
November 2017
Kittitas County Voluntary Stewardship Program

ANCHOR QEA

# DRAFT Work Plan

Prepared for Kittitas County Conservation District

DRAFT

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Kittitas County Voluntary Stewardship Program

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# ABBREVIATIONS

| | |
|---|---|
| CAO | Critical Areas Ordinance |
| CARA | critical aquifer recharge area |
| CPPE | Conservation Practices Physical Effects |
| FEMA | Federal Emergency Management Agency |
| FFA | frequently flooded area |
| GHA | geologically hazardous areas |
| GMA | Growth Management Act |
| HCA | fish and wildlife habitat conservation areas |
| Integrated Plan | Yakima River Basin Integrated Water Resource Management Plan |
| KCCD | Kittitas County Conservation District |
| NRCS | Natural Resources Conservation Services |
| PHS | Priority Habitat and Species |
| RCW | Revised Code of Washington |
| VSP | Voluntary Stewardship Program |
| Watershed Group | Kittitas County VSP Watershed Group |
| Work Plan | Kittitas County VSP Work Plan |
| WRIA | Water Resource Inventory Area |
| WSCC | Washington State Conservation Commission |
| YTAHP | Yakima Tributary Access and Habitat Program |

# 1 Introduction

## 1.1 Voluntary Stewardship Program Overview

The Washington State Growth Management Act (GMA) was adopted by the Washington State Legislature in 1990. The GMA provides for citizens, communities, local governments, and the private sector to cooperate and coordinate in comprehensive land-use planning. The GMA requires county and local governments to adopt development regulations that protect critical areas.

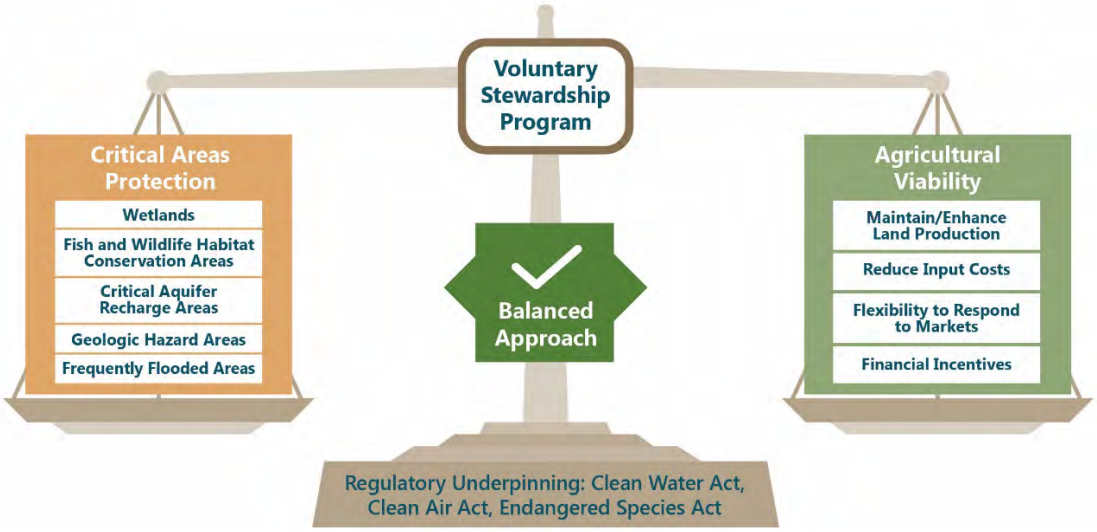
In 2011, the Legislature amended the GMA with the intent to protect and voluntarily enhance critical areas in places where agricultural activities are conducted, while maintaining and enhancing the long-term viability of agriculture. This amendment established the Voluntary Stewardship Program (VSP), a new, non-regulatory, and incentive-based approach that balances the protection of critical areas on agricultural lands while promoting agricultural viability, as an alternative to managing agricultural activities in the County under the Critical Areas Ordinance (CAO). VSP is not a replacement for compliance with other local, state, or federal laws and regulations, but participation in VSP will help to show how much effort the County's agricultural producers are investing in meeting these requirements and to document the benefits of these efforts in protecting and enhancing critical area functions and values (Figure 1-1).

**Critical Areas per RCW 36.70A.020(5) include:**

- Wetlands
- Fish and wildlife habitat conservation areas
- Critical aquifer recharge areas
- Geologically hazardous areas
- Frequently flooded areas

Under VSP, critical areas on lands where agricultural activities are conducted are managed under this voluntary program. Lands used for non-agricultural purposes are regulated under Kittitas County's CAO.

**Figure 1-1**
**Balanced Approach of Critical Areas Protection and Agricultural Viability**




VSP presents a unique opportunity to address an important environmental topic that has been a source of controversy in recent decades—how to protect critical areas on agricultural lands while keeping agriculture economically viable (Schultz and Vancil 2016).

**Opting into VSP**

In 2012, the Board of County Commissioners of Kittitas County passed a resolution to "opt-into" the VSP as an alternative to the traditional regulatory approaches to protecting critical areas on lands where agricultural activities are conducted.

**What are considered "agricultural activities" under VSP?**

VSP applies to lands where agricultural activities are conducted, as defined in RCW 90.58.065.
**Agricultural activities** mean agricultural uses and practices including, but not limited to:

- Producing, breeding, or increasing agricultural products, including livestock
- 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 the replacement facility is no closer to the shoreline than the original facility
- Maintaining agricultural lands under production or cultivation.

## 1.2 Work Plan Elements

The guiding document for the VSP is this Kittitas County VSP Work Plan (Work Plan), the goal of which is to protect critical areas while maintaining the viability of agriculture in the County. The Work Plan was developed by the Kittitas County VSP Watershed Group (Watershed Group), convened by the County and comprised of agricultural producers, local government elected officials and staff, agency representatives, and interest groups.

### *1.2.1 Work Plan Goals*

One of the main goals of the Work Plan is to identify stewardship practices that are implemented under existing programs or voluntarily implemented through producer-funded practices and identify goals and benchmarks for continued protection and enhancement of the County's critical area functions and values.

Producer participation is a key component of Work Plan implementation and program success. **Failure of the Work Plan in meeting protection goals will trigger a regulatory approach to protecting critical areas under the GMA,** such as applying buffers and setbacks along streams or wetlands. Additionally, the regulatory approach for protecting critical areas on agricultural lands would not have the equally important VSP goal of maintaining and enhancing agricultural viability. Neither would it necessarily encourage outreach or technical assistance for agricultural operators. Therefore, producer participation will be encouraged as a central component of the Work Plan, through new and continued implementation of stewardship strategies and practices, to help ensure the success of VSP and protect agricultural viability.

**Stewardship Practices**

Examples of practices that protect critical area functions and values and promoting agricultural viability include:

- Water management
- Prescribed grazing
- Nutrient Management

See the **VSP Checklist** for additional examples of voluntary stewardship practices, and resources for additional information and potential incentive funding.

Agricultural field in Kittitas County

Producer participation is a key component of Work Plan implementation and success of the program. The Watershed Group developed a *Kittitas County VSP Overview and Checklist* to provide a summary overview of VSP and the Work Plan, including frequently asked questions and a VSP Checklist, as an outreach and implementation tool to help assess how the VSP could apply to individual agricultural producer's lands. The VSP Checklist includes additional examples of stewardship practices that protect and enhance critical areas and promote agricultural viability.

### *1.2.2 Work Plan Organization*

This Work Plan, including its appendices, includes detailed information intended to fulfill the state requirements outlined under the Revised Code of Washington (RCW) 36.70A.720(1)(a through l), which requires Work Plans to include critical area protection and enhancement goals with measurable benchmarks, and an implementation, reporting, and tracking framework.

**Kittitas VSP Work Plan Organization**

- **Section 1 – Introduction:** Background on VSP regulation and how it applies to the County
- **Section 2 – Kittitas County Regional Setting:** Overview of County conditions, including description of critical areas
- **Section 3 – Baseline and Existing Conditions:** Description of county-wide critical areas presence and functions and values as of 2011
- **Section 4 – Protection and Enhancement Strategies:** Description of currently implemented stewardship practices that protect and enhance critical areas functions and values
- **Section 5 – Goals, Benchmarks, and Adaptive Management:** Description of VSP goals for critical area protection and enhancements, measurable benchmarks, and indicators and methods for adaptive management
- **Section 6 – Implementation:** Detailed plan outlining implementation of VSP actions by the VSP Lead
- **Appendices:** Additional detailed information referenced by the above sections

## 1.3 Work Plan Development – Roles and Responsibilities

RCW 36.70A.705 identifies roles and responsibilities for state agencies, counties, and VSP watershed groups. Table 1-1 provides a summary of these roles and responsibilities, adapted to the Work Plan development process. Administrative, technical, and collaborative roles and responsibilities are included in the Work Plan development process spanning state, county, and local levels. Kittitas County designated the Kittitas County Conservation District (KCCD) to manage and facilitate the VSP process. The KCCD, under direction of the Watershed Group and supported by Anchor QEA, led the development the Work Plan for Kittitas County. The Work Plan was developed through a series of 18 Watershed Group meetings and 3 Technical Committee meetings, beginning on March 9, 2016 through January XX, 2018. Meeting agenda and materials were emailed to Watershed Group members and the VSP interested parties/contact list including tribes for all Watershed Group meetings (see Appendix E for contact list) and posted on the VSP webpage on the KCCD's website[1].

[1] VSP materials can be found at http://www.kccd.net/VoluntaryStewardship.htm

Additional outreach was conducted to seek input from agencies and stakeholders through community meetings, newsletters, individual meetings, and other methods as described the Kittitas County VSP Outreach Plan (Appendix E).

Implementation roles and responsibilities for the Work Plan are further described in Section 6.

**Table 1-1**
**VSP Roles and Responsibilities for Plan Development**

| | |
|---|---|
| **State – Approval and Administration** | |
| WSCC | Administers VSP statewide; approves/rejects locally developed work plans |
| VSP Technical Panel [1] | Provides technical guidance and assistance, reviews draft work plans, makes recommendations on whether to approve or reject the work plan |
| VSP Statewide Advisory Committee [2] | Works with the WSCC to revise rejected draft work plans |
| **Local – Administration and Work Plan Development** | |
| Kittitas County | Administers VSP funding and grants for work plan development |
| Kittitas County VSP Watershed Group | Develops and proposes a work plan for approval by WSCC |
| Kittitas County Conservation District | Provides technical information to support work plan development and manages and facilitates the VSP process |
| Other Technical Providers | Provides technical input during work plan development |
| **Agricultural Producers – Outreach Focus** | |
| Landowners/Operators/Others | Provide input to the draft work plan |

Notes:

1. The VSP Technical Panel members include representatives from Washington State Department of Ecology, Washington Department of Fish and Wildlife, Washington State Department of Agriculture, and the WSCC.
2. The Committee includes two representatives each from environmental interests, agriculture, and counties; two tribal representatives are also invited to participate.

WSCC: Washington State Conservation Commission

# 2 Kittitas County Regional Setting

## 2.1 Kittitas County Profile

Kittitas County is located in central Washington and bound by the Cascade Mountains to the west and the Columbia River to the east. More than 70% of the County is publicly owned. Approximately two thirds of the public lands are managed by federal agencies including the U.S. Forest Service (Wenatchee National Forest) and the U.S. Army (Yakima Training Center). The remaining one third of publicly owned land is split primarily between the Washington Department of Natural Resources and Washington Department of Fish and Wildlife. Private lands are highly influenced by the availability of irrigation water in Kittitas County. Like the rest of the Yakima River watershed, irrigation infrastructure including reservoirs and delivery systems maintained by the U.S. Bureau of Reclamation and irrigation districts and companies, provide water to agricultural lands allowing for significant crop production.

This section provides a County profile description for the following items:

- Water resources and precipitation
- Soils and terrain
- Land ownership
- Land use and landcover

### *2.1.1 Water Resources*

The County includes portions of three watersheds, which are known as Water Resource Inventory Areas (WRIAs). Most of the County is within the Upper Yakima (WRIA 39), which drains into the

Yakima River, and a small portion of the eastern County is in the Alkali-Squilchuck (WRIA 40), which drains into the Columbia River. Additionally, a small portion of the County is within the Naches (WRIA 38); however, this watershed was not designated by the County to be within the VSP because it is nearly all publicly owned with no known agricultural practices (Figure 2-1).

Water available for irrigation in the Yakima River watershed has been confirmed through the State's largest stream adjudication. The historic determining and confirming all surface water rights in the Yakima River Basin will soon be final (Ecology 2017a). Under the threat of drought in 1977, the Washington State Department of Ecology filed a petition for an adjudication to determine the legality of all claims for use of surface water in the Yakima River Basin. Adjudication is a legal process to determine who has a valid water right, how much water can be used, and who has priority during shortages. The resulting court case began a thorough and binding review of all historical facts and evidence associated with each claim for rights to surface water use in the basin, including Kittitas, Yakima, Benton, and parts of Klickitat counties.

**Yakima River Basin Integrated Water Resource Management Plan**

The Integrated Plan was created in response to the lack of capacity for the Yakima River to support the demands for fish and wildlife habitat, irrigation, and municipal water. The Integrated Plan addresses these issues through installation of fish passage at existing reservoirs, funding of habitat protections and enhancements, structural water storage modifications, and water conservation efforts.

These actions will act to ensure a stable supply of irrigation water into the future which is a crucial component of agricultural viability. Additionally, efforts to reduce agricultural water use and installation of habitat protection and enhancement projects will have a dual benefit with goals and benchmarks of the Kittitas VSP Work Plan.

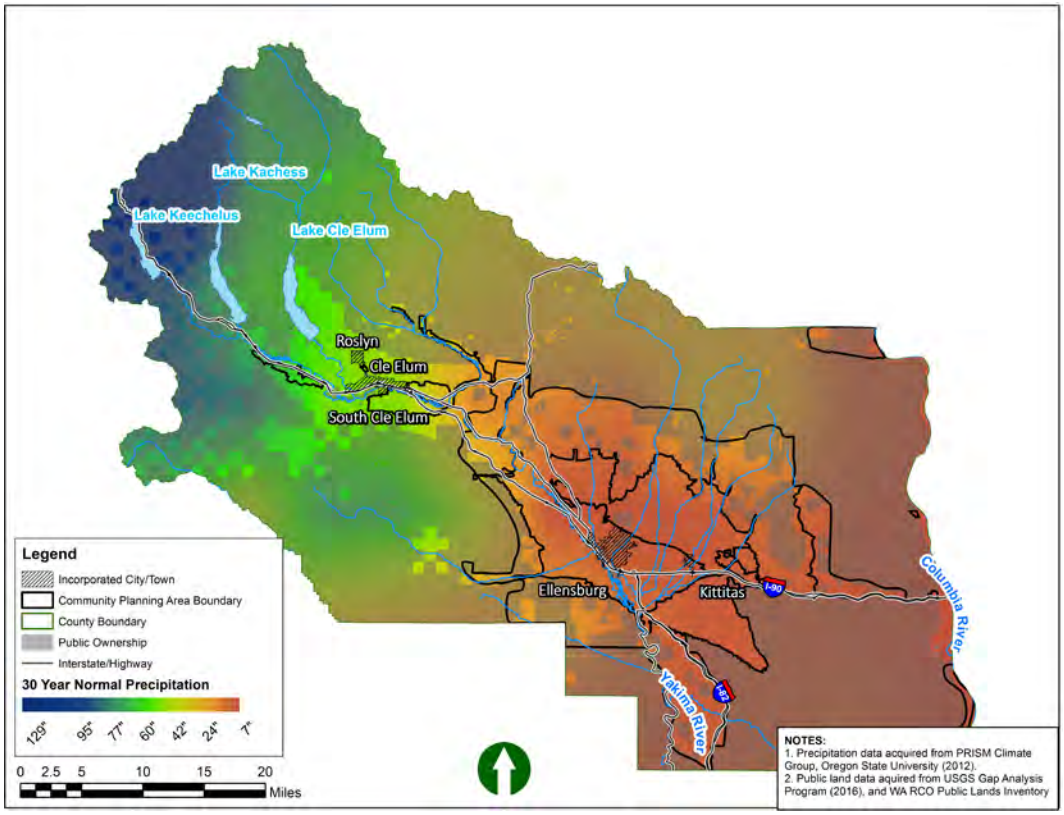
Cle Elum Lake Dam

In 2017, a Yakima Superior Court judge proposed final decree which included a draft schedule of rights set to be confirmed. Evidence has been provided to support nearly 2,500 water rights in 31 sub-basins (tributary watersheds) for individuals and about 30 major claimants, including irrigation districts, cities, federal projects (U.S. Bureau of Reclamation and U.S. Forest Service) and the Yakama Nation. Of that total, over 1,100 water rights in 13 sub-basins were addressed in Kittitas County (Ecology 2017a). These water rights are primarily for the purposes of irrigation and stockwater.

Precipitation ranges from 7 inches of annual precipitation in the western portion of the County to 129 inches in the eastern portion of the County (Figure 2-1). Most of the agriculture that occurs

within the County is located in areas that receive between 7 inches and 42 inches of precipitation per year (Figure 2-1).

**Figure 2-1**
**Water Resources and Precipitation in Kittitas County**



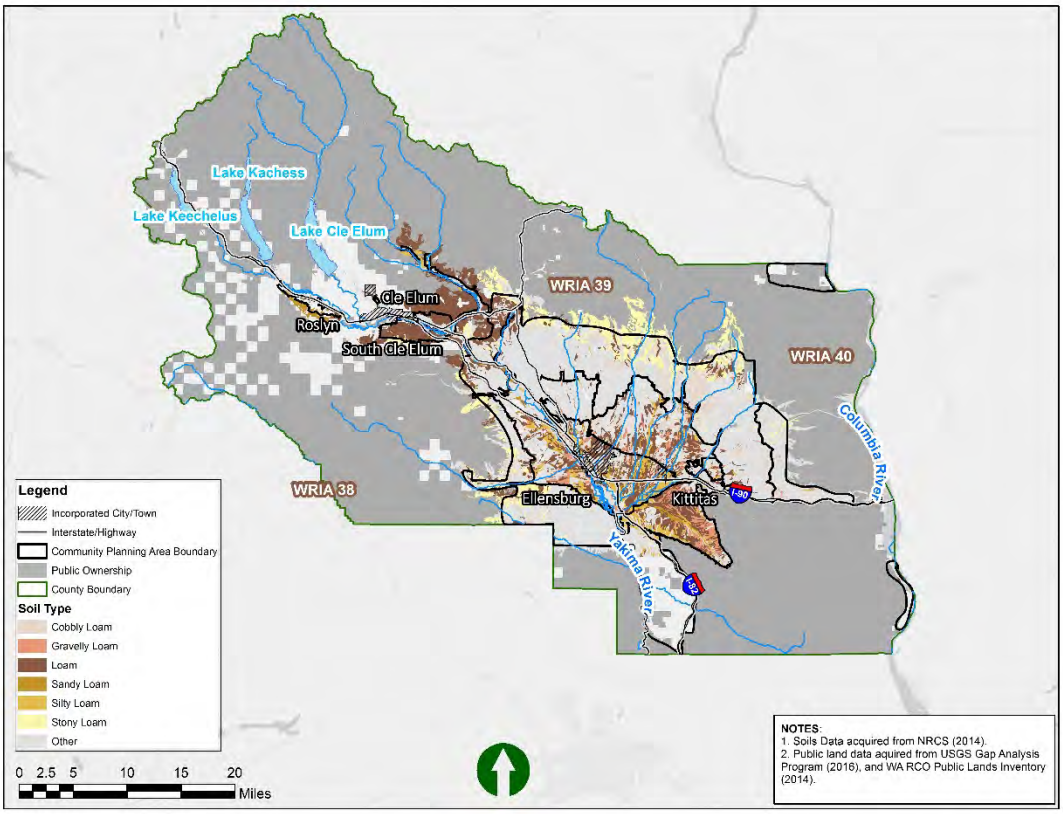

## *2.1.2 Terrain and Soils*

Three distinct regions are found in the County which include the Cascades, Eastern Cascades Slopes and Foothills, and Columbia Plateau. The Cascade region is located in the western portion of the County and is characterized by glaciated valleys and high peaks. The Cascade region is mainly forested and within the Wenatchee National Forest. The Eastern Cascades Slopes and Foothills region comprises the majority of the central portion of the County and is characterized by open forests, mainly ponderosa pine. The Columbia Plateau region is located to the east of the Eastern Cascades Slopes and Foothills and is characterized as the Yakima River Valley and the Columbia River Valley. Much of the area in the Yakima River Valley has been converted to irrigated agriculture.

Soils in the mountainous areas in the County are characterized as basalt and glacial deposits. These soils are eroded and deposited in the Yakima River Valley as alluvium. Upland of the Columbia River basalt forms steep talus slopes with large particle sizes (ranging from sand to boulders). The

shoreline of the Columbia River is characterized by natural alluvium and sand dunes but some areas have been modified by riprap and artificial fill (Kittitas County et al. 2013).

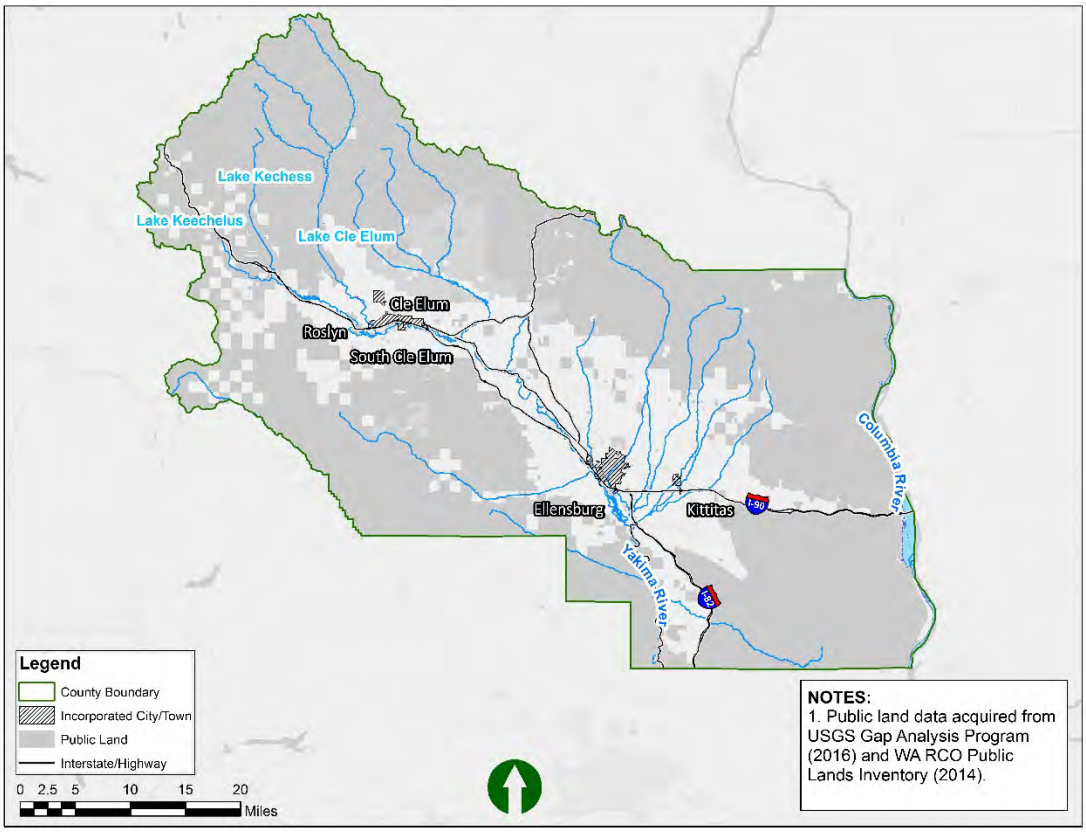
**Figure 2-2**
**Soil Types in Kittitas County**




## 2.1.3 *Land Ownership*

A large portion of the County is publicly owned (72%) and therefore not included in the VSP. Much of the publicly-owned land is managed by the U.S. Forest Service and includes the Wenatchee National Forest, Snoqualmie National Forest, and Alpine Lakes Wilderness (31% of the County). Additionally, the Department of Defense manages 10% of the County as the U.S. Army Yakima Training Center located in the southeast portion of the County. Only approximately half of this 327,000-acre military installation is in Kittitas County, with the other half in Yakima County. State owned lands (28% of the County) are managed primarily by the Washington Department of Fish and Wildlife and Washington Department of Natural Resources and include the Teanaway Community Forest, Naneum Ridge State Forest, Colockum Wildlife Area, and LT Murray Wildlife Area. Privately-held land comprises only 28% of the land base in Kittitas County, which includes a mixture of rural development, agriculture, and commercial forestry (Kittitas County et al. 2013).

**Figure 2-3**
**Land Ownership in Kittitas County**




## 2.1.4 *Agricultural Land Use and Landcover*

Agriculture on privately-owned lands comprises approximately 13% of the County's landcover, which is generally associated with one of these four categories: 1) irrigated crops; 2) dryland crops; 3) orchards and vineyards; and 4) rangelands (Table 2-1, Figure 2-4).

**Table 2-1**
**Agricultural Landcover Summary**

| Landcover | Acres | Percent of County |
|---|---|---|
| **Total Area in County** | 1,494,400 | |
| **Agricultural Landcover** | 197,765 | 13.2% |
| Irrigated | 97,709 | 6.5% |
| Dryland | 2,320 | <1% |
| Orchard/vineyard | 2,459 | <1% |
| Rangelands | 95,277 | 6.4% |

Note: Privately-owned agricultural lands, data methods are described in Appendix B

**Types of Rangeland in Kittitas County**

Rangelands are areas that are primarily kept in a natural or semi-natural state to facilitate grazing of livestock. These areas are essential for production of livestock, but also provide value to many wildlife species by preventing conversion to more intensive land uses. In Kittitas County, there are two types of rangeland practices, forested rangeland and shrub-steppe rangeland. Forested rangeland occurs mostly in the foothills of the Cascade Mountains and is characterized by livestock that graze on vegetation underneath forest. Grazing in these areas often has the additional benefit of reducing fuel for forest fires. Shrub-steppe rangelands are located on the Columbia Plateau and often overlap with shrub-steppe habitat. Stewardship practices on these rangelands aim to support vegetation growth, maintain healthy soils, and reduce fuels for wildland fires.

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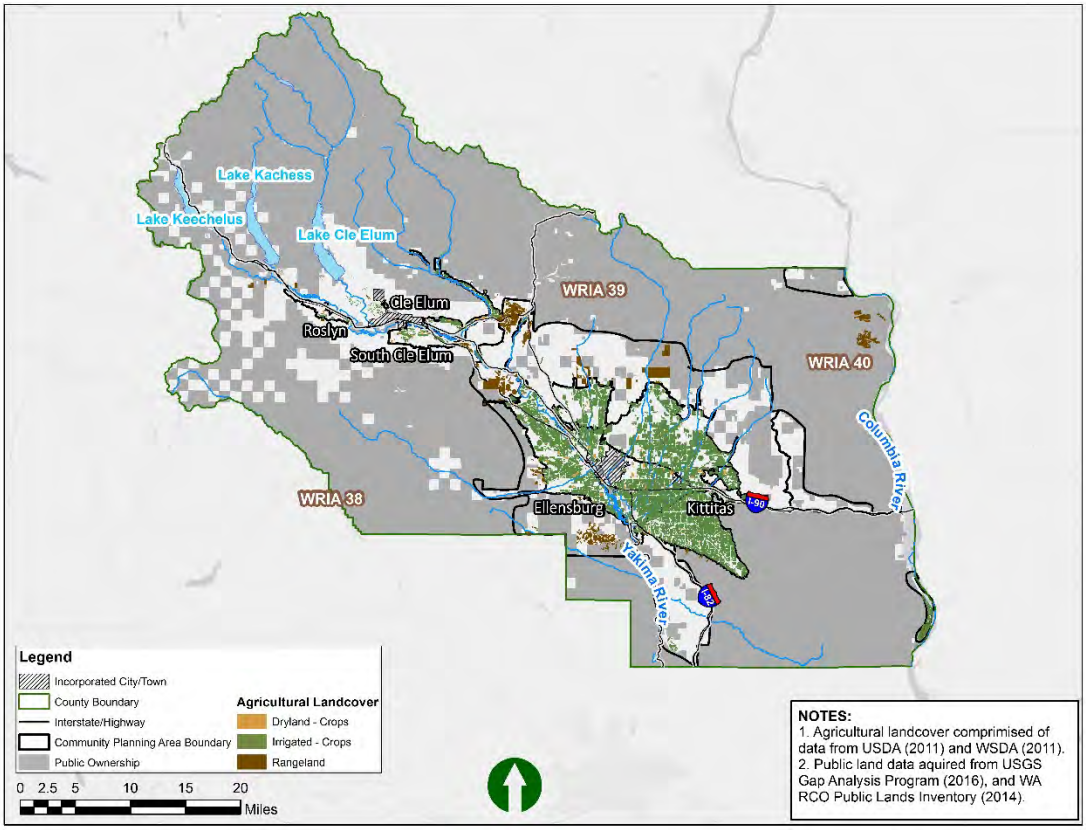
**Figure 2-4**
**Agricultural Land Cover in Kittitas County**

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## 191 2.2 Agricultural Activities

192 Agriculture is the major land use in the County. The Work Plan's goals and measurable benchmarks
193 for voluntary landowner participation apply to agricultural producers on privately-owned land in
194 unincorporated areas of the County, which comprise approximately 13% of the County's lands.

Kittitas County has highly productive irrigated agricultural lands due to the water supply from the upper Yakima River watershed, favorable climate, and highly productive soils. Irrigated, dryland, and orchard/vineyard crops comprise 6.5%, less than 1%, and less than 1% of County lands respectively. Kittitas County crop lands produce approximately 68% of the value of products sold in the County (USDA 2012). Rangelands account for 6.4% of County land, and County-wide livestock sales account for approximately 32% of the value of products sold (USDA 2012).

According to the U.S. Department of Agriculture's Census of Agriculture (2012), Kittitas County produces approximately $68 million in market value from agricultural products statewide. See Table 2-2 for summary of agricultural landcover and major agricultural products within the County. There are approximately 1,000 farms in the County that vary in size ranging from relatively small, with agricultural product sales of less than $10,000, to large, with agricultural product sales of greater than $500,000. A majority of County farms are small (Table 2-3).

**Table 2-2**
**Agricultural Activity and Products**

| Agricultural Type | % of County | Primary Crops/Livestock | |
|---|---|---|---|
| Irrigated | 6.5% | • Hay<br>• Small grains | • Vegetables<br>• Seed crops |
| Dryland | <1% | • Wheat<br>• CRP | |
| Orchards/ Vineyards | <1% | • Tree fruit (e.g., apples)<br>• Vineyards | |
| Rangeland | 6.4% | • Cattle<br>• Sheep | |
| **Total** | **13%** | | |

Sources:
WSDA Agricultural Landcover Data 2011
USDA 2012
Kittitas County 2017

**Table 2-3**
**Size of Farms in Kittitas County Based on Agricultural Product Sales**

| Farm Agricultural Product Sales (Dollars) | % of Farms |
|---|---|
| Less than 10,000 | 64% |
| 10,000 to 100,000 | 23% |
| 100,000 to 250,000 | 6% |
| 250,000 to 500,000 | 3% |
| Greater than 500,000 | 4% |

**Major Resource Concern**

Water availability is a major concern in Kittitas County. In dry years the demand for irrigation water exceeds the supply resulting in prorationing for proratable, or junior, water right holders. This means that the amount of water delivered to junior water right holders is equally reduced based on the total water available. Stewardship practices that reduce the overall water consumption benefit the farmers that rely on irrigation water while increasing the amount of water available for fish and wildlife.

Sprinkler Irrigation

## 2.3 Critical Areas

### *2.3.1 Critical Areas Definitions*

The five critical areas that are specifically defined under the GMA (RCW 36.70A.030) include: 1) wetlands; 2) fish and wildlife habitat conservation areas (HCAs); 3) critical aquifer recharge areas (CARAs); 4) geologically hazardous areas (GHAs); and 5) frequently flooded areas (FFAs). Critical areas perform key environmental functions (e.g., water quality and fish and wildlife habitat) and provide protections from hazards (e.g., flood, erosion, or landslide hazards). The County's CAO includes identification and designation criteria for these five critical areas, which are summarized below and included in Appendix B-3.

**Wetlands**

Wetlands are areas inundated or saturated by surface water or groundwater for at least part of the growing season and support vegetation adapted for life in saturated soil conditions. Some irrigation-influenced artificial wetlands may be exempt from this designation (see Washington State Department of Ecology guidance[2]).

**Functions:** Water quality, hydrology, and habitat

**Fish and Wildlife Habitat Conservation Areas (HCAs)**

HCAs are lands and waters that provide habitat to support fish and wildlife species throughout their life stages. These include ranges and habitat elements where endangered, threatened, and sensitive species may be found, and areas that serve a critical role in sustaining needed habitats and species for the functional integrity of the ecosystem, and which, if altered, may reduce the likelihood that the species will persist over the long term

**Functions:** Water quality, hydrology, soil, and habitat

**Critical Aquifer Recharge Areas (CARAs)**

CARAs are areas that have a critical recharging effect on aquifers used for drinking water, including aquifers vulnerable to contamination or that could reduce supply by reducing recharge rates and water availability. There are currently no CARAs designated in Kittitas County; however, the functions and values that CARAs provide will be addressed in this Work Plan.

**Functions:** Water quality and hydrology

[2] Ecology guidance on irrigation influenced wetlands available at https://fortress.wa.gov/ecy/publications/documents/1006015.pdf.

**Geologically Hazardous Areas (GHAs)**

GHAs are areas susceptible to erosion, sliding, and other geological events. In Kittitas County, only GHAs which require specialized engineering are designated, therefore GHAs are not applicable to agricultural activities in the County. Although, steep slopes and water and wind erosion potential areas as they pertain to agricultural lands are not specifically designated as critical areas, they are discussed under GHA in this VSP.

**Functions:** Water quality, hydrology, soil, and habitat

**Frequently Flooded Areas (FFAs)**

FFAs include 100-year floodplains and floodways, and often include the low-lying areas adjacent to rivers and lakes that are prone to inundation during heavy rains and snowmelt.

**Functions:** Water quality, hydrology, soil, and habitat

## *2.3.2 Critical Areas Functions and Values*

VSP legislation requires that work plans develop goals and benchmarks to protect and enhance critical area **functions and values** (RCW 36.70A.720(1)(e)). The key functions and values provided by the five critical areas in the County can be summarized into four major functions, which include: 1) water quality, 2) hydrology, 3) soil, and 4) habitat (Figure 2-1). Each critical area provides one or more of these key functions and values (Table 2-4). This section provides an overview of the functions and values and Section 3 will further describe the relationship between critical areas and their functions and values.

**Table 2-4**
**Critical Areas Functions**

| Critical Areas | Key Functions | | | |
|---|---|---|---|---|
| | Water Quality | Hydrology | Soil Function | Habitat |
| Wetlands | ● | ● | | ● |
| Fish and Wildlife Habitat Conservation Areas | ● | ● | ● | ● |
| Critical Aquifer Recharge Areas | ● | ● | | |
| Geologically Hazardous Areas (Erosion) | ● | ● | ● | ● |
| Frequently Flooded Areas | ● | ● | ● | ● |

### Water Quality

Critical areas, such as stream channels, riparian areas, and wetlands, are part of the aquatic ecosystem which filters and retains excess fine sediments and cycles out excessive nutrients (such as phosphorus and nitrogen) and other pollutants. These functions provide the clean water that is essential for supporting habitat for fish and other aquatic species. Critical areas also help moderate water temperatures by providing vegetative shade and cooler water from recharged groundwater, which helps maintain cooler in-water temperatures and dissolved oxygen levels needed to support aquatic species.

### Hydrology

Hydrology is the process of water delivery, movement, and storage. In an ecosystem, hydrology is affected by landform, geology, soil characteristics and moisture content, and climate (including precipitation). Water is delivered to streams primarily from surface and shallow subsurface runoff and, in some cases, from groundwater. Stream channels, riparian areas, and wetlands are also a part of the aquatic ecosystem that stores and transports water and sediment, maintains base flows, and can support vegetation and microorganism communities.

### Soil Function

Soil provides an underground living ecosystem, which is essential for preserving plants, animals, and human life. Soil conservation is essential in the County to support healthy soils that have the following characteristics:

- Reduce susceptibility to erosion
- Hold and slowly release water
- Filter pollutants and, in many cases, detoxify them
- Store, transform, and cycle nutrients
- Physically support plants

### Fish and Wildlife Habitat

Habitats are the natural environment in which a particular species or population can live. The habitat requirements are unique for different species and can be unique for different life stages of a species. Habitat loss is the primary threat to the survival of many native species.

## 2.4 Community Planning Areas

For the purposes of the Work Plan, the Watershed Group identified four community planning areas within the County to help develop a more localized planning approach during Work Plan implementation. The community planning areas are Northern Kittitas County, Kittitas Valley, Kittitas Valley Rangeland, and Columbia (Figure 2-5). The agricultural activities conducted in each Community Area are summarized in Table 2-5.

**Figure 2-5**
**Community Planning Areas [Placeholder until areas are finalized]**

Note(s), source, attribution, or caption text

**Table 2-5**
**Agricultural Acres within each Community Planning Area [Preliminary numbers]**

| Agricultural Type | Northern Kittitas County | Kittitas Valley | Kittitas Valley Rangeland | Columbia |
|---|---|---|---|---|
| Irrigated | 4,463 | 93,202 | 44 | 0 |
| Dryland | 380 | 0 | 1,752 | 188 |
| Orchard/vineyard | 1 | 1,044 | 304 | 1,110 |
| Rangeland | 7,837 | 4,243 | 72,482 | 10,715 |
| Total | 12,680 | 98,489 | 74,583 | 12,013 |

# 3 Baseline and Existing Conditions

Establishing baseline conditions is necessary in order to understand the critical areas that need to be protected under VSP. The effective date of the VSP legislation, July 22, 2011, serves as the baseline date for accomplishing the following items (RCW 36.70A.700):

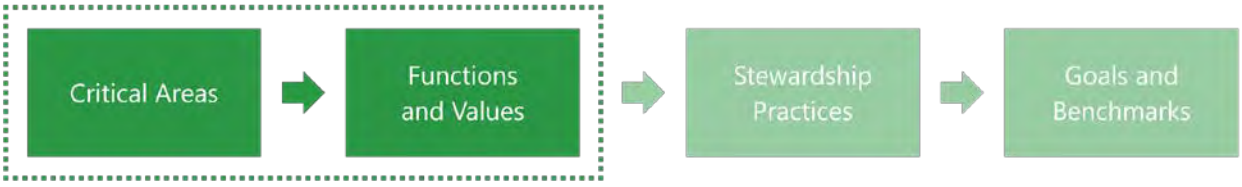
- Protecting critical area functions and values
- Providing incentive-based voluntary enhancements to critical area functions and values
- Maintaining and enhancing the viability of agriculture in the County

To be successful, this Work Plan must protect critical area functions and values as they existed on July 22, 2011, as described in this section. The 2011 baseline sets the conditions from which the County will measure progress in implementing the Work Plan and meeting measurable benchmarks (see Section 5). Any improvement of critical area functions and values through stewardship strategies will be considered enhancement under VSP regulations.

It's important to note that changes to baseline conditions outside of VSP are likely to occur due to effects from climate change, natural events (e.g., wild fires), or other changes outside of the scope of VSP. These changes would be documented through the reporting and adaptive management process discussed in Sections 5 and 6.

Stewardship strategies and practices have been implemented since 2011 to improve agricultural productivity, reduce erosion, and improve water and soil quality and are discussed in Section 4. Both protection of baseline conditions, as described in this section, and improvements of critical area functions and values, as described in Section 4, dictate the setting of goals and benchmarks, described in Section 5 (Figure 3-1).

**Figure 3-1**
**VSP Crosswalk – Critical Areas Connection with Functions and Values**




## 3.1 Baseline (2011) and Existing Conditions

The overlap between agricultural land use and critical areas generally accounts for only a small percentage of the total agricultural land in the County. However, critical areas provide benefit to the four functions and values beyond their physical locations. These functions and values are water quality, hydrology, soil function, and fish and wildlife habitat. County-wide, the portion of agricultural lands that physically intersects with critical areas is small (Table 3-1). However, areas that have the potential to affect critical area functions and values are more widespread and will be targeted in the goals and benchmarks.

**Use of Maps and Data**
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 or similar planning. For more information on data used to establish baseline conditions see Appendix B.

Although protection of physical critical areas is important, protection of critical area functions and values means even producers without a defined critical area on their property can participate in VSP to help the County reach its goals. Both critical area locations within the County and their connection to critical area functions and values are described in this section. [This section provides preliminary baseline conditions data. The data is being refined and the baseline condition numbers and will be updated]

**Table 3-1**
**Critical Areas Within Kittitas County Agricultural Lands [Preliminary Results]**

| Critical Area Type | | Acres Within Agricultural Lands[1] | % of Total Agricultural Lands[1] |
|---|---|---|---|
| Wetlands (all types) | | 6,830 | 8% |
| Fish and Wildlife Habitat Conservation Areas[2] *(Also includes about 130 stream miles)* | | 197,765 | 100% |
| Critical Aquifer Recharge Area[3] | | 32 | <1% |
| Geologically Hazardous Areas[4] | Steep Slopes (>25%) | 1,806 | 2% |
| | Water Erosion | 8,649 | 10% |
| | Wind Erosion | 27,887 | 33% |
| Frequently Flooded Areas | | 20,104 | 24% |

Notes:

1. Agricultural areas included in this summary are limited to privately-owned lands. Publicly-owned land is not managed under VSPs.
2. These areas include sensitive, candidate, and threatened species and habitats mapped in Washington Department of Fish and Wildlife's Priority Habitat and Species (PHS) data and maps.
3. There are no designated Critical Aquifer Recharge Areas in Kittitas County. This approximates areas that have the potential to affect aquifer recharge based on 100-foot buffer on Group A and B wells.
4. There are no designated Geologically Hazardous Areas that pertain to agricultural lands in Kittitas County. This approximates areas that have the potential to affect geologic hazards based on steep slopes and erosion potential.

### *3.1.1 Wetlands*

**Characteristics and functions overview:** Wetlands in Kittitas County provide a range of functions for water quality, hydrology, and fish and wildlife habitat. Wetlands are characterized as areas that are inundated with water and are surrounded by vegetation adapted to saturated soil conditions. Wetlands act to reduce siltation and erosion by catching particles in vegetation or allowing sediment to settle on the bottom. Filtration of water also occurs as water is filtered through wetland vegetation. Wetland vegetation also provides shade, which acts to moderate water temperature. Additionally, wetlands act as water storage which moderates flooding and contributes to base flow. Wetlands also provide aquatic and woody vegetated habitat for fish and wildlife.

**Intersections on agricultural lands:** In Kittitas County, wetlands are found within 8% of the County's total agricultural lands (Figure 3-2). These wetlands are concentrated in river valleys that are correlated with agricultural areas, meaning most wetlands in the County are associated with agricultural activities or large river floodplains. They are mostly associated with irrigated areas with only a small amount in rangelands. There are no mapped wetlands present in either drylands or orchard and vineyards. The extent of wetlands within the County are subject to ongoing water management practices, including water efficiency and stewardship practices for the delivery and use of water for irrigation, which will affect the volume and timing of surface water available to support some wetlands. Improving water management practices affects the size and number of wetlands and associated habitats within the County. When wetlands dry up in the County from improved water management practices, then they are no longer considered part of VSP baseline conditions.

| Wetlands on Agricultural Lands in Kittitas County | |
|---|---|
| **General locations/ distribution** | • Concentrated along the Yakima River and its tributaries.<br>• Few wetlands along the Columbia River. |
| **Characteristics** | • Large freshwater emergent wetlands located northeast of Ellensburg.<br>• Freshwater forested/shrub wetlands are concentrated along rivers. |

**Irrigation-Influenced Wetlands**

Irrigation directly and indirectly causes the formation of many of the wetlands within the County through water management actions and associated facilities. Many wetlands are considered unintentional wetlands, resulting from localized conditions such as seepage from irrigation ditches. These types of wetlands are considered jurisdictional wetlands regulated by state wetland law. Improving water management practices (such as implementation of water conservation practices), which is happening through projects and practices implemented in Kittitas County each year, affects the size and number of wetlands and associated habitats within the County. However, if the irrigation practices are changed (such as implementation of water conservation practices like sprinkler conversions or pipelines) and the wetland dries up and no longer performs wetland functions, then no mitigation is required (Ecology 2010).

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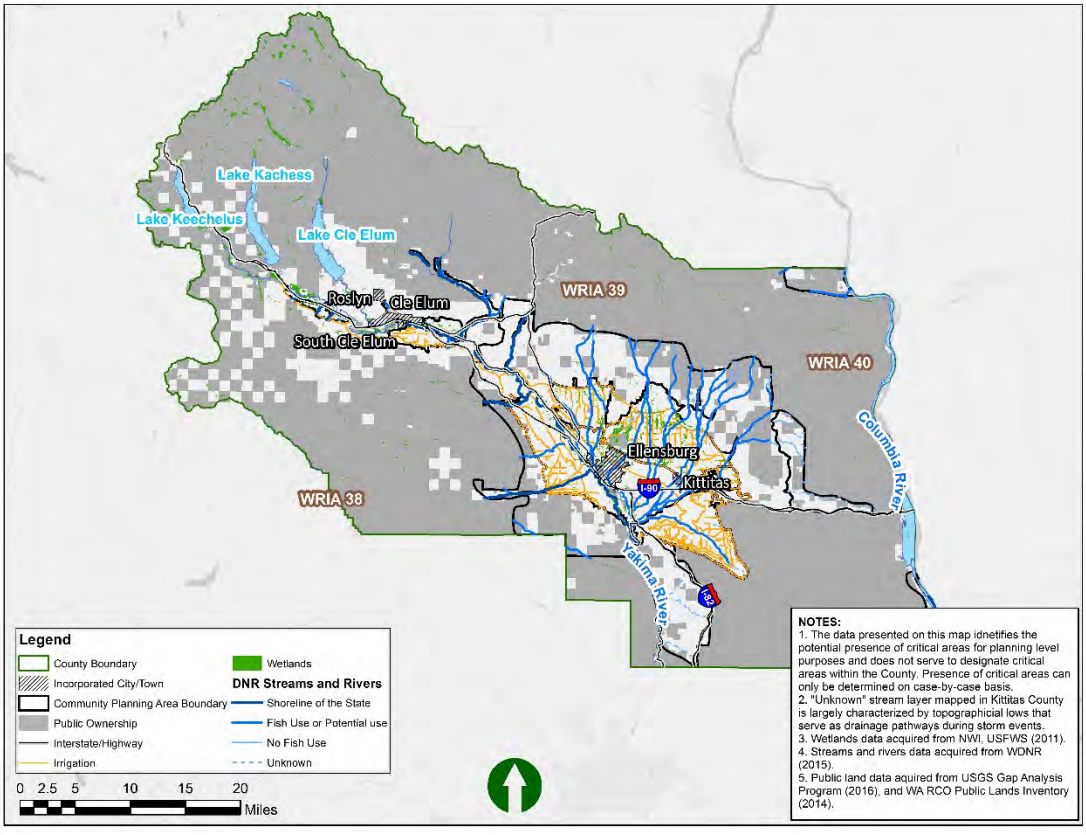
**Figure 3-2**
**Distribution of Wetlands in Kittitas County**

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### 3.1.2 Fish and Wildlife Habitat Conservation Areas

**Characteristics and functions overview:** HCAs include streams, riparian vegetation, and upland habitats that provide water quality, hydrology, soil, and fish and wildlife habitat functions. HCAs 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 material, habitat structures and cover, streambank stabilization, and shade to help regulate water temperatures.

**Habitats and Species in Kittitas County**

In the County, habitats include wetlands, rivers, and streams that support aquatic and terrestrial species.

Common fish and wildlife species and habitats in Kittitas County include:

- Steelhead
- Bull trout
- Spring Chinook salmon
- Golden eagle
- Northern spotted owl
- Norther goshawk
- Pileated woodpecker
- Grey wolf
- Elk and mule deer
- Various bats
- Biodiversity corridors and areas

Large HCAs provide for species that require large 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. HCAs (riparian areas and wetlands) also help improve water quality, affect hydrology, contribute to soil health, and provide a variety of habitats.

Agriculture practices impacted natural habitats by replacing them with an intensely managed landscape, and although agriculture lands can provide vast tracts of semi-natural habitat, species biodiversity is typically higher in the remnant natural areas in the County. It has been shown that farmers who provide greater landscape variability can provide meaningful benefit to many different species (Weibull et al. 2002). Farming practices provide a variety of habitat functions, including providing cover. Crops provide a food source for herbivores such as deer, and birds help control insect and rodent populations.

#### Streams and Riparian Areas

**Intersections on agricultural lands**: In Kittitas County, there are two large river systems, the Yakima River and the Columbia River. In total, there are 1,533 stream miles in the County. Of the total stream miles mapped within the County, 8% are within agricultural lands (130 miles; Figure 3-3). Many of these streams support fish species such as spring Chinook salmon, steelhead, and bull trout. Specifically, there are 22 miles of bull trout and 72 miles of spring Chinook salmon Priority Habitats and Species (PHS) mapped habitat that intersect with agricultural areas. [Steelhead data to be added]

Some systems in the County exceed state standards for pollutants such as pH, dissolved oxygen, bacteria, and temperature (Ecology 2017b; see Appendix B for full list). Most of the systems that exceed standards for pH and bacteria are small creeks and irrigation canals (e.g., Cascade Irrigation

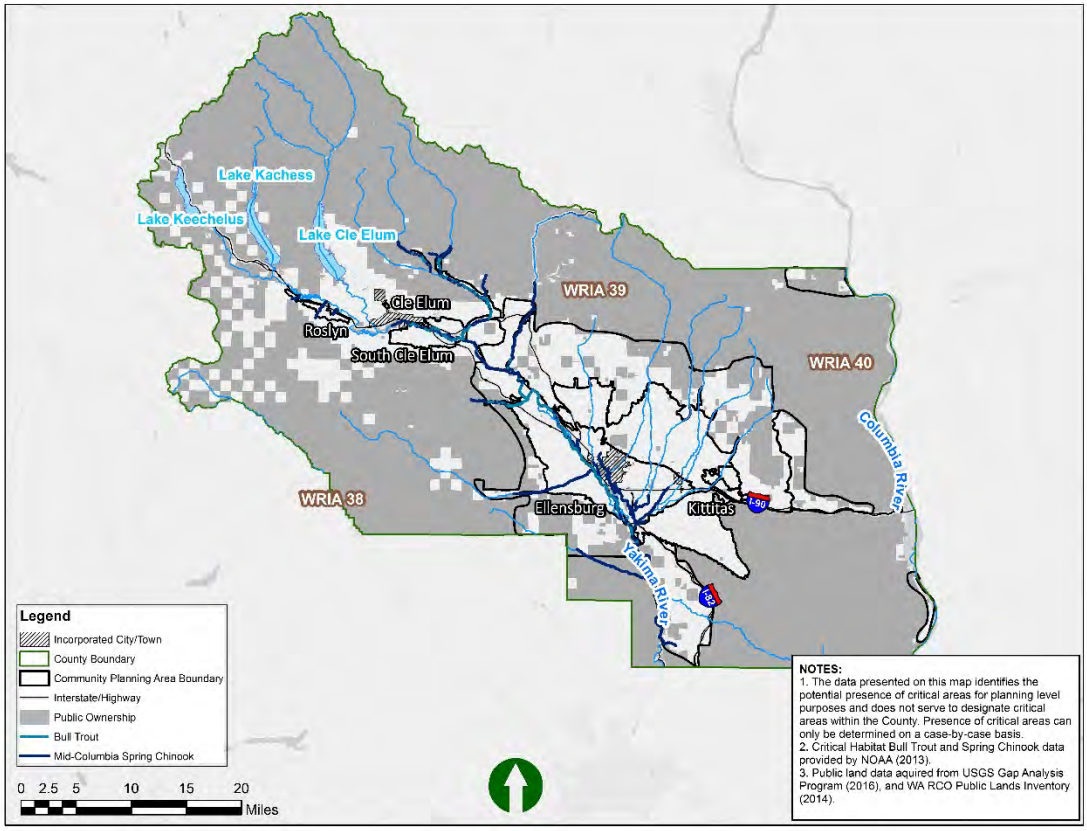
District Canal, KRD Main Canal, Manastash Creek). Agriculture can affect water quality through excess nutrients from fertilizers, bacteria from livestock (e.g., fecal coliform), toxins from chemical inputs, and sediment from soil erosion. However, fertilizer, sediment, and toxin inputs are also associated with paved or turfed landscapes, and septic systems also contribute to fecal coliform issues. Additionally, agriculture preserves lands from more intensive development.

| Streams and Riparian on Agricultural Lands in Kittitas County | |
|---|---|
| **General locations/ distribution** | **Streams:** See Section 2.1 for discussion of water resources within the County<br>**Riparian vegetation:** Located along water resources and form a "ribbon of green" from ordinary high water and within irrigation seepages |
| **Characteristics** | **Streams:**<br>• Historically the Yakima River supported large quantities of anadromous salmon<br>• Spring Chinook salmon and steelhead spawn in the Yakima River and tributaries<br>• Irrigation has resulted in increased summer flows in some systems (e.g., KRD North Branch Canal)<br>• Water management and removal of large woody debris has created low flow environments in many streams during dry years<br>**Riparian Vegetation:**<br>• Provide important habitat for many species of birds and mammals<br>• Forest riparian areas provide specialized habitat such as snag for woodpeckers and cavity nesting animals<br>• Large woody debris is often removed from systems due to its interference with irrigation systems (Kittitas County et al. 2013) |

**Riparian Vegetation**

Riparian vegetation includes the vegetated areas along water sources (wetlands and streams) characterized by plants accustomed to moist soil and high-water table conditions than adjacent areas. In Kittitas County's agricultural areas, riparian vegetation is typically forested with trees and shrubs, including species like black cottonwood, water birch, ponderosa pine, black hawthorne, and pacific willow (Kittitas County et al. 2013). Riparian vegetation provides habitat for fish and wildlife, reduces siltation by trapping sediments, and helps moderate in-water temperatures by providing vegetative shade.

**Figure 3-3**
**Distribution of Streams and Fish in Kittitas County**

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## Priority Habitats and Species

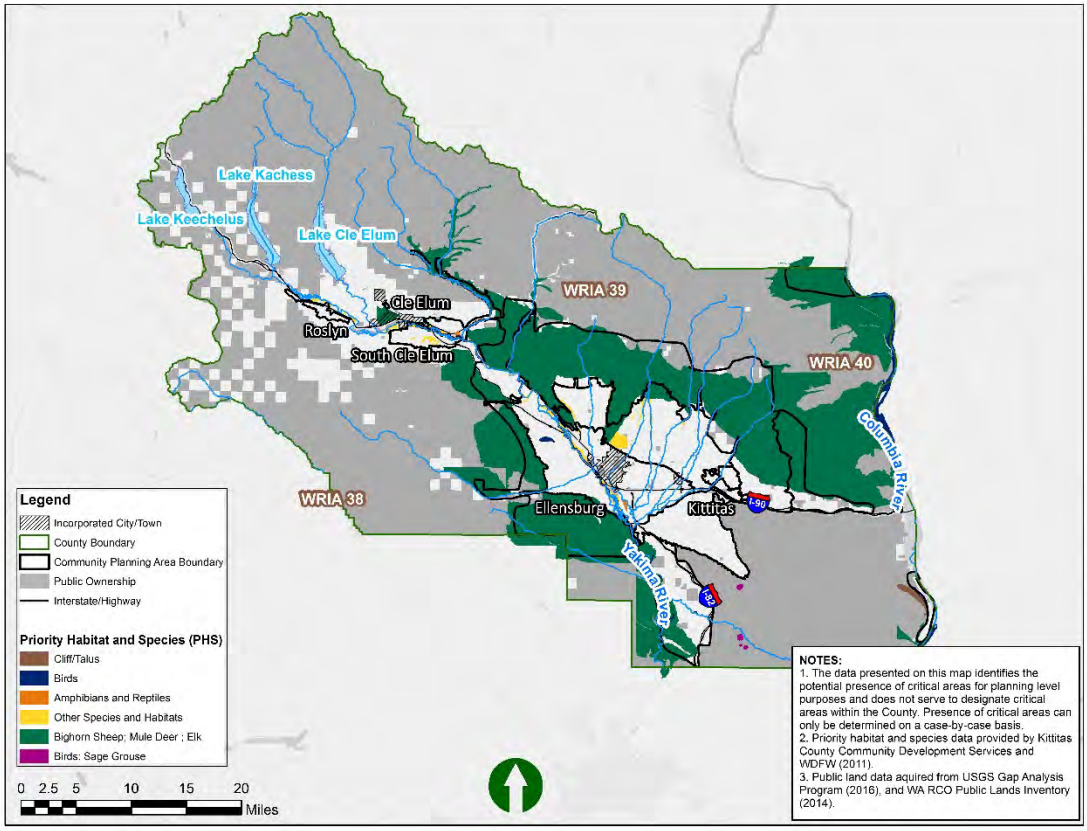
**Intersections on agricultural lands**: PHS mapped areas are the largest critical area found within the County and are found within 100% of agricultural lands (Figure 3-4). A majority of the PHS area in the County is associated with large mammals such as bighorn sheep, mule deer, and elk (Figure 3-4). These areas are located mostly in the upland range community area. [This section includes preliminary data for PHS, currently working to refine the data to provide a complete picture of species distributions in the County. Data and discussion will be updated]

| Priority Habitats and Species on Agricultural Lands in Kittitas County | |
|---|---|
| **General locations/ distribution** | • Large mammals associated mostly with the upland shrublands in the Upland Range Community Area<br>• Small areas of bird and amphibian habitats located mostly along the Yakima River<br>• Isolated instance of talus and cliff habitat along the Columbia River but mostly outside of agricultural areas |
| **Characteristics** | • Riverine aquatic habitats, which support a variety of wildlife including amphibians, birds and mammals, covers approximately 7% of the agricultural area<br>• Includes approximately 4,900 acres of shrub steppe habitat, mapped only on rangelands<br>• The County contains important biodiversity corridor areas in upland rangeland areas (approximately 5,000 acres mapped) |

**Historic Conditions and Shrub-Steppe Habitat**

It is not the intent of VSP to restore natural resources to pre-development conditions, but to protect critical area functions and values that existed in 2011. Prior to cultivation, much of the County was covered with shrub-steppe habitat. The typical vegetation in these communities consisted of open sagebrush and shrub plains with an understory of perennial grasses. These areas are important habitat for species such as western ground squirrel, burrowing owl, and other bird species. Conversion to cropland, overgrazing, and invasion by exotic species have resulted in the loss and fragmentation of these habitats. Today, less than half of the historic shrub-steppe habitat in Washington remains (WDFW 2017).

**Figure 3-4**
**Distribution of Priority Habitats and Species in Kittitas County**

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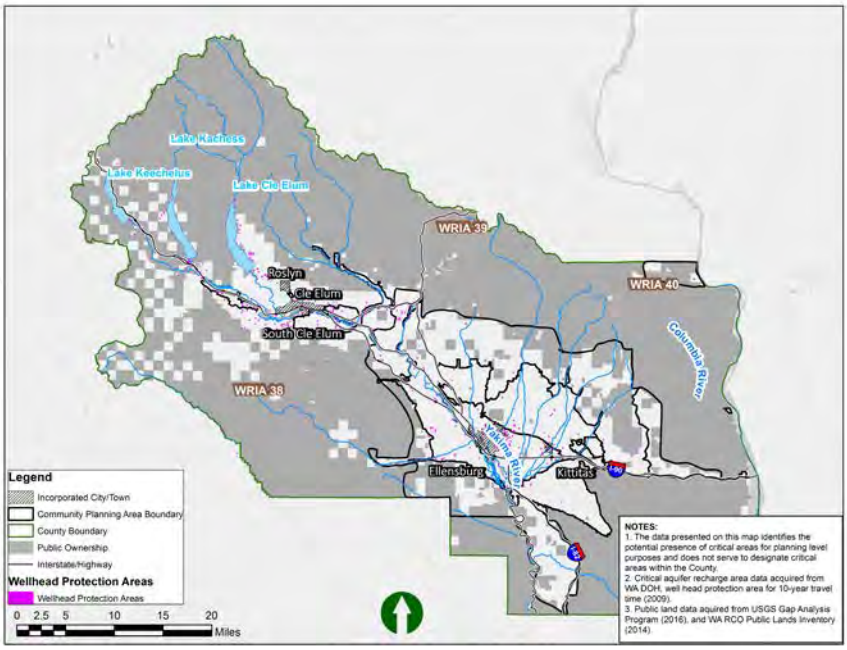
### 3.1.3 *Critical Aquifer Recharge Areas*

**Characteristics and functions overview:** CARAs provide protections to public drinking water supplies by providing sufficient area for water to filter through the soil column. In addition, CARAs affect groundwater quality and hydrology by providing adequate groundwater infiltration.

**Intersections on agricultural lands:** There are no designated CARAs that pertain to agricultural areas in the County; however, aquifer and groundwater recharge areas are important to agricultural viability and will be discussed in this section. Wellhead protection areas (100-foot buffer on Group A and B wells) are found on less than 1% (32 acres) of the County's total agricultural lands.

| Critical Aquifer Recharge Areas on Agricultural Lands in Kittitas County | |
|---|---|
| **General locations/ distribution** | • Most are within irrigated agricultural lands close to municipal water supplies; these are concentrated around cities and towns<br>• Areas within incorporated cities and towns are not subject to VSP, but any portions extending into agricultural lands of unincorporated Kittitas County are included |
| **Characteristics** | • Where recharge areas are present there is a potential for contaminants on the land surface, such as fuel, pesticide or fertilizer, to infiltrate into public or private drinking water supplies |

**Figure 3-5**
**Distribution of Critical Aquifer Recharge Areas and Species in Kittitas County**



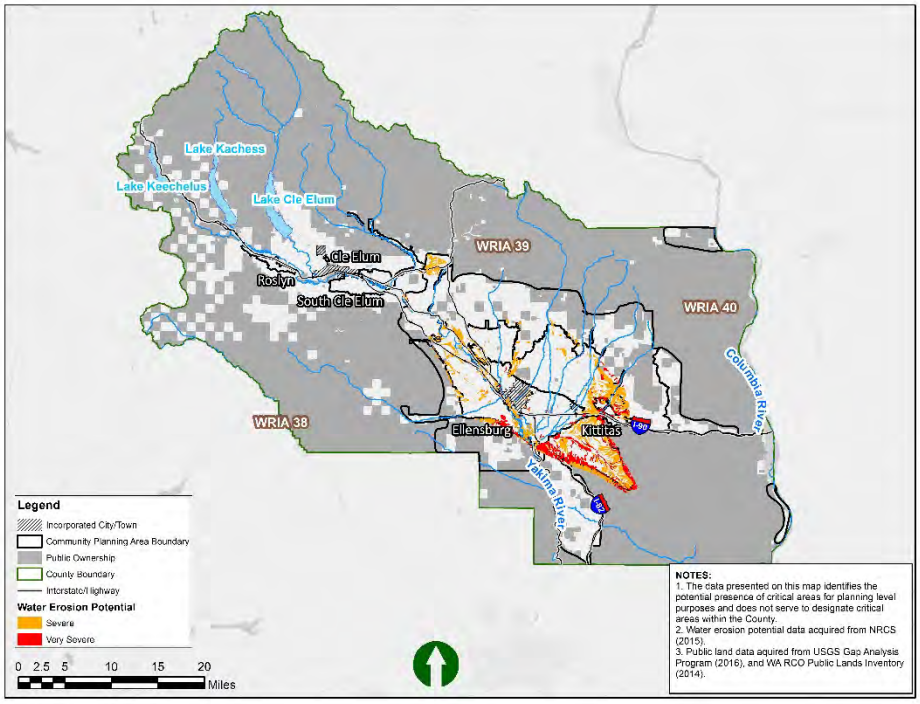
### *3.1.4 Geologically Hazardous Areas*

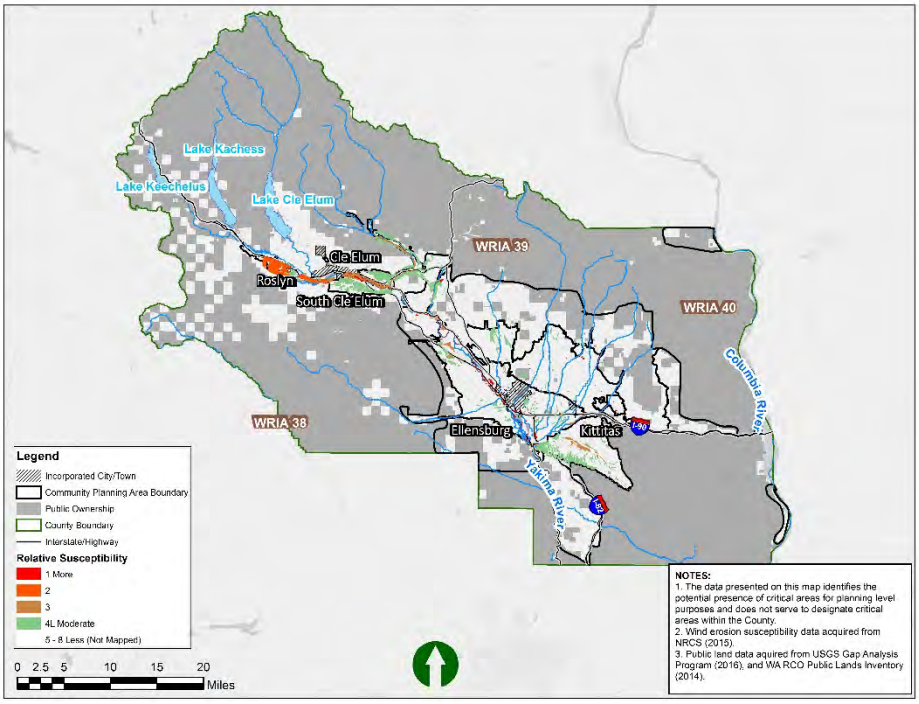
**Characteristics and functions overview:** This Work Plan addresses only a narrow focus for geologic hazards related to instability of steep slopes and potential for water and wind erosion. These are included for maintaining agricultural viability by keeping productive soils in fields used to produce crops, improving water quality, and maintaining habitat. This is different from protecting inherent functions and values of other types of critical areas. Water erosion and 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. Steep slopes are included and mainly associated with maintaining soil health in steep rangeland areas. In developed areas (outside of VSP), GHAs can determine where constructing structures may not be suitable due to landslide, earthquake, or other geologic risks.

**Intersections on agricultural lands**: There are no designated GHAs that pertain to agricultural areas in the County; however, minimizing erosion on steep slopes and water and wind erosion of soils have an impact on agricultural viability and will be discussed in this section. Overall, these areas cover 12% of agricultural land in the County. Steep slopes are mainly concentrated in County rangeland areas; these areas are also associated with high incidence of landslides (Kittitas County et al. 2013).

| Geologic Hazard Areas on Agricultural Lands in Kittitas County | |
|---|---|
| **General locations/ distribution** | • Steep slopes are concentrated in rangeland areas<br>• Water erosion areas are concentrated in irrigated areas<br>• Wind erosion areas are evenly split between irrigated and rangeland areas |
| **Characteristics** | • Landslide occurrence is generally associated with steep areas in the foothills of the Cascade Mountains<br>• In rangeland areas, erosion and landslide hazards can be exacerbated by the loss of vegetation from wildfires or overgrazing |

**Figure 3-6**
**Distribution of Geologic Hazard Areas in Kittitas County**

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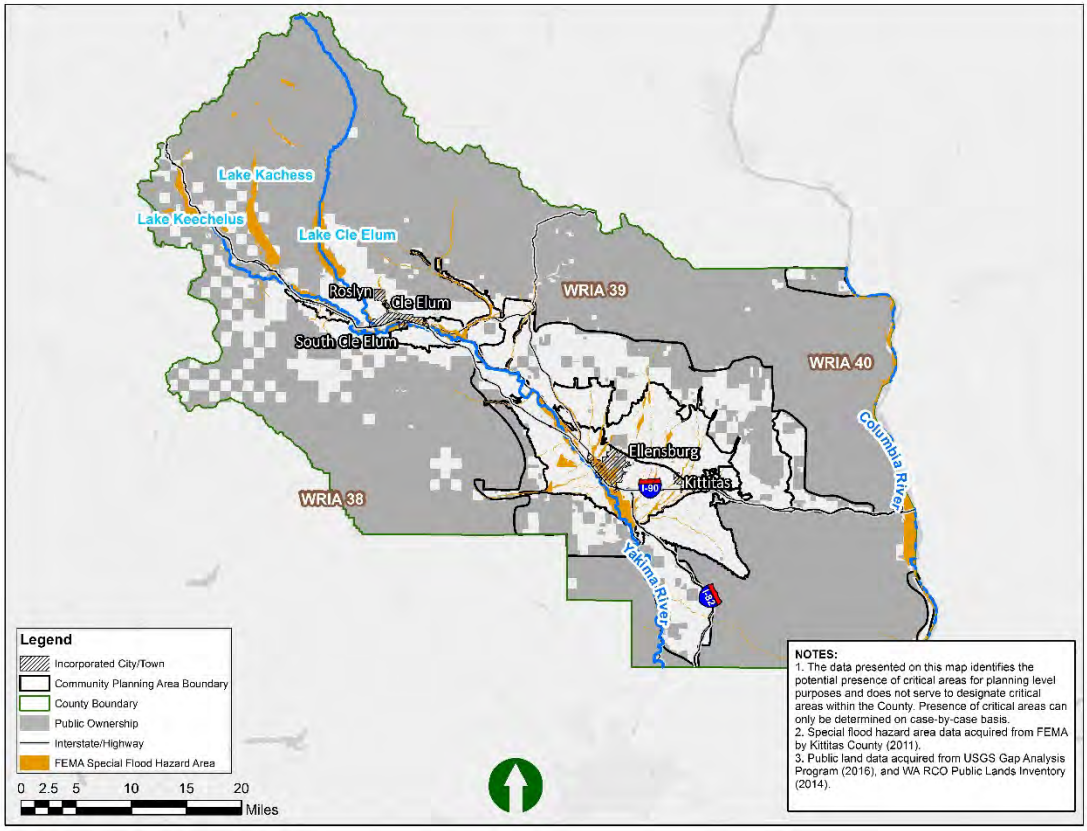
### *3.1.5 Frequently Flooded Areas*

**Characteristics and functions overview:** 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 recharge groundwater. FFAs can affect surface and groundwater quality and hydrology (timing and magnitude of flows and alluvial aquifer recharge), improve or degrade soil health based on vegetative conditions, and contribute to riparian habitat diversity.

**Intersections on agricultural lands**: FFAs are found within 24% of the County's total agricultural lands. FFAs typically overlap or are adjacent to wetlands and some HCAs (Figure 3-7). The Federal Emergency Management Agency (FEMA) occasionally works with the County to update floodplain mapping. No updates to the mapping are currently underway; any changes to the FEMA maps in the future would be reflected in this Work Plan through the adaptive management process.

| Frequently Flooded Areas on Agricultural Lands in Kittitas County | |
|---|---|
| **General locations/ distribution** | • Concentrated in irrigated agricultural areas<br>• FFAs occur mainly along the Yakima River and its tributaries including the Teanaway River, Cle Elem River, Manastach River, and others.<br>• Widest portion of the Yakima River floodplain is south of Ellensburg above where the Yakima River lower canyon confines the floodplain. |
| **Characteristics** | • Rain-on-snow events have caused repeated flooding in the County.<br>• High intensity localized rain fall has also caused flooding and landslides in the County. |

**Figure 3-7**
**Distribution of Frequently Flooded Areas in Kittitas County**

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## 3.2 Agricultural Viability Baseline Conditions

Agriculture is widely recognized as a pillar of Washington State's and Kittitas County's 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, must be addressed in this Work Plan.

Agricultural viability in the 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. Tables 3-2 and 3-3 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 succeed. This system also helps to mitigate potential threats and supports local producers in their operations and ability to take advantage of business opportunities.

**Table 3-2**
**Agricultural Viability – Regional Elements**

| Regional Elements | |
|---|---|
| **Concept** | **Detail** |
| Stable and secure agricultural land base | Land conversion |
| | Stable water rights |
| Infrastructure and services | Utilities/irrigation |
| | Market access/transportation |
| Support for best farm management practices | Economically viable solutions |
| | Balanced approach |
| Education, training, and succession planning | Apprenticeships/training |
| | Interconnectivity with end users |
| Welcoming business environment | Stable regulatory environment |
| | Partnership-based environmental protection |
| Market trends/viability | Changing livestock and commodity prices can affect the number of producers that support economy |
| | Value added measures to make products more marketable |

**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 (Table 3-3). Due to the presence of irrigation water, Kittitas County has a variety of agricultural products and practices. In this Work Plan, emphasis is placed on implementing stewardship and conservation measures through a systematic approach that maximizes the dual benefits of protecting and enhancing critical areas

while enhancing agricultural viability. These systems are a suite of farming practices, applied by crop type, that target multiple agricultural viability concerns, including water, soil health, nutrient, and pest. In combination, practices that maximize benefits and synergies through a systematic approach are expected to have the most benefit for critical areas and agricultural viability.

Another important aspect of agricultural viability is the importance of operating and maintaining existing stewardship practices/systems to achieve long-term benefits and minimize the number of practices that are discontinued over time. The continued operation of existing stewardship practices and systems will be a key component of VSP implementation. New technology is another area that can be explored by agricultural producers to improve the operation of existing stewardship practices and systems or establish new ones. As described in this Work Plan, stewardship practices have the potential to benefit multiple resources, including agricultural practices and critical areas.

**Table 3-3**
**Agricultural Viability – Farm Elements**

| Farm Elements | |
|---|---|
| **Concept** | **Detail** |
| Reduce inputs | Energy (power, fuels) |
| | Chemicals |
| | Labor |
| Maintain/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 farming practices |
| | Cropping choices |
| Incentives | Payment for measures |
| | Tax breaks |
| Managed farmland conversion | Urban development |
| | Maintaining resource lands |
| "No surprises" regulatory environment | Clean Water Act, Clean Air Act, Endangered Species Act, and others |
| | County permitting (drainage and other requirements) |
| Protect private property rights | Recognizing and respecting rights |
| Environmental variation | Rainfall, temperature, and other environmental factors can affect agricultural production and activities |

Kittitas County is unique in location, growing climate, and agricultural diversity, which are all important factors in considering agricultural viability. To obtain a firsthand agricultural viability perspective, producers in the Watershed Group provided insight on agricultural viability including strengths, weaknesses, opportunities, and threats (Table 3-4). See Appendix B-5 for a full summary of the responses.

**Table 3-4**
**Agricultural Viability Strengths, Weaknesses, Opportunities, and Threats**

| Strengths | Weaknesses |
|---|---|
| • Many export options and close to urban markets<br>• Strength of family farms<br>• Good climate<br>• Strong demand for products<br>• Good transportation infrastructure | • Cost of electricity<br>• Water availability<br>• Few rotational options<br>• Short growing season |
| **Opportunities** | **Threats** |
| • Yakima Basin Integrated Plan partnerships<br>• New technologies and crops<br>• Increased efficiency<br>• Agricultural tourism | • Agricultural land conversion<br>• New regulations<br>• Population growth and urban sprawl<br>• Predation of livestock |

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

# 4 Protection and Enhancement Strategies

Agricultural producers play a major role in the stewardship and management of private lands and resources within Washington State and Kittitas County. Agricultural producers are continually improving agricultural practices, applying new science and technology, and implementing stewardship practices that reduce agricultural impacts on critical areas, as well as maintain or increase the viability of the agricultural economy. In Kittitas County, agricultural producers have adopted a variety of practices to address many of the major resource concerns within the County, including practices to improve irrigation water management, habitat, reduce soil erosion, and improve soil quality.

This section introduces the connection between stewardship practices and critical area functions and values (Figure 4-1). Additionally, this section discusses the stewardship strategies and practices that have been implemented since 2011, highlighting the protections to critical areas and associated function and values these practices are already providing.

**Figure 4-1**
**VSP Crosswalk – Functions and Values Connection with Stewardship Practices**

## 4.1 Examples of Stewardship Practices that Protect Critical Areas

As discussed in Section 3, key critical areas functions include water quality, hydrology, soil, and habitat. Many stewardship practices have been adopted within the County that provide a suite of benefits to these critical areas functions, in addition to maintaining the viability of agriculture.

Table 4-1 summarizes examples of practices that have been applied by agricultural producers in the County under Natural Resources Conservation Services (NRCS) programs. This table helps illustrate the types of practices that have been or can be implemented to protect critical areas functions. As noted in the table, these examples also address the promotion of agricultural viability.

It is important to consider implementing a suite of farming practices in order develop an effective conservation system on a farm. For example, application of irrigation water management practices would realize the most benefit for critical areas protections and agricultural viability by implementing in conjunction with nutrient and pest management. The KCCD is available to provide technical guidance in identifying farming practices that promote agricultural viability and further the goals of this Work Plan to protect critical area functions.

The VSP Checklist has been developed for agricultural producers and the KCCD to determine how the VSP could apply to their operations. Appendix B provides specific stewardship practices for each Community Area and Appendix C provides a more comprehensive "toolbox" of example practices that have been or could be implemented by agricultural producers within the County.

**VSP Checklist**

The VSP Checklist is a helpful tool to help assess how the VSP could support individual agricultural producers. It includes additional examples of stewardship strategies and practices that protect and enhance critical areas and promote agricultural viability.

**Fish Screens**

In addition to diversions for irrigation districts and companies, there are also dozens of individual diversions for irrigation water operated by private individuals primarily on tributaries to the Yakima River. Installing compliant screens on these diversions protects fish from entrainment in irrigation systems. Work has been underway for more than 15 years through the Yakima Tributary Access and Habitat Program to install fish screens in Kittitas County.

**Participation in Funded Programs**

Federal, state, and local government, and private-sector programs and opportunities are available to support producers in addressing agricultural and resource concerns. See Section 6 for additional resources and technical assistance available to agricultural producers on a voluntary basis. **Participation in a government-funded program is not required to be a VSP participant.**

**Table 4-1**
**Examples of Critical Areas Stewardship Practices in Kittitas County (Implemented Under NRCS)**

| Example Practice | Applicability | Description | Critical Area Functions | | Agricultural Viability |
|---|---|---|---|---|---|
| Irrigation Water Management | Irrigated | Managing water volume, frequency, and application rate for efficiency | Water Quality | • Reduces runoff and erosion<br>• Reduces transport of nutrients and sediment | • Soil quality<br>• Yield and fertility<br>• Reduced inputs |
| | | | Hydrology | • Reduces degradation of surface and groundwater resources | |
| | | | Soil | • Manages leaching of salt and chemicals below the root zone | |
| Nutrient Management | Dryland Irrigated | Managing application of nutrients to minimize loss to runoff | Water Quality | • Reduces nutrients in surface and groundwater due to matching plant needs to the amount, timing, and placement of nutrients | • Soil quality<br>• Yield and fertility<br>• Reduced input costs |
| | | | Habitat | • Optimizes health and vigor of desired plant species<br>• Increases food and cover for wildlife | |
| Aquatic Organism Passage | Irrigated | Modification or removal of barriers to aquatic species | Habitat | • Allows aquatic organisms to migrate to find cover and shelter<br>• Increase the amount of habitat available for feeding and breeding | • Regulatory relief<br>• Continued access to irrigation water |
| Prescribed Grazing | Rangeland Irrigated | Managing grazing and vegetation harvest to improve plant communities and manage weeds | Water Quality | • Reduces runoff and erosion<br>• Reduces transport of nutrients and sediment | • Soil quality and conservation<br>• Weed management<br>• Yield and fertility |
| | | | Hydrology | • Increases infiltration and water availability | |
| | | | Soil | • Decreases water and wind erosion due to increased vegetation cover<br>• Reduces stream erosion through enhanced riparian vegetation | |
| | | | Habitat | • Improves and maintains health and vigor of desired plant species<br>• Restores desired habitats, such as shrub-steppe | |

Note: Functions are defined by the Conservation Practices Physical Effects (CPPE) matrix for each practice. See Section 5.2 and Table 5-6 for additional discussion and details on how practices provide benefits to these critical area functions, based on the NRCS CPPE scores.

## 4.2 Changes Since 2011 Baseline

Since 2011, agricultural producers have implemented practices that provide protections and enhancements to critical areas and promote agricultural viability through private projects, and projects funded by federal, state, and local governments. One of the key purposes of the VSP and this Work Plan is to leverage existing resources by relying on existing local planning efforts, existing private-sector activities, and government programs to achieve Work Plan goals (RCW 36.70A.700(2)(d)).

The following subsections summarize documented stewardship practices, implemented since 2011, that have likely protected or enhanced critical areas and improved agricultural viability over baseline conditions.

These documented practices likely represent only a subset of all the stewardship practices that have been implemented since 2011, because many agricultural producers in the County implement practices independent of government programs. Accounting for these improvements would require extensive self-reporting and documentation processes that are not yet in place. Additionally, it should be acknowledged that, during this same time, there are likely some practices that have been discontinued. The re-establishment of agriculture in lands managed in conservation can result in habitat and other functions being affected.

It is expected that most implemented stewardship practices, such as irrigation management systems stock watering facilities, and fencing, will see very little to no relapse back to old practices. Less than 3% per year of these types of practices are anticipated to be removed or discontinued each year. There are other stewardship practices (such as pest and nutrient management, residue management, direct seed, and prescribed grazing) where a higher rate of discontinuation (6%) or more variability year to year in implementation is anticipated. See Table 4-2 for assumptions related to varying estimated discontinuation rates.

Stock Watering Facility

Other programs may also see a higher rate of discontinuation with the expiration of long-term government contracts that manage wildlife habitat, such as the Conservation Reserve Program (CRP), that temporarily enhance wildlife habitat, but this will occur on agricultural lands historically cultivated and not part of designated critical areas. Measures and systems are typically put in place when lands are returned to production to conserve resources and protect potentially affected critical areas adjacent to lands no longer enrolled in CRP.

**Table 4-2**
**Calculating Discontinuation for Stewardship Practices**

| Assumed Range of Discontinuation | Stewardship Practice Category | Example Practices |
|---|---|---|
| None | **Easements and Infrastructure**<br>• Permanent Stewardship Practices | • Permanent Easements<br>• Major Infrastructure<br>• Aquatic Organism Passage |
| Lower<br>0-3% | **Conservation Investments**<br>• High Barriers to Entry/Exit<br>– Conservation Investments<br>– Maintenance Cost<br>– Effectiveness<br>• Increases Land Productivity<br>• Lowers Cost | • Irrigation Management<br>• Streambank/Shoreline Protection<br>• Fencing<br>• Habitat Restoration<br>• Nutrient Management |
| Higher<br>3-7% | **Conservation Actions**<br>• Low Barriers to Entry/Exit<br>– Easily Removed<br>• Reduced Land in Production<br>• Rotational Use<br>– Market Driven Rotation<br>• Reliance on Unstable Conservation Funding or Incentives (e.g., CRP) | • Prescribed Grazing<br>• Cover Crop<br>• Range Vegetation Management |

### *4.2.1 NRCS Conservation Practices*

Conservation projects have been implemented on close to 17,000 acres since 2011 through the NRCS-funded programs on agricultural lands. The top practices that have been implemented include:

- Irrigation water management and sprinkler systems to conserve water resources
- Prescribed grazing to improve vegetation composition, manage weeds, reduce erosion and improve soil functions
- Pest and nutrient management to protect water quality

As summarized previously in Table 4-1, these practices also promote agricultural viability.

Table 4-3 provides a summary of top NRCS practices implemented under the Environmental Quality Improvement Program (EQIP), Wildlife Habitat Improvement Program (WHIP), and Agricultural Water Enhancement Program (AWEP) for acreages and number of projects. As previously noted, these practices and programs only represent a portion of all the practices being implemented but that are currently unaccounted for in the County. VSP definitions control whether a stewardship practice or project qualifies as a protection or an enhancement under the VSP. Under the VSP definitions "enhance…means to improve the processes, structure, and functions existing, as of July 22, 2011…"

598 and "protect…means to prevent the degradation of functions and values existing as of July 22, 2011"
599 (RCW 36.70A.703). Because most conservation practices or projects installed since 2011 were
600 designed to improve functions they should generally be counted as enhancement.

601 **Table 4-3**
602 **Top NRCS Conservation Enhancement Practices Implemented from 2011 to 2016**

| Practice | Acres | Projects Implemented |
|---|---|---|
| Irrigation Water Management | 2,753 | 46 |
| Forest Stand Improvement | 2,163 | 50 |
| Sprinkler System | 2,147 | 35 |
| Woody Residue Treatment | 2,145 | 49 |
| Tree/Shrub Pruning | 2,011 | 40 |
| Prescribed Grazing | 1,428 | 10 |
| Integrated Pest Management | 1,406 | 31 |
| Access Control | 1,164 | 3 |
| Nutrient Management | 720 | 21 |
| Tree/Shrub Establishment | 481 | 40 |

603 Source: NRCS data provided by Harold Crose with the Grant County Conservation District
604

605 ### *4.2.2 Conservation District Led Practices*

606 Numerous other projects have also been implemented through the KCCD and are often funded
607 directly by the KCCD or through programs administered by other agencies. A majority of the projects
608 implemented by the KCCD are related to improving irrigation efficiency such as installing irrigation
609 water pipelines and sprinkler systems (Table 4-4). Additionally, the KCCD is also focused on
610 improving aquatic species habitat through installation of practices such as aquatic organism passage
611 and shoreline protection (Table 4-4).

612 **Table 4-4**
613 **KCCD Lead Enhancement Projects Implemented from 2011 to 2016**

| Practice | Amount | Projects Implemented |
|---|---|---|
| Irrigation Water Pipeline | 42,319 feet | 19 |
| Aquatic Organism Passage | 1,200 square feet | 3 |
| Sprinkler System | 1,831 acres | 51 |
| Range Planting | 494 acres | 1 |
| Streambank/Shoreline Protection | 445 feet | 2 |
| Clearing and Snagging | 20 cubic yards | 1 |
| Pumping Plant | N/A | 2 |
| Structure for Water Control (fish screen) | N/A | 2 |

Irrigation diversion replacement (before and after)

### 4.2.3 Conservation Reserve Program

The CRP is a federally funded program, managed by the Farm Service Agency, that pays a yearly rental payment in exchange for farmers removing environmentally sensitive land from agricultural production and planting species that will improve environmental quality. Acres enrolled in CRP vary year to year, depending on the availability of federal funding, which has decreased in recent years. However, these lands are not designated as critical areas. Habitat benefits from CRP lands are considered enhancements under VSP and, if put back into production, are accounted for under baseline conditions.

### 4.2.4 Yakima Tributary Access and Habitat Program

The Yakima Tributary Access and Habitat Program (YTAHP) was developed in 2001 to provide assistance to landowners in restoring critical salmon habitat by implementing projects that protect, restore, and enhance riparian and floodplain habitat currently or historically used by salmon.

The program objectives are to screen irrigation diversions, remove manmade barriers (e.g., dams, culverts), restore fish passage, and enhance stream habitat. The YTAHP program is made possible through a collaborative effort between the Washington Resource Conservation and Development Council; local conservation districts, including the KCCD; and many other local, state, and federal entities (RCD 2017). Projects are voluntary and are designed to serve the best interest of the landowner, salmon, and the community.

In Kittitas County, YTAHP has resulted in dozens of fish screens installations, fish passage barrier removals that opened miles of additional stream habitat, and on-farm improvements that improve water management and stream flow conditions in tributaries from the Teanaway River in northern

636 Kittitas County to Lmuma Creek in the Yakima River canyon. The YTAHP Strategic Plan outlines the
637 work which will continue on priority projects[3].

### 638 *4.2.5 Yakima River Basin Integrated Water Resource Management Plan*

639 The Integrated Plan includes a suite of actions
640 that benefit both agricultural viability and
641 critical areas. These include fish habitat
642 enhancement projects on the Yakima River and
643 its tributaries and enhanced water conservation
644 efforts. Several projects have been funded
645 through the Integrated Plan on private lands in
646 Kittitas County. This includes a series of
647 projects on Manastash Creek that
648 supplemented and expanded the efforts of the
649 KCCD and the Manastash Creek Steering
650 Committee.

651 Additionally, water conservation efforts
652 recommended in the Integrated Plan include
653 lining or piping irrigation canals, improving
654 water management and accounting, and
655 installing on-farm water conservation
656 improvements. Habitat restoration efforts are
657 also recommended including the removal of
658 fish passage barriers and stream, floodplain,
659 and riparian habitat improvements. Projects
660 that are funded under this program are
661 reviewed by subcommittees and ultimately
662 selected by the Yakima River Basin Water
663 Enhancement Project Conservation Advisory
664 Group.

**Manastash Creek Restoration Project**

Together, the KCCD and the Manastash Creek Steering Committee worked to implement the Manastash Creek Restoration Project, an effort to address unscreened diversions, fish passage barriers, and instream flow. The restoration project included the construction of fish screens and repair of fish passage barriers. The Integrated Plan was incorporated into the project at a critical stage and assisted with the construction of pipelines to allow consolidation of the remaining irrigation diversions as well as converting 3.2 miles of the KRD irrigation canal to a pressurized pipeline which resulted in conservation of 1,200 acres feet of water annually. As a result of this water conservation, lower Manastash Creek increased instream flow by approximately 3.5 cubic feet per second. The consolidation of the diversions allowed KCCD to pursue removal of the last remaining fish passage barrier, which occurred in 2016 and opened access to approximately 25 miles of upstream fish habitat (Ecology 2015).

*"Manastash is a great of example of what it takes for a collaborative process to be successful. We set early goals for safe fish passage and keeping agriculture whole and we are achieving those goals."*

Dave Duncan, irrigator
Manastash Water Ditch Association.

[3] The full Strategic Plan can be downloaded from https://docs.wixstatic.com/ugd/a17495_88b382478ce5455a94b4e70039f7c2ac.pdf

### 4.2.6 Regional Conservation Partnership Program – Yakima Integrated Plan – Toppenish to Teanaway Project

Under the umbrella of the Integrated Plan, the KCCD and the Yakama Nation applied together for funding through the U.S. Department of Agriculture Natural Resources Conservation Service's Regional Conservation Partnership Program. The proposal was approved for $7.5 million in December 2016 and the 5-year project began in October 2017. In Kittitas County, the program includes funding for on-farm conservation practices, agricultural and wetland easements, and forestland easements.

### 4.2.7 Other Programs

Additional programs, entities, and agencies that support farmers in implementing stewardship strategies and practices are further described in Section 6.4. Technical assistance and stewardship programs and incentives are also provided through U.S. Department of Agriculture Natural Resources Conservation Service, Washington State Department of Ecology, Washington Department of Fish and Wildlife, and Washington State Conservation Commission through private lands programs and assistance, such as the Farmed Smart Partnership and Aquatic Land Enhancement Account.

### 4.2.8 Changes in Agricultural Landcover since 2011

Changes in agricultural land cover since 2011 were influenced by development, as well as purchases of large tracts of private lands converting to state owned and managed lands. In 2017, there are 2,137 more tax parcels than there were in 2011, reflecting further subdivisions of land in the County. In 2014, the State of Washington secured the purchase of more than 50,000 acres of privately owned forestland and created the Teanaway Community Forest.

# 5 Goals and Measurable Benchmarks

## 5.1 Goals

## 5.2 Measurable Benchmarks

### *5.2.1 Methods*

### *5.2.2 Benchmarks*

## 5.3 Indicators

## 5.4 Monitoring and Adaptive Management

# 6 Implementation and Outreach

## 6.1 Framework for Implementation

## 6.2 Agricultural Producers Participation, Technical Assistance, and Outreach

### *6.2.1 Organization Leads*

## 6.3 Monitoring, Reporting, and Adaptive Management

## 6.4 Existing Programs, Plans, and Other Applicable Regulations

### *6.4.1 Existing Public Conservation Programs*

### *6.4.2 Private-sector and Not-for-profit Programs*

### *6.4.3 Existing Plans and Guidance*

### *6.4.4 Regulatory Environment*

## 6.5 Implementation by Community Planning Area

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