
January 2018
Kittitas County Voluntary Stewardship Program

ANCHOR QEA

# DRAFT Work Plan

Prepared for Kittitas County Conservation District

DRAFT

January 2018
Kittitas County Voluntary Stewardship Program

# DRAFT Work Plan

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# ABBREVIATIONS

| | |
|---|---|
| ALEA | Aquatic Lands Enhancement Account |
| CAO | Critical Areas Ordinance |
| CARA | critical aquifer recharge area |
| CPPE | Conservation Practices Physical Effects |
| CRP | Conservation Reserve Program |
| FEMA | Federal Emergency Management Agency |
| FFA | frequently flooded area |
| FSA | Farm Service Agency |
| GHA | geologically hazardous areas |
| GMA | Growth Management Act |
| HCA | fish and wildlife habitat conservation areas |
| KCCD | Kittitas County Conservation District |
| KRD | Kittitas Reclamation District |
| NRCS | Natural Resources Conservation Services |
| NRI | Natural Resources Inventory |
| PHS | Priority Habitat and Species |
| PIT | passive integrated transponder |
| RCW | Revised Code of Washington |
| TMDL | Total Maximum Daily Load |
| USDA | U.S. Department of Agriculture |
| USGS | U.S. Geological Survey |
| 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 |
| Yakima Basin Integrated Plan | Yakima River Basin Integrated Water Resource Management Plan |
| 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.

# 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 Yakima Basin 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 Yakima Basin 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.

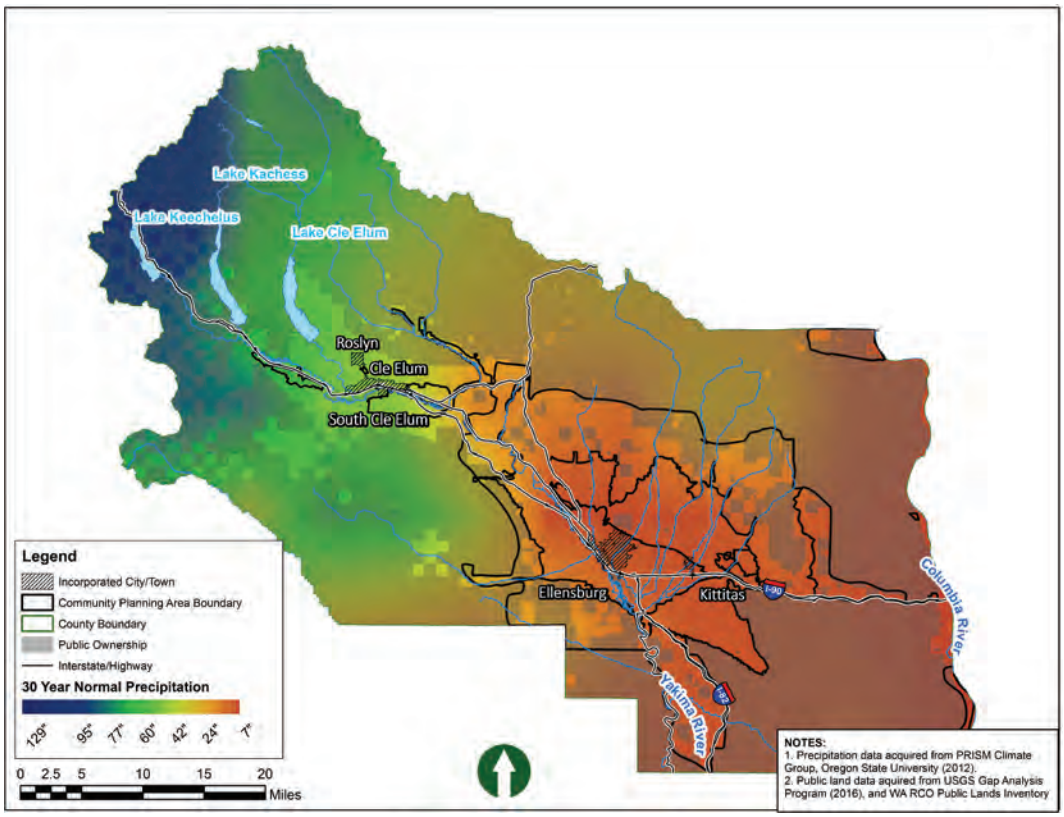
Cle Elum Lake Dam

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**



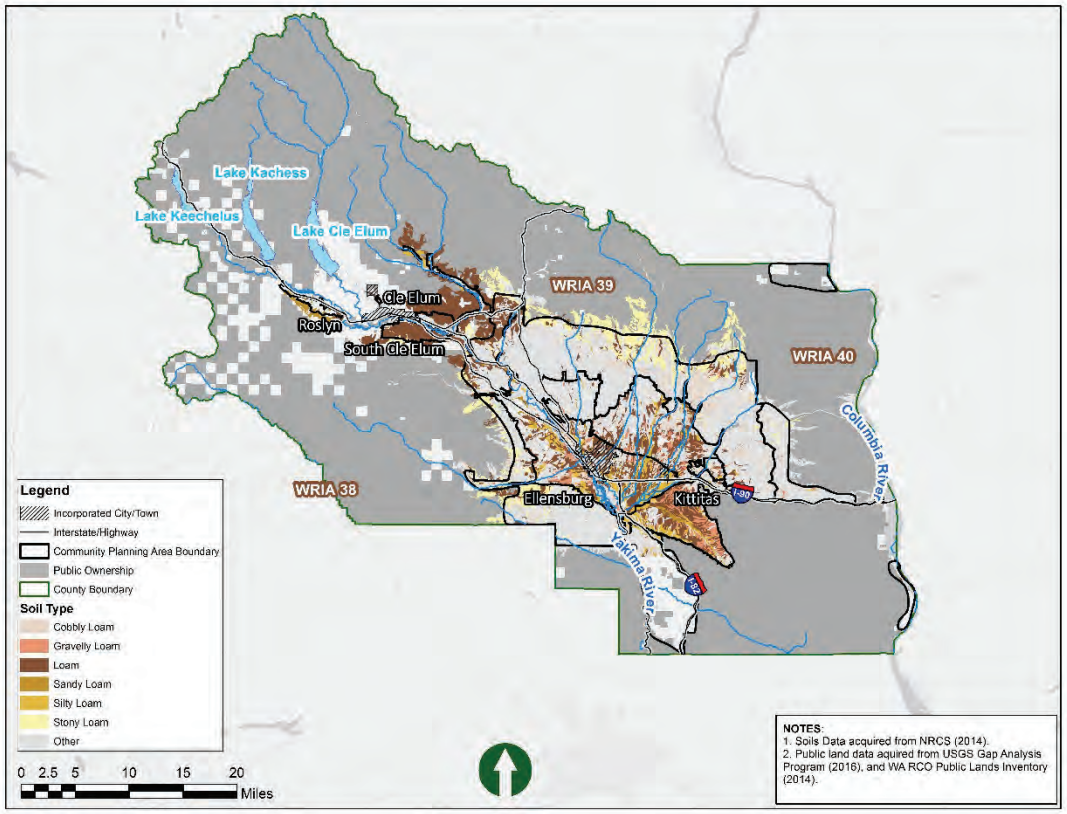

## *2.1.2 Terrain and Soils*

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).

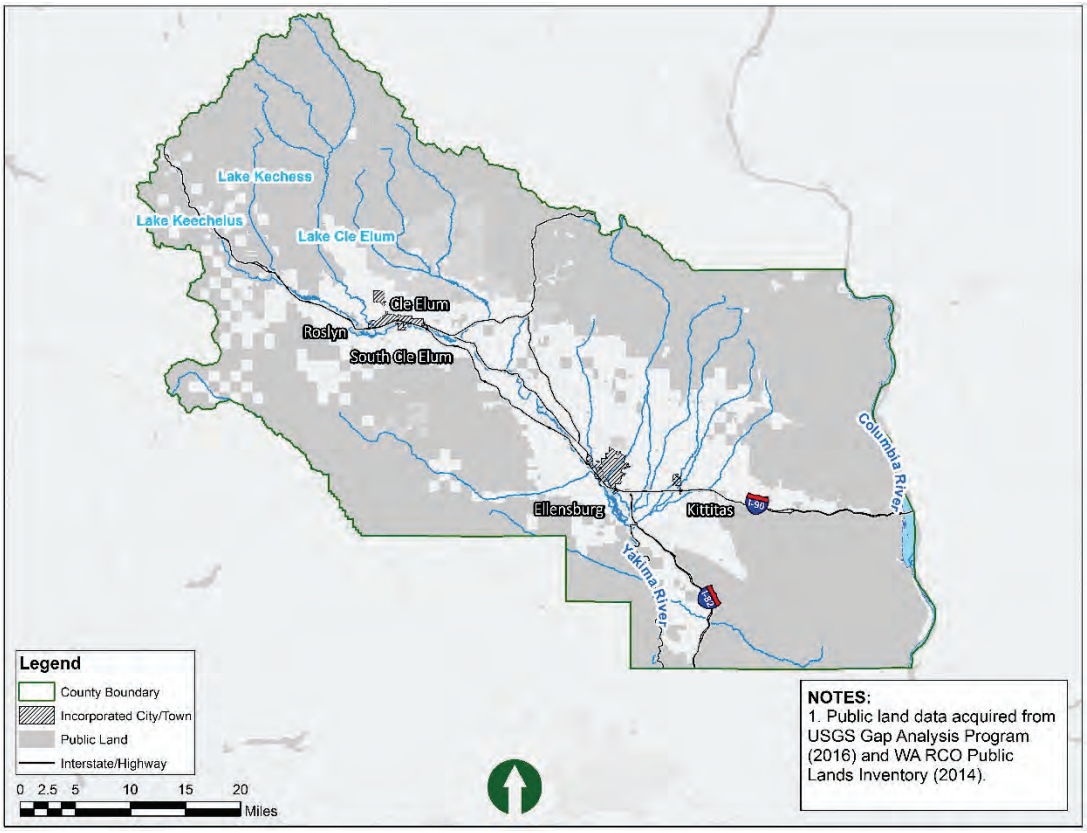
**Figure 2-2**
**Soil Types in Kittitas County**




## 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**

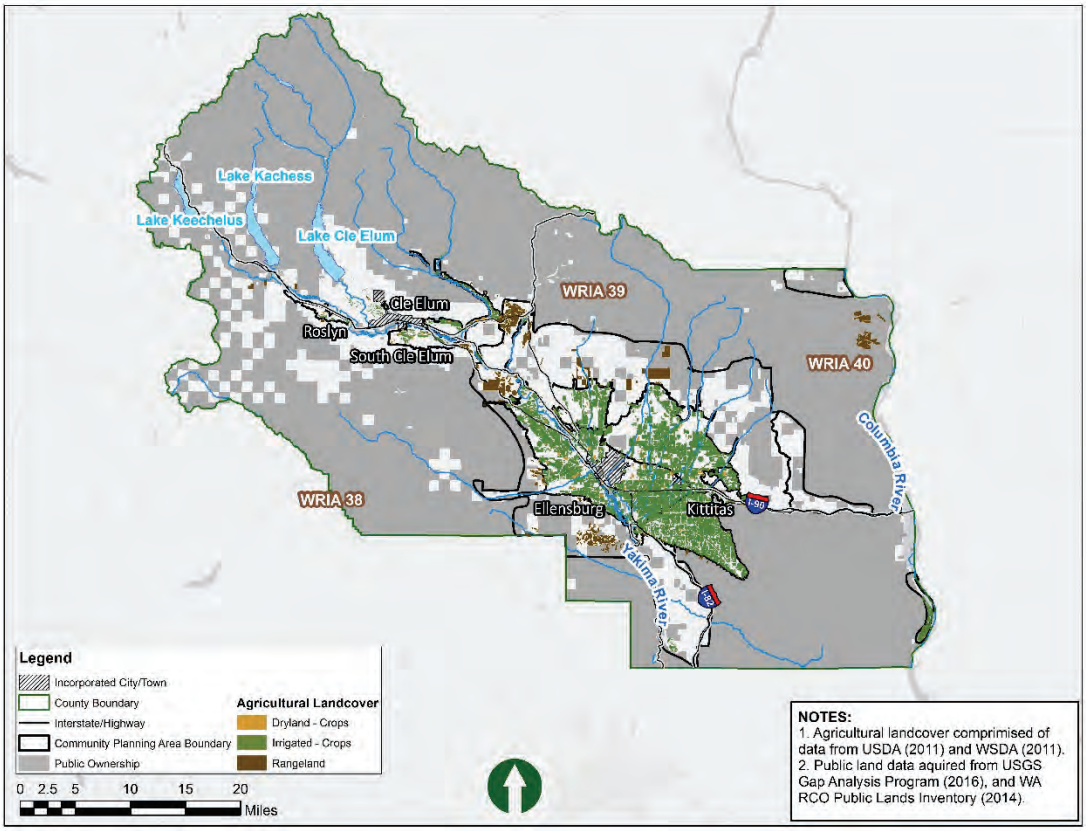
| Landcover | Acres | Percent of County |
|---|---|---|
| **Total Area in County** | 1,494,400 | |
| **Agricultural Landcover** | 197,765 | 13.2% |
| Irrigated | 97,709 | 6.5% |
| Dryland | 2,320 | <1% |
| Orchard/vineyard | 2,459 | <1% |
| Rangelands | 95,277 | 6.4% |

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.

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




## 2.2 Agricultural Activities

Agriculture is the major land use in the County. The Work Plan's goals and measurable benchmarks for voluntary landowner participation apply to agricultural producers on privately-owned land in 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 (USDA) 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] Washington State Department of 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):

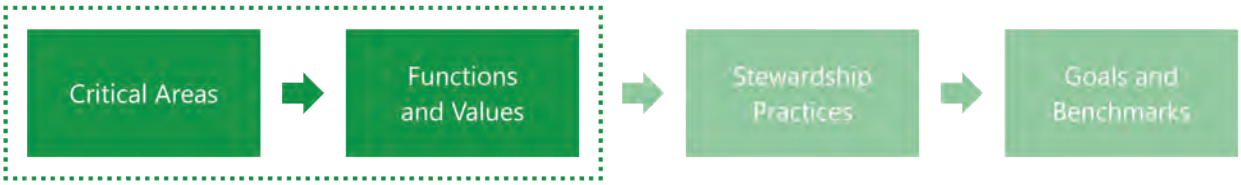
- Protecting critical area functions and values
- Providing incentive-based voluntary enhancements to critical area functions and values
- Maintaining and enhancing the viability of agriculture in the County

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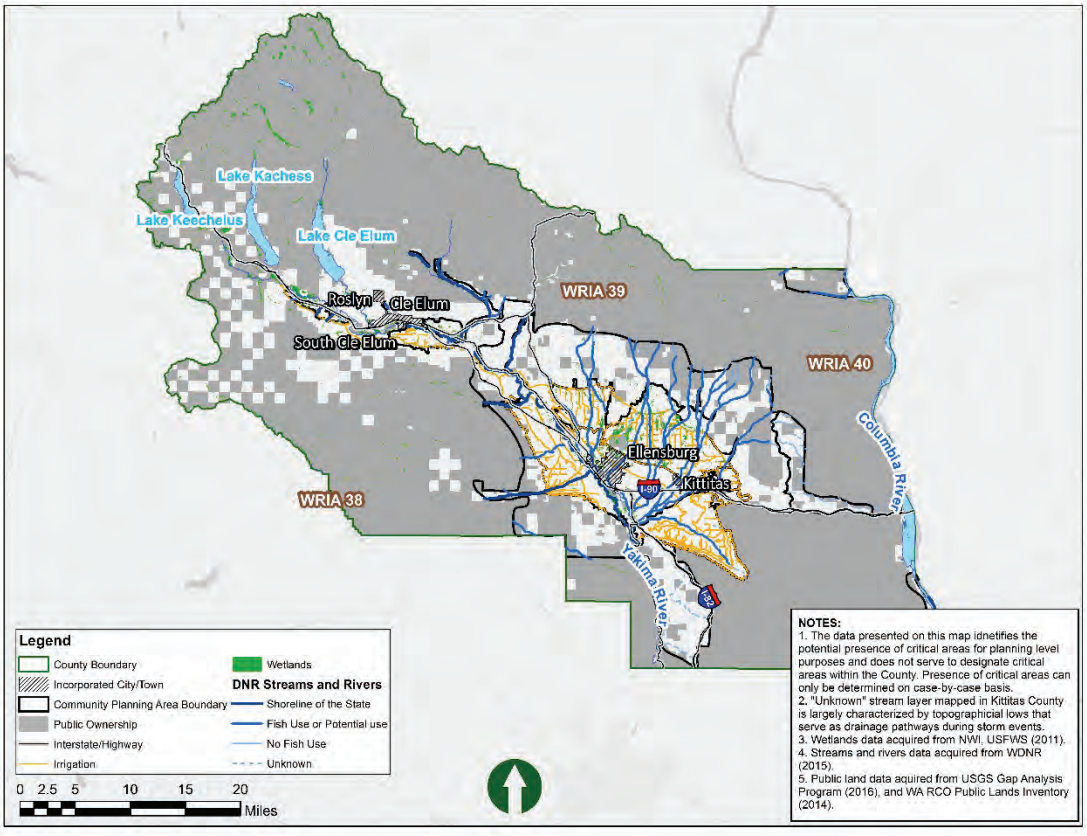
**Figure 3-2**
**Distribution of Wetlands in Kittitas County**

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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

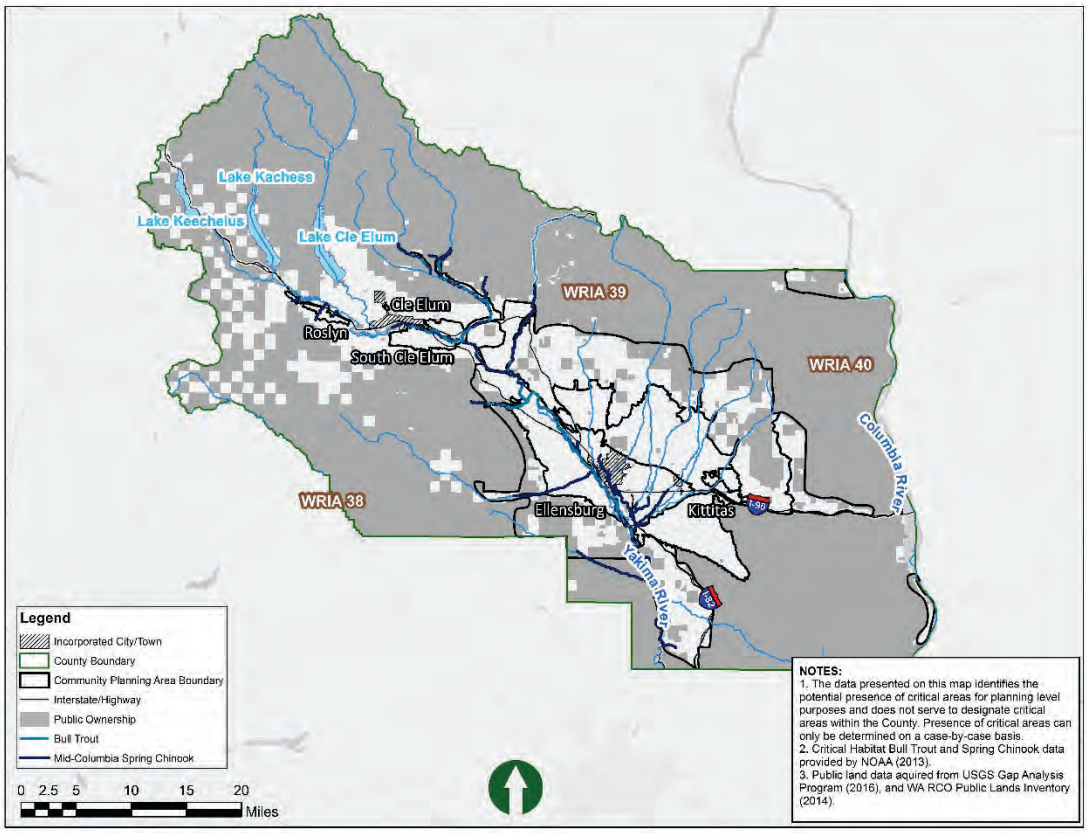
District Canal, KRD Main Canal, Manastash Creek). Agriculture can affect water quality through excess nutrients from fertilizers, bacteria from livestock (e.g., fecal coliform), toxins from chemical inputs, and sediment from soil erosion. However, fertilizer, sediment, and toxin inputs are also associated 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

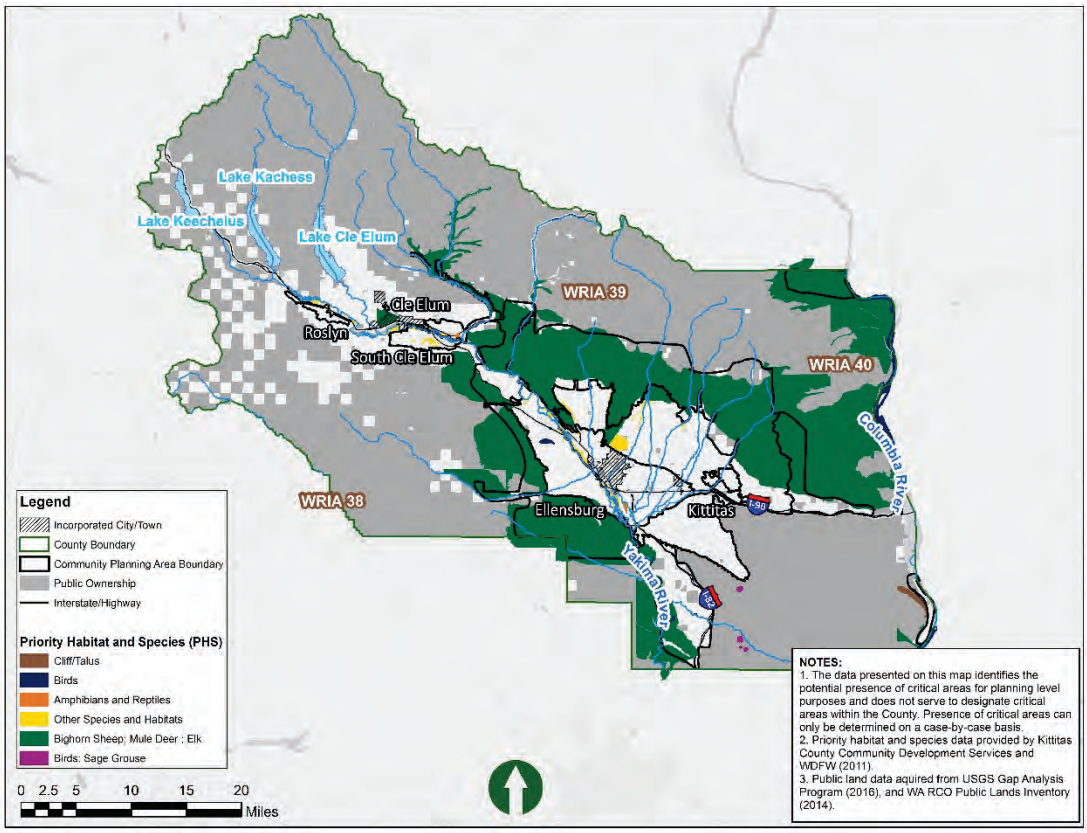
**Intersections on agricultural lands**: PHS mapped areas are the largest critical area found within the County and are found within 100% of agricultural lands (Figure 3-4). A majority of the PHS area in the County is associated with large mammals such as bighorn sheep, mule deer, and elk (Figure 3-4). 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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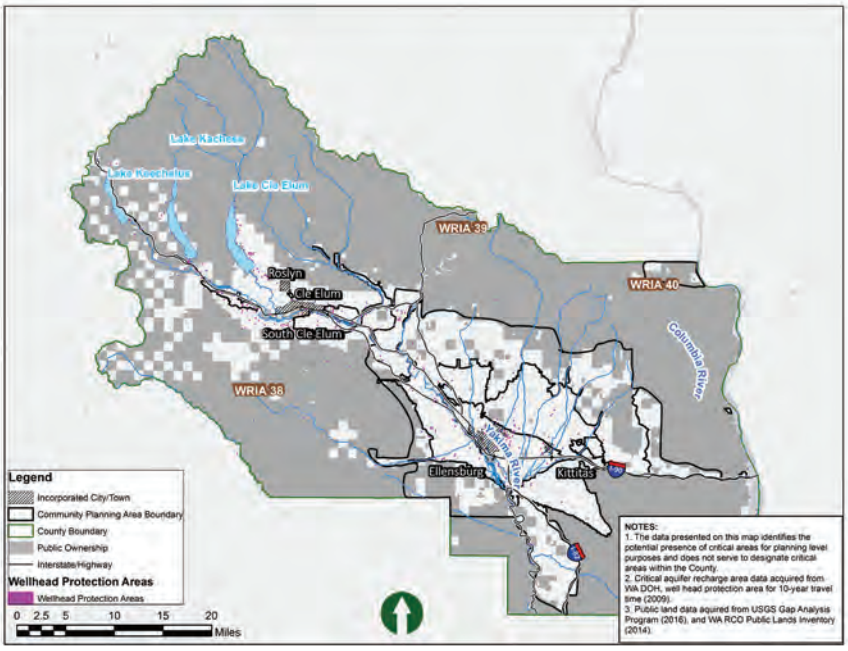
### 3.1.3 *Critical Aquifer Recharge Areas*

**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**



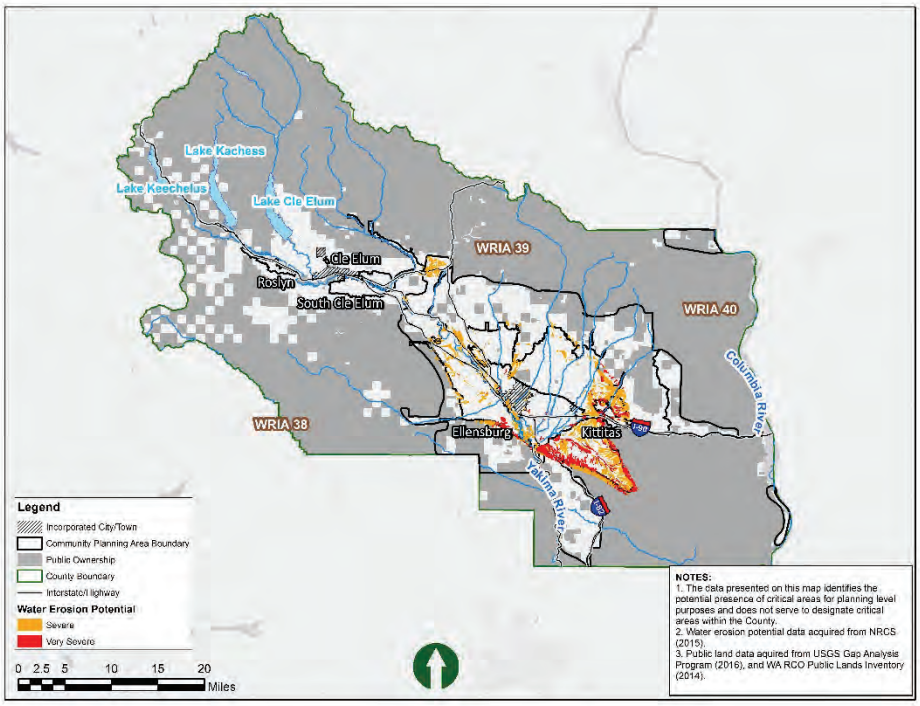
### *3.1.4 Geologically Hazardous Areas*

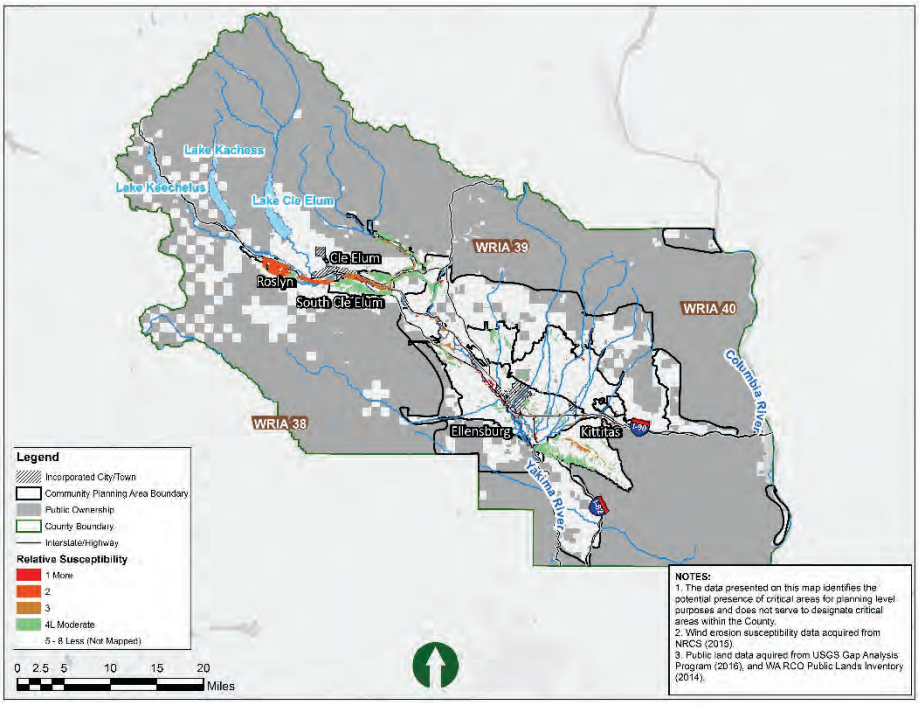
**Characteristics and functions overview:** This Work Plan addresses only a narrow focus for geologic hazards related to instability of steep slopes and potential for water and wind erosion. These are included for maintaining agricultural viability by keeping productive soils in fields used to produce 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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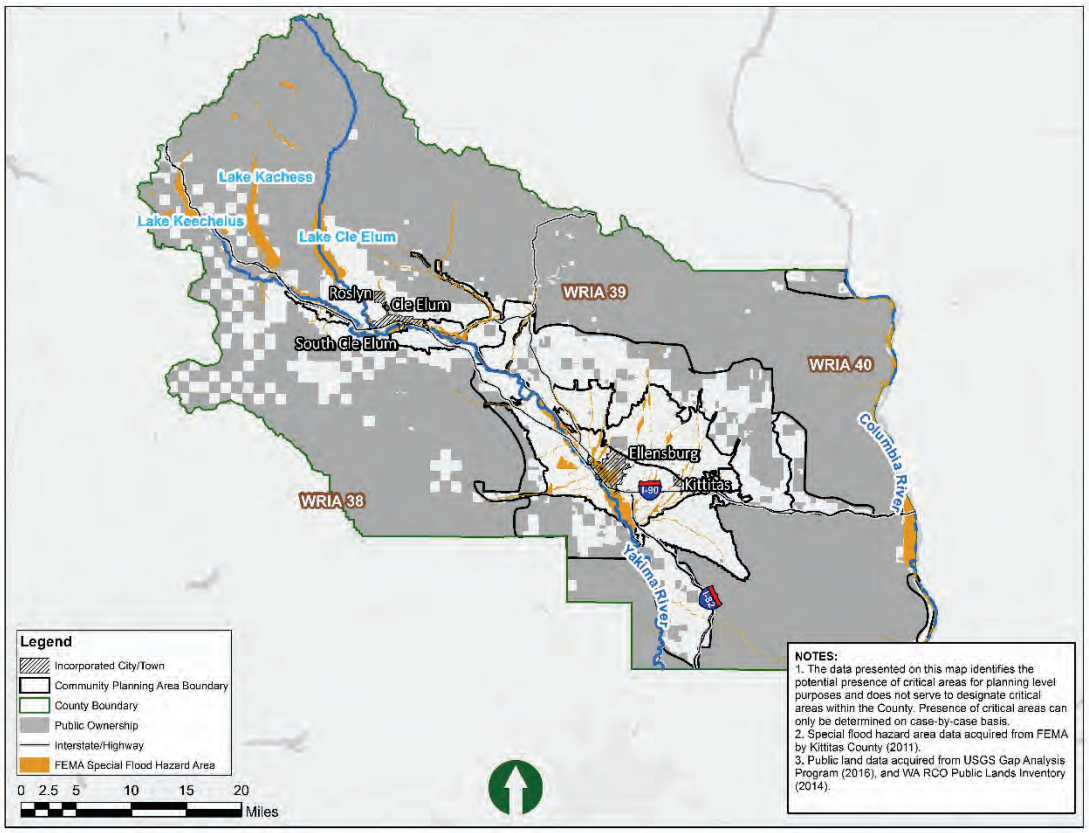
### *3.1.5 Frequently Flooded Areas*

**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 |

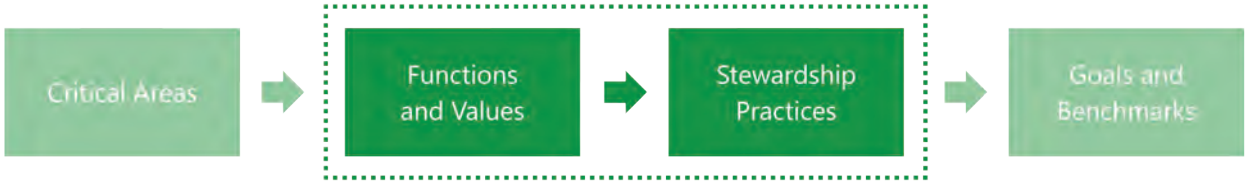
Overall, the Work Plan has been designed to support and promote the regional and individual farm agricultural viability elements listed above. The program places emphasis on systems, practices, flexibility, incentives, and other opportunities mutually beneficial to agricultural viability and critical 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 NCRS 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.

583 **Table 4-2**
584 **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 |

585

586 ### *4.2.1 NRCS Conservation Practices*

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

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

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

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

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

**Table 4-3**
**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 |

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

### *4.2.2 Conservation District Led Practices*

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

**Table 4-4**
**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 (FSA), 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

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

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

The Yakima River Basin Integrated Water Resource Management Plan (Yakima Basin Integrated Plan) includes a suite of actions that benefit both agricultural viability and critical areas. These include fish habitat enhancement projects on the Yakima River and its tributaries and enhanced water conservation efforts. Several projects have been funded through the Yakima Basin Integrated Plan on private lands in Kittitas County. This includes a series of projects on Manastash Creek that supplemented and expanded the efforts of the KCCD and the Manastash Creek Steering Committee.

Additionally, water conservation efforts recommended in the Yakima Basin Integrated Plan include lining or piping irrigation canals, improving water management and accounting, and installing on-farm water conservation improvements. Habitat restoration efforts are also recommended including the removal of fish passage barriers and stream, floodplain, and riparian habitat improvements. Projects that are funded under this program are reviewed by subcommittees and ultimately selected by the Yakima River Basin Water Enhancement Project Conservation Advisory 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 Yakima Basin 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 Basin Integrated Plan – Toppenish to Teanaway Project

Under the umbrella of the Yakima Basin Integrated Plan, the KCCD and the Yakama Nation applied together for funding through the USDA NRCS's Regional Conservation Partnership Program (RCPP). 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 USDA NRCS, Washington State Department of Ecology, Washington Department of Fish and Wildlife, and Washington State Conservation Commission (WSCC) through private lands programs and assistance, such as the Farmed Smart Partnership and Aquatic Land Enhancement Account (ALEA).

### 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.

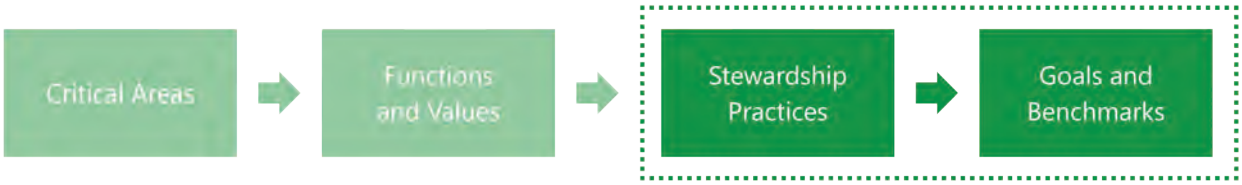
# 5 Goals and Measurable Benchmarks

RCW 36.70A.720(1) requires this Work Plan include goals and benchmarks for the protection and enhancement of critical areas. The benchmarks must be measurable and designed to result in the protection of critical area functions and values and the enhancement of critical areas functions and values through voluntary, incentive-based measures.

This section of the Work Plan identifies:

- **Goals** for protecting and enhancing the County's critical areas, and the four associated major critical areas functions and values: 1) water quality; 2) hydrology; 3) soil; and 4) fish and wildlife habitat. See Section 2.3 for additional discussion on these four major functions and their relationship to the five types of critical areas.
- **Measurable benchmarks** for protection and enhancement of critical areas based on participation in key stewardship strategies and practices. See Section 4 for additional discussion on the connection between stewardship strategies and critical areas functions. Section 5.2 further discusses the methods used to identify functional effects of stewardship strategies and practices.
- **Indicators** for measurable metrics that can be analyzed over time to help assess whether anticipated protection and enhancement of critical areas and their functions is occurring, and focus technical assistance efforts where needed.
- **Monitoring and adaptive management plan** to adjust the Work Plan's benchmarks and activities based on performance results and review of indicators analyzed through monitoring efforts.

**Figure 5-1**
**VSP Crosswalk – Stewardship Practices Connection with Goals and Benchmarks**




## 5.1 Goals

The VSP law requires VSP Work Plans include measurable benchmarks for the protection and enhancement of critical area functions and values, along with goals for participation by agricultural operators (RCW 36.70A.720 (1)(c)) to meet these benchmarks. Additionally, Work Plans are required to incorporate applicable data and plans into development of Work Plan goals and benchmarks (RCW 36.70A.720 (1)(a)). This section identifies the following elements in support of RCW 36.70A.720 (1)(a) and (c); and Section 5.2 includes measurable benchmarks:

- **Goals:** Participation goals are defined for the protection and enhancement of the County's critical areas and key functions.
- **Agricultural viability:** The ancillary benefits to agricultural production, profitability, and sustainability are also noted for each goal, as well as when financial assistance may be necessary to offset costs associated with implementing stewardship practices, including the purchase of associated equipment or other costs.
- **Objectives:** Objectives are identified for each goal to help define specific applications that further each goal. To accomplish these objectives, agricultural producers can implement the stewardship practices that are applicable to their land, agriculturally viable, and protect and/or enhance the critical area functions.
- **Key stewardship practices:** Example stewardship practices are tied to each objective; however, it is acknowledged other practices, including those administered outside of established government programs, can also help meet the objectives. Additionally, it is understood that new practices may emerge, and existing practices may be phased out during implementation of this Work Plan. Selection of example stewardship practices for each objective are based upon Conservation Practice Physical Effect (CPPE) scores for each practice (Appendix C).
- **Existing plans:** Existing plans are also referenced where applicable to identified goals. See Appendix D for additional discussion on review of applicable data and plans as a part of the process for establishing measurable benchmarks and associated indicators.

742 **Table 5-1**
743 **Wetland Protection and Enhancement Goals**

**Goal #1: Protect and/or enhance wetland functions.**

**Protection and enhancement:** Special emphasis on key functions provided by wetlands

| Key Functions | Wetland Functions |
|---|---|
| **Water Quality** | • Reduces downstream sediment load and erosion<br>• Provides water filtration<br>• Sequesters pollutants and nutrients |
| **Hydrology** | • Stores water to reduce flooding and contributes to base flows |
| **Habitat** | • Provides aquatic and woody vegetated habitat for fish and wildlife<br>• Provides off channel refuge during high flows fish bearing stream connections |

**Agricultural viability:** This goal will be achieved while sustaining agriculture viability through:

- Ancillary benefits from implemented stewardship practices (improved soil function/soil preservation, improved water availability, weed management, increased pollinators/beneficial organisms, and increased fertility)
- Reducing regulatory uncertainty associated with priority habitat degradation and species decline
- Reducing costs associated with lost ecosystem services (e.g., flood control and water filtration)
- Reducing input costs associated with nutrient, pest, and water management
- Financial incentives to offset start-up costs for new practices and infrastructure

| Objectives | Key Stewardship Practices | Existing Plans |
|---|---|---|
| Protect and voluntarily enhance acres managed using strategies that provide direct protections to wetlands and wetland buffers. | • Riparian Herbaceous Cover/Filter Strips<br>• Fencing<br>• Heavy Use Protection<br>• Stream Crossing | • Washington Department of Fish and Wildlife's Management Recommendations for Washington's Priority Habitats and Species: Riparian<br>• *Yakima River Basin Integrated Water Resource Management Plan (2012)* |
| Protect and enhance acres managed using strategies that promote water quality and hydrology functions by reducing erosion and improving water storage and filtration. | • Range Planting<br>• Managed Grazing<br>• Streambank and Shoreline Protection | • *Yakima River Basin Integrated Water Resource Management Plan (2012)*<br>• *Naneum, Wilson, and Cherry Creeks Watershed Phase I Assessment (2017)* |
| Protect and enhance acres managed using strategies that promote water quality and aquatic habitat functions by reducing inputs from runoff. | • Irrigation Water Management<br>• Sprinkler Systems<br>• Nutrient Management<br>• Riparian Herbaceous Cover/Filter Strips | • Existing water quality data, such as Washington State Department of Ecology 303(d) list (see Appendix D for full list)<br>• *Yakima Steelhead Recovery Plan (2009)*<br>• *Yakima River Basin Integrated Water Resource Management Plan (2012)*<br>• *Naneum, Wilson, and Cherry Creeks Watershed Phase I Assessment (2017)* |

744

745 **Table 5-2**
746 **HCA Protection and Enhancement Goals**

**Goal #2: Protect and/or enhance fish and wildlife habitat conservation area functions.**

**Protection and enhancement:** Special emphasis on key functions provided by fish and wildlife habitat conservation areas (HCAs)

| Key Functions | HCA Functions |
|---|---|
| **Water Quality** | • Reduces siltation by stabilization streambanks from riparian vegetation<br>• Provides water filtration, sequestration of pollutants<br>• Reduces water temperature by providing shade |
| **Hydrology** | • Stores and retains water to reduce flooding and support base flows in streams |
| **Soil** | • Reduces rate of erosion by providing vegetative cover |
| **Habitat** | • Provides spawning, rearing and migratory habitat for fish, and riparian also provides refuge, nesting, and rearing areas for wildlife<br>• Provides aquatic habitat by supplying organic inputs (e.g., leaf fall, insects, and large wood)<br>• Supports sensitive species lifecycles with forage, refuge, and migratory corridors |

**Agricultural viability:** This goal will be achieved while sustaining agriculture viability through:

- Reducing regulation uncertainty associated with priority habitat degradation and species decline
- Ancillary agriculture benefits from implemented practices (soil conservation, water conservation, weed management, and pollinator/beneficial organism)
- Reducing costs associated with lost ecosystem services (e.g., flood control and water filtration)
- Financial incentives to offset start-up costs for new practices and infrastructure

| Objectives | Key Stewardship Practices | Existing Plans |
|---|---|---|
| Protect and/or enhance acres managed using strategies that promote habitat functions by restoring or creating new habitat structures. | • Stream Habitat and Improvement Management<br>• Streambank and Shoreline Protection<br>• Riparian Herbaceous Cover<br>• Habitat Restoration<br>• Tree/Shrub Establishment | • Washington Department of Fish and Wildlife's Management Recommendations for Washington's Priority Habitats and Species:<br>– Shrub-steppe<br>– Riparian<br>• Washington Department of Natural Resources Natural Heritage Program (rare plants and ecosystems)<br>• *Yakima Steelhead Recovery Plan (2009)*<br>• *Yakima River Basin Integrated Water Resource Management Plan (2012)*<br>• *Washington Connected Habitats Project (2010)* |
| Protect and/or enhance acres managed using strategies that promote habitat functions by limiting trampling of habitat. | • Managed Grazing<br>• Watering Facilities<br>• Fencing<br>• Access Control | |

| Goal #2: Protect and/or enhance fish and wildlife habitat conservation area functions. | | |
|---|---|---|
| Protect and/or enhance acres managed using strategies that promote water availability for aquatic species and agricultural benefits. | • Irrigation Water Management<br>• Irrigation Pipeline<br>• Sprinkler Systems<br>• Trust Water | • *Yakima Steelhead Recovery Plan (2009)*<br>• *Yakima River Basin Integrated Water Resource Management Plan (2012)*<br>• *Kittitas County Hazard Mitigation Plan (2012)*<br>• *Naneum, Wilson, and Cherry Creeks Watershed Phase I Assessment (2017)* |
| Protect and/or enhance acres managed using strategies to protect fish-bearing streams and limit shoreline and watercourse degradation and enhance shoreline areas and watercourses. | • Stream Habitat Improvement and Management<br>• Streambank and Shoreline Protection<br>• Watering Facility<br>• Riparian Herbaceous Cover<br>• Fish and Wildlife Structure | • *Yakima Steelhead Recovery Plan (2009)*<br>• *Yakima River Basin Integrated Water Resource Management Plan (2012)* |
| Protect and/or enhance acres managed using strategies that promote water quality and aquatic habitat functions by reducing inputs from runoff (surface water quality). | • Irrigation Water Management<br>• Irrigation Pipeline<br>• Sprinkler Systems<br>• Trust Water<br>• Nutrient Management<br>• Pest Management<br>• Riparian Herbaceous Cover/Filter Strips | • Existing water quality data, such as Washington State Department of Ecology 303(d) list (see Appendix D for full list)<br>• *Yakima Steelhead Recovery Plan (2009)*<br>• *Yakima River Basin Integrated Water Resource Management Plan (2012)*<br>• *Naneum, Wilson, and Cherry Creeks Watershed Phase I Assessment (2017)* |

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748 **Table 5-3**
749 **CARA Protection and Enhancement Goals**

**Goal #3: Protect and/or enhance critical aquifer recharge area functions.**

**Protection and enhancement:** Special emphasis on key functions provided by CARAs

| Key Functions | CARA Functions |
|---|---|
| **Water Quality** | • Infiltration through soil column and underlying geology improves groundwater quality |
| **Hydrology** | • Recharges groundwater resources |

**Agricultural viability:** This goal will be achieved while sustaining agriculture viability through:

- Ancillary agriculture benefits from implemented practices (increased soil, increased soil moisture, increased water use efficiency, weed management, pollinator/beneficial organism, and increased fertility)
- Reducing input costs associated with chemicals
- Reducing costs associated with irrigation and livestock watering
- Financial incentives to offset start-up costs for new practices and infrastructure
- Hazardous materials spill containment and cleanup

| Objectives | Key Stewardship Practices | Existing Plans |
|---|---|---|
| Protect and/or enhance acres managed to protect shallow groundwater wells by managing chemical and nutrient input controls. | • Irrigation Water Management<br>• Sprinkler Systems<br>• Nutrient Management<br>• Pest Management | • Existing municipal and public water system well monitoring data<br>• *Yakima River Basin Integrated Water Resource Management Plan (2012)* |
| Protect and/or enhance acres managed to promote natural groundwater filtration functions. | • Tree/Shrub Establishment<br>• Range Planting<br>• Managed Grazing | |
| Protect and/or enhance acres managed to promote hydrology functions by improving water conservation. | • Irrigation Water Management<br>• Sprinkler Systems<br>• Pipelines | |

750

751 **Table 5-4**
752 **GHA (Erosion Hazard) Protection and Enhancement Goals**

**Goal #4: Protect and/or enhance geologically hazardous area (erosion hazard) functions.**

**Protection and enhancement:** Special emphasis on key functions provided by geologically hazardous areas (GHAs) for erosion hazards

| Key Functions | GHA Functions |
|---|---|
| **Water Quality** | • Rate of soil erosion and associated movement of sediment deposited in surface waterbodies |
| **Hydrology** | • Rate of groundwater infiltration and rate of surface water runoff |
| **Soil** | • Rate of erosion as it relates to arable soil depth |
| **Habitat** | • Rate of erosion as it relates to sediment inputs to stream and wetland aquatic habitat |

**Agricultural viability:** This goal will be achieved while sustaining agriculture viability through:

- Preserving land available for agriculture
- Ancillary agriculture benefits from implemented practices (increased soil moisture, improved water availability, weed management, and pollinator/beneficial organism)
- Reducing costs associated with soil replenishment and flood cleanup
- Financial incentives to offset start-up costs for new practices and infrastructure

| Objectives | Key Stewardship Practices | Existing Plans |
|---|---|---|
| Protect and/or enhance acres managed using strategies that promote water quality, hydrology, soil, and habitat functions by reducing erosion and improving water storage and filtration. | • Range Planting<br>• Managed Grazing<br>• Sprinkler Systems<br>• Pipelines | • Existing water quality data, such as Washington State Department of Ecology 303(d) list (see Appendix D for full list)<br>• *Yakima Steelhead Recovery Plan (2009)*<br>• *Naneum, Wilson, and Cherry Creeks Watershed Phase I Assessment (2017)* |

753

754 **Table 5-5**
755 **FFA Protection and Enhancement Goals**

**Goal #5: Protect and/or enhance frequently flooded area (FFA) functions.**

**Protection and enhancement:** Special emphasis on key functions provided by frequently flooded areas (FFAs) for erosion hazards

| Key Functions | FFA Functions |
|---|---|
| **Water Quality** | • Vegetation in FFAs holds underlying soil in place and also provides area for new sediment depositions to settle out<br>• Moderates water temperature by shallow groundwater infiltration and releases from unconfined aquifers of cooler groundwater back to streams, and by vegetation that can provide shade |
| **Hydrology** | • Stores and retains surface water surface in floodplain, reducing velocities and modifying discharge rates<br>• Recharges groundwater that can later be returned to the stream to help maintain base flow |
| **Soil** | • Supports moisture content in soils, reduces rate of erosion, and supports plant growth that can increase organic inputs to soil |
| **Habitat** | • Provides aquatic and riparian habitats for wildlife, plants, and fish |

**Agricultural viability:** This goal will be achieved while sustaining agriculture viability through:

- Ancillary agriculture benefits from implemented practices (maximize availability of surface withdrawals for irrigation, flood control benefits/soil preservation, weed management, and pollinator/beneficial organism)
- Reducing costs associated with flood management and flood cleanup
- Financial incentives to offset start-up costs for new practices and infrastructure

| Objectives | Key Stewardship Practices | Existing Plans |
|---|---|---|
| Protect and/or enhance frequently flooded areas directly | • Riparian Herbaceous Cover<br>• Riparian Forest Buffer<br>• Tree & Shrub Planting<br>• Fencing<br>• Heavy Use Protection | • *Kittitas County Hazard Mitigation Plan (2012)*<br>• *Yakima Steelhead Recovery Plan (2009)*<br>• *Yakima River Basin Integrated Water Resource Management Plan (2012)*<br>• *Naneum, Wilson, and Cherry Creeks Watershed Phase I Assessment (2017)* |
| Protect and/or enhance acres managed using techniques that limit soil compaction or trampling of habitat | • Managed Grazing<br>• Watering Facilities<br>• Fencing | |
| Protect and/or enhance acres managed using strategies that promote water quality, hydrology, soil, and habitat functions by reducing erosion and improving water storage and filtration. | • Range Planting<br>• Managed Grazing<br>• Sprinkler Systems | |

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## 5.2 Measurable Benchmarks

### *5.2.1 Methods*

This section identifies the measurable benchmarks required by RCW 36.70A.720 (1)(e) for: 1) protection of critical area functions and value; and 2) enhancement critical areas functions and values through voluntary, incentive-based measures. Protection and enhancement benchmarks are based on agricultural producer participation in key stewardship strategies that further the Work Plans goals identified in Section 5.1.

Benchmarks are measured by tracking new and continued implementations of various stewardship practices and associated stewardship on agricultural lands. Over time, the implementation of these stewardship practices will be used to demonstrate that VSP is meeting the protection goals and determine whether VSP is achieving the enhancement goals and benchmarks. See Appendix C for initial results based on 2011 to 2016 participation data in key stewardship practices.

The Work Plan includes two measurable benchmarks per RCW 36.70A.720 (1)(e):

- **Protection Benchmarks** (preventing the degradation of baseline functions existing July 22, 2011) – The protection benchmark must be met to continue the voluntary, non-regulatory approach under VSP. For each protection goal, participation benchmarks are also identified and are designed to provide quantifiable measures that will ensure protection of the County's critical area functions and values is being achieved.
- **Enhancement Benchmarks** (enhancements improve baseline critical area functions and values through voluntary and incentive based measures) – Meeting enhancement goals is encouraged, but not required, to continue the voluntary, non-regulatory program under VSP for protecting critical areas. At each 5-year benchmark reporting period, voluntary enhancements of critical area conditions on lands used for agricultural activities are promoted and accounted for. Benchmarks for enhancement are specific to the County and indicate if voluntary measures are leading to desired improvements in critical area functions and values. Enhancement also provides a measure of certainty that the VSP protection goal will be met if some unforeseen, future agricultural related loss of critical area function(s) and/or value(s) occurs.

Benchmark quantities for stewardship practice enrollment are provided in 5-year reporting increments (2021 and 2026). The methods used to establish protection and enhancement benchmark values for stewardship practice participation included:

- **Measuring historical enrollment data** in key stewardship practices to develop an average annual enrollment quantity for each practice.

- **Connecting stewardship practices with specific benchmark goals** based on the CPPE scores for each practice developed by USDA (NRCS 2017). CPPE scores range between -5 and +5, with positive scores denoting a beneficial effect, and negative scores having an adverse effect. USDA CPPE scores were averaged for the four key functions, adjusted to include scoring criteria applicable to Kittitas County. See Appendix C for details on how averaged CPPE scores were developed for Kittitas County. The CPPE scoring is an interim step in determining whether protection and/or enhancement has occurred compared to the VSP 2011 baseline. Under VSP, the relative changes in functions affected from a given conservation practice will be tracked, e.g., a +4 increase moving to from a -2 to +2, rather than the CPPE score of +2.
- **Setting anticipated disenrollment rate** of agriculture lands that may not continue to maintain the stewardship practice past the required lifespan or following the end of a contract, or for other disenrollment reasons. Disenrollment or abandonment of practices can be monitored to reduce this rate further based on actual data.
- **Setting protection benchmarks and performance objectives** (see Table 5-7) by summing the enrollment goal for similar practices that maintain baseline conditions of critical area functions through replacing lost functions associated with discontinuation of practices (acres calculated by anticipated discontinuation rates; see Table 4-2). Monitoring and tracking of the protection benchmark will be refined during implementation.

| Change from 2011 Baseline Condition | = | Newly Enrolled Acres x Physical Effects Score | – | Disenrolled Acres x Physical Effect Score |
|---|---|---|---|---|

**What is Conservation Practice Physical Effect?**

The CPPE describes how NRCS practices affect human-economic environment (e.g., agricultural viability) and natural resources (e.g., critical areas functions). This planning tool provides a quantitative score detailing the magnitude of the practice's effect on the resource. Technical reports for each practice also include a qualitative statement on the impact of each practice on soil, water, air, plants, animals, energy and labor, capital, and risk. A summary of the practices with CPPE scores are provided in Appendix C. The implementation team will use discretion in determining which CPPE best represents the physical effects of stewardship practices on critical areas in the County based on local conditions and practices.

- **Setting enhancement benchmarks and performance objectives by:**
  - Anticipated levels of future funding based on historic levels of stewardship funding and estimates of future funding available through identified programs including the RCPP, which is funded through 2021. However, the amount of funding will affect the amount

of enhancement that occurs within the County. Including project acres that have implemented between 2011 and 2016 above the protection performance objectives.

- Enhancement benchmarks and performance objectives are in addition to the protection benchmarks; therefore, estimated discontinuation acres have been incorporated into the enhancement benchmark (see Table 5-7). Monitoring and tracking of the enhancement benchmark will be refined during implementation.

| | | | | | | |
|---|---|---|---|---|---|---|
| **Enhancement above 2011 Baseline Condition** | = | **Anticipated Enrolled Acres x Physical Effect Score** *(Based on 2017 to 2027 project data)* | + | **Historic Enrolled Acres x Physical Effect Score** *(Based on 2011 to 2016 enrollment data)* | — | **Disenrolled Acres x Physical Effect Score** |

**Rapid Watershed Assessments**

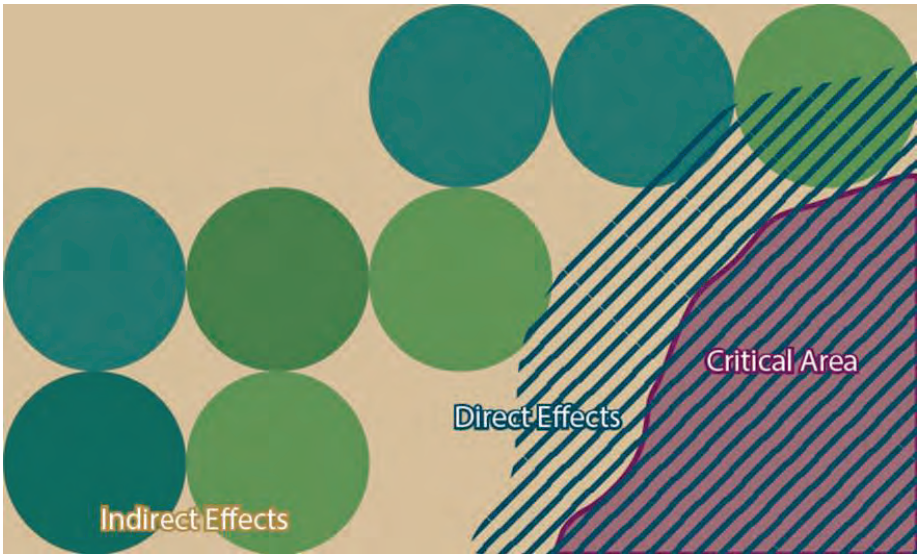
The KCCD has developed planning matrices (for each community planning area) that identify the following values:

- Resource concerns (e.g., water availability, fish passage) and locally appropriate stewardship practices to address these concerns
- The anticipated effects of implementing stewardship practices
- Funding mechanisms toward VSP implementation

Planning matrices for each community planning area are provided in Appendix C. These tools provide a valuable mechanism toward implementing the VSP and monitoring its success, as well as providing a localized approached to developing benchmark values.

Stewardship practices can be implemented within or directly adjacent to a critical area (see Figure 5-2 for a conceptual representation). An example of a direct effect would include implementing wetland restoration practices within or adjacent to an existing wetland critical area. Indirect effects occur within agricultural areas that are not adjacent to or within critical areas but still have indirect effects on resource functions.

**Figure 5-2**
**Direct and Indirect Effects of Practices on Critical Area Functions**




## *5.2.2 Benchmarks*

Work Plan benchmarks are focused on measuring and tracking producer participation in implementing key stewardship practices identified by the Watershed Group as having a benefit to one or more critical area functions and values.

Table 5-6 provides a crosswalk of the key stewardship practices identified for the Work Plan benchmarks to critical areas, function protections based on the overall averaged CPPE function effects score, and agricultural viability aims. The CPPE scoring shown in Table 5-6 indicates the most beneficial effects (enhancements) to functions in green boxes (+5), no effect (0), and the most detrimental effects to functions in orange (-5). See Appendix C for additional information on methods applied for linking stewardship practices to function protections using CPPE function effects and a more comprehensive list of stewardship practices.

Table 5-7 provides a summary of protection and enhancement measurable participation benchmarks for the 5-year reporting increments (2021 and 2026). In predicting benchmark values for enhancement, KCCD typically assumed 70% implementation would likely occur within the first 5-year reporting timeframe (2021) while VSP implementation and outreach is developed and conducted, and 30% would occur within the second 5-year reporting timeframe (2026). The protection performance standard for each stewardship practice is based on historic records. New practices will often replace an existing practice. Trends in stewardship practices and updates to the protection performance standard that reflect the move to new stewardship practices will be included in the 2- and 5-year reports. Benchmarks may be adjusted through adaptive management as needed to reflect the higher or lower physical effect of the new practice.

**Table 5-6**
**Key Stewardship Practices Crosswalk to National Functions Scores, Critical Areas, and Agricultural Viability**

| Key Stewardship Strategies | | | Critical Area Functions Protection Metrics (averaged CPPE Function Effects Score)[2] | | | | Critical Area Protections | | | | | Agricultural Viability | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Type** | **NRCS Code** | **Key Practices[1]** | **Soil** | **Hydrology** | **Water Quality** | **F&W Habitat** | **WET** | **HAB** | **CARA** | **GHA** | **FFA** | **Aims** | **CPPE Metric[2]** |
| **Water Management** | 449 | Irrigation Water Management | 2.25 | 2.00 | 2.55 | 3.50 | • | • | • | • | | • Protect against erosion risk<br>• Protect soil function<br>• Improve water availability<br>• Reduce input costs | 1.56 |
| | 441 | Micro-irrigation | 0.50 | 2.00 | 2.00 | 1.00 | | | | | | | 1.53 |
| | 430 | Pipeline | 1.00 | 1.33 | 1.14 | 0.00 | | | | | | | 3.00 |
| | 442 | Sprinkler System | 1.25 | 2.25 | 1.55 | 1.00 | | | | | | | 1.00 |
| **Nutrient Management** | 590 | Nutrient Management | 0.83 | 0.00 | 3.50 | 0.00 | • | • | • | | | • Protect soil function<br>• Reduce invasive and nuisance species<br>• Reduce input costs | 1.55 |
| **Pest Management** | 595 | Pest Management | 2.00 | 0.00 | 4.00 | 2.00 | • | • | • | • | | • Protect soil function<br>• Reduce invasive and nuisance species<br>• Provide pollinator species/beneficial organisms habitat | 1.00 |
| **Soil Management** | 340 | Cover Crop | 2.46 | 1.40 | 3.00 | 2.00 | • | • | | • | | • Protect against erosion risk<br>• Protect soil function<br>• Reduce invasive and nuisance species<br>• Provide pollinator species/beneficial organisms habitat<br>• Promote yield and fertility | 1.93 |
| | 484 | Mulching | 2.50 | 0.60 | 0.83 | 1.00 | | | | | | | 2.18 |
| **Range Management[3]** | 550 | Range Planting | 3.10 | 0.75 | 1.33 | 2.67 | • | • | | • | • | • Protect against erosion risk<br>• Protect soil function<br>• Reduce invasive and nuisance species<br>• Promote yield and fertility | 1.70 |
| | 528 | Managed Grazing | 3.00 | 1.50 | 2.50 | 3.00 | | | | | | | 1.50 |
| | 614 | Watering Facility | 1.10 | 0.00 | 1.71 | 4.00 | | | | | | | 0.00 |
| **Habitat Management** | 395 | Stream Habitat Improvement and Management | 2.50 | 0.00 | 2.00 | 3.00 | • | • | | • | • | • Protect against erosion risk<br>• Protect soil function<br>• Reduce invasive and nuisance species<br>• Provide pollinator species/beneficial organisms habitat | 1.18 |
| | 390 | Riparian Herbaceous Cover | 2.79 | 0.33 | 2.50 | 3.50 | | | | | | | 1.50 |
| | 391 | Riparian Forest Buffer | 2.47 | 0.67 | 2.83 | 4.00 | | | | | | | 1.92 |
| | 612 | Tree/Shrub Establishment | 2.97 | 1.50 | 2.08 | 3.00 | | | | | | | 2.21 |
| | 382 | Fence | 2.00 | 0.00 | 2.00 | 1.00 | | | | | | | 1.30 |
| **Stream Enhancement** | 580 | Streambank and Shoreline Protection | 2.00 | 0.00 | 1.25 | 1.50 | • | • | | • | | • Protect against erosion risk<br>• Protect soil function<br>• Reduce invasive and nuisance species<br>• Promote yield and fertility | 1.09 |
| | 396 | Aquatic Organism Passage | 0.00 | 0.00 | 2.00 | 2.67 | | | | | | | 1.22 |
| | 587 | Structure for Water Control | 0.00 | 2.00 | 1.00 | -1.00 | | | | | | | 1.44 |

Notes:
1. Key practices include those practices that address resource concerns and critical areas function protections and are widely implemented, anticipated for continued application, or identified as major practice trends anticipated in the future.
2. The NRCS CPPE matrix was relied upon to develop an average function effects scores for the key function and practices. See Appendix C for full suite of stewardship practices CPPE scores.
3. Livestock management stewardship focuses on key practices that address on-field resource concerns and management.

**Table 5-7**

**Protection and/or Enhancement Benchmarks and Objectives (Enhancement Benchmarks Only Include Irrigated Areas, to be Updated with Other Areas)**

| Stewardship Strategies | | | Historical Enrollment Data (2011 – 2016) | | Protection Benchmarks and Performance Objectives [b,c] | | | Enhancement Benchmarks and Performance Objectives [b, c] | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Type | | Key Stewardship Practices[a] | Average Annual Enrollment in Key Practices | Estimated Yearly Disenrollment | Benchmark | 2021 Performance Objective (Disenrollment x 10)[d] | 2026 Performance Objective (Disenrollment x 15)[d] | Benchmark | 2021 Performance Objective | 2026 Performance Objective |
| Indirect Intersects | Water Management | • Irrigation Water Management<br>• Sprinkler System<br>• Micro-irrigation | 1,043 acres | 31 acres | No net loss in acres under water management | 313 acres | 469 acres | Enrolled units (e.g., acres and feet) based on:<br>• Implemented projects from 2011 – 2016<br>• Anticipated projects funded for stewardship practices from 2017 –2027[f]<br>• Estimated annual disenrollment since 2011 at time of reporting | 22,112 acres | 31,589 acres |
| | | • Irrigation Pipeline | 16,913 feet | 507 feet | No net loss in feet under water management | 5,074 feet | 7,611 feet | | 213,893 feet | 305,561 feet |
| | Nutrient Management | • Nutrient Management | 120 acres | 8 acres | No net loss in acres under nutrient management | 84 acres | 126 acres | | 6,343 acres | 9,062 acres |
| | Pest Management | • Pest Management | 234 acres | 16 acres | No net loss in acres under pest management | 164 acres | 246 acres | | 914 acres | 1306 acres |
| | Soil Management | • Cover Crop<br>• Mulching | 919 acres | 64 acres | No net loss in acres under soil management | 643 acres | 965 acres | | 4,447 acres | 6,353 acres |
| | Range Management[e] | • Range Planting<br>• Managed Grazing | 238 acres | 17 acres | No net loss in acres under range management | 167 acres | 250 acres | | 867 acres | 1,239 acres |
| | | • Stock Watering Facility | 19 facilities | <1 facility | No net loss of feet providing forest enhancement | 5 facilities | 8 facilities | | 74 facilities | 105 facilities |
| Direct Intersects | Habitat Management | • Stream Habitat Improvement and Management<br>• Riparian Herbaceous Cover<br>• Riparian Forest Buffer<br>• Tree/Shrub Establishment | 287 acres | 20 acres | No net loss in acres under habitat management<br>No net loss of feet providing habitat management | 201 acres | 302 acres | | 1,010 acres | 1,443 acres |
| | | • Fence | 28,407 feet | 852 feet | No net loss of feet providing habitat management | 8,522 feet | 12,783 feet | | 156,667 feet | 223,810 feet |
| | Stream Enhancement | • Streambank and Shoreline Protection | 119 feet | 4 feet | No net loss in acres under stream enhancement<br>No net loss of feet providing stream enhancement | 36 feet | 53 feet | | 886 feet | 1,266 feet |
| | | • Aquatic Species Passage<br>• Structure for Water Control | 3 projects | <1 project | | 1 project | 2 projects | | 27 projects | 38 projects |

Notes:

a. Key practices include those practices that address resource concerns and critical areas function protections and are widely implemented, anticipated for continued application, or identified as major practice trends anticipated in the future.
b. Measurable benchmarks are based upon the historic NRCS participation data (2011 to 2016) in key practices (see Note a). No net loss and enhancements will be measured based on estimated annual disenrollment rates for key practices from the 2011 baseline.
c. Benchmarks are anticipated to be adapted as new technologies and practices are applied by producers and unanticipated changes in environmental and market conditions would be addressed through the adaptive management process. Protection benchmarks are based on estimated disenrollment rates. A more accurate estimate and understanding of which practices are discontinued can be used to modify these benchmarks.
d. Number is years between 2011 and benchmark year.
e. Livestock management stewardship focuses on key practices that address on-field resource concerns and management.
f. If the funding received is less than anticipated, enhancement benchmarks may be lower than predicted. However, as of 2017 the amount of implemented stewardship practices in the County are above the protection benchmark and all additional stewardship practices are providing enhancement of critical areas functions and values.

## 5.3 Indicators

Indicators are measurable metrics associated with specific environmental variables (e.g., stream flow at a particular location). Metrics can be monitored and analyzed over time to understand longer term trends related to specific critical area functions and values. Indicators affected by both agricultural and non-agricultural factors will generally not be used for purposes of determining whether protection of baseline conditions is being achieved or goals and benchmarks are being met due to the cost and difficulty involved in separating agricultural effects from non-agricultural effects. Such indicators may, however, be used to identify resource trends and focus enhancement efforts on high priority areas or specific functions. Indicator data will be reviewed at least every 5 years to help focus technical assistance efforts and assess if the anticipated protection and/or enhancement of critical area functions is occurring. If an indicator shows a loss or gain in the baseline condition for a critical area function, it can be compared to the performance objectives for stewardship practices implemented.

If this analysis does not account for the change, a more targeted evaluation and analysis of the specific effects of agricultural activities can be made for the applicable parameter(s). This analysis would be used to inform if the VSP is meeting the protection standard for critical area functions within agricultural areas and the degree to which non-agricultural factors are influencing one or more indicators.

The following indicators relate to the four major critical area functions:

- **Water quality indicators** will include Category 4 and 5 303(d) listings, focused on parameters that potentially have an agricultural source. Category 4 includes polluted waters that do not require a Total Maximum Daily Load (TMDL), and Category 5 waters are polluted and require a TMDL or other water quality improvement project. Appendix B-6 provides a listing of these parameters found in Kittitas County in 2016, acknowledging these parameters may be updated in the future. 303(d) listings within the County can be monitored using Washington State Department of Ecology's Water Quality tools found online at http://www.ecy.wa.gov/programs/wq/303d/index.html.
- **Hydrology indicators** will include tracking flow gauges through the U.S. Geological Survey (USGS), Washington State Department of Ecology, U.S. Bureau of Reclamation, Kittitas Reclamation District (KRD), or other agencies. USGS water data is available online at https://www2.usgs.gov/water/. Washington State Department of Ecology water data is available online at https://fortress.wa.gov/ecy/eap/flows/regions/state.asp. U.S. Bureau of Reclamation has gauges along the mainstem Yakima River, water monitoring sites can be found online at https://www.usbr.gov/pn/hydromet/yakima/yaktea.html. KRD monitoring occurs mostly on irrigation canals and is available online at:

http://krdistrict.org/manageme.htm. Groundwater monitoring wells are also present in Kittitas County to monitor groundwater quantity.

- **Soil function indicators** will include USDA Natural Resources Inventory (NRI) monitoring results related to erosion and soil functions and fertility. This monitoring should focus on locations within or adjacent to critical areas in relation to erosion issues, allowing for more natural erosion rates upland of critical areas. Interactive data viewers at the State level are available online at https://www.nrcs.usda.gov/wps/portal/nrcs/rca/national/technical/nra/rca/ida/.
- **Habitat indicators** will include evaluation of publicly available aerial imagery at the 5- and 10-year performance review periods, based upon adequate resources provided through the state for VSP program implementation to assess critical area resource protections (primarily HCAs and wetlands). Imagery evaluation will include a random sampling of areas[4] within the Work Plan's community planning areas. Analysis results will be summarized in the reporting at Community Area and County scales. Individual parcels will not be identified and producer privacy will be maintained in the evaluation process. Priority habitats and species data available through Washington Department of Fish and Wildlife will also be evaluated in addition to other related information that might or is expected to become available in the future, such as remote sensing through Washington Department of Fish and Wildlife's High Resolution Change Detection program, LiDAR, or other GIS approaches for habitat assessment, if this information is made available to Kittitas County. Additionally, ground-truthing will be needed to ensure that change detection data made available fits the scope and jurisdiction of the VSP. In addition to remotely sensed data, fish abundance and distribution can be monitored and track using passive integrated transponder (PIT) tag array, redd count, radio telemetry, and screw trap data. Once data are obtained, analysis will be needed to determine if agricultural activities are the cause of any identified degradations. Review of PHS updates and other relevant information comparisons against the 2011 baseline conditions will be done in coordination with Washington Department of Fish and Wildlife.

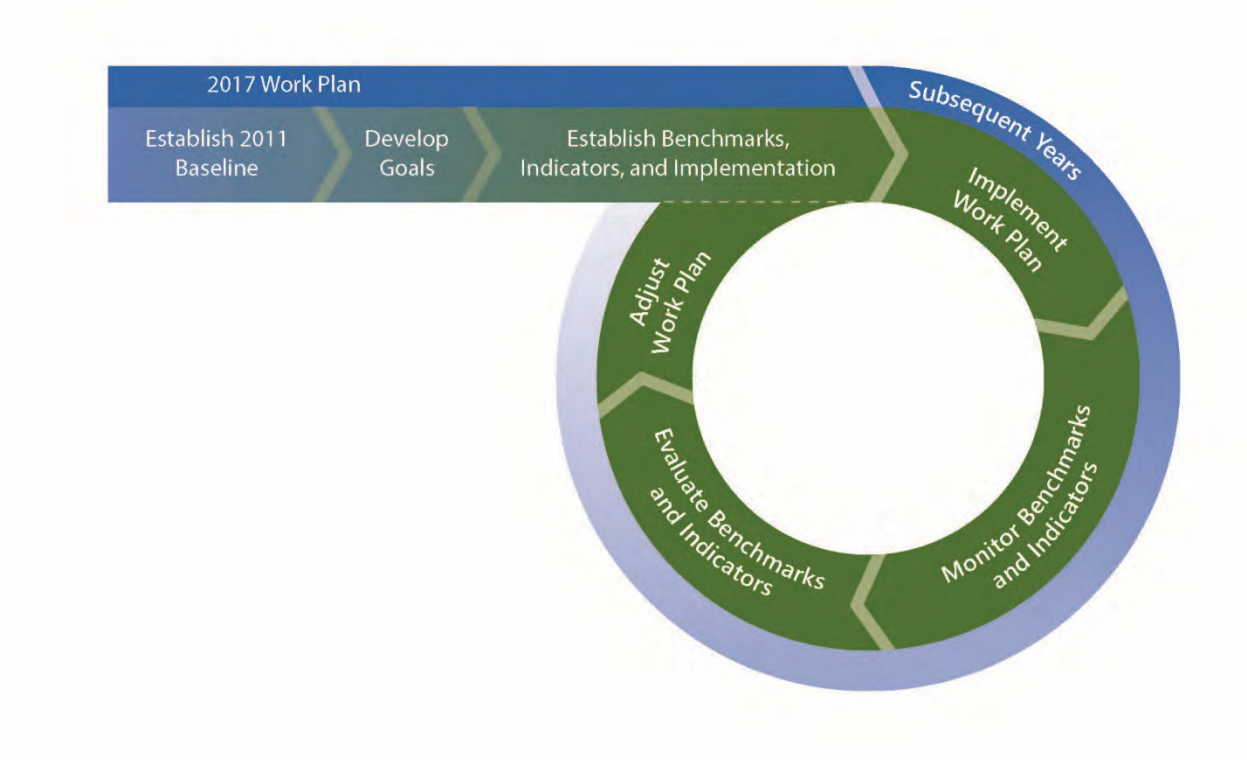
Indicators provide important information for evaluating the Kittitas County VSP performance and informing adaptive management decisions as described in Section 5.4. Indicators may not be determinative of VSP success in maintaining 2011 baseline or better conditions as affected by agricultural activities as opposed to other changes at the landscape scale such as urbanization, major fire events, or long term climatic trends.

[4] Random sample areas will include a representation of lands for VSP participants as well as other lands that may or may not have practices implemented on them, and these results will be extrapolated to the larger community areas and the County, in an effort to more accurately characterize critical areas protections achieved.

## 5.4 Monitoring and Adaptive Management

Adaptive management typically consists of a monitoring system to identify changes in the environment coupled with a response system to adjust the activities based on performance results and review of indicators information. The adaptive management system would be applied if the performance review in Year 5 of implementation suggests the VSP program may not be protective of critical areas functions existing in 2011. The adaptive management system for the Kittitas County VSP consists of the following five key sequential elements, as illustrated in Figure 5-3:

**Figure 5-3**
**Adaptive Management System**




1. **Assess** – Data on participation goals and the indicators previously described are compiled by KCCD. The compiled information is used to identify issues, refine objectives, and understand if benchmarks are effective in protecting or enhancing critical area functions and values, and if indicators are sufficient to understand any change to critical area functions and values.
2. **Update Benchmarks** – Based on the results of the assessment stage, updates to the protections and enhancement benchmarks could occur. These updates could represent changes to the level of participation necessary to meet a specific protection or enhancement standard. These updates could also reflect a change in the goals for a specific watershed or critical area function, or a shift from one set of conservation practices to another.
3. **Implement and Monitor** – The approved Work Plan is put into action, concurrently with monitoring focused on documenting the protection and enhancement of critical area functions

and values. Monitoring data are collected on various indicators and used to determine if specific functions and values are being protected.

4. **Evaluate** – Participation data are evaluated relative to the protection and enhancement goals. Differences between targeted goals and results are identified, and the causes for those differences are investigated, including consideration of participation measures and indicators. Goal adjustments are made as needed to maintain protection of critical area functions and values.
5. **Adjust** – Information learned in previous steps is used to adjust the participation benchmarks, stewardship practices, or level of incentive for enhancement.

**Considering the Changes to Baseline Conditions**
It's important to note changes to baseline conditions outside of VSP are likely to occur due to effects from climate change, natural events (e.g., floods, wild fires), or other changes outside of the scope of VSP (e.g., forest practices). Additional changes to baseline may occur in the 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 agriculture for VSP assessment purposes and will be documented through the reporting and adaptive management process.

The adaptive management process is iterative and would repeat cyclically at least every 5 years, as part of the implementation of the VSP. If an adjustment is identified, the Watershed Group would submit a written report identifying the results of the evaluation and a strategy to make the necessary adjustments to the Work Plan to the WSCC. If an adjustment is not necessary, then the report would simply state the results of the evaluation. In either case, the process of adaptive management would be applied at least every 5 years.

Monitoring and adaptive management is based on two strategies

1. **Direct monitoring** of producer participation (Table 5-9)
    a. **Enrolled acres monitoring**. Direct monitoring of stewardship participation (enrolled acres) in key stewardship practices is integral to the outreach strategy. Participation goals were developed based on agricultural activities, critical area functions, and the anticipated effects of implementing specific stewardship practices. During outreach and implementation, enrollment data will be frequently reviewed to determine if participation levels are adequate to meet the goals and benchmarks identified in Section 5.1 and 5.2.
    b. **Sample verification.** In addition to monitoring enrollment acres, KCCD will also monitor a randomly selected sample of 10% of the reported projects, including self-reported/funded, to verify the performance of the stewardship practices in terms of implementation/application and maintenance, relying on the CPPE framework. The relative changes in functions affected from a given stewardship practice will be tracked in relation to baseline conditions, e.g., a +2 CPPE score for a practice will be captured as a +4 if practices are moving to from a -2 to +2.

c. **Adaptive management trigger.** If at any point after the first year the annual producer participation rate drops below 120% of the rate needed to meet the protection benchmark, measures would be taken to understand the situation. Since the trigger is above the necessary participation rate this allows the implementer to adjust before the protection benchmark is in jeopardy. Participation goals and objectives with potential adaptive management actions are described in Table 5-8.

d. **Adaptive management process.** Table 5-9 includes a more detailed description of the adaptive management process for enrollment, including specific thresholds for each of the key practices.

2. **Indirect monitoring** of indicators of critical areas and their functions and values (Table 5-10)

a. **Indicators**. Indicators, identified in Section 5.3, will be used to assess whether the enrollment in VSP is having the anticipated effect of protecting and/or enhancing critical area functions and values. If enrollment goals are met, but indicators show a negative trend in critical area functions and values, it will be important to analyze whether this is related to agriculture, and respond accordingly.

b. **VSP applicability.** Some indicators (e.g., stream temperature) may be responding to changes other than agricultural activities (e.g., climactic variability, reservoir operations). Where a link to changes in agricultural activities can be made, it may be important to also understand the contribution of other factors. Indicators of negative impacts related to changes in agriculture since 2011 would trigger additional stewardship practices, higher enrollment goals, or increased outreach as needed to mitigate these impacts. Because detection of long-term trends in environmental indicators is difficult, this review will occur every 5 years as part of VSP reporting.

c. **Process.** Table 5-10 includes a description of how environmental indicators discussed in Section 5.3 will be used to refine the goals and benchmarks of the VSP over time.

**Table 5-8**
**Producer Participation Goal and Adaptive Management for Low Enrollment**

| **Participation Goal:** Promote producer participation in voluntary stewardship of agricultural lands and critical areas to meet the protection and enhancement benchmarks and protect critical areas functions and values at a County-wide watershed level. | | | | | |
|---|---|---|---|---|---|
| **Objectives/Benchmarks** | **Performance Metric/Monitoring Method** | **Identified Cause/ Adaptive Management Threshold** | **Adaptive Management Action** | **Who Monitors** | **When** |
| Sufficient active participation by commercial and non-commercial agricultural operators (farmers and ranchers) over 10 years that achieves the protection of critical area functions and values at a County-wide watershed level.[1] | • Number of acres reported in key stewardship practices<br>• Number of VSP checklists submitted<br>• Sufficient producer participation necessary to meet protection and enhancement benchmarks | Key practice not consistent with agricultural viability | Identify alternative practices that provide similar function and are agriculturally viable | VSP Coordinator | Monitored every year<br>Reported during the Two-year status reports and<br>Five-year performance reports |
| | | Incentives associated with key stewardship practice no longer available | Identify alternative funding or alternative practices that are more likely to be self-funded | | |
| | | Inadequate reporting of voluntary participation | Increase outreach to producers | | |
| | | Change in agricultural practices that make key practices less applicable | Develop applicable practices that provide similar function | | |
| | | Changes in agricultural economy that make self-funded stewardship practice implementation difficult | Identify alternative funding or other incentives | | |
| Passive participation by commercial and noncommercial agricultural operators in VSP stewardship practices is maintained or increased over 10 years on agricultural land (including but not limited to those listed in Table 5-6 and Appendix C, Attachment 2).[2] | • Mapping and aerial photo evaluation and/or rapid watershed assessment of practices in place<br>• Random sampling of farmers and ranchers in the field by technical assistance providers with willing landowners | Decline below the annual average enrollment rate identified in Table 5-9 in key stewardship practices | Increase outreach to producers | | |
| Technical assistance and outreach is provided to agricultural producers to encourage stewardship practices and VSP participation. | • Number of outreach and education events<br>• Number of event attendees | Decline below the baseline annual average enrollment rate identified in Table 5-9 in key stewardship practices | Increase outreach to producers | | |

Notes:
1. Active participation includes stewardship activities reported either through publicly-funded programs or self-reported through the VSP checklist in coordination with the VSP Coordinator or technical assistance provider.
2. Passive participation includes un-reported stewardship activities.

**Table 5-9**
**Adaptive Management Process for Enrollment**

| Type | Adaptive Management Objective | Protection Metric[1] (Annual) | Verification | Adaptive Management Trigger (120 % of Protection Metric) (Annual) | Adaptive Management Action | Who Monitors | When |
|---|---|---|---|---|---|---|---|
| Soil Management | Mulching | 64 acres | 10% verified through monitoring and visual recognition | 77 acres | Outreach with producers/review approach | Conservation District | Every year |
| | Cover Crop | | | | | | |
| Water Management | Irrigation Water Management | 31 acres | 10% verified through monitoring and visual recognition | 37 acres | Outreach with producers/review approach | Conservation District | Every year |
| | Sprinkler System | | | | | | |
| Nutrient Management | Nutrient Management | 8 acres | 10% verified through monitoring and visual recognition | 10 acres | Outreach with producers/review approach | Conservation District | Every year |
| Pest Management | Pest Management | 16 acres | 10% verified through monitoring and visual recognition | 19 acres | Outreach with producers/review approach | Conservation District | Every year |
| Stream Enhancement | Streambank and shoreline protection | 4 acres | 10% verified through monitoring and visual recognition | 4.5 acres | Outreach with producers/review approach | Conservation District | Every year |
| | Channel Bed Stabilization | | | | | | |
| Range Management | Range Planting | 17 acres | 10% verified through monitoring and visual recognition | 20 acres | Outreach with producers/review approach | Conservation District | Every year |
| | Prescribed Grazing | | | | | | |
| | Watering Facility | 1 facility | | 1 facility | | | |
| Habitat Management | Tree/Shrub Establishment | 20 acres | 10% verified through monitoring and visual recognition | 24 acres | Outreach with producers/review approach | Conservation District | Every year |
| | Restoration of Rare and Declining Habitats | | | | | | |
| | Upland Wildlife Habitat Management | | | | | | |
| | Fence | 852 feet | | 1,022 feet | | | |

Note:
1. Metric is calculated based on annual to meet 2021 benchmark values identified in Table 5-7.

**Table 5-10**
**Adaptive Management Process for Critical Area Functions and Values Protection and Enhancement**

| Goal | Adaptive Management Objective | Indicator Data Source | Performance Metric | Monitoring Method | Adaptive Management Action Threshold | Adaptive Management Action | Who Monitors | When | Party Responsible for Action |
|---|---|---|---|---|---|---|---|---|---|
| Maintain or improve surface water and groundwater quality | Ensure stewardship practices employed with the goal of protecting or improving water quality are effective | Water quality stations | Change in Category 4 and 5 303(d) listings, focused on parameters that potentially have an agricultural source. | Tracking Category 4 and 5 listings through Washington State Department of Ecology's 303(d) Water Quality tools | Significant trends indicating a decrease from baseline water quality due to agriculture | Determine whether water quality parameters are from agriculture or non-agriculture contributors.<br><br>Survey with outreach to agricultural producers owners along affected watercourse, waterbody and/or CARA to determine % of participation in stewardship<br><br>Identify if enrollment in conservation practices is supporting goals<br><br>Identify stewardship strategies with Watershed Group to target for implementation to support goal | Conservation District | Every 5 years | Conservation District and participating land owners |
| Maintain or improve storage capacity and groundwater recharge | Ensure stewardship practices employed with the goal of maintaining or improving storage capacity and groundwater recharge are effective | Stream flow gauges, groundwater monitoring wells | Changes in flows that are attributable to agricultural practices (as opposed to regional drought) | Tracking water level gauges through USGS Water data | Significant trends indicating a decrease from baseline storage capacity and/or groundwater recharge due to agriculture | Determine whether storage capacity and groundwater recharge issues are due to agriculture<br><br>Survey with outreach to agricultural producers along floodplains and within CARA to determine percentage of participation in stewardship<br><br>Identify if enrollment in conservation practices is supporting goals<br><br>Identify stewardship strategies with Watershed Group to target for implementation to support goal | Conservation District | Every 5 years | Conservation District and participating land owners |
| Maintain or improve soil conservation and soil fertility | Ensure stewardship practices employed with the goal of maintaining or improving soil functions are effective | USDA NRI monitoring result | Changes in volume of soil and/or overall soil fertility relative to critical areas | Tracking soil data through USDA NRI monitoring results, tracking sediment parameter within Washington State Department of Ecology's 303(d) Water Quality tools | Significant trends indicating a decrease from baseline soil and/or soil fertility due to agriculture | Determine whether soil issues are due to agriculture<br><br>Survey with outreach to agricultural producers to determine percentage of participation in stewardship<br><br>Identify if enrollment in stewardship practices is supporting goals<br><br>Identify stewardship strategies with Watershed Group to target for implementation to support goal | Conservation District | Every 5 years | Conservation District and participating land owners |

| Goal | Adaptive Management Objective | Indicator Data Source | Performance Metric | Monitoring Method | Adaptive Management Action Threshold | Adaptive Management Action | Who Monitors | When | Party Responsible for Action |
|---|---|---|---|---|---|---|---|---|---|
| Protect or enhance terrestrial and aquatic habitat | Ensure stewardship practices employed with the goal of protecting or improving habitat are effective | Washington Department of Fish and Wildlife PHS data or other aerial and GIS-based evaluation | Changes in amount of HCAs and wetlands | Tracking PHS data through the Washington Department of Fish and Wildlife<br>Evaluating random sample areas (including a representation of lands with conservation practices documented and lands where practices are not documented) using available aerial imagery, LiDAR, and associated GIS methods | Significant trends indicating a decrease from baseline terrestrial and/or aquatic habitat due to agriculture | Determine whether habitat issues are due to agriculture<br>Survey with outreach to agricultural producers property owners to determine percentage of participation in stewardship<br>Identify if enrollment in stewardship practices is supporting goals<br>Identify stewardship strategies with Watershed Group to target for implementation to support goal | Conservation District | Every 5 years | Conservation District and participating land owners |
| | Ensure stewardship practices employed with the goal of protecting or improving fish species are effective | Fish abundance and distribution | Changes in fish presence and abundance | PIT tag arrays, redd counts, radio telemetry, and screw traps | Significant trends indicating a decrease from baseline fish presence due to agriculture | | | | |

# 6 Implementation

## 6.1 Framework for Implementation

Work Plan implementation is expected to continue largely through established programs and organizations. As noted previously, many agricultural-based programs, activities, and efforts are already in place to protect and, in many cases, enhance critical areas and agricultural viability. Significant progress has been made to these ends in recent years, and is expected to continue under this and other related efforts. These efforts include habitat and fish passage improvements supported by the Yakima Basin Integrated Plan, the Yakima Tributary Access and Habitat Program, and the Yakima Steelhead Recovery Plan. This Work Plan has been designed to fit within this existing framework, with supplemental efforts identified to meet state VSP requirements. These requirements include documenting 2011 critical areas baseline conditions, establishing goals and measurable benchmarks, identifying stewardship practices, and establishing monitoring and adaptive management measures to track Work Plan performance in protecting critical areas and maintaining agricultural viability. The tracking timeframe for this Work Plan is the first 10 years of implementation.

RCW 36.70A.705, the Watershed Group is responsible for developing the Work Plan and overseeing its implementation. Work Plan implementation responsibilities include: agricultural producer participation and outreach; technical assistance; program performance tracking and reporting; and adaptive management. The KCCD and others can help in performing these responsibilities. The anticipated implementation budget for this Work Plan is summarized in Table 6-1, under the

assumption that State funding for VSP is continued at a level of $250,000 each biennium for the County.

**Table 6-1**
**Implementation Budget**

| Task | Activities | Who | Biennium Budgets[1] |
|---|---|---|---|
| Education, Outreach, and Technical Assistance | • Conduct outreach and develop education materials<br>• Assist producers in developing stewardship plans<br>• Facilitate VSP checklist reporting<br>• Identify cost-share to leverage other conservation project funding | KCCD/ VSP Coordinator | $165,000 |
| Monitoring, Reporting, and Adaptive Management | • Annual monitoring and tracking<br>• Develop adaptive management as needed<br>• Prepare 2-year status reports<br>• Prepare 5-year progress reports | KCCD/ VSP Coordinator or contract services | $70,000[2] |
| Watershed Group Coordination | • Attend quarterly meetings<br>• Coordinate report and adaptive management review and approvals | KCCD/ VSP Coordinator | $15,000 |
| | | **Total State Budget** | **$250,000** |

Notes:
1. Assumes State funding for VSP is continued at a level of $250,000 each biennium for the County.
2. Costs will be less in non-reporting years to support annual monitoring and tracking efforts. The majority of budget item will support costs during the 2-year and 5-year reporting years: 2019, 2021, and 2026.

Ultimately, agricultural producers play the most integral role in VSP implementation. Success of the VSP relies on these producers to voluntarily implement stewardship actions that help meet Work Plan goals and benchmarks for critical areas protection and agricultural viability.

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

Many producers are already implementing stewardship actions throughout the County that are protecting or enhancing critical areas and supporting agricultural viability, as described in Section 4. Two participation objectives have been established for Kittitas County VSP implementation:

1. Better identify and document the existing measures that have been put in place since 2011 through private-sector activity and outside of government programs.
2. Increase the level of participation among agricultural producers in implementing stewardship practices and document those efforts going forward.

Regarding the first objective, it is expected the measures summarized in Section 4 represent only a portion of the total measures implemented during this period. Outreach to individual landowners, as well as to private industry groups, is planned in Years 0 to 2 to better document existing practices and identify future practices that might be implemented outside of government programs. Additional outreach and coordination with the private sector, resulting from initial outreach activities, is expected to continue through the remaining 8 years of the initial 10-year performance tracking period.

The second participation objective is focused on increasing the number of stewardship practices implemented by agricultural producers and helping to meet protection and, where possible, enhancement performance goals outlined in Section 5. Achieving this objective includes offering technical assistance to producers with the development of individual farm stewardship plans, identifying and targeting technical assistance and financial incentive programs that further the goals of the Work Plan, and making producers aware of available private- and public-sector financial incentives and programs. This technical assistance would also include helping to estimate the expected benefits that can be realized from implementing the measures identified in individual stewardship plans, including agriculture viability benefits at the farm level. These plans will also be instrumental in tracking voluntary stewardship efforts, and developing better metrics in overall progress toward the benchmarks going forward. VSP success depends on producer participation, and producer participation depends on effective protection of producers' confidential business information from disclosure. According to guidance from the WSCC, statutory provisions on the confidentiality and disclosure of a farm plan also apply to a VSP "individual stewardship plan" that a conservation district helps a producer develop (unless the producer expressly permits disclosure). VSP technical assistance providers can provide more detail on applicable confidentiality and disclosure provisions for particular types of agricultural operations and conservation programs.

**Producer Participation Goal**

In addition to the benchmarks for enrolled acres in stewardship practices identified in Section 5, this Work Plan includes a producer participation goal to help track progress towards the Work Plan's protection and enhancement benchmarks.

It is estimated the reported stewardship practices in the County account for approximately 10% of the County's agricultural operators. This Work Plan includes the goal of **promoting producer participation (as measured either by new enrollment in stewardship practices or new producer reporting) as described in Table 5-8**. New acres enrolled will include new participants in privately-funded practices as captured through reporting for existing and new projects and new participants accounted for in government-funded programs. This goal will be tracked annually with progress reported in the 2-year and 5-year reports.

Results from these efforts will be tracked and documented, along with documenting any lands converted from stewardship practices back to more conventional farming, so the overall net effect on protecting (and where applicable, enhancing) critical areas is characterized.

Although the Work Plan and the goals and benchmarks discussed in Section 5 apply County-wide, KCCD will tailor implementation approaches to address priorities within each community planning unit (see Appendix B-2).

### *6.2.1 Organization Leads*

The KCCD will lead the public-sector program participation efforts, supported by other agencies, such as Washington State Department of Agriculture, Washington Department of Fish and Wildlife, Washington State Department of Ecology, NRCS, and FSA, and others, with their respective programs and support from the private sector. See Section 6.4 and Appendix D for additional detail on public-sector plans, programs, and agency partners that support the goals of this Work Plan.

Technical assistance occurs in a variety of ways, including developing individual farm stewardship or conservation plans, range management plans, providing advice on use of specific practices, and sharing information at forums, meetings, and other venues where stewardship practices are highlighted for environmental and economic benefits (Table 6-2). KCCD will prepare biennial work plans that incorporate public-sector activities to be implemented to achieve VSP outreach and technical assistance objectives, and will identify plans for working with the private sector to capture information about practices put in place through its efforts. See Section 6-4 and Appendix D for additional detail on public-sector plans, programs, and agency partners that support the goals of this Work Plan.

**Table 6-2**
**Potential VSP Outreach Opportunities**

| Venue | Description |
|---|---|
| Tours | • KCCD-led annual tours<br>• Legislative and partner agencies outreach tours<br>• On-farm testing/demonstrations<br>• Field trials |
| Meetings | • KCCD monthly board meetings (public meetings)<br>• KCCD annual meetings<br>• Private-sector agricultural industry-led meetings<br>• Agricultural producer groups (e.g., Farm Bureau, Cattlemen's Association)<br>• County government<br>• Irrigation districts and companies<br>• USDA Big Bend Local Work Group<br>• FSA County Committee |

| Venue | Description |
|---|---|
| Media | • KCCD and private-sector agricultural industry websites, newsletters, and social media sites<br>• WSCC news and announcement webpage<br>• Articles, announcements, and advertisements with local newspapers<br>• E-mail distribution lists<br>• FSA newsletter<br>• Washington State University newsletter |
| Others | • Informational booths and displays at fairs and agricultural conventions<br>• Individual outreach, consistent with KCCD policies<br>• News releases |

## 6.3 Monitoring, Reporting, and Adaptive Management

Monitoring performance, reporting progress on Work Plan goals and benchmarks, and implementing adaptive management measures when necessary are part of this Work Plan. Tracking program performance and reporting includes the following tasks:

- **Two-year status reports.** Conduct a program evaluation and provide a written report on the status of the Work Plan, including accomplishments, to the County and to the WSCC within 60 days (by the end of September) after the end of each biennium. Based on a November 17, 2015 receipt of funding date, 2-year reports are due by end of September in 2019, 2021, 2023, 2025, and 2027.
- **Five-year performance reports.** Develop and provide to the WSCC 5-year progress reports on Work Plan performance in meeting goals and benchmarks. Based on a January 2016 start date, 5-year progress reports would be due in early 2021 and 2026.

The timeline for this implementation process is shown in Table 6-3.

**Table 6-3**
**Timelines for Implementation Process**

| Category | Schedule | Roles and Responsibilities |
|---|---|---|
| Periodic Evaluations | Finalize Work Plan in 2018 (Latest date for approval is Aug. 17, 2018 per WSCC) | Watershed Group |
| | 2019, 2021, et seq. | Watershed Group |
| Report on Goals and Benchmarks | VSP start date in 2016 | Watershed Group oversees; KCCD prepares report |
| | 2021, 2026, et. seq. | |
| Adaptive Management or Additional Voluntary Actions | Ongoing after 2021 | Watershed Group oversees Work Plan adjustment recommendations to WSCC |

The 2-year status and 5-year performance reports would be developed by KCCD under the direction of the Watershed Group. Draft reports would be prepared and presented to the Watershed Group for review and comment. Comments would be addressed and edits made to the reports, which would then be approved by the Watershed Group, after they are satisfied that the reports are accurate and complete. Reports would be distributed to the County, WSCC, and others by KCCD on behalf of the Watershed Group. The general timing for reporting will be as follows:

- Monitoring will focus on the measurable benchmarks described in Section 5 and will include periodic evaluations every 2 years.
- The Watershed Group must report no later than 5 years after receipt of funding (2015 for Kittitas County) on whether the protection and enhancement goals have been met or identify an adaptive management plan to meet VSP goals and benchmarks.
- The Watershed Group must report no later than 10 years after receipt of funding, and every 5 years thereafter, whether it has met the protection and enhancement goals and benchmarks of the Work Plan.

Work plans often need to adapt to changing conditions and observations of results that aren't consistent with established goals. Adaptive management is the process for, "continually improving management policies and practices by learning from the outcomes of the operational programs" (Nyberg 1999). If the Watershed Group determines goals have not been met, they must propose and submit an Adaptive Management Plan to achieve the goals and benchmarks. The adaptive management process is outlined in Section 5. Monitoring indicators will inform the long-term viability of the Adaptive Management Plan, based on goals for protecting critical area functions. Monitoring will focus on the measurable benchmarks and goals also described in Section 5.

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

The GMA was passed by the Washington State legislature in 1990 to help the state manage the growth of development and activities that have the potential to affect sensitive environments and species, including critical areas. The VSP is part of the GMA, but was also written to work with other existing programs, plans, and applicable rules and regulations. The following subsections provide a brief overview of the existing resources used in this Work Plan and describes how they relate to other applicable rules and regulations (the regulatory environment).

### *6.4.1 Existing Public Conservation Programs*

The existing programs, plans, and guidance documents that were used for this Work Plan are from federal conservation programs, local- and county-based watershed and groundwater management programs, and federal, state, and local planning efforts. These resources have been incorporated into this Work Plan to the maximum extent practical, consistent with the intent of the VSP. There are a variety of conservation programs available to agricultural producers that provide technical assistance

and resources for ways to improve the agricultural viability of their land while protecting or enhancing critical areas. Funding opportunities are also available through these programs for qualifying applicants and projects. Table 6-4 includes a comparison of conservation programs that are currently available. Appendix D contains more detail for each program and links to the program's webpages.

**Table 6-4**
**Public Sector Conservation Programs Summary**

| Lead | Description | Technical Assistance[1] | Financial Assistance[2] | Partnership Agreements[3] | Contractor Easement[4] |
|---|---|---|---|---|---|
| NRCS | Provides technical and financial assistance to help agricultural producers make and maintain conservation improvements on their land as well as offers conservation easement programs and partnerships to leverage existing conservation efforts on farm lands | ● | ● | ● | ● |
| FSA | Oversees several voluntary, conservation-related programs that work to address several agriculture-related conservation measures, including programs such as CRP | | ● | | ● |
| WSCC | Works with and supports Conservation Districts to provide voluntary, incentive-based programs for implementation of conservation practices through financial and technical assistance; administrative and operational oversight; program coordination; facilitate conservation easements; and promotion of activities and services | | ● | ● | ● |
| Washington State Department of Fish and Wildlife | Provides financial assistance for habitat projects that restore and/or preserve fish and wildlife habitat through funding opportunities such as the ALEA Volunteer Cooperative Grant Program and technical and financial assistance for fish screening and passage through Yakima Construction Shop | ● | ● | | |
| Washington State Recreation and Conservation Office | Provides funding to protect aquatic lands and for projects aimed at achieving overall salmon recovery, including habitat projects and other activities that result in sustainable and measurable benefits for salmon and other fish species; funding is provided through programs such as ALEA, Washington Wildlife and Recreation Program, and the Salmon Recovery Funding Board Grant Program | | ● | | |
| Washington State Department of Ecology | Provides funding for water-quality improvement and protection projects, including programs such as the Water Quality Financial Assistance program and voluntary partnership programs | | ● | ● | |
| Washington State University Extension | Provides agricultural producers with technical assistance, research, and education services | ● | | | |

| Lead | Description | Technical Assistance[1] | Financial Assistance[2] | Partnership Agreements[3] | Contractor Easement[4] |
|---|---|---|---|---|---|
| KCCD | Works through voluntary, incentive-based programs to assist landowners and agricultural operators with the conservation of natural resources throughout the district, including cost-share and watershed-based partnership programs such as the Yakima Tributary Access & Habitat Program and the "Yakima Basin Integrated Plan – Toppenish to Teanaway" RCPP project | • | • | • | |

Notes:
1. Technical assistance includes providing stewardship practice information or technical resources to producers
2. Financial assistance includes grant or funding opportunities to support stewardship practice implementation
3. Partnership agreements are developed for completing conservation projects in partnership with an agency who has partial ownership
4. Contractor easements include the payment for land to be removed from agricultural production

### *6.4.2 Private-Sector and Not-for-Profit Programs*

Private-sector services and programs are available through existing agri-businesses and associations serving the County such as food-processing companies, certified crop consultants, and agri-businesses providing soil services, and integrated water, pest, and nutrient management services.

### *6.4.3 Existing Plans and Guidance*

Available plans and guidance were referenced for developing the goals and benchmarks in this Work Plan and were obtained from existing federal, state, and local sources, including water quality improvement projects, species and habitat recovery recommendation and guidance, including shrub-steppe restoration and water management plans.

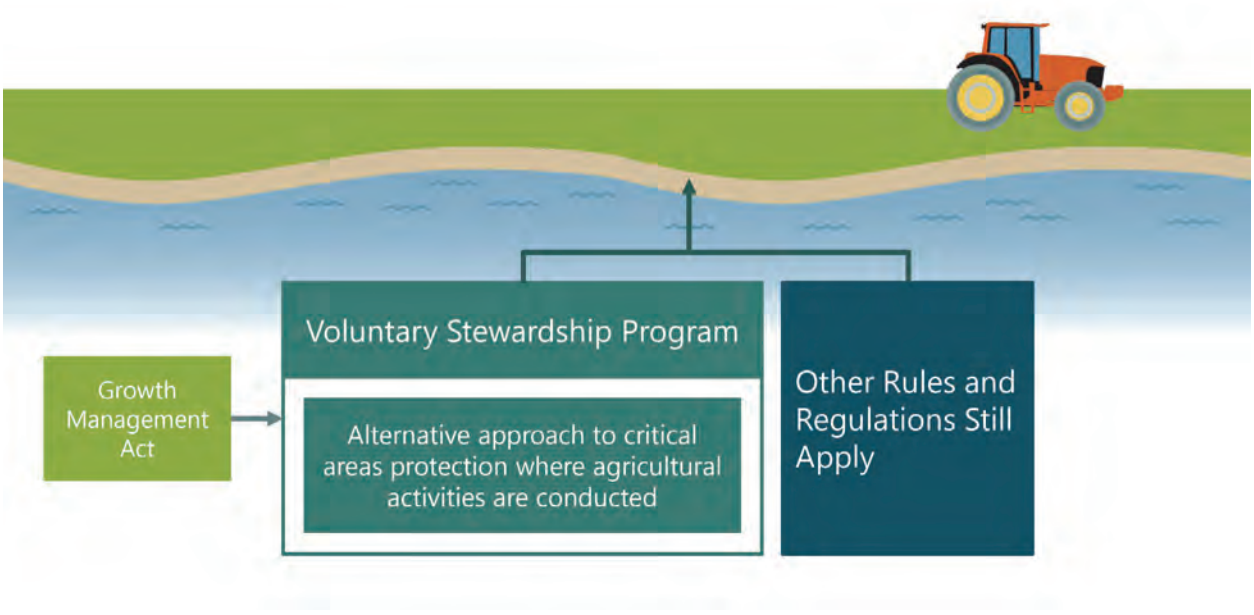
Washington State Department of Ecology has been developing strategies to protect water quality and improve working relationships with agricultural landowners and livestock producers. Washington State Department of Ecology has also established a new Agriculture and Water Quality Advisory Committee comprising a broad array of agricultural participants. The new committee aims to provide an open forum for dialogue regarding water quality protection and a healthy agricultural industry. See Appendix D for a more comprehensive list of existing plans and guidance.

Additionally, the Yakima Basin Integrated Plan includes funding of habitat protections and enhancements and water conservation efforts that agricultural producers can use. These actions will act to ensure a stable supply of irrigation water into the future, which is a crucial component of agricultural viability and provides benefits to critical area functions and values.

### 6.4.4 *Regulatory Environment*

Even though the VSP is carried out under the GMA, other rules and regulations still apply for agricultural activities that have the potential to impact critical areas (Appendix D). Existing federal and state rules and regulations will still apply to agricultural activities that have the potential to affect the environment, including the federal Clean Air Act, Clean Water Act, and Endangered Species Act. Other state and local environmental regulations may also apply to agricultural activities with the potential to affect the environment. Figure 6-1 is intended to show how the VSP relates to other rules and regulations that apply separately from critical areas protection under the GMA.

**Figure 6-1**
**Voluntary Stewardship Program Regulatory Underpinning**



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