



Chapter Three: Baseline and Existing Conditions

The effective date of the VSP legislation is July 22, 2011. This is also the date chosen by the legislature as the applicable baseline for accomplishing the following items found in RCW 36.70A.703:

- Protecting critical areas functions and values,
- Providing incentive-based voluntary enhancements to critical areas functions and values,
- Maintaining and enhancing the viability of agriculture in the County.

The 2011 baseline sets the conditions from which Columbia County will measure progress in implementing this Work Plan and meeting measurable benchmarks (see Chapter 5). Stewardship strategies and practices have been implemented since 2011 to improve agricultural productivity, reduce erosion, conserve water and improve soil quality, water quality and habitat. These stewardship strategies and practices will be credited towards meeting the Work Plan goals and benchmarks.

It is important to note that changes to baseline conditions outside of VSP are likely to occur due to non-agricultural effects (e.g., climate change, natural events, wild fires, floods, forest practice activities), or other changes outside of the scope and jurisdiction of the VSP or the control of producers (including changes in federal program eligibility conditions). Additional changes to the baseline may occur in Columbia County that are the result of activities outside of the County, such as effects to watercourses that occur upstream and outside of the County limits. These changes will not be counted against the agricultural community and will be documented through the reporting and adaptive management processes discussed in Chapters 5 and 6.

Baseline Intersection of Critical Areas and Agricultural Land Uses

This Chapter provides a summary of baseline conditions of the intersections of critical areas on agricultural lands. The following appendices provide additional information and methods relied upon for the baseline conditions summary:

- Appendix A: VSP Map Folio
- Appendix B: Baseline Conditions Summary (includes methods, data sources, and critical areas data summary tables)

The overlap between agricultural land use and mapped critical areas generally accounts for 94% of the total agricultural land in Columbia County. Most agricultural lands do not contain critical areas other than water erosion potential areas. However, most of the wetlands, CARAs, FFAs and FWHA in the County are on agricultural lands. Although the portion of agricultural lands that intersect with these mapped critical areas is a relatively small fraction of the County's agricultural land base, these lands includes many areas of high functioning habitats, which provide important ecological functions.

Use of Maps

The data sources and maps that were used to assess the potential presence of critical areas within the County and intersection with agricultural lands were used for planning-level purposes only. Actual critical areas presence is determined on a case-by-case basis through farm stewardship planning.

Table 3-1 below summarizes the potential presence of critical areas within Columbia County that intersect with agricultural activities on private lands. Of the 558,037 total acres in Columbia County, 67.5% (376,875 acres) are private and the balance is public (181,162 acres). The predominant landcover of the private lands in the County is agriculture and the presence of potential critical areas on those lands covers a majority of the ag lands. It should be noted that there is some overlap of critical areas. For example, Fish and Wildlife Habitat Areas frequently overlap with wetlands and due to the large amount of acreage that has water erosion potential, those Geologically Hazardous Areas can and do overlap with other critical areas. It should also be noted that under Geologically Hazardous Areas, the water and wind erosion potential areas are exactly that: *potential* erosion areas. This designation is based upon specific soil types identified within the County. This is a concern in terms of soil loss from farming which can impact ag viability and sedimentation in streams which impacts critical areas. Due to generations of conservation practices by ag producers in Columbia, this potential erosion hazard has been greatly diminished. There is, however, always the potential for some erosion given a convergence of weather conditions and seasonal timing.






Table 3.1 Summary of Critical Areas



Summary of Critical Areas

Total County acreage.....558,037
 Agricultural acreage.....334,284
 (only counting private lands)
 Percentage of Ag in County.....63.5%
 Dryland ag.....201,728 acres (36%)
 Rangeland ag....150,236 (64%)
 Irrigated ag.....2,320 (0.4%)

Ag acreage intersecting with Critical Areas...335,142 (94.6% of all private ag lands)

Critical Area Type	Acres Within Agricultural Lands	% of Total Agricultural Lands	% of Total County
 Wetlands	772	< 1 %	0.14%
 Critical Aquifer Recharge Area	6,358	1.89%	1.14%
 Frequently Flooded Areas	7,893	2.35%	1.41%
 Fish & Wildlife Habitat Areas – includes both game and non-game species	241,776	72.1%	43.3%
 Geologically Hazardous Areas: Water Erosion Potential	331,416	98.88%	59.40%
Wind Erosion Potential	25,311	7.55%	4.54%

Agricultural areas included in this summary are limited to privately-owned lands. Publicly owned lands are not managed under VSP.

3.1.1 Wetlands

The wetlands of Columbia County are generally associated with the streams and rivers. Some wetlands, including marshes, are isolated and stand alone.

Characteristics and functions overview: Wetlands can help reduce erosion and siltation; provide filtration and produce cleaner water; retain water to reduce flooding and support base flows; and provide wildlife, plant and fisheries habitats. In Columbia County, most are Freshwater Forested/Shrub wetlands (47%), 24% are Freshwater Emergent and 19% are associated with Riverine environments.

Intersections on agricultural lands: As shown on the mapped resources, potential wetlands are found on 772 acres of private ag lands which is less than 1% of total ag lands. (Appendix A, Figure 5) Most wetlands that intersect with agricultural lands are found on Rangelands (87%), 11% are found on Dryland Ag lands and a very small percentage are found associated with Irrigated Ag lands. Data on the wetlands was derived from the National Wetland Inventory Data by the U.S. Fish and Wildlife Service (2010).

3.1.2 Fish & Wildlife Habitat Areas

Characteristics and functions overview: FWHA include streams, riparian vegetation and upland habitats that provide water quality, hydrology, soil health and habitat functions. FWHA provide migration corridors; breeding and reproduction areas; forage, cover and refugia space; and wintering habitat for wildlife species. Streams provide a key habitat and streamside vegetation functions as a source of organic materials, habitat structures and cover, slope and streamside stabilization, and shade to help regulate water temperatures. Large habitat areas provide for species that require hefty spaces or range for migration, forage and cover. Habitats of local importance may support sensitive species throughout their lifecycle or are areas that are of limited availability or high vulnerability to alteration. FWHA help improve water quality, affect hydrology, contribute to soil health and provide a variety of habitats.

3.1.2.1 Streams and Riparian Vegetation

Intersections on agricultural lands: Approximately 52% of the total stream miles mapped in Columbia County are within agricultural lands (Appendix A, Figure 5). This number doesn't include streams associated with Washington State's Department of Natural Resources (DNR) "Unknown" stream type. Field reconnaissance has confirmed that most of these unknown type streams lack the characteristics of a stream (they have no water) and do not constitute FWHA. These stream types would need to be field-verified to identify appropriate protections for potential fish life or habitat use, if any.

**Table 3-2
Critical Area Streams within Columbia County Agricultural Lands**

Stream Type	Miles in County	Miles Within Ag Lands	% of County Total
Streams Total	2,910	1,517	52.10%
Shorelines of the State	117	75	4.90%
Other Types	354	130	8.60%

Stream types within agricultural areas included in this summary are limited to privately-owned lands. Publicly owned lands are not managed under VSP. The vast majority of stream and riparian areas that intersect with agricultural lands are found on Rangelands (360 of the 362 miles). Data on the streams and rivers was derived from the Washington Department of Natural Resources (2015).

Riparian Vegetation

Riparian vegetation includes the vegetated areas along water sources (wetlands and streams) characterized by plants accustomed to soils with higher water content than adjacent areas. In Columbia County, riparian vegetation typically consists of grasses, shrubs and some trees. Riparian vegetation provides habitat for fish and wildlife, reduces siltation by trapping sediments, provides slope and bank stability and helps moderate in-water temperatures by providing vegetative shade.

3.1.2.2 Priority Habitats and Species

Intersections on agricultural lands: Priority Habitats and Species (PHS) have been mapped and identified on less than 1% of the total land area of Columbia County for species and habitat that are state-listed or candidate species or associated with vulnerable aggregations (1,919 acres). However, when including game and recreation species, the amount of PHS climbs to 72% of the agricultural land with 241,776 acres. In this latter category are included birds such as chukar and ring-necked pheasant and large mammals such as big-horned sheep, Rocky Mountain elk, mule deer and Northwest white-tailed deer. Due to the extent of these PHS, there is much overlap with other critical areas (Appendix A, Figure 6). Priority game species habitat is highly prevalent throughout the County, particularly on and around agricultural lands and adjacent riparian and upland habitats. Appendix A presents a comprehensive list of PHS, including game species habitat that the Washington Department of Fish and Wildlife (WDFW) has identified in Columbia County.

The vast majority are found on Rangelands. 1,678 of the 1,919 acres of PHS that intersects with agricultural lands are found in Rangelands. Most are habitats on Cliffs and Bluffs (89%). Bird and waterfowl concentrations comprise the

balance of PHS habitats. Data on PHS was derived from the Washington Department of Fish and Wildlife (2010).

Game species in Priority Habitat and Species maps:

PHS maps maintained by WDFW provide a reference to the potential existence of FWHA. Game species habitat mapped in PHS almost entirely overlap existing cultivated and range agricultural land. Agriculture is expected to continue providing a positive benefit to deer, elk and other game species habitat. Accordingly, it is not a protection focus of this Work Plan, except where there is overlap with other FWHA, such as riparian and other habitat types. Protection of these habitats is also expected to benefit game species. VSP enhancement goals can help improve habitat conditions for game and other species.

Game Species in Priority Habitat and Species (PHS):

PHS data and mapping are maintained by the Washington Department of Fish and Wildlife in part to provide a reference to the potential existence of Fish and Wildlife Habitat Areas (FWHA). Game species habitat are mapped in PHS within approximately 241,000 acres of Columbia County's private agricultural lands, primarily comprised of Northwest White-tailed Deer, Mule Deer and Rocky Mountain Elk habitat. These habitats almost entirely overlap existing dryland agriculture and range lands. Agriculture is expected to continue providing a suitable habitat for these game species.

Protection Goals: Protection efforts under VSP are focused on the rare and undisturbed natural habitats that exist in the County, such as wetlands, steep canyon cliffs and riparian areas. Game species areas that overlap with existing agricultural lands are not the primary protection focus of this Work Plan, except where there is overlap with other habitat types as referenced above. The protection goals included in the Work Plan (Chapter 5.1) for these habitats are also anticipated to benefit game species.

Enhancement Goals: Enhancement efforts under this Work Plan include conservation efforts that focus on improving habitat conditions for game (along with other species) on existing agricultural lands (for example, the Conservation Reserve Program or field fringe habitat). These enhancement efforts will be counted towards meeting the Work Plan's enhancement goals and benchmarks.

See Appendix A, Figure 6 and Appendix B-4 for additional details on PHS species, including recreation and gaming species.

3.1.3 Critical Aquifer Recharge Areas

Characteristics and functions overview: CARAs provide protections to public drinking water supplies. CARAs affect groundwater quality and hydrology through groundwater infiltration. Most CARAs are located in areas where potential contaminants on the land surface, such as fuel, pesticide or fertilizer, could potentially infiltrate into public drinking water supplies, however this is minimal on Rangelands as opposed to croplands. This is noteworthy since the vast majority are found on Rangelands (5,639 of the 6,358 acres of CARAs that intersects with agricultural lands) is found in Rangelands (89%).

Intersections on agricultural lands: CARAs are found on less than 2% of Columbia County's agricultural lands. Combined with the CARAs on public lands, the CARAs represent slightly more than 2% of the total land area in the County. These CARAs are primarily associated with wellhead protection areas mapped for the public drinking water supply (Appendix A, Figure 7). Most are within Rangelands found close to municipal water supplies around Dayton. Data on CARAs was derived from the Washington Department of Health (2015).

3.1.4 Geologically Hazardous Areas (Erosion)

Characteristics and functions overview: This Work Plan addresses only a narrow focus of geologic hazards related to potential wind and water erosion areas. The importance of this pertains to maintaining agricultural viability by keeping productive soils in the fields used to produce crops, improving water quality and maintaining habitat. This is different than protecting inherent functions and values of other types of critical areas. Columbia County's Critical Areas Ordinance defines erosion hazard areas as those areas identified by the U.S. Department of Agriculture's Natural Resources Conservation Service as having a "moderate to severe", "severe" or "very severe" rill and inter-rill erosion hazard. These erosion potential areas, along with wind erosion hazards, are considered in this Work Plan for soil conservation and to reduce the risk of erosion effects on other functions such as surface water quality, water infiltration into soil to improve groundwater conditions and soil health. Most County soils are generally characterized as loess, which are highly erodible soils deposited by wind from the post glacial outwash of the Cascades.

In the developed areas (outside of VSP), geologically hazardous areas can affect areas where constructing structures may not be suitable due to landslide, earthquake or other geologic risks.

Intersections on agricultural lands: Water erosion potential areas are designated as erosion hazard areas within the County and are found on 98.8% of the County's total agricultural lands (Appendix A, Figure 8). 10% of these lands are within moderate risk areas and 90% are within severe risk areas. It should

be noted that there are no very severe risk lands within Columbia County. High wind erosion potential areas are only found on 7% of the County's agricultural lands. Although wind erosion potential areas are not officially designated as erosion hazardous areas in Columbia County's Critical Areas Ordinance, they are still considered within this Work Plan as they pertain to agricultural viability. 59% of water erosion areas are within dryland agricultural lands, 40% are found in rangelands. Soil health is a key contributor to agricultural viability in Columbia County. Data on wind and water erosion potential was derived from the Natural Resources Conservation Service (2014).

Geologically Hazardous Areas for Seismic and Landslide Hazards

Geologically hazardous areas for seismic and landslide hazards are of limited concern because these hazards traditionally are considered under GMA as areas to avoid for constructing buildings, bridges, roads, etc. In areas where there is risk, that the developer should include additional requirements to protect structures from earthquake, landslide or other geologic hazards. Under this Work Plan, structures in agricultural lands will continue to be permitted and regulated under Columbia County's Critical Areas Ordinance.

3.1.5 Frequently Flooded Areas

Characteristics and functions overview: Frequently Flooded Areas (FFAs) protect public health and safety by providing temporary flood water storage and conveyance. They also provide riparian habitat and other wildlife benefits and can improve water quality and hydrology (timing and magnitude of flows, and alluvial aquifer recharge), improve or degrade soil health based upon vegetative conditions and contribute to riparian habitat diversity. Flooding throughout the County is mainly caused by heavy rainfall combined with snowmelt over frozen ground (rain-on-snow) during winter or early spring months.

Intersections on agricultural lands: FFAs are found on only 2% of Columbia County's total aglands (Appendix A, Figure 10). FFAs typically overlap or are adjacent to wetlands and some FWHA. 52% of frequently flooded areas are within rangelands. 31% are found in dryland agricultural lands. The majority of FFAs are found along the Touchet and Tucannon Rivers and their tributaries. Data on FFAs was derived from the Federal Emergency Management Agency.



3.2 Agricultural Viability Baseline Conditions

Agriculture is widely recognized as a pillar of the Washington State and Columbia County economies. The VSP law is explicit that critical areas are to be protected while “maintaining and improving the long-term viability of agriculture” (RCW 36.70A.700). Both objectives, critical areas protection and maintaining agricultural viability, have to be met in this Work Plan, as illustrated in the figure of the balance scale on page 3.

Agricultural viability in Columbia County includes regional and individual farm elements. These are defined, respectively, as the region’s ability to sustain agricultural production over time and an individual farm’s ability to meet financial obligations and make a profit. The tables below identify agricultural viability concepts for the regional and individual farm perspectives within the County.



At the regional level, agricultural viability is the support system that helps individual farms to succeed. This system also helps to mitigate against potential threats as well as supporting local producers in their operations and their ability to take advantage of business opportunities.

Regional Elements	
Concept	Detail
Stable and secure agricultural land base	Land conversion
	Stable water rights
Infrastructure and services	Utilities and irrigation
	Market access and transportation
Support for best farm management services	Economically viable solutions
	Balanced approach
Education, training and succession planning	Apprenticeship and training
	Interconnectivity with end users
Welcoming business environment	Stable regulatory environment
	Partnership-based environmental protection
Solid marketing environment	New and expanding market opportunities
	Reliable marketing of goods and services

At the farm level, agricultural viability rests mostly on the productivity of the land and the ability of the operator to balance input costs with sales and market pressures. In Columbia County, one of the main farm-level agricultural viability concerns is land productivity. Land production capacity can be impacted by soil erosion and soil quality (moisture and nutrient management). Maintaining and enhancing land production capacity can be addressed through stewardship and land-management practices. Many of these stewardship strategies and practices also have the dual benefit of protecting and enhancing critical areas as well as enhancing land production capacity. Additionally, reduction of input costs (for example fuels and fertilizers) can also result from these practices and technology improvements can help enhance production capacity. The table below illustrates these concepts.

Farm Elements	
Concept	Detail
Reduce inputs	Energy (power and fuels)
	Chemicals
	Labor
Maintain or enhance land production capacity	Soil health
	Water systems and moisture management
	Nutrient management
	New technologies
Flexibility to respond to market conditions	Changing land in production
	Individual schedule for implementing stewardship strategies and practices
	Cropping choices
Incentives	Payment for measures
	Tax incentives or breaks
Managed farmland conversion	Maintain resource lands
	Change to non-ag only adjacent to Dayton
"No Surprises" regulatory environment	County permitting (when applicable)
	Clean Air Act, Clean Water Act, Endangered Species Act
Protect private property rights	Recognize and respect rights
Environment variation	Rainfall, temperature, etc. affects activities

The Work Group identified a number of issues which have the potential to impact agricultural viability in Columbia County. These are summarized in this table:

Strengths	Weaknesses
<ul style="list-style-type: none"> ~ High quality ag products ~ Good services ~ Strong infrastructure ~ Strong history of conservation practices ~ Dams, hydropower & windpower are major assets for this region for transportation & energy 	<ul style="list-style-type: none"> ~ Market price of ag products ~ Most ag is dependent upon water from sky ~ Limited flexibility for type of crops that can be produced ~ Average age of farmer in County is 57 ~ Incentivising younger generation to farm
Opportunities	Threats
<ul style="list-style-type: none"> ~ Education of local populace on value of ag economy ~ Hunting and wildlife management coexisting with ag ~ Strong infrastructure ~ Promote recognition of local ag products ~ New markets and opportunities ~ Other crops like quinoa, industrial hemp ~ Agri-tourism 	<ul style="list-style-type: none"> ~ Sale of aglands to state agencies ~ Conversion of aglands to other uses ~ Adjacent land uses affect/impact ag practices ~ State/federal/county regulations ~ Foreign ag producers ~ Detrimental changes in government policies ~ Degraded soil through water/wind erosion ~ If funding is cut for CRP, the impact upon finances and acreages would be harmful

Overall, the Columbia County VSP Work Plan has been designed to support and promote the regional and individual agricultural viability elements listed in this chapter. The program places emphasis on practices, flexibility, incentives and other opportunities mutually beneficial to agricultural viability and critical areas protections, supporting continued agricultural viability within the County. Agricultural viability is a component of conservation activities as described in Chapter 4 and in each of the goals provided in Chapter 5. Protecting and enhancing agricultural viability will continue to be a key performance measure that must be met during plan implementation.