...

Source: Chelan County Code 2014; BERK Consulting 2014

Based on Growth Management Hearings Board and Court decisions, if a VSP Work Plan is not adopted, the County would need to adopt development regulations certified by the Washington Department of Commerce as protective of critical areas in areas used for agricultural activities.

If the County's current GMA critical area regulations were to apply to agricultural areas, some land could be encumbered as "no touch" areas. An example comparison based on an *assumption* of a 100-foot "study area" along shorelines, streams and wetlands and the more detailed application of current CAO buffers along shorelines, streams, and wetlands appears in the Exhibit 18 below. The amount of agricultural land within a floodplain and channel migration zone area would likely be the same in any case. See also Appendix F.

Exhibit 18. Theoretical Comparison: VSP Hydrologic Study Areas and Standard Critical Area Buffers for Streams, Wetlands, and Location in Floodplain and Channel Migration Area

Agricultural Lands in 100 Ft Hydrologic Study Area, Floodplain, and/or CMZ by WRIA

	Total Acreage	Agricultural Lands Intersecting Hydro Macro 100 Ft	% in Critical Areas
Chelan	10,102	424	4%
Entiat	1,228	245	20%
Wenatchee	10,289	1,065	10%
Squilchuck/Stemilt	5,997	63	1%
Total	**27,616**	**1,797**	**7%**

Agricultural Lands in CAO Hydrologic Study Area, Floodplain, and/or CMZ by WRIA

	Total Acreage	Agricultural Lands Intersecting Hydro Macro 100 Ft	% in Critical Areas
Chelan	10,102	611	6%
Entiat	1,228	302	25%
Wenatchee	10,289	1,385	13%
Squilchuck/Stemilt	5,997	136	2%
Total	**27,616**	**2,434**	**9%**

Source: BERK Consulting 2014

5.2 SHORELINE MANAGEMENT ACT

The Shoreline Management Act (SMA) was passed by the State Legislature in 1971 and subsequently adopted by Washington State voters in 1972. The SMA requires local jurisdictions to adopt a shoreline master program (SMP) with goals, policies, and shoreline environment designations designed to promote preferred shoreline uses (water dependent such as ports, marinas and docks; water related such as boat repair and sales; and water oriented uses such as recreation sites), environmental protection, and public access. The SMP goals and policies are considered part of a jurisdiction's GMA Comprehensive Plan and the SMP regulations are considered part of a jurisdiction's development regulations.

Unlike GMA which is countywide, the SMA applies to a smaller shoreline jurisdiction area: streams of 20 cubic feet per second or greater, lakes of 20 acres or greater, lands within 200 feet of the ordinary high water mark of these water bodies and floodways, and associated wetlands. Chelan County has 80 rivers and streams and 53 lakes and reservoirs that are within shoreline jurisdiction.

The County's current SMP was adopted in 1975. The County has developed drafts of an SMP update, but has not yet completed its efforts. The current SMP allows for agricultural activities and includes policies and regulations.

> *Agricultural practices are those methods used in vegetation, soil, and livestock management, such as tilling of soil, irrigation, control of weeds, control of plant diseases and insect pests, soil maintenance and fertilization, the raising and storing of crops, and control of livestock. In Chelan County, irrigated orchard production is the most significant agricultural activity, although general farming, livestock, dryland wheat and hay operations are present in lesser degrees. Diversion of water for agricultural purposes must occur in accord with the water right procedures of the Hydraulics Division of the Department of Ecology.*
>
> *a. Encourage that lands which are well suited for agriculture can be maintained in agricultural production.*
>
> *b. Encourage the maintenance of a buffer of permanent vegetation along the shoreline in agricultural areas which will retard surface runoff, reduce siltation, and provide sanctuary for fish and other wildlife.*
>
> *c. Livestock waste should be disposed of in a manner that will prevent surface or groundwater pollution. Livestock enclosures involving a significant concentration of animals should be sufficiently set back from all Shorelines of the State to prevent direct pollution of the water by animal wastes.*
>
> *d. Barns and agricultural accessory structures should be permitted within the Shorelines of the State only when compliance with the above policy can be assured. Such buildings are not permitted in recognized floodway areas, and only conditionally permitted in floodway fringe areas. Barns and agricultural accessory structures should be generally discouraged in the floodway fringe unless no other suitable location is available and adequate protective measures are assured.*
>
> *e. Discourage commercial feedlots and silage pits from locating on shorelines unless it can be satisfactorily demonstrated that no adverse environmental effects would result.*
>
> *f. Protect natural airsheds, made up of ravines, swales, tributaries and other topographic features which direct the flow of cold air down to major streams, from obstructions which would create frost pockets. Proposed highways, buildings, dikes, landfills, and dense hedge plantings*

which may obstruct this airflow and threaten existing orchards should be designed to minimize any adverse effect.

g. Orchardists are encouraged to extract directly from the source, rather than from a streamside well, in order to obtain water free from damaging salts. Orchardists are encouraged to utilize pumping unit installations which will not detract from the· visual quality of the shoreline.

h. Overflow spillage points along gravity irrigation systems should be channelized or rip-rapped to prevent excessive siltation of rivers and streams during irrigation water "wasting."

i. Orchardists using the rille method (open ditches) of irrigation are encouraged to filter overflow irrigation water into the soil rather than permitting excess irrigation water to runoff directly into surface waters.

j. As indicated by the Agricultural Element Goal, orchard agriculture is the key element in the economy of Chelan County. At present, sufficient amounts of water to sustain production are available. It is essential that future permitted land uses such as industry, recreation, and residential development do not create a water demand conflict which may reduce the amounts of water available for present levels of irrigation.

The current Shoreline Environment Designations include: Urban, Rural, Conservancy, and Natural. Agriculture is allowed in all environment designations; however, in Natural areas, only noncommercial agriculture is allowed. Specific standards are applied to feedlots, processing plants, and wetland alterations, and grazing. Grazing is allowed when:

Livestock grazing shall be managed in such a way as to preserve a sufficient amount of streamside vegetation to maintain bank stability, water quality, and shade and cover for fish and game.

When the County completes its SMP Update, it would be guided by SMP Guidelines (WAC 173-26) which similarly promote agriculture. The definition of agriculture is the same as shown in Section 3.1. SMP Guidelines indicate the SMP does not apply to existing agricultural activities, and only applies to land newly put into production and to activities that are more industrial in nature such as processing facilities.

WAC 173-26-241 (3) Standards. Master programs shall establish a comprehensive program of use regulations for shorelines and shall incorporate provisions for specific uses consistent with the following as necessary to assure consistency with the policy of the act and where relevant within the jurisdiction.

(a) Agriculture.

(i) For the purposes of this section, the terms agricultural activities, agricultural products, agricultural equipment and facilities and agricultural land shall have the specific meanings as provided in WAC 173-26-020. [See Section 3.1]

(ii) Master programs shall not require modification of or limit agricultural activities occurring on agricultural lands. In jurisdictions where agricultural activities occur, master programs shall include provisions addressing new agricultural activities on land not meeting the definition of agricultural land, conversion of agricultural lands to other uses, and other development on agricultural land that does not meet the definition of agricultural activities.

(iii) Nothing in this section limits or changes the terms of the current exception to the definition of substantial development. A substantial development permit is required for any agricultural development not specifically exempted by the provisions of RCW 90.58.030 (3)(e)(iv).

(iv) Master programs shall use definitions consistent with the definitions found in WAC 173-26-020(3).

(v) New agricultural activities are activities that meet the definition of agricultural activities but are proposed on land not currently in agricultural use. Master programs shall include provisions for new agricultural activities to assure that:

(A) Specific uses and developments in support of agricultural use are consistent with the environment designation in which the land is located.

(B) Agricultural uses and development in support of agricultural uses, are located and designed to assure no net loss of ecological functions and to not have a significant adverse impact on other shoreline resources and values.

Measures appropriate to meet these requirements include provisions addressing water quality protection, and vegetation conservation, as described in WAC 173-26-220 (5) and (6). Requirements for buffers for agricultural development shall be based on scientific and technical information and management practices adopted by the applicable state agencies necessary to preserve the ecological functions and qualities of the shoreline environment.

(vi) Master programs shall include provisions to assure that development on agricultural land that does not meet the definition of agricultural activities, and the conversion of agricultural land to nonagricultural uses, shall be consistent with the environment designation, and the general and specific use regulations applicable to the proposed use and do not result in a net loss of ecological functions associated with the shoreline.

The County includes shoreline buffers in its current critical areas ordinance based on current shoreline environment designation. See Exhibit 19.

Exhibit 19. Shoreline Buffers – Chelan County Code 11.78.090

	Buffer Width	
Environment Classification	**High Intensity (feet)**	**Low Intensity (feet)**
Natural*	250	200
Conservancy*	250	200
Rural*	150	100
Urban*	100	75

Note: * All shoreline environment classifications within the Lower Lake Chelan Basin may be subject to a fifty-foot riparian buffer for high intensity land uses and a twenty-five-foot buffer for low intensity land uses if the following requirements are met: (A) An enhanced on-site sewage system or public sewer is required, and stormwater must be retained on-site and not directly flow into surface water. A stormwater drainage plan is required with a submittal of a land use or building permit application; and (B) Supplement the native vegetation with plant materials selected from an approved plant list developed jointly by Chelan County and the Washington State Department of Fish and Wildlife, available at the Chelan County department of building, fire safety and planning. The Lower Lake Chelan Basin, for the purposes of this section, shall be considered to begin at Box Canyon,

extending southeast to the city limits of the city of Chelan and extending northwest from the city limits of the city of Chelan to Deer Point.

SMP Guidelines (WAC 173-26) indicate that critical area regulations are to be included in the SMP when updated. SMPs are to "provide a level of protection to critical areas located within shorelines of the state that assures no net loss of shoreline ecological functions necessary to sustain shoreline natural resources as defined by department of ecology guidelines adopted pursuant to RCW 90.58.060." Until such time as the SMP Update occurs, the GMA critical area regulations addressing shorelines apply. (RCW 36.70A.480)

When the SMP is updated, it appears that the VSP Watershed Work Program could be applied to critical areas in shoreline jurisdiction where agriculture is occurring based upon the following:

- The GMA indicates the SMP is part of the community's GMA comprehensive plan and development regulations (RCW 36.70A.480)
- The SMP Guidelines indicate the definitions of critical areas and the minimum guidelines to classify critical areas are the same as GMA and its implementing rules (WAC 173-26-221)
- The VSP Program is included in the GMA statute and applies to unincorporated properties in watersheds and is not restricted in its application within the shoreline jurisdiction

In order to be integrated in the SMP update in the future, it does appear that the VSP Watershed Work Program would need to demonstrate "a level of protection to critical areas within the shoreline area that assures no net loss of shoreline ecological functions necessary to sustain shoreline natural resources" (RCW 36.70A.480 and WAC 173-26-221)

5.3 VSP COMPARISON TO GMA AND SMA STANDARD APPROACHES

As described in Section 1, and in more detail in Section 6, the VSP is distinct from standard GMA and SMP critical areas protections because it is voluntary, takes a watershed level approach, is based on measurable objectives that are monitored, and is developed by a multi-stakeholder Watershed Group.

Similar to GMA and SMA which promote resource production and critical areas protection, the ultimate goal of the VSP Watershed Work Program is to protect critical areas while maintaining the viability of agriculture in the watershed. However, unlike a standard regulatory approach, the VSP Watershed Work Program protection would be demonstrated by measurable benchmarks for the protection and enhancement (through voluntary, incentive-based measures) of critical areas. Over time the achievement of the benchmarks would be monitored. Monitoring reports would identify whether goals and benchmarks have been met. Adaptive management or additional voluntary actions and funding may need to be identified if goals and benchmarks are not met.

The VSP Watershed Work Program would apply to unincorporated properties in watersheds, and not within city limits, whereas GMA and SMA apply within and outside of city limits and are administered by the applicable local government. Relative to the rest of the watershed, some agriculture does occur in Chelan and Entiat and to a lesser degree in Wenatchee and Leavenworth, but in the cities, the standard GMA approach would apply.

5.4 OTHER ALTERNATIVES TO CRITICAL AREAS PROTECTION IN VSP

If the VSP Watershed Work Plan is not approved, fails, or is unfunded or inadequately funded the paths for addressing critical areas under GMA include adopting updated critical area regulations that either: 1) follow the approach used in four example counties referenced in the VSP law (Clallam, Clark, King, or Whatcom counties)

or 2) follow the Washington Department of Commerce rules that are pending. Each alternative approach is addressed below.

Example Counties in VSP Law

The VSP law references alternative suitable regulations for agriculture and critical areas that have been developed by Clallam, Clark, King, and Whatcom counties, all located in Western Washington. Each county's approach is described below.

Clallam County

Summary Description

Clallam County regulation of agricultural activities within critical areas is based on the categorization of agricultural activities operations and on when such activities began. Agricultural activities are categorized as either existing/ongoing or new agriculture/hobby farms. (The effective date is unclear; it appears the chapter was replaced in 1999 and amended subsequently.)

Agricultural Activities

According to the 2012 USDA Census of Agriculture, Clallam County has 23,640 acres of farm land and 536 farms. Cropland accounted for 34% of farm land use, woodland accounted for 33%, and pastureland 23%. Livestock sales accounted for 61% of total market value of products sold, and crop sales accounted for 39%. Top livestock items (in number) include cattle, sheep and ducks. Top crop items (in acres) include forage-land used for hay, grass, and greenchop, barley, wheat and corn.

Tools

Exemptions

Existing or ongoing agricultural operations that were established before the effective date of the critical area ordinance (CAO) and employ best management practices are exempt from the provisions of the County's CAO.

> *27.12.035 Activities not regulated by this chapter – Exemptions. (7) Existing and ongoing agriculture that was conducted prior to the effective date of this chapter on lands designated as critical areas or their associated buffers; provided, that such lands are classified as farm and agricultural land pursuant to Chapter 84.34 RCW; provided further, that all activities occurring on such lands employ best management practices (BMPs).*

According to the code, acceptable best management practices include:

- Activities carried out consistent with farm plans by the Natural Resources Conservation Service (NRCS);
- Activities that demonstrate consistency with total maximum daily loads (TMDL) established by the Washington Department of Ecology for specific operations; and/or
- Activities that demonstrate consistency with standard BMPs published by the NRCS. (CCC 27.12.035)

Written confirmation by the administrating agency (i.e. NRCS, Ecology) that applicable BMPs are being met is required as evidence for the exemption eligibility. (CCC 27.12.035; See also CCC 27.12.025(7)).

However, this does not exempt the new construction of, alteration, expansion, replacement, or reconstruction of an existing "structure," which is still subject to the provisions of the County's CAO.

Flexible Buffer Widths

In Clallam County, agricultural activities that were established after the critical area ordinance became effective are subject to buffer regulations to protect critical areas. Buffer widths have flexibility depending on the intensity of land use within the critical area. A buffer reduction can be requested if there is a low intensity land use- meaning low levels of human disturbance and low habitat impacts. Agriculture land use is included as a low intensity land use if it meets this definition. See County Code 27.12.730 - Requirements for buffer averaging.

County Code References

- Sec. 27.12.035 - Activities not regulated by this chapter – Exemptions
- Sec 27.12.040 - Pre-existing uses
- 27.12.730 - Requirements for buffer averaging

Clark County

Summary Description

The Clark County Code uses a variety of tools to regulate agricultural activities in habitat areas through the Habitat Conservation Ordinance (HCO), "involving regulations for categorizing streams, reducing riparian areas along streams without fish habitat, clarification of 'reasonable use' rules for significantly impacted property, and requirements for utility maintenance permits." Application of the HCO depends on the categorization of agricultural activities (existing or new) and the location of agricultural activities (within riparian or non-riparian habitat). Existing agricultural activities are defined as those in existence on July 11, 2006. The County includes an assumption that the continuation of existing agricultural activities on July 11, 2006 will not substantially degrade existing habitat functions and values.

Existing agricultural activities within designated non-riparian habitat areas are exempt from critical area code and regulation. Existing agricultural activities in riparian designated habitat have several options to meet compliance with critical area code. Options include: 1) creating an agricultural/habitat protection plan, or 2) complying with standard buffer zones, where there is some flexibility if it impacts reasonable use.

Agricultural Activities

According to the 2012 USDA Census of Agriculture, Clark County has 74,758 acres of farmland and 1,929 farms. Cropland accounted for 39% of farm land use, pastureland accounted for 33%, and woodland 20%. Livestock sales accounted for 63% of total market value of products sold and crop sales accounted for 37%. Top livestock items (in number) include chickens and cattle. Top crop items (in acres) include forage-land used for hay, grass and greenchop, corn, berries, Christmas trees, and wheat.

Tools

Exemptions

Exemptions apply only to existing agricultural activities within designated non-riparian habitat.

Agricultural/Habitat Open Protection Plan

Existing agricultural activities in designated riparian habitat areas can choose to create an agricultural/habitat protection plan that includes at a minimum the following:

- An approximate map of existing and proposed structures, roads, driveways, utilities, property lines, and agricultural uses.

- A map of regulated riparian habitat areas.
- Identification of existing habitat functions and values within the regulated habitat area on July 11, 2006, taking into account agricultural cycles that involve varying intensity of agricultural use.
- A description of best management practices and other mitigation measures to be undertaken in order to achieve the standard in subsection (B)(2)(a)(2) of this section.
- The owner's signature attesting that the information in the plan is accurate to the best of the owner's knowledge, and the mitigation measures specified in the plan will be implemented.
- The signature of an ag-habitat technician certified by the county attesting that he/she has inspected the area covered by the plan and that the plan satisfies the standard in subsection (B)(2)(a)(2) of this section.

Protection plans must be approved by a trained ag-habitat technician certified by the responsible official. Approved plans are recorded with the County Auditor and run with the land unless the plan is modified or rescinded. Plans can be modified as long as they use the same initial approval process. They can also be rescinded if the default option will be utilized (see below), or that agricultural activities no longer take place on the land.

Buffer Standards

The default option for existing and new agricultural activities in riparian designated habitat areas is to comply with two buffer zones, the inner zone and the outer zone, determined by the ordinary high water mark, stream classification (S, F, Np and Ns types), and the presence of wetlands. Activities like animal husbandry are prohibited in the inner zone. Other activities like clearing are permissible if it enhances habitat function and value. Buffers may be flexible for small parcels, if the inner zone impacts more than half of a parcel that is 10 acres or less, or more than a quarter of a parcel that is 5 acres or less.

County Code References

- 40.440 Habitat Conservation- 40.440.020 D Individual Stewardship Plan

King County

Summary Description

King County's Critical Area Ordinance (CAO) allows existing agriculture to continue with only minor regulatory changes. For new and expanded agricultural activities, it also offers flexibility in regulatory approach and implementation based on sound agricultural practices. Existing agricultural activities are defined as having existed prior to January 1, 2005.

Agricultural Activities

According to the 2012 USDA Census of Agriculture, there are 46,717 acres of farmland and 1,837 farms in King County. The major farmland uses include cropland (42%), pastureland (32%) and woodland (12%). The County's three largest categories of products include livestock, dairy, and nursery. Livestock operations are the largest segment of King County's agricultural industry, both in sales and acreage used. Livestock sales account for 64% of market value of products sold, and crop sales account for 36%. Top livestock inventory items (in number) include cattle, horses, and alpacas. Top crop items include forage-land used for hay, grass and greenchop, corn, vegetables, Christmas trees, and dried herbs.

Tools

Farm Management Plan

CAO-related Farm Plans are developed and approved by the King Conservation District. They are then submitted to King County for confirmation that they comply with CAO regulations. This is required for new and expanded agricultural activities as well as for certain conditions with existing agriculture (i.e. ditches, livestock). A plan is not required for existing agricultural activities prior to January 1, 2005 with some exceptions (i.e. ditches).

Alteration of Buffers

Within critical areas and their buffers, alterations are allowed if the alteration complies with the development standards, impact avoidance and mitigation requirements and other applicable requirements established in the King County Code. For agricultural activities that allow alterations, see County code 21A.24.045 subsection C and D.

Flexible Buffer Widths

A buffer reduction can be requested if there is a low intensity land use, i.e. low levels of human disturbance and low habitat impacts, or if there is a stewardship plan in place. Agriculture land use is included if it meets this definition. See County Code Sec. 21A.24.055(C) and (E) Flexible widths via a Rural Stewardship Plan.

County Code References

- Sec. 21A.24.045 - Allowed alterations
- Sec. 21A.24.210 - .310, 21A.24.335, 21A.24.365, and 21A.24.386 - Development standards and alterations in various types of hazard or critical areas
- Sec. 21A.24.055(C) and (E) Flexible widths via a Rural Stewardship Plan
- Sec. 27.12.730 - Requirements for buffer averaging

Whatcom County

Summary Description

Whatcom County developed a Conservation Program on Agricultural Lands (CPAL) within the County's CAO. It provides flexibility from the standard regulations for on-going agriculture, i.e. activities associated with the production of crops and livestock (including hobby farms) that have occurred in the last five years. On-going agricultural activities may be permitted within critical areas and/or their buffers with the submittal and approval of a Farm Conservation Plan. Otherwise, all ongoing agricultural activities must comply with the standard regulations. The focus of CPAL is on water quality in known wetlands, streams and critical recharge areas.

Agricultural Activities

According to the 2012 USDA Census of Agriculture, Whatcom County has 115,831 acres of farmland and 1,702 farms. Approximately 68% of farmland is used as cropland, 12% is pastureland, and 12% is woodland. Livestock sales accounted for 66% of market value of products sold, and crop sales accounted for 34%. Whatcom County's primary agricultural products are dairy and powdered milk; raspberries, blueberries and strawberries; cattle, calves; greenhouse/nursery; poultry and eggs; vegetables- seed potatoes; and other animal, aquaculture, and Christmas trees. It is ranked first in Washington State for raspberry production.

Tools

Farm Conservation Plan

A farm conservation farm plan identifies the farming or ranching activities and the practice(s) necessary to avoid their potential negative impacts (resource concerns). It includes a site map, checklist of current management practices, and a list of best management practices to help protect water quality. There are two kinds of farm plans:

- The Standardized Farm Conservation Plan is designed for low impact farms, defined as one that does not exceed 1 animal unit per 1 acre of grazeable pasture. They can be developed by the farm operator, consultant, or the Whatcom Conservation District.
- The Custom Farm Conservation Plan is required for moderate or high impact farms. Moderate Impact farms include farms that exceed 1 animal unit per 1 acre of grazeable pasture; contain orchards, vineyards, small fruit field and row crop; or drainage improvements. High Impact farms include farms with dairies, animal feeding, or concentrated animal feeding operations.

The farm conservation plan has some additional requirements that apply, such as further regulation around activities like filling, draining, grading or clearing activities, and the construction of structures.

Standard Regulations: Flexible Buffer Widths

Standard regulations include wetland buffer widths determined by their designated category (Category I – IV), habitat value, and the intensity of adjacent land use (high, moderate, low), (see WCC 16.16.630). Widths can be averaged or reduced if specific criteria are met, or increased when additional protection is needed. Habitat conservation area buffers include standard stream buffers and shoreline buffers based on designation as a shoreline stream or marine shoreline (150 feet), fish bearing stream (100 feet) or non-fish bearing stream (50 feet).

County Code References

- WCC 16.16 Critical Areas Ordinance
- WCC 16.16.290 Conservation program on agriculture lands (CPAL)
- WCC 16.16.630 Standards – Wetland buffer widths

Washington Department of Commerce Rules

Counties have the option to either develop a Watershed Work Plan under the VSP; or adopt development regulations certified by the Washington State Department of Commerce as protective of critical areas on agricultural lands. The Washington State Department of Commerce is required to develop rules to implement this role, and has recently initiated rulemaking in March 2014.

6.0 FUTURE VSP WATERSHED WORK PLAN

6.1 WHO WILL DEVELOP THE WATERSHED WORK PLAN?

Chelan County designated the participating watersheds and accepted grant funds to develop the Watershed Work Plan. However, Chelan County by itself will not create or administer the Watershed Work Plan. Instead, the VSP Watershed Work Plan will be developed and implemented by a broad based Watershed Work Group(s) designated by Chelan County.

The Watershed Work Group "must include broad representation of key watershed stakeholders and, at a minimum, representatives of agricultural and environmental groups and tribes that agree to participate." In forming the Work Group, the County should "encourage existing lead entities, watershed planning units, or other integrating organizations to serve as the Watershed Group."

The County "may designate itself, a tribe, or another entity to coordinate the local watershed group."

Once completed, the Watershed Work Plan must be approved by the Washington State Conservation Commission Director and the Departments of Fish and Wildlife, Ecology, and Agriculture to become effective.

Exhibit 20 presents a conceptual decision making framework and roles for consideration. A more detailed description of roles is included in Appendix G.

Exhibit 20. Conceptual Decision-Making Framework

VSP Watershed Work Group

Role: Develop 10-Year VSP Watershed Work Plan to protect critical areas while maintaining and enhancing the viability of agriculture; seek input from tribes, agencies, and stakeholders. Could be more "policy" focused, supported by the technical committees below.

Membership: Representatives of agricultural and environmental groups and tribes that agree to participate. Could include members from the suggested WRIA and Agriculture/Range Land Committees.

WRIA Planning Unit Committee

Role: Review technical materials and provide advice on goals and measurable objectives for the Work Plan, and advise on criteria for individual stewardship checklists from the perspective of furthering watershed plans

Membership: Several members from each WRIA Planning Unit (e.g. three nominated from each Planning unit)

Agriculture & Range Land Committee

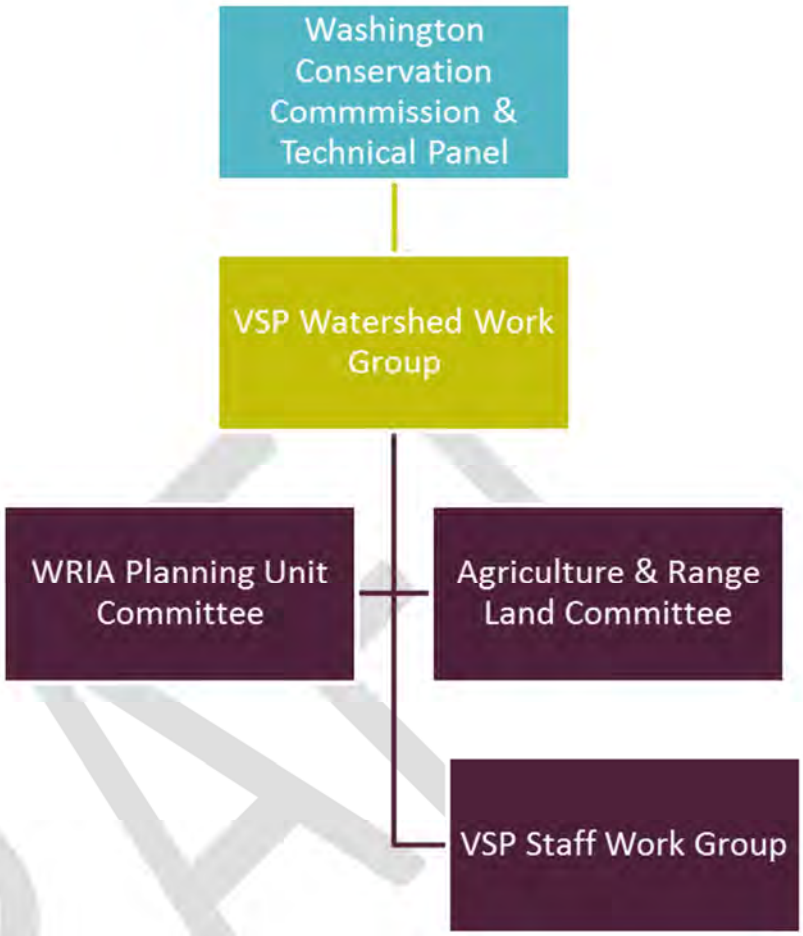
Role: Review technical materials and provide advice on goals and measurable objectives for the Work Plan, and advise on criteria for individual stewardship checklists from the perspective of operators

Membership: Orchardists, Ranchers, And Agricultural and Conservation Technical Assistance Providers

VSP Staff Work Group

Role: Provide Technical Advice to VSP Watershed Work Group and Committees.

Membership: Chelan County Natural Resources Department, Agricultural and Conservation Technical Assistance Providers



Source: BERK Consulting, 2014

6.2 WHAT IS IN A WATERSHED WORK PLAN?

A Watershed Work Plan is developed and implemented by the Watershed Work Group to protect critical areas while maintaining the viability of agriculture in the watershed. The work plan is to consider available data and plans and to develop goals for participation and measurable benchmarks for the protection of functions and values of critical areas, and baseline monitoring.

A summary and discussion of each step is included below. For the full list of requirements, see RCW 36.70A.720 Watershed Group's Duties — Work Plan — Conditional Priority Funding.

A. Review and incorporate applicable water quality, watershed management, farmland protection, and species recovery data and plans.

Discussion: A summary of watershed, water quality, and species recovery plans is included in Appendix C. This summary is a beginning of review efforts, and the contents may be augmented, corrected, or refined over time.

B. Seek input from tribes, agencies, and stakeholders.

Discussion: In the formation of the Work Group there would be a broad base of representatives, and during the preparation of the Watershed Work Plan there can be opportunities for formal and informal review and comment.

C. Develop goals for participation by agricultural operators conducting commercial and noncommercial agricultural activities in the watershed necessary to meet the protection and enhancement benchmarks of the work plan.

Discussion: See Appendix H for a "mock up" of what participation objectives and measurable benchmarks could look like.

D. Ensure outreach and technical assistance is provided to agricultural operators in the watershed.

Discussion: The methods of outreach and type of technical assistance will be determined by the Watershed Work Group. Agricultural and conservation technical assistance providers are participating in the Agriculture & Range Land Committee and VSP Staff Work Group.

E. Create measurable benchmarks that, within ten years after the receipt of funding, are designed to result in (i) the protection of critical area functions and values and (ii) the enhancement of critical area functions and values through voluntary, incentive-based measures.

Discussion: See Appendix I for a "mock up" of what participation objectives and measurable benchmarks could look like.

F. Designate the entity or entities that will provide technical assistance.

Discussion: See discussion under part D.

G. Work with the entity providing technical assistance to ensure that individual stewardship plans contribute to the goals and benchmarks of the work plan.

Discussion: The definition of individual stewardship plans is not included in the VSP law; however, discussions with Washington State Conservation Commission staff have indicated it could be a watershed-based checklist (there could be one or more by type of agriculture and by WRIA). A matrix showing how existing producer checklists relate to the potential critical area stressors is included in Appendix I.

H. Incorporate into the work plan any existing development regulations relied upon to achieve the goals and benchmarks for protection.

Discussion: This would be discussed by the Watershed Work Group and Committees.

I. Establish baseline monitoring for: (i) Participation activities and implementation of the voluntary stewardship plans and projects; (ii) stewardship activities; and (iii) the effects on critical areas and agriculture relevant to the protection and enhancement benchmarks developed for the watershed.

Discussion: This would be discussed by the Watershed Work Group and Committees.

J. Conduct periodic evaluations, institute adaptive management, and provide a written report of the status of plans and accomplishments to the county and to the commission within sixty days after the end of each biennium.

Discussion: This would be discussed by the Watershed Work Group and Committees.

K. Assist state agencies in their monitoring programs.

Discussion: This would be discussed by the Watershed Work Group and Committees.

L. Satisfy any other reporting requirements of the program.

Discussion: This would be discussed by the Watershed Work Group and Committees.

M. The watershed group shall develop and submit the work plan to the director for approval as provided in RCW 36.70A.725.

Discussion: The overall timeline is addressed in Section 6.3. The Watershed Work Group may wish to have a more detailed timeline for the Work Plan preparation itself.

6.3 HOW LONG WILL IT TAKE?

The Chelan County grant agreement for the VSP Work Plan development indicates that within 18 months of receipt of funding – or June 2015 – a Watershed Work Plan would be submitted by the Watershed Work Group to the Director of the State Conservation Commission and technical panel (Departments of Fish and Wildlife, Ecology, and Agriculture). Depending on the amount of time for State Review and potential for comments/responses, the plan could be approved as soon as August 2015 or as late as September 2016. There is also periodic monitoring, and if need be, adaptive management, built into the process as well at the 5 and 10 year marks. Note that there is other reporting due to the Commission every two years at the biennium. See Exhibit 21.

Exhibit 21. VSP Work Plan Preparation, Approval, and Monitoring Timeline

	Action	Timeline
1.	**Receipt of funding** to create a VSP Watershed Work Plan.	January 2014[1]
2.	**Prepare a watershed work plan** within 18 months after the receipt of funding.	June 2015
3.	**Approval of Work Plan.** Director of the State Conservation Commission and technical panel (see RCW 36.70A.735) approves work plan within two years and nine months after receipt of funding (September 2016) - technical panel has 45 days to review and provide response to Director. • **If no agreement in 2 years 9 months**, work plan is sent to the Statewide Advisory Committee made up of representatives of environmental, agricultural, local governmental, and tribal agencies	August 2015 if plan approved - OR - September 2016 if back and forth with technical panel occurs

	Action	Timeline
	and stakeholders. • **If no agreement in 3 years**, the work plan does not go into effect and an alternative regulatory path must be selected. See RCW 36.70A.735 for alternative paths.	
4.	**Conduct periodic evaluations**, institute adaptive management, and provide a written report of the status of plans and accomplishments to the county and to the commission within sixty days after the end of each biennium.	August 2015, 2017, 2019 et seq.
5.	**Report on whether goals and benchmarks have been met** in 5 years after receipt of funding (January 2019), and also at the ten year mark and every 5 years after that.	January 2019 January 2024
6.	**Adaptive management** or additional voluntary actions and funding may need to be identified if goals and benchmarks are not met.	ongoing after Jan. 2019

Note: Chelan County signed the agreement in January 2014 and it was signed by the Conservation Commission in February 2014. If February becomes the "receipt of funding" date the months could move accordingly below.

Source: RCW 36.70A.700-760; BERK Consulting 2014

7.0 REFERENCES

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8.0 APPENDICES

Appendix A and Appendices B to I are compiled under separate cover.

A. Map Folio
B. Mapping Sources and Chelan County Code Critical Area Designation and Classification Criteria
C. Summary of Watershed Resource Inventory Area Plans
D. Comparison of Census of Agriculture Mapping and VSP White Paper Agriculture Mapping
E. Matrix of Stressors and Solutions
F. Compendium of Agriculture and Critical Area Intersection Tables
G. VSP Roles Matrix, Washington Conservation Commission
H. Chelan County VSP Performance Measurement Framework (examples)
I. Critical Area Stressors and Potential Sustainability & Safety Checklists

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