

Draft Work Plan Appendices

Adams County Voluntary Stewardship Program

December 2017

Prepared for Adams County and the
Washington State Conservation Commission



Appendix A

VSP Map Folio

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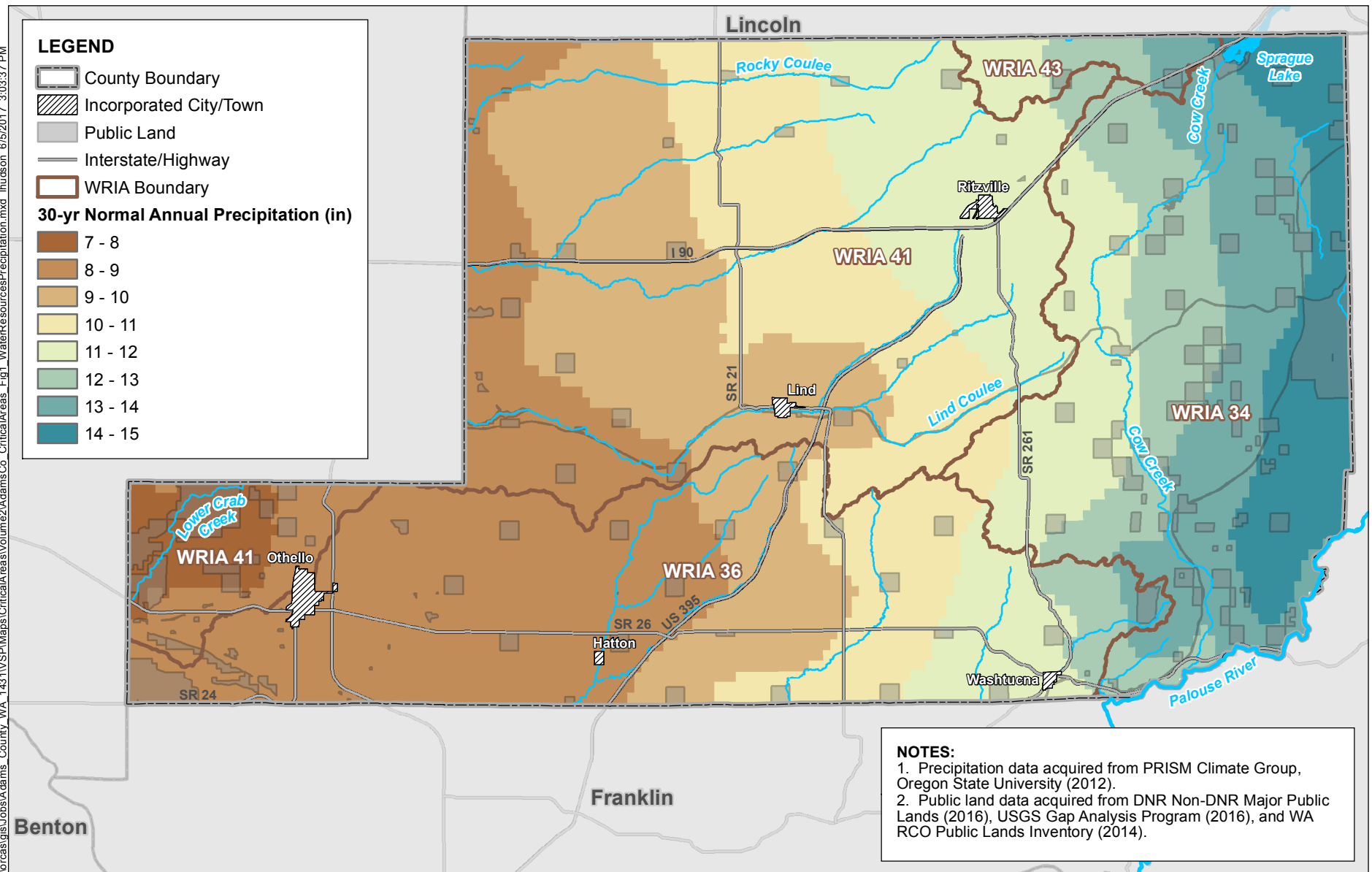
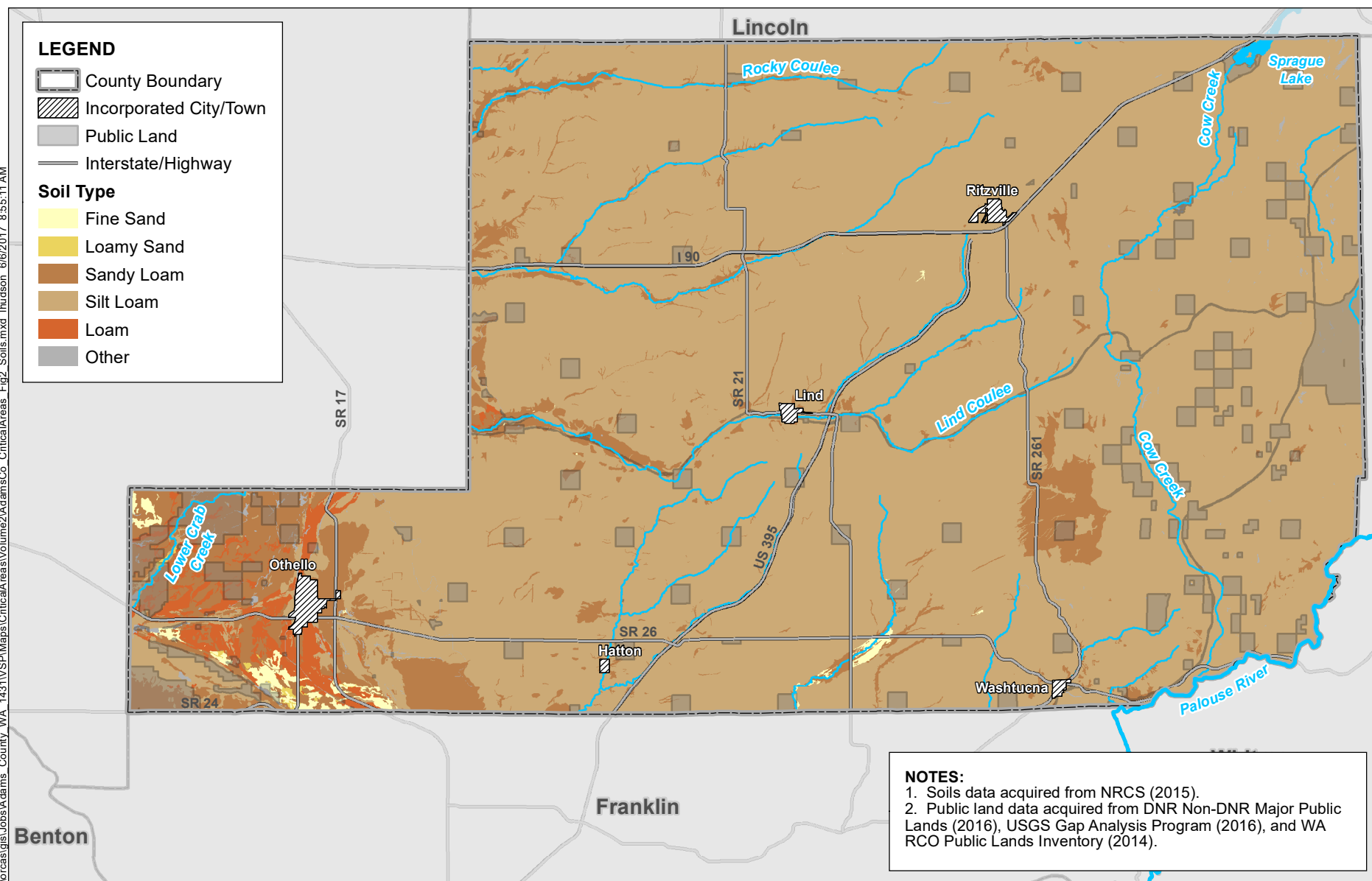


Figure 1
Water Resources and Precipitation Map
Voluntary Stewardship Program
Adams County, WA





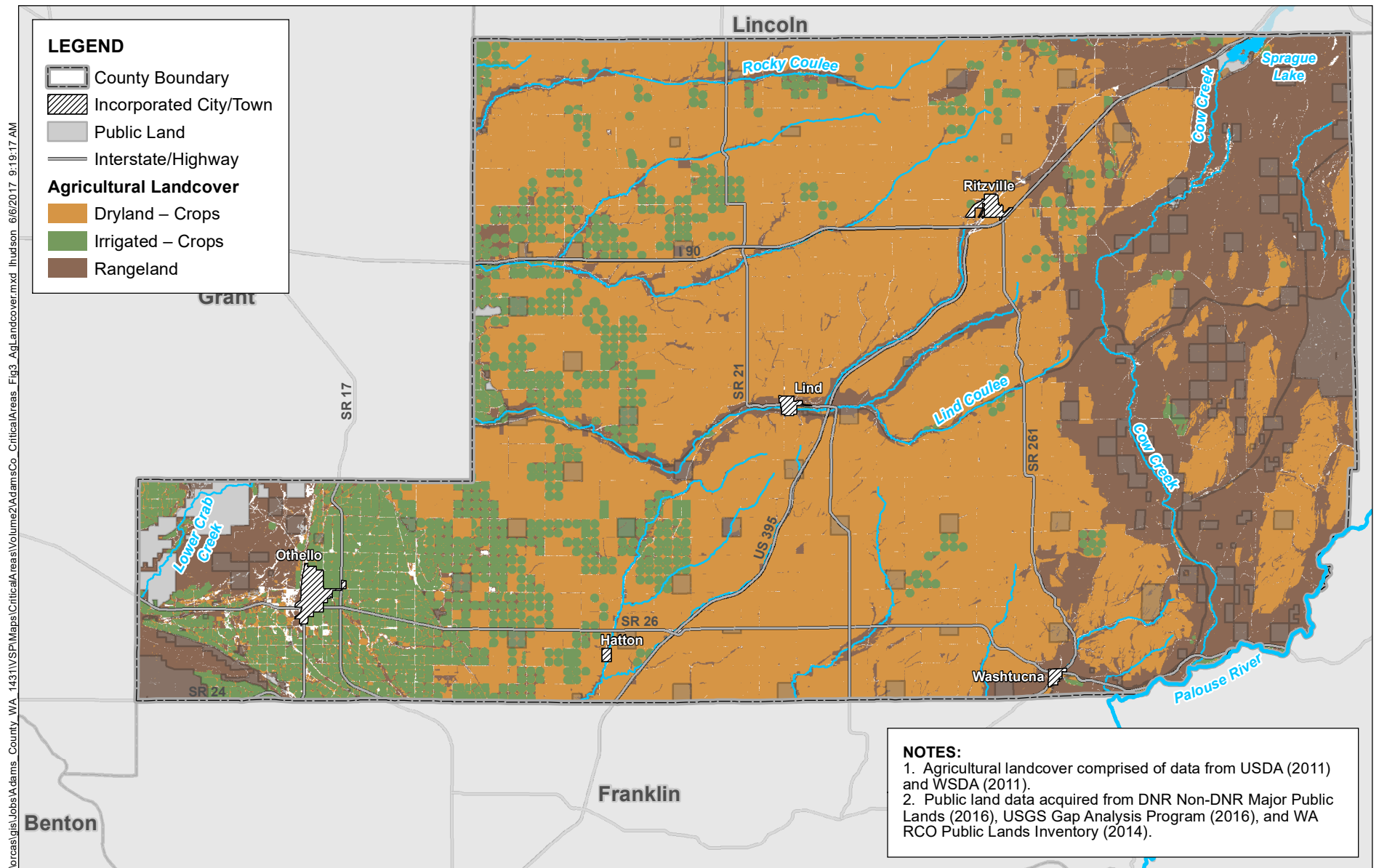
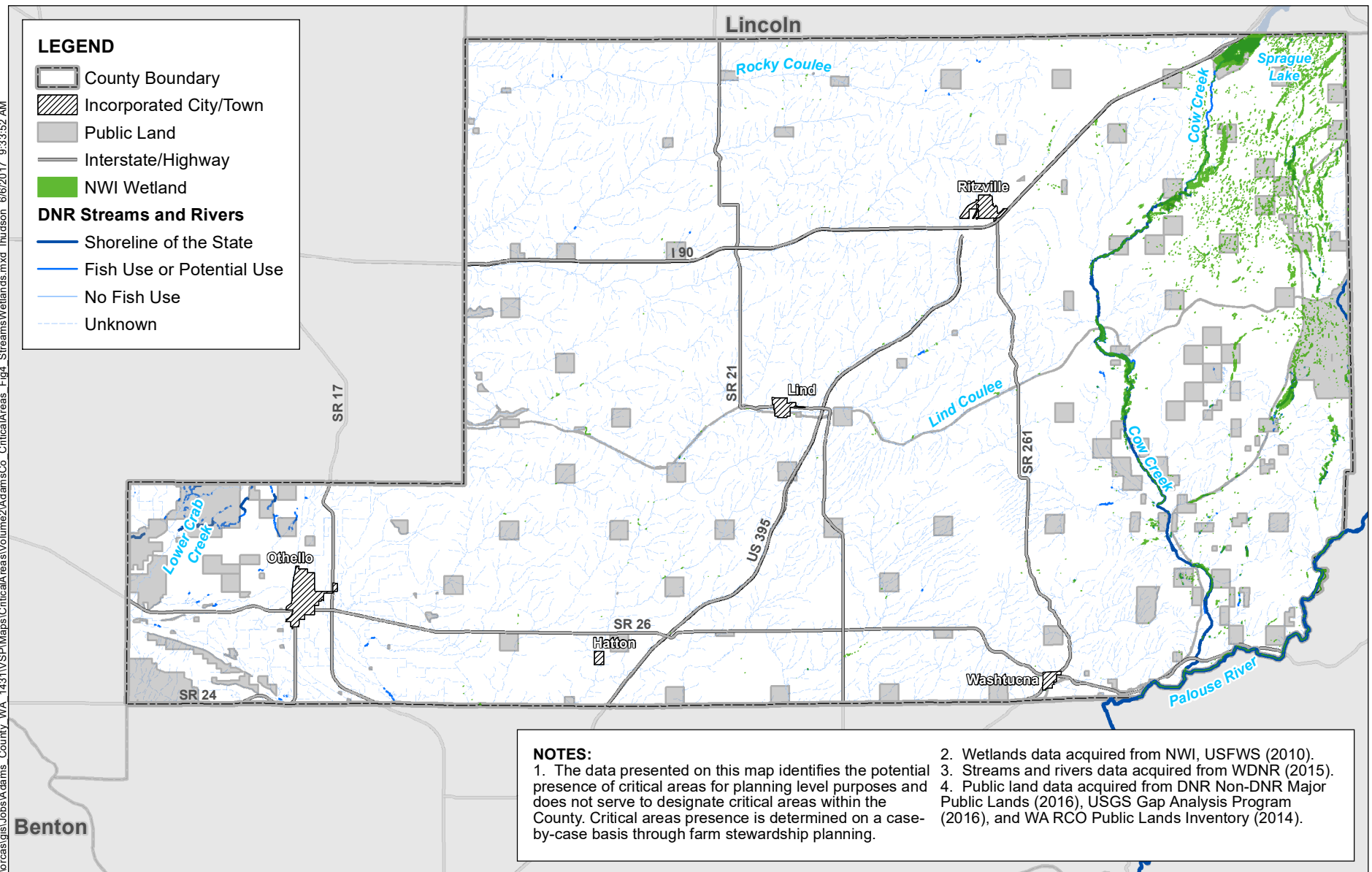
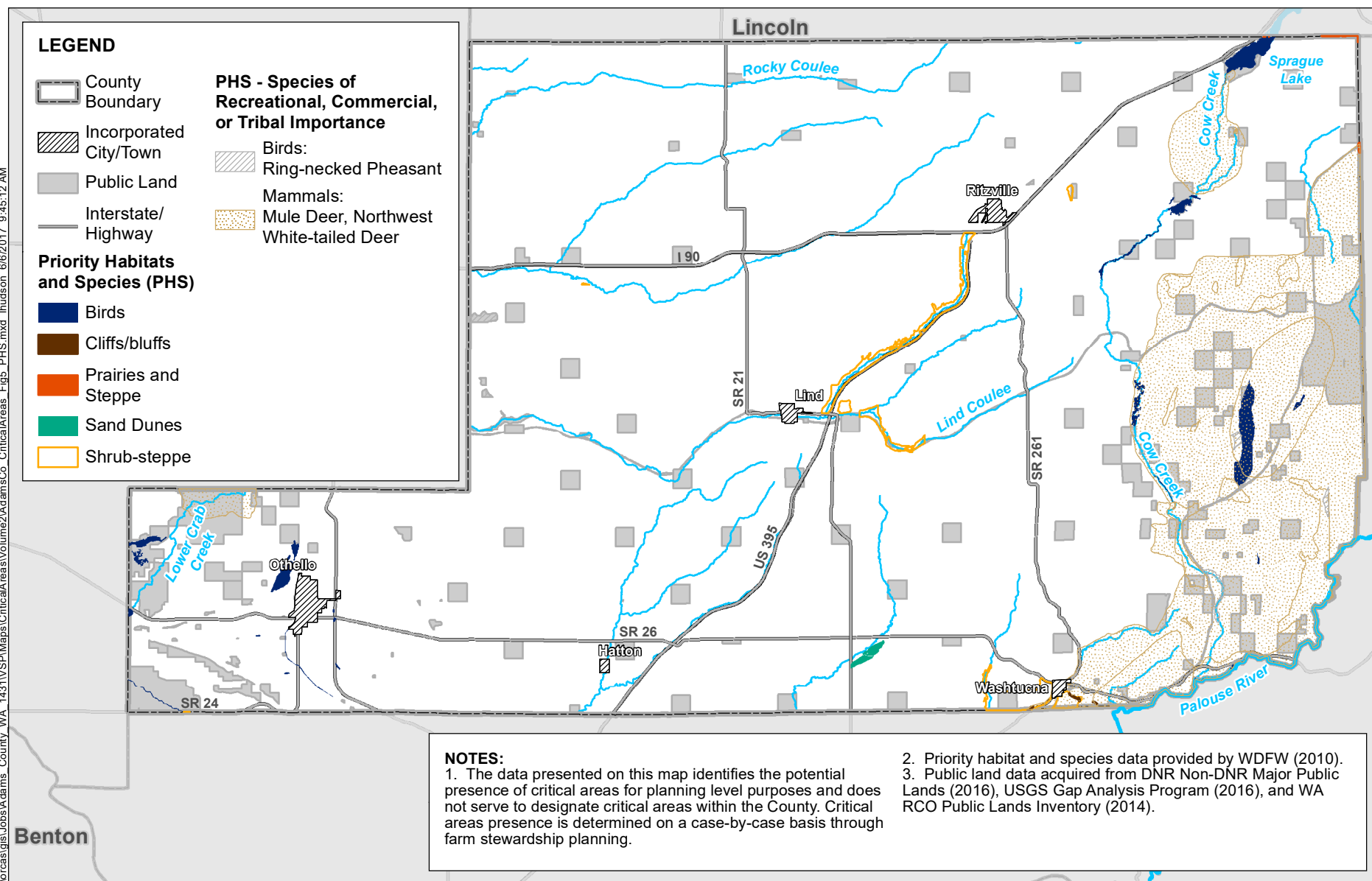
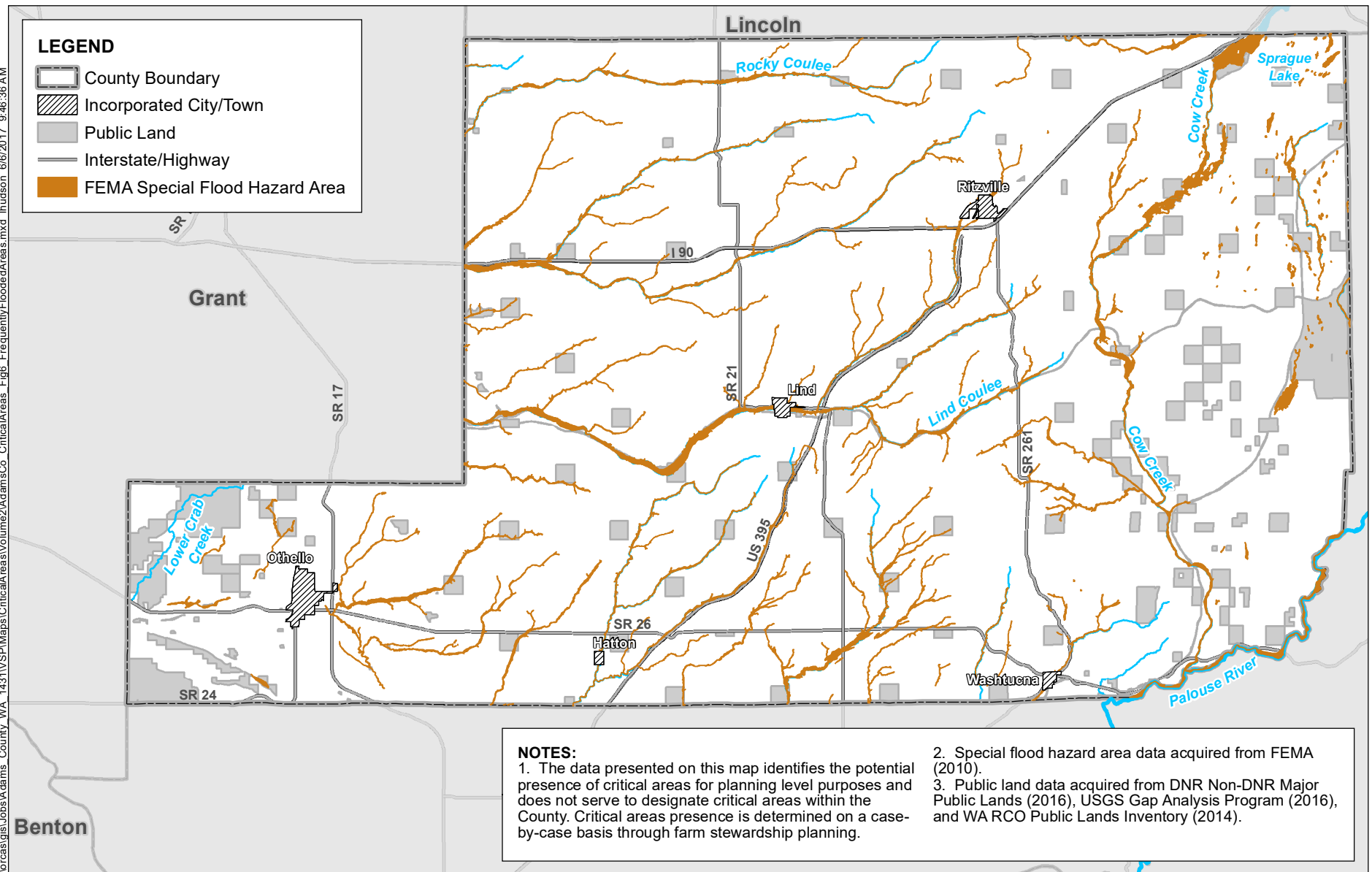
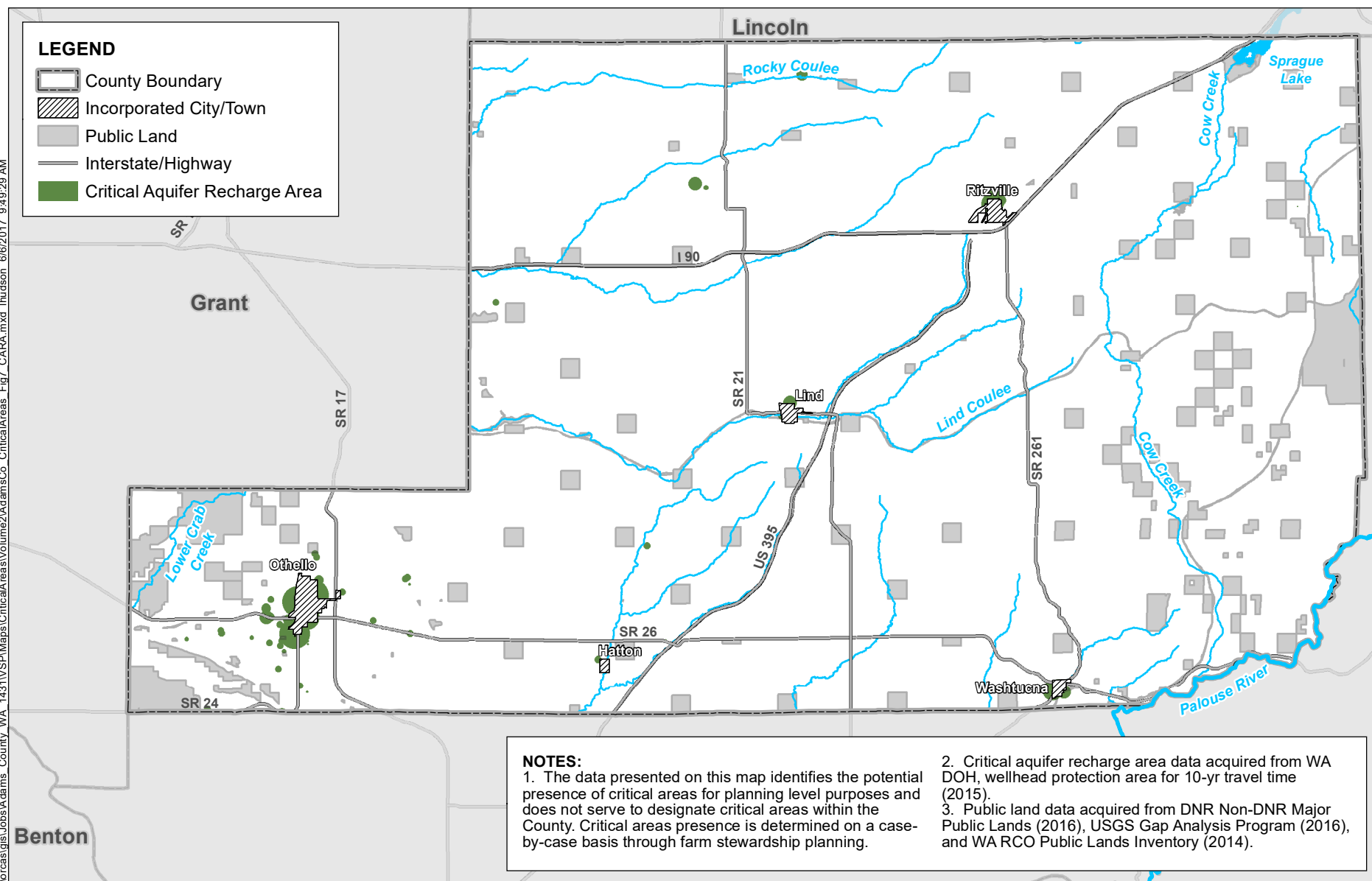


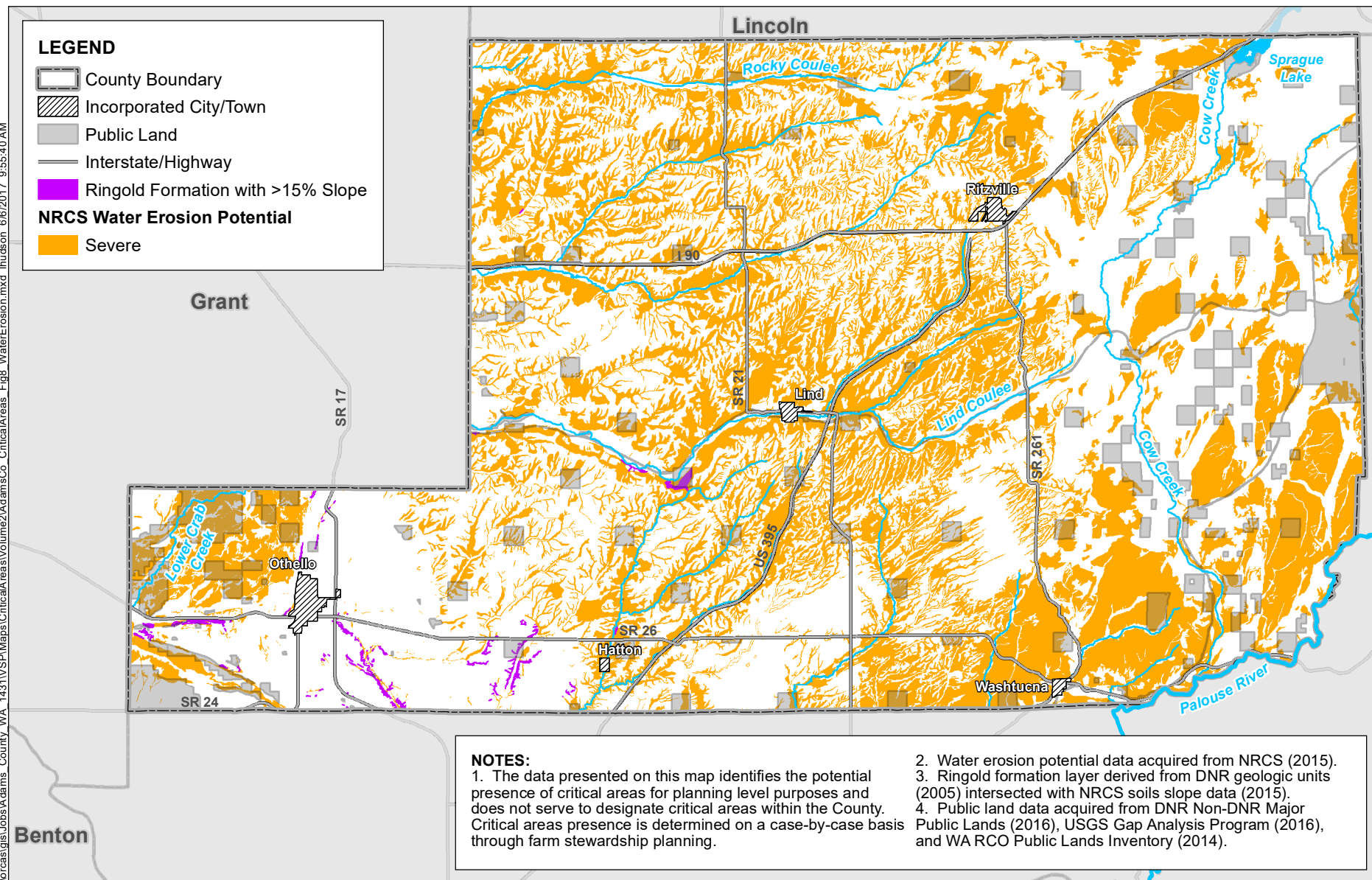
Figure 3
Agricultural Landcover Map
Voluntary Stewardship Program
Adams County, WA

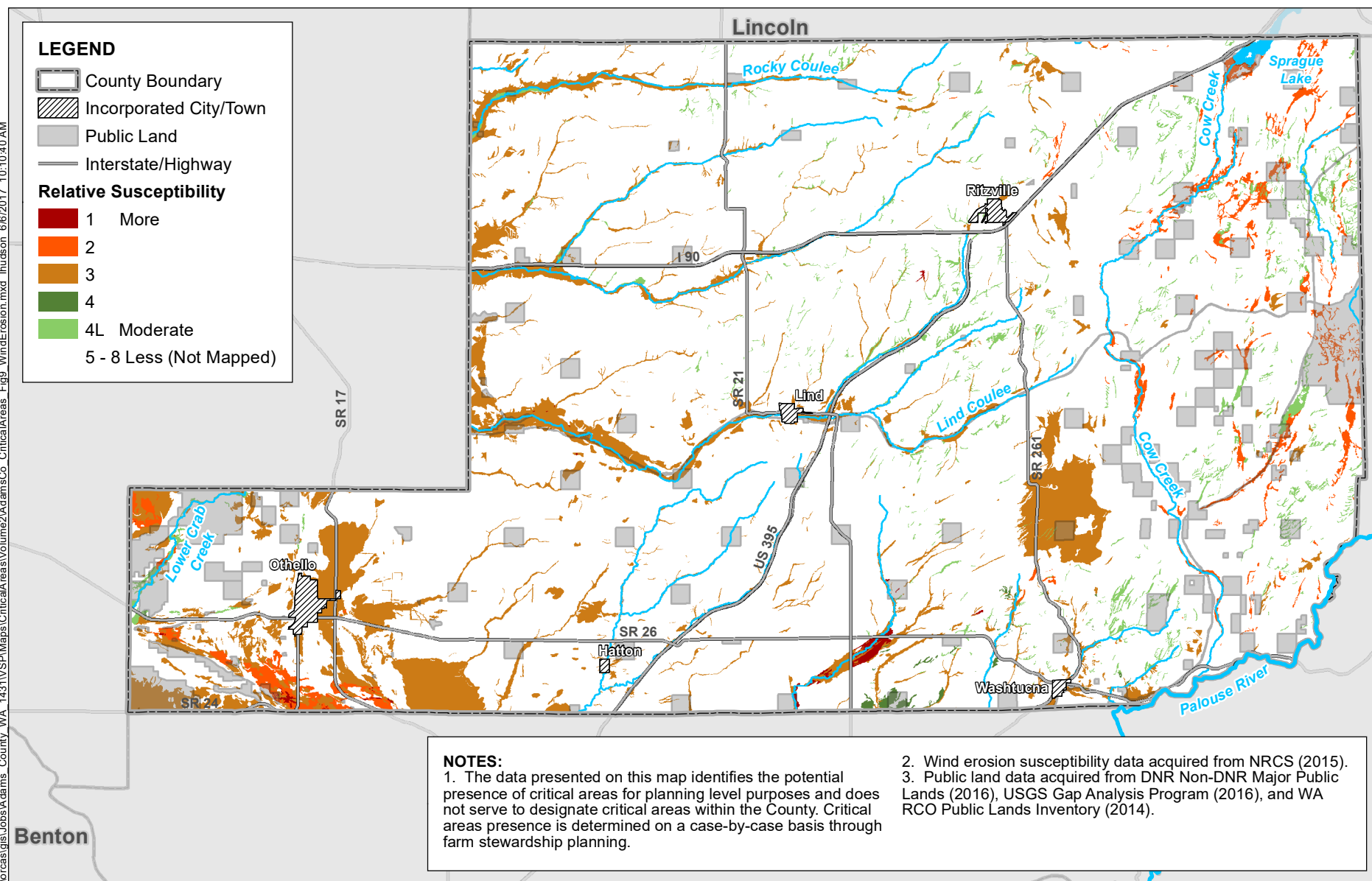


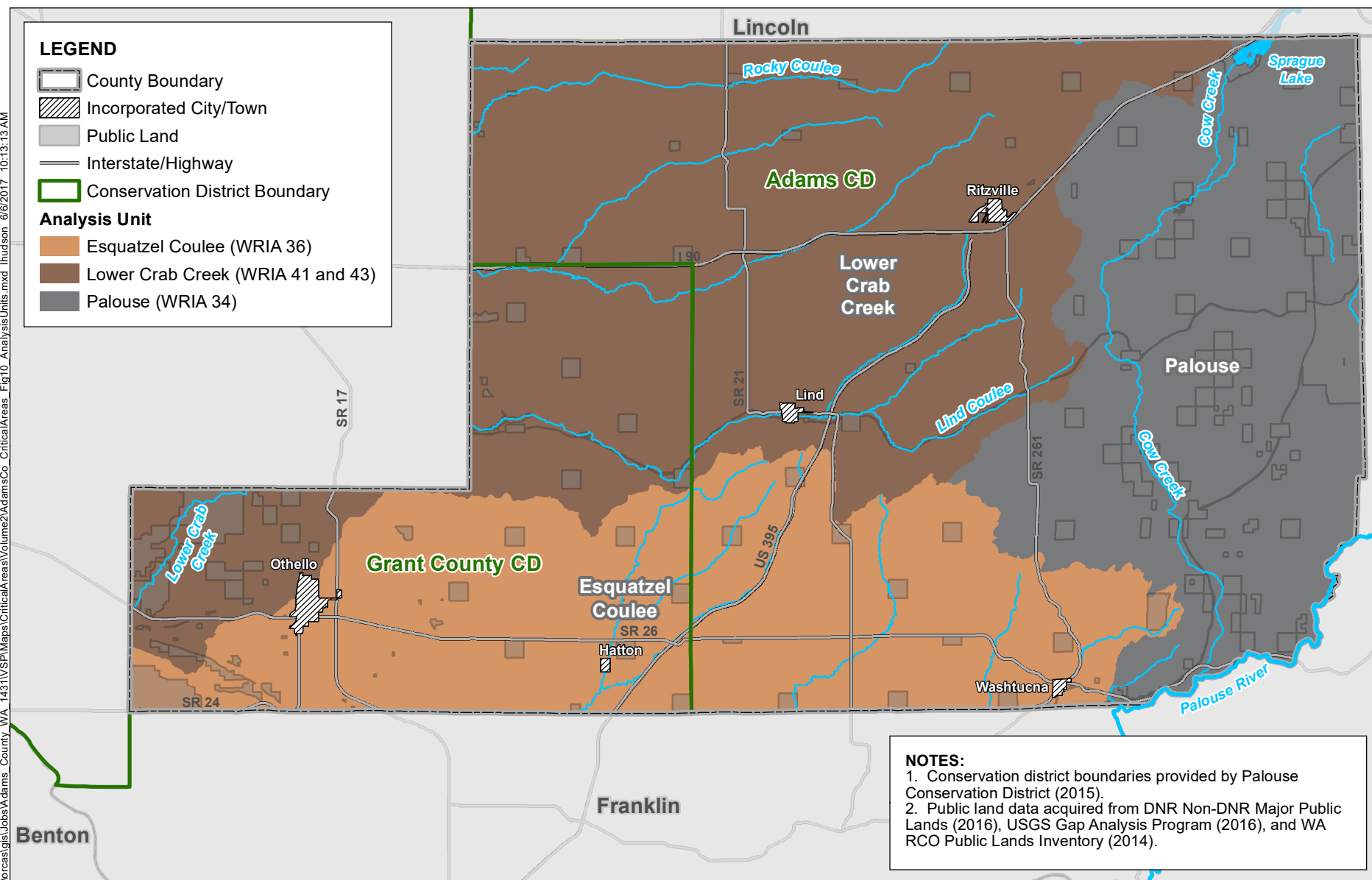












Appendix B

Baseline Conditions Summary

- Appendix B-1: Baseline Conditions Summary Method and Data Sources
- Appendix B-2: Watershed Analysis Units
- Appendix B-3: Adams County Critical Areas Designations and Definitions
- Appendix B-4: Critical Areas Data Summary Tables
- Appendix B-5: Adams County Water Quality 303(d) Listings (2017)

Appendix B-1

Baseline Conditions Summary Method and Data Sources

Appendix B-1: Baseline Conditions Summary Method and Data Sources

Overview

The effective date of the Voluntary Stewardship Program (VSP) legislation is July 22, 2011. This is also the date chosen by the legislature as the applicable baseline for accomplishing the following items (Revised Code of Washington [RCW] 36.70A.703):

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

The 2011 baseline sets the conditions from which the County will measure progress in implementing the Adams County VSP Work Plan (Work Plan) and meeting measurable benchmarks. Measurable benchmarks are a required Work Plan element under VSP (RCW 36.70A.720 (1)(E)) and provided in the Work Plan, Section 5: Goals, Benchmarks, and Adaptive Management.

The methods and data sources relied on to establish 2011 baseline conditions for the County's five critical areas and agricultural activities are described in the following sections.

Methods for Establishing Baseline Conditions

The 2011 baseline conditions summary includes an inventory of agriculture land cover and critical area resources. The following methods were applied in the baseline conditions inventory (see Table 1 for a complete list of data sources):

- **Agricultural landcover assessment** was primarily based on:
 - Washington State Department of Agriculture (WSDA) 2011 agricultural landcover data for croplands (irrigated and dryland agriculture). U.S. Department of Agriculture (USDA) 2011 agricultural landcover data were primarily relied on for additional data on rangelands. Three major agricultural land categories were characterized within the County: 1) irrigated; 2) dryland; and 3) rangeland. These categories are associated with different crops, agricultural activities, stewardship practices, and intersections with critical areas.
- **Critical areas assessment** was based on:
 - Critical areas designations included in the County's Critical Areas Ordinance (CAO) (see Appendix B-3 for CAO summary).
 - Data sources for planning-level critical areas mapping (Appendix A: Map Folio) and critical area/agricultural intersections summaries (Appendix B-4: Baseline Conditions Critical Areas Data Summary Tables) ranged from 2010 to 2016 and included data relied

on for the County's recent Shoreline Master Program update, adopted in 2016. See Table 1 for a complete list of data sources.

- **Privately owned lands** were used to:
 - Assess critical area intersections with agricultural lands. The VSP does not apply to agricultural activities occurring on public lands through leases or other agreements.
- **Data sources and the VSP Map Folio (Appendix A)** were used to:
 - Assess the potential presence of critical areas within the County and intersection with agricultural lands were used for planning-level purposes only. Actual critical areas presence is determined on a case-by-case basis through farm stewardship planning.

Data Sources

The data sources listed in Table 1 were used in the baseline conditions inventory, to assess the conditions as close to the 2011 baseline as data availability allowed.

Table 1
2011 Baseline Conditions Data Sources

Title	Year	Author
PRISM Climate Group Precipitation Data	2012	Oregon State University
USDA Agricultural Landcover	2011	United State Department of Agriculture
WSDA Agricultural Landcover	2011	Washington State Department of Agriculture
National Wetland Inventory Data	2010	United State Fish and Wildlife Service
Streams and Rivers Data	2015	Washington State Department of Natural Resources
Priority Habitat and Species Data	2010	Washington State Department of Fish and Wildlife
Critical Aquifer Recharge Area	2015	Washington State Department of Health
Water Erosion Potential	2015	Natural Resources Conservation Service
Ringold Erosive Slopes	2016	Anchor QEA
Wind Erosion Susceptibility	2015	Natural Resources Conservation Service
Special Flood Hazard Areas	2010	Federal Emergency Management Agency
Hydraulic Unit Code (HUC) 10 data	2013	Bureau of Land Management
Watershed Resource Inventory Area (WRIA)	2000	Washington State Department of Ecology
Public Lands (Gap Analysis Program)	2016	United States Geological Survey
Public Lands (Public Lands Inventory)	2014	Washington State Recreation and Conservation Office
Public Lands (Non-DNR Major Public Lands)	2016	Washington State Department of Natural Resources

Appendix B-2

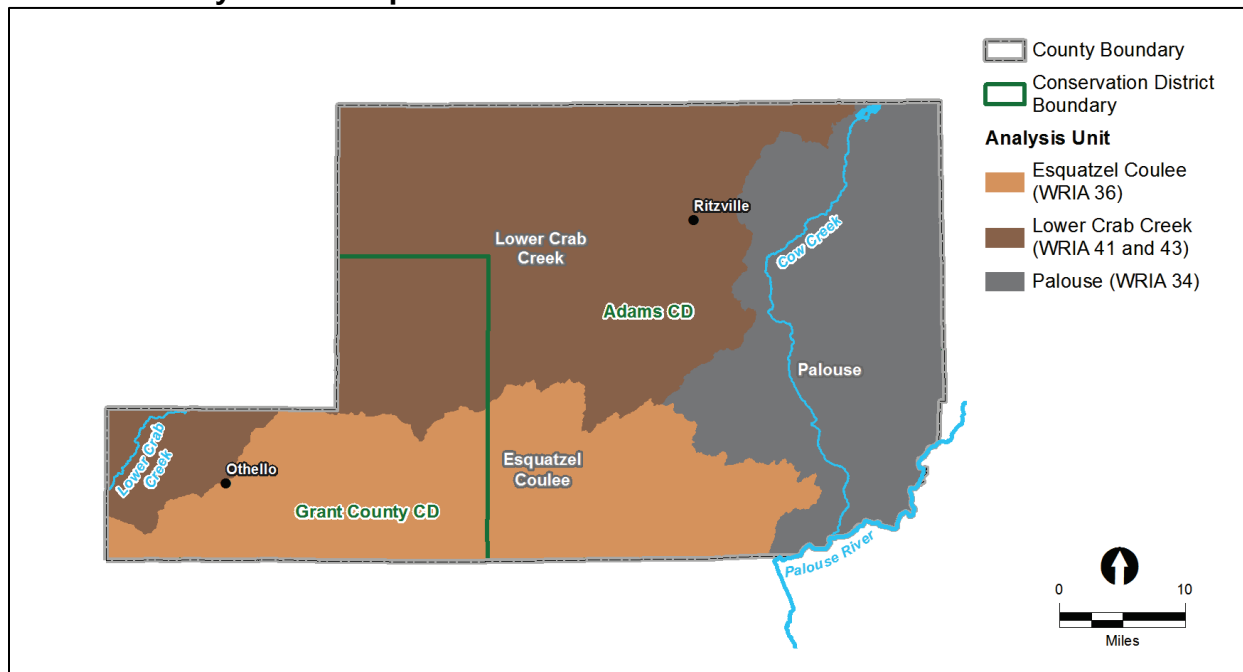
Watershed Analysis Units

Appendix B-2: Watershed Analysis Units

The Adams County Voluntary Stewardship (VSP) Work Plan (Work Plan) divides the County into three watershed analysis units to establish a more localized planning approach during implementation of the Work Plan (see Figure 1). These watershed analysis units are defined by the following Water Resource Inventory Area (WRIA) boundaries:

- Esquatzel Coulee (WRIA 36)
- Lower Crab Creek (WRIA 41 and 43)
- Palouse (WRIA 34)

Figure 1
Watershed Analysis Units Map



Esquatzel Coulee Watershed Analysis Unit

The Esquatzel Coulee watershed analysis unit is located in the southern portion of the County. This unit drains seasonal creeks and streams and irrigation water conveyance facilities near Othello.

Profile

Water Resources

The Esquatzel Coulee unit primarily consists of seasonal creeks and streams that are tributaries to the Columbia River. Waterbodies in the Esquatzel Coulee unit include Esquatzel Coulee, Wahluke Branch, Potholes and East Low canals, and Rodeo Lake (The Watershed Company 2014). Water conveyance facilities are also located throughout the unit. Precipitation ranges from 8 to 10 inches in the western region to up to 12 inches in the east. Groundwater is generally located in bedrock, with limited availability outside of the boundaries of the Columbia Basin Project (CBP; Ecology 2012). Many aquifers throughout the watershed are in decline, meaning limited water is available for new consumptive uses (Ecology 2012).

Soils and Terrain

Channeled scablands are scattered throughout the County (Lenfesty 1967). Within the Esquatzel Coulee unit, scablands are located near the Saddle Mountains, which are in the southwestern part of the County (Lenfesty 1967). Soils in the unit are dominated by silt loam with pockets of sandy loam located throughout. The western portion of the unit near Othello includes more loam, sandy loam, and pockets of fine sand. Most of the soils in this unit are used for dryland farming.

Agricultural Landcover and Primary Crops/Products

Approximately 92% of the Esquatzel Coulee unit is within agricultural landcover (private lands), primarily comprising dryland agriculture. In 2015, primary crops produced in the County included potatoes, wheat, and apples (WSDA 2015).

Landcover	Acres	Percent
Total Community Area	343,511	NA
Agricultural Landcover	317,198	92%
<i>Irrigated</i>	82,067	26%
<i>Dryland</i>	206,635	65%
<i>Range</i>	28,496	9%

Location of Critical Areas

Fish and Wildlife Habitat Conservation Areas (HCAs) are mapped as Priority Habitat and Species (PHS) within the Esquatzel Coulee unit. Approximately 1% of private agricultural lands include mapped non-game species PHS areas and approximately 2% include game species PHS areas, which are described below:

- Shrub-steppe PHS habitat occurs on 2,442 acres of agricultural lands.
- Game species PHS habitat, primarily mule deer habitat, occurs on 7,228 acres of agricultural lands.

Water Erosion Areas have a moderate intersect with agricultural lands within the Esquatzel Coulee unit (33%). The majority of land to the east, near the Palouse River and Cow Creek, is listed as having severe water erosion potential.

Other Critical Areas such as wetlands, critical aquifer recharge areas, and frequently flooded areas have limited intersections with agriculture in the Esquatzel Coulee unit.

Critical Areas	Areas within Agricultural Lands ¹							
	Irrigated		Dryland		Rangeland		Total	
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Wetlands	2	<1%	16	<1%	23	<1%	41	<1%
HCAs – Non-game Species	49	<1%	26	<1%	2,472	1%	2,546	1%
HCAs – Game Species²	156	<1%	3,284	1%	3,792	1%	7,231	2%
CARAs	1,262	<1%	533	<1%	939	<1%	2,734	1%
Geologic Hazards²	9,424	3%	81,934	26%	13,942	4%	105,301	33%
Frequently Flooded Areas	1,746	1%	4,630	1%	2,309	1%	8,685	3%

Notes:

1. Agricultural areas included in this summary are limited to privately owned lands.
2. Only displaying water erosion potential as a geologically hazardous area. In addition to water erosion potential, wind erosion potential covers approximately 14% of the agricultural area in this unit.

Critical Area Functions

Critical area functions, including water quality, habitat, soil, and hydrology, are discussed below. This discussion focuses on existing functions and potential stressors on functions from agricultural activities on private lands.

Water Quality Function
<ul style="list-style-type: none"> • Much of the water quality functions in the Esquatzel Coulee unit are associated with water conveyance facilities located throughout the unit. In this unit, several wasteways on the east side near Othello are listed on the Washington State Department of Ecology 303(d) list as Category 5 for bacteria, dissolved oxygen, pH, and temperature (Ecology 2016). • Riparian vegetation, where it occurs, includes a mix of native and introduced trees and shrubs (WDFW 2006). These areas provide stream cover, which reduces temperatures and helps filter surface and groundwater inputs.
Habitat Function
<ul style="list-style-type: none"> • Upland and riparian habitat: Upland and riparian habitat in agricultural areas primarily occurs in the margins between fields. These areas and the cultivated fields provide shelter and migration corridors for terrestrial species, and forage and breeding opportunities, particularly for a variety of avian and terrestrial species. • Aquatic habitat: Streams within the Esquatzel Coulee unit are mostly seasonal, with some providing a variety of riparian and wetland habitat. Riparian and wetland vegetation, where available, provides cover and food inputs for aquatic species. • Wildlife and habitat: Priority species occurrences in the Esquatzel Coulee unit include burrowing owl and waterfowl concentrations. Game species include mule deer and ring-necked pheasant.
Soil and Hydrology Functions
<ul style="list-style-type: none"> • Surface water moves flow through this area for irrigation supply, carrying soil and creating wetland and stream-like habitat as water moves through topographic lows. • Soils are characterized as silty loams with severe water erosion susceptibility in most areas throughout the unit.

Indirect Effects of Agriculture on Critical Area Functions

Indirect effects occur within areas that are not adjacent to or within critical areas. Within the Esquatzel Coulee unit, agricultural activities can have indirect effects on surface and groundwater quality function and quantity (hydrology function).

Severe water erosion susceptibility areas are designated across the Esquatzel Coulee unit, which can affect soil health and agricultural viability, and have been identified as a management concern for this area. Water erosion is a concern in steeper slope areas and can be exacerbated by intensive crop management practices or wildfires.

Objectives and Key Practices

Protection/Enhancement Objectives	Key Stewardship Practices
<ul style="list-style-type: none"> • Protect and enhance habitat areas, including riparian and wetland areas scattered throughout the unit, including PHS-listed shrub-steppe habitat located in the southeast corner of the unit • Protect soils from water and wind erosion, including those listed as severe water erosion potential areas located throughout the unit and Ringold Formation soils located on the west side of the unit • Protect and manage groundwater aquifers to ensure adequate recharge and water quality • Manage irrigation water so it is delivered, scheduled, and/or applied efficiently¹ 	<ul style="list-style-type: none"> • Critical area planting • Prescribed grazing • Till and residue management • Direct seed • Conservation cover • Nutrient management • Irrigation water management

Note:

1. Watershed goal described in the Focus on Water Availability: Esquatzel Coulee Watershed WRIA 36 (Ecology 2012).

Lower Crab Creek Watershed Analysis Unit

The Lower Crab Creek watershed analysis unit encompasses a large portion of the central and northern portion of the County and in the southwest corner near Othello. Lower Crab Creek only flows through the County in the southwest corner, entering and exiting the County in the panhandle region. The majority of tributary creeks and streams in this area are seasonal.

Profile

Water Resources

The Lower Crab Creek unit primarily consists of seasonal creeks and streams that are tributaries to the Columbia River. Lower Crab Creek only flows through the County in the southwest corner, entering and exiting the County in the panhandle region. The majority of tributary creeks and streams in this area are seasonal. Water conveyance facilities are also located throughout the unit. Precipitation ranges from 7 to 8 inches in the western panhandle region to up to 13 inches in the northeast. Groundwater is generally located in bedrock, with limited availability outside of the boundaries of the CBP (Ecology 2012). Many aquifers throughout the watershed are in decline, meaning limited water is available for new consumptive uses (Ecology 2012).

Soils and Terrain

Channeled scablands are scattered throughout the County (Lenfesty 1967). Within the Lower Crab Creek unit, scablands are located near the Saddle Mountains, which are in the southwestern part of the County (Lenfesty 1967). Soils in the unit are dominated by silt loam with pockets of sandy loam located throughout. Soils in the unit are dominated by silt loam with pockets of sandy loam located throughout. The western portion of the unit in the panhandle near Othello and Lower Crab Creek are dominated by loam, sandy loam, and pockets of fine sand. Most of the soils in this unit are used for dryland farming.

Agricultural Landcover and Primary Crops/Products

Approximately 93% of the Lower Crab Creek unit is within agricultural landcover (private lands), primarily comprising dryland agriculture. In 2015, primary crops produced in the County included potatoes, wheat, and apples (WSDA 2015).

Landcover	Acres	Percent
Total Community Area	555,885	NA
Agricultural Landcover	518,275	93%
<i>Irrigated</i>	68,331	13%
<i>Dryland</i>	376,426	73%
<i>Range</i>	73,518	14%

Location of Critical Areas

Fish and Wildlife Habitat Conservation Areas (HCAs) are mapped as PHS within the Lower Crab Creek Coulee unit. Approximately 1% of private agricultural lands include mapped non-game species PHS areas and less than 1% include game species PHS areas which are described below:

- Shrub-steppe PHS habitat occurs on 3,648 acres of agricultural lands.
- Game species PHS habitat, primarily mule deer, occurs on 474 acres of agricultural lands.

Water Erosion Areas have a moderate intersect with agricultural lands within the Lower Crab Creek unit (43%). The majority of land in the panhandle, surrounding Lower Crab Creek, is listed as having severe water erosion potential.

Other Critical Areas such as wetlands, critical aquifer recharge areas, and frequently flooded areas have limited intersections with agriculture in the Lower Crab Creek unit.

Critical Areas	Areas within Agricultural Lands ¹							
	Irrigated		Dryland		Rangeland		Total	
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Wetlands	17	<1%	22	<1%	62	<1%	101	<1%
HCAs – Non-game Species	73	<1%	230	<1%	4,012	1%	4,315	1%
HCAs – Game Species²	107	<1%	19	<1%	348	<1%	474	<1%
CARAs	437	<1%	789	<1%	465	<1%	1,690	<1%
Geologic Hazards²	18,692	4%	162,129	31%	40,827	8%	221,649	43%
Frequently Flooded Areas	1,889	<1%	5,409	1%	6,028	1%	13,326	3%

Notes:

1. Agricultural areas included in this summary are limited to privately owned lands.
2. Only displaying water erosion potential as a geologically hazardous area. In addition to water erosion potential, wind erosion potential covers approximately 10% of the agricultural area in this unit.

Critical Area Functions

Critical area functions, including water quality, habitat, soil, and hydrology, are discussed below. This discussion focuses on existing functions and potential stressors on functions from agricultural activities on private lands.

Water Quality Function
<ul style="list-style-type: none"> • Much of the water quality functions in the Lower Crab Creek unit are associated with the Lower Crab Creek and water conveyance facilities located throughout the unit. In this unit, several stretches of the Lower Crab Creek are listed on the Washington State Department of Ecology 303(d) list as Category 5 for temperature (Ecology 2016). • Riparian vegetation, where it occurs, includes a mix of native and introduced trees and shrubs (WDFW 2006). These areas provide stream cover, which reduces temperatures and helps filter surface and groundwater inputs.
Habitat Function
<ul style="list-style-type: none"> • Upland and riparian habitat: Upland and riparian habitat in agricultural areas primarily occurs in the margins between fields. These areas and the cultivated fields provide shelter and migration corridors for terrestrial species, and forage and breeding opportunities, particularly for a variety of avian and terrestrial species. • Aquatic habitat: Streams within the Lower Crab Creek unit are mostly seasonal, with some providing a variety of riparian and wetland habitat. Riparian and wetland vegetation, where available, provides cover and food inputs for aquatic species. • Wildlife and habitat: Priority species occurrences in the Lower Crab Creek unit include sandhill crane and shorebird and waterfowl concentrations. Game species primarily include mule deer.
Soil and Hydrology Functions
<ul style="list-style-type: none"> • Surface water moves flow through this area for irrigation supply, carrying soil and creating wetland and stream-like habitat as water moves through topographic lows. • Soils are characterized as silty loams with severe water erosion susceptibility in most areas throughout the unit.

Indirect Effects of Agriculture on Critical Area Functions

Indirect effects occur within areas that are not adjacent to or within critical areas. Within the Lower Crab Creek unit, agricultural activities can have indirect effects on surface and groundwater quality function and quantity (hydrology function).

Severe water erosion susceptibility areas are designated across the Lower Crab Creek unit, which can affect soil health and agricultural viability, and have been identified as a management concern for this area. Water erosion is a concern in steeper slope areas and can be exacerbated by intensive crop management practices or wildfires.

Objectives and Key Practices

Protection/Enhancement Objectives	Key Stewardship Practices
<ul style="list-style-type: none"> • Protect and/or enhance existing fisheries habitat and promote voluntary riparian and wetland habitat planting and restoration projects, including on Lower Crab Creek where water quality issues are present (e.g., temperature)¹ • Protect and/or restore stream channel and floodplain restoration and habitat enhancement projects to reduce high runoff events within the Lower Crab Creek watershed¹ • Protect and enhance habitat areas, including PHS-listed habitat such as game species habitat on the west side of the unit and shrub-steppe habitat on the east side of the unit • Manage nutrient inputs (e.g., nitrates, phosphorus, fecal coliform) into surface waters and groundwater (e.g., near wellheads) through best management practices¹ • Implement conservation, reuse, and reclaimed water strategies, including agriculture irrigation conservation¹ 	<ul style="list-style-type: none"> • Stream habitat improvement and management • Critical area planting • Fish and wildlife structure • Prescribed grazing • Till and residue management • Direct seed • Conservation cover • Nutrient management • Grass waterways • Irrigation water management

Note:

1. Planning unit goal described in the *WRIA 43 Watershed Management Plan* (The WRIA 43 Watershed Planning Unit 2006).

Palouse Watershed Analysis Unit

The Palouse watershed analysis unit is located in the eastern portion of the County. The unit includes Cow Creek and Sprague Lake, which drain into the Palouse River in the southeast corner of the County.

Profile

Water Resources																				
The Palouse unit includes Cow Creek and Sprague Lake and primarily consists of seasonal creeks and streams. Water conveyance facilities are also located throughout the unit. Precipitation ranges from 10 to 12 inches in the western region to up to 15 inches in the east. Groundwater is generally located in bedrock, with limited availability outside of the boundaries of the CBP (Ecology 2012). Many aquifers throughout the watershed are in decline, meaning limited water is available for new consumptive uses (Ecology 2012).																				
Soils and Terrain																				
Channeled scablands are scattered throughout the County (Lenfesty 1967). Within the Palouse unit, soils are dominated by silt loam with pockets of sandy loam located throughout. Most of the soils in this unit are used for rangeland practices.																				
Agricultural Landcover and Primary Crops/Products																				
Approximately 86% of the Palouse unit is within agricultural landcover (private lands), primarily comprising rangeland area. In 2015, primary crops produced in the County included potatoes, wheat, and apples (WSDA 2015).																				
	<table border="1"> <thead> <tr> <th>Landcover</th><th>Acres</th><th>Percent</th></tr> </thead> <tbody> <tr> <td>Total Community Area</td><td>330,729</td><td>NA</td></tr> <tr> <td>Agricultural Landcover</td><td>283,865</td><td>86%</td></tr> <tr> <td><i>Irrigated</i></td><td>5,695</td><td>2%</td></tr> <tr> <td><i>Dryland</i></td><td>100,078</td><td>35%</td></tr> <tr> <td><i>Range</i></td><td>178,091</td><td>63%</td></tr> </tbody> </table>		Landcover	Acres	Percent	Total Community Area	330,729	NA	Agricultural Landcover	283,865	86%	<i>Irrigated</i>	5,695	2%	<i>Dryland</i>	100,078	35%	<i>Range</i>	178,091	63%
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<i>Dryland</i>	100,078	35%																		
<i>Range</i>	178,091	63%																		

Location of Critical Areas

Fish and Wildlife Habitat Conservation Areas (HCAs) are mapped as PHS within the Palouse unit. Less than 1% of private agricultural lands include mapped non-game species PHS areas and approximately 51% include game species PHS areas which are described below:

- Waterfowl concentration PHS species and habitat occurs on 1,046 acres of agricultural lands.
- Game species PHS habitat, primarily mule deer and northwest white-tailed deer, occurs on 144,339 acres of agricultural lands.

Water Erosion Areas have a moderate intersect with agricultural lands within the Palouse unit (34%). The majority of land in the vicinity of the Palouse River and Cow Creek is listed as having severe water erosion potential.

Other Critical Areas such as wetlands, critical aquifer recharge areas, and frequently flooded areas have limited intersections with agriculture in the Lower Crab Creek unit.

Critical Areas	Areas within Agricultural Lands ¹							
	Irrigated		Dryland		Rangeland		Total	
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Wetlands	3	<1%	410	<1%	5,381	2%	2,794	2%
HCAs – Non-game Species	4	<1%	85	<1%	1,063	<1%	1,152	<1%
HCAs – Game Species²	2,055	<1%	57,102	20%	95,182	34%	144,339	51%
CARAs	0	0%	0	0%	3	<1%	3	<1%
Geologic Hazards²	1,630	1%	58,895	12%	36,177	13%	96,702	34%
Frequently Flooded Areas	383	<1%	1,884	1%	5,575	2%	7,841	3%

Notes:

1. Agricultural areas included in this summary are limited to privately owned lands.
2. Only displaying water erosion potential as a geologically hazardous area. In addition to water erosion potential, wind erosion potential covers approximately 12% of the agricultural area in this unit.

Critical Area Functions

Critical area functions, including water quality, habitat, soil, and hydrology, are discussed below. This discussion focuses on existing functions and potential stressors on functions from agricultural activities on private lands.

Water Quality Function
<ul style="list-style-type: none"> • Water quality functions in the Palouse unit are primarily associated with Cow Creek and the Palouse River. In this unit, Cow Creek is listed on the Washington State Department of Ecology 303(d) list as Category 5 for ammonia and nitrogen from Sprague Lake to its confluence with Lugenbeal Creek; the Palouse River is listed for dissolved oxygen and pH in several locations along the County border with Whitman County (Ecology 2016). • Riparian vegetation, where it occurs, includes a mix of native and introduced trees and shrubs (WDFW 2006). These areas provide stream cover, which reduces temperatures and helps filter surface and groundwater inputs.
Habitat Function
<ul style="list-style-type: none"> • Upland and riparian habitat: Upland and riparian habitat in agricultural areas primarily occurs in the margins between fields. These areas and the cultivated fields provide shelter and migration corridors for terrestrial species, and forage and breeding opportunities, particularly for a variety of avian and terrestrial species. • Aquatic habitat: Streams within the Palouse unit are mostly seasonal, with some providing a variety of riparian and wetland habitat. Riparian and wetland vegetation, where available, provides cover and food inputs for aquatic species. • Wildlife and habitat: Priority species occurrences in the Palouse unit include American white pelican, western grebe, and waterfowl concentrations. Game species include mule deer, northwest white-tailed deer, and ring-necked pheasant.
Soil and Hydrology Functions
<ul style="list-style-type: none"> • Surface water moves flow through this area for irrigation supply, carrying soil and creating wetland and stream-like habitat as water moves through topographic lows. • Soils are characterized as silty loams with severe water erosion susceptibility in most areas throughout the unit.

Indirect Effects of Agriculture on Critical Area Functions

Indirect effects occur within areas that are not adjacent to or within critical areas. Within the Palouse unit, agricultural activities can have indirect effects on surface and groundwater quality function and quantity (hydrology function).

Severe water erosion susceptibility areas are designated across the Palouse unit, which can affect soil health and agricultural viability, and have been identified as a management concern for this area. Water erosion is a concern in steeper slope areas and can be exacerbated by intensive crop management practices or wildfires.

Objectives and Key Practices

Protection/Enhancement Objectives	Key Stewardship Practices
<ul style="list-style-type: none"> • Protect and enhance riparian and wetland habitat located adjacent to and to the west of Cow Creek and its tributaries; protect and enhance terrestrial habitat for bird and game species, including PHS-listed habitat located throughout the unit¹ • Address soil compaction, accelerated erosion, and reduction in water infiltration and soil holding capacity from agricultural activities, particularly in moderately to severe water erosion potential areas located throughout the unit¹ • Manage commercial fertilizer over-application and resulting excess nutrient contribution to receiving waters¹ • Manage livestock grazing and winter feeding operations, which can result in excess sediment, and bacteria and nutrient contributions to receiving waters¹ • Protect aquatic life and water quality in streams within the unit, including those listed on the Ecology 303(d) list such as Cow Creek and the Palouse River¹ • Restore and enhance natural floodplain, riparian, and wetland capacities to increase aquifer recharge, improve water quality, provide aquatic and riparian habitat, and reduce the duration and severity of flood events within the Palouse watershed¹ 	<ul style="list-style-type: none"> • Critical area planting • Upland and wetland wildlife habitat management • Direct seed • Till and residue management • Conservation cover • Nutrient management • Prescribed grazing • Fencing • Riparian herbaceous cover/filter strips • Stream habitat improvement and management

Note:

1. Watershed goal described in the *Palouse Subbasin Management Plan* (Gilmore 2004).

References

- Ecology (Washington State Department of Ecology), 2012. Focus on Water Availability: Esquatzel Coulee Watershed, WRIA 36. Ecology Water Resources Program. Revised August 2012.
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Attachment 1

- Watershed Analysis Units: GIS Data Summary Tables

Attachment 1

Watershed Analysis Units: GIS Data Summary Tables

Critical Areas Data Summary Tables

Table 1

Agricultural Activity Landcover

Landcover	Acres	Percent
Total Area	343,511	N/A
Agricultural Landcover	317,198	92%
<i>Irrigated</i>	82,067	26%
<i>Dryland</i>	206,635	65%
<i>Range</i>	28,496	9%

Analysis Unit: Esquatzel Coulee

Global Notes: - Agricultural areas included in VSP are limited to privately-owned lands.
 Additionally, incorporated city/town limits are not included in VSP and are excluded from these calculations.
 - See Appendix B-1 for GIS data sources and methods.
 - Critical area percentages are based on the total private agricultural landcover

Table 2

Critical Areas within Agricultural Lands

Critical Areas		Areas within Agricultural Lands							
		Irrigated		Dryland		Rangeland		Total	
		Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Wetlands		2	0%	16	0%	23	0%	41	0%
Fish and Wildlife Habitat Conservation Areas^{1,2}		49	0%	26	0%	2,472	1%	2,546	1%
Critical Aquifer Recharge Areas		1,262	0%	533	0%	939	0%	2,734	1%
Geologic Hazards	Water Erosion	9,424	3%	81,934	26%	13,942	4%	105,301	33%
	Wind Erosion	22,370	7%	15,980	5%	6,685	2%	45,036	14%
Frequently Flooded Areas		1,746	1%	4,630	1%	2,309	1%	8,685	3%

Notes:

1. Excluding game species (see Table 6 for full list of game species)
2. Summary Priority and Habitat Species numbers are collapsed so that overlapping species or habitats are not double counted

Table 3

Stream Summary

Critical Areas		Areas within Agricultural Lands							
		Irrigated		Dryland		Rangeland		Total	
		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
Streams Total		156	13%	650	56%	206	18%	1,011	87%
<i>Shorelines of the State</i>		0		0		0		0	
<i>Fish Use or Potential Fish Use</i>		0		1		0		1	
<i>No Fish Use</i>		0		0		0		0	
<i>Unknown</i>		155		649		206		1,010	

Esquatzel Coulee

Wetlands Data Summary

Table 4

Wetland Summary

Critical Areas	Acres within Agricultural Lands			
	Irrigated	Dryland	Rangeland	Total
Wetlands (all types)	2	16	23	41
<i>Freshwater Emergent Wetland</i>	0	12	10	22
<i>Freshwater Forested/Shrub Wetland</i>	0	0	3	4
<i>Lake/Pond</i>	2	4	8	14
<i>Riverine</i>	0	0	0	0
<i>Other</i>	0	0	1	1

Esquatzel Coulee

Fish and Wildlife Habitat Conservation Areas - PHS Data Summary

Table 5

Priority Habitats and Species (PHS) Summary - excluding game species^{1,2}

Critical Areas	Acres within Agricultural Lands			
	Irrigated	Dryland	Rangeland	Total
Priority Habitats and Species	49	26	2,472	2,546
Birds	49	10	36	95
<i>American White Pelican</i>	0	0	0	0
<i>Burrowing Owl</i>	49	9	7	64
<i>Caspian Tern</i>	0	0	0	0
<i>Gull Species</i>	0	0	0	0
<i>Sandhill Crane</i>	0	0	0	0
<i>Shorebird Concentrations</i>	0	0	0	0
<i>Tundra Swan</i>	0	0	0	0
<i>Western Grebe</i>	0	0	0	0
<i>Waterfowl Concentrations</i>	0	2	29	31
Cliffs/bluffs	0	0	57	57
Shrub-Steppe	0	15	2,427	2,442
Prairies And Steppe	0	0	0	0

Notes:

1. Excluding game species (see Table 6 for full list of game species)
2. Summary Priority and Habitat Species numbers are collapsed so that overlapping species or habitats are not double counted

Table 6

PHS Summary (game species)¹

Critical Areas	Acres within Agricultural Lands			
	Irrigated	Dryland	Rangeland	Total
PHS (Game Species)	156	3,284	3,792	7,231
Birds	3	0	0	3
<i>Ring-necked Pheasant</i>	3	0	0	3
Mammals	153	3,284	3,792	7,228
<i>Mule Deer</i>	153	3,284	3,792	7,228
<i>Northwest White-tailed Deer</i>	0	0	0	0

Notes:

1. Summary Priority and Habitat Species numbers are collapsed so that overlapping species or habitats are not double counted

Esquatzel Coulee

Geologically Hazardous Areas - Water Erosion Potential

Table 7

Water Erosion Potential

Critical Areas	Acres within Agricultural Lands			
	Irrigated	Dryland	Rangeland	Total
Water Erosion Potential	9,424	81,934	13,942	105,301
<i>Ringold soils and >15% slope</i>	333	451	233	1,017
<i>Severe to Very Severe</i>	9,091	81,483	13,709	104,284

Esquatzel Coulee

Critical Areas Data Summary Tables

Table 1

Agricultural Activity Landcover

Landcover	Acres	Percent
Total Area	555,885	N/A
Agricultural Landcover	518,275	93%
<i>Irrigated</i>	68,331	13%
<i>Dryland</i>	376,426	73%
<i>Range</i>	73,518	14%

Analysis Unit: Lower Crab Creek

Global Notes: - Agricultural areas included in VSP are limited to privately-owned lands. Additionally, incorporated city/town limits are not included in VSP and are excluded from these calculations.

- See Appendix B-1 for GIS data sources and methods.

- Critical area percentages are based on the total private agricultural landcover

Table 2

Critical Areas within Agricultural Lands

Critical Areas		Areas within Agricultural Lands							
		Irrigated		Dryland		Rangeland		Total	
		Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Wetlands		17	0%	22	0%	62	0%	101	0%
Fish and Wildlife Habitat Conservation Areas^{1,2}		73	0%	230	0%	4,012	1%	4,315	1%
Critical Aquifer Recharge Areas		437	0%	789	0%	465	0%	1,690	0%
Geologic Hazards	Water Erosion	18,692	4%	162,129	31%	40,827	8%	221,649	43%
	Wind Erosion	13,546	3%	22,780	4%	15,838	3%	52,164	10%
Frequently Flooded Areas		1,889	0%	5,409	1%	6,028	1%	13,326	3%

Notes:

1. Excluding game species (see Table 6 for full list of game species)
2. Summary Priority and Habitat Species numbers are collapsed so that overlapping species or habitats are not double counted

Table 3

Stream Summary

Critical Areas		Areas within Agricultural Lands							
		Irrigated		Dryland		Rangeland		Total	
		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
Streams Total		143	8%	1,083	63%	340	20%	1,566	91%
<i>Shorelines of the State</i>		0		0		0		0	
<i>Fish Use or Potential Fish Use</i>		0		1		2		3	
<i>No Fish Use</i>		0		0		0		1	
<i>Unknown</i>		143		1,082		337		1,562	

Lower Crab Creek

Wetlands Data Summary

Table 4

Wetland Summary

Critical Areas	Acres within Agricultural Lands			
	Irrigated	Dryland	Rangeland	Total
Wetlands (all types)	17	22	62	101
<i>Freshwater Emergent Wetland</i>	9	12	39	60
<i>Freshwater Forested/Shrub Wetland</i>	0	0	3	3
<i>Lake/Pond</i>	3	7	9	20
<i>Riverine</i>	3	0	11	15
<i>Other</i>	2	2	0	4

Lower Crab Creek

Fish and Wildlife Habitat Conservation Areas - PHS Data Summary

Table 5

Priority Habitats and Species (PHS) Summary - excluding game species^{1,2}

Critical Areas	Acres within Agricultural Lands			
	Irrigated	Dryland	Rangeland	Total
Priority Habitats and Species	73	230	4,012	4,315
Birds	73	63	531	667
<i>American White Pelican</i>	0	0	0	0
<i>Burrowing Owl</i>	0	0	0	0
<i>Caspian Tern</i>	0	0	0	0
<i>Gull Species</i>	0	0	0	0
<i>Sandhill Crane</i>	39	9	3	51
<i>Shorebird Concentrations</i>	34	54	528	615
<i>Tundra Swan</i>	0	0	0	0
<i>Western Grebe</i>	0	0	0	0
<i>Waterfowl Concentrations</i>	34	54	529	616
Cliffs/bluffs	0	0	0	0
Shrub-Steppe	0	167	3,481	3,648
Prairies And Steppe	0	0	0	0

Notes:

1. Excluding game species (see Table 6 for full list of game species)
2. Summary Priority and Habitat Species numbers are collapsed so that overlapping species or habitats are not double counted

Table 6

PHS Summary (game species)¹

Critical Areas	Acres within Agricultural Lands			
	Irrigated	Dryland	Rangeland	Total
PHS (Game Species)	107	19	348	474
Birds	0	0	1	1
<i>Ring-necked Pheasant</i>	0	0	1	1
Mammals	106	19	347	473
<i>Mule Deer</i>	106	19	347	473
<i>Northwest White-tailed Deer</i>	0	0	0	0

Notes:

1. Summary Priority and Habitat Species numbers are collapsed so that overlapping species or habitats are not double counted

Lower Crab Creek

Geologically Hazardous Areas - Water Erosion Potential

Table 7

Water Erosion Potential

Critical Areas	Acres within Agricultural Lands			
	Irrigated	Dryland	Rangeland	Total
Water Erosion Potential	18,692	162,129	40,827	221,649
<i>Ringold soils and >15% slope</i>	77	93	344	515
<i>Severe to Very Severe</i>	18,615	162,036	40,483	221,134

Lower Crab Creek

Critical Areas Data Summary Tables

Table 1

Agricultural Activity Landcover

Landcover	Acres	Percent
Total Area	330,729	N/A
Agricultural Landcover	283,865	86%
<i>Irrigated</i>	5,695	2%
<i>Dryland</i>	100,078	35%
<i>Range</i>	178,091	63%

Analysis Unit: Palouse River

Global Notes: - Agricultural areas included in VSP are limited to privately-owned lands. Additionally, incorporated city/town limits are not included in VSP and are excluded from these calculations.
 - See Appendix B-1 for GIS data sources and methods.
 - Critical area percentages are based on the total private agricultural landcover

Table 2

Critical Areas within Agricultural Lands

Critical Areas		Areas within Agricultural Lands							
		Irrigated		Dryland		Rangeland		Total	
		Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Wetlands		3	0%	410	0%	5,381	2%	5,794	2%
Fish and Wildlife Habitat Conservation Areas^{1,2}		4	0%	85	0%	1,063	0%	1,152	0%
Critical Aquifer Recharge Areas		0	0%	0	0%	3	0%	3	0%
Geologic Hazards	Water Erosion	1,630	1%	58,895	21%	36,177	13%	96,702	34%
	Wind Erosion	857	0%	18,204	6%	15,215	5%	34,276	12%
Frequently Flooded Areas		383	0%	1,884	1%	5,575	2%	7,841	3%

Notes:

1. Excluding game species (see Table 6 for full list of game species)
2. Summary Priority and Habitat Species numbers are collapsed so that overlapping species or habitats are not double counted

Table 3

Stream Summary

Critical Areas		Areas within Agricultural Lands							
		Irrigated		Dryland		Rangeland		Total	
		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
Streams Total		8	1%	307	41%	321	43%	636	86%
<i>Shorelines of the State</i>		1		5		40		45	
<i>Fish Use or Potential Fish Use</i>		0		2		20		22	
<i>No Fish Use</i>		0		0		3		3	
<i>Unknown</i>		8		300		259		566	

Palouse River

Wetlands Data Summary

Table 4

Wetland Summary

Critical Areas	Acres within Agricultural Lands			
	Irrigated	Dryland	Rangeland	Total
Wetlands (all types)	3	410	5,381	5,794
<i>Freshwater Emergent Wetland</i>	1	260	4,304	4,566
<i>Freshwater Forested/Shrub Wetland</i>	1	10	118	130
<i>Lake/Pond</i>	0	81	755	836
<i>Riverine</i>	1	13	111	126
<i>Other</i>	0	45	92	137

Palouse River

Fish and Wildlife Habitat Conservation Areas - PHS Data Summary

Table 5

Priority Habitats and Species (PHS) Summary - excluding game species^{1,2}

Critical Areas	Acres within Agricultural Lands			
	Irrigated	Dryland	Rangeland	Total
Priority Habitats and Species	4	85	1,063	1,152
Birds	4	85	957	1,046
<i>American White Pelican</i>	0	2	44	47
<i>Burrowing Owl</i>	0	0	0	0
<i>Caspian Tern</i>	0	1	2	3
<i>Gull Species</i>	0	2	28	30
<i>Sandhill Crane</i>	0	0	0	0
<i>Shorebird Concentrations</i>	0	0	0	0
<i>Tundra Swan</i>	0	0	0	0
<i>Western Grebe</i>	0	2	44	47
<i>Waterfowl Concentrations</i>	4	85	957	1,046
Cliffs/bluffs	0	0	0	0
Shrub-Steppe	0	0	74	74
Prairies And Steppe	0	0	32	32

Notes:

1. Excluding game species (see Table 6 for full list of game species)
2. Summary Priority and Habitat Species numbers are collapsed so that overlapping species or habitats are not double counted

Table 6

PHS Summary (game species)¹

Critical Areas	Acres within Agricultural Lands			
	Irrigated	Dryland	Rangeland	Total
PHS (Game Species)	2,055	47,102	95,182	144,339
Birds	0	219	500	719
<i>Ring-necked Pheasant</i>	0	219	500	719
Mammals	2,055	47,102	95,182	144,339
<i>Mule Deer</i>	2,055	47,102	95,182	144,339
<i>Northwest White-tailed Deer</i>	588	1,742	5,747	8,077

Notes:

1. Summary Priority and Habitat Species numbers are collapsed so that overlapping species or habitats are not double counted

Palouse River

Geologically Hazardous Areas - Water Erosion Potential

Table 7

Water Erosion Potential

Critical Areas	Acres within Agricultural Lands			
	Irrigated	Dryland	Rangeland	Total
Water Erosion Potential	1,630	58,895	36,177	96,702
<i>Ringold soils and >15% slope</i>	0	0	0	0
<i>Severe to Very Severe</i>	1,630	58,895	36,177	96,702

Palouse River

Appendix B-3

Adams County Critical Areas Designations and Definitions

Appendix B-3: Adams County Critical Areas Designations and Definitions

Adams County Critical Areas and Resources Lands Code (Chapter 18.06)

General Provisions

Critical areas in Adams County are categorized as follows:

1. Wetlands
2. Fish and Wildlife Habitat Conservation Areas
3. Critical Aquifer Recharge Areas
4. Geologically Hazardous Areas
5. Frequently Flooded Areas

Resource Information and Maps (Adams County Code [ACC] 18.06.040):

Reference Maps and Inventories. The distribution of critical areas within Adams County is described and displayed on reference materials and on maps maintained by the administrator. These reference materials are intended for general information only and do not depict site-specific designations. These reference materials shall include but are not limited to the following:

- Any maps created through a critical areas review process
- Washington Department of Fish and Wildlife priority habitats and species maps, as amended
- U.S. Geologic Survey quadrangle maps
- Flood insurance rate maps (Federal Emergency Management Agency [FEMA]), as amended
- Flood boundary and floodway maps (FEMA), as amended
- Aerial photographs
- U.S. Fish and Wildlife Service national wetland inventory maps
- Columbia Basin Ground Water Management Area maps
- Columbia Basin Irrigation Project topography and retracement maps from 1939 to 1943 and from 1960, as well as other preconstruction and construction maps developed for the project
- Previously completed maps in the vicinity of a permit application

Wetlands

Identification and Designation (ACC 18.06.620)

Wetlands shall be identified and delineated using the Washington State Wetlands Identification and Delineation Manual for Eastern Washington¹. Classification and rating of wetlands will be done using the Washington State Wetlands Rating System for Eastern Washington.

The following wetlands may not be further regulated by this article:

- Artificial wetlands within the developed portion of the Columbia Basin Irrigation Project. (Conversion of ground and surface water conditions within the developed project boundary was anticipated and intended.)
- Areas that may meet the definition of "artificial wetlands" either intentionally or unintentionally as described herein that are managed and regulated by the U.S. Bureau of Reclamation.
- Wetland areas identified on the National Wetland Inventory maps with an artificial designation when it can be shown that the area(s) noted was (were) intentionally created from a non-wetland site.

Fish and Wildlife Habitat Conservation Areas

Identification and Designation (ACC 18.06.520)

Fish and Wildlife Habitat Conservation Areas in the County shall include:

- Areas of fish and wildlife habitat conservation that include:
 - Areas with which federal or state endangered, threatened, and sensitive species of fish, wildlife, or plants have a primary association
 - Threatened or endangered species²:
 - Bald eagle
 - Ferruginous hawk
 - Sandhill crane
 - Northern leopard frog
 - Ute ladies' tresses
 - State candidate species and species of local importance³:
 - Golden eagle
 - Burrowing owl

¹ Ecology (Washington State Department of Ecology), 2007. *Washington State Wetlands Identification and Delineation Manual for Eastern Washington*. Ecology Publication #04-06-15. March 2007.

² Bald eagles are no longer listed as threatened or endangered; however, they are state sensitive and a federal species of concern.

³ Additional candidate species not specified in the code include sage sparrow, Merriam's shrew, Preble's shrew, Townsend's big-eared bats, black-tailed jackrabbit, and white-tailed jackrabbit.

- Loggerhead shrike
- Sage thrasher
- Washington ground squirrel
- Habitats and species of local importance, which could include areas with state-listed monitored or candidate species, or federally listed candidate species, or species with high recreational value (e.g., game) that have primary association
- Naturally occurring ponds fewer than 20 acres and their submerged aquatic beds that provide fish or wildlife habitat
- Waters of the state
- Lakes, ponds, streams, and rivers planted with game fish by a governmental entity (these include waterbodies planted under auspices of a federal, state, or local program, or which support important fish species as identified by Washington Department of Fish and Wildlife)
- Federal, state, and private natural area preserves and natural resource conservation areas
- Adams County allows for the nomination of species/habitats of local importance by the process identified in Section 18.06.060
- In order to accommodate the needs and desires of the people of Adams County, public input shall be required to include species and/or habitats in the important habitat area classification identified in this article

Critical Aquifer Recharge Areas

Identification and Designation (ACC 18.06.320)

Areas identified by the Columbia Basin Ground Water Management Area Plan (GWMA) as being exposures above-ground of the top of the highest recognized basalt complex basalt flows are referred to as critical aquifer recharge areas.

Geologically Hazardous Areas

Identification and Designation (ACC 18.06.420)

Geologically Hazardous Areas are defined as follows:

- Areas with slopes in excess of 45%
- Areas with all three of the following characteristics:
 - Soil types with the properties of the Ringold formation (clay)
 - Areas with the potential for water loading
 - Slopes in excess of 15%
- Soils within Adams County are subject to wind erosion:

- All developments subject to the provisions of ACC 18.06 that involve any land-clearing activities shall have a dust control and wind erosion mitigation plan reviewed and approved by the County
- Slopes having gradients steeper than 80% subject to rock fall during seismic shaking
- Areas highly susceptible to liquefaction from seismic activity

As noted in the Voluntary Stewardship Program (VSP) Work Plan, structures in agricultural lands will continue to be permitted and regulated through the County's Critical Areas Ordinance, notably for landslide, mine, and seismic hazard areas. Geologically hazardous areas for erosion hazards have primary applicability in the VSP context.

Frequently Flooded Areas

Identification and Designation (ACC 18.06.230)

Shorelines and waters that are currently identified within the 100-year floodplain in the FEMA Flood Insurance Rate Maps dated January 16, 2009. If and when this study becomes updated to reflect new conditions, designation of frequently flooded areas will include the changes.

Appendix B-4

Critical Areas Data Summary Tables

Critical Areas Data Summary Tables

Table 1

Agricultural Activity Landcover

Landcover	Acres	Percent
Total Area	1,230,126	N/A
Agricultural Landcover	1,119,338	91%
<i>Irrigated</i>	156,093	14%
<i>Dryland</i>	683,140	61%
<i>Range</i>	280,105	25%

Analysis Unit: County-wide Summary

Global Notes: - Agricultural areas included in VSP are limited to privately-owned lands.
 Additionally, incorporated city/town limits are not included in VSP and are excluded from these calculations.
 - See Appendix B-1 for GIS data sources and methods.
 - Critical area percentages are based on the total private agricultural landcover

Table 2

Critical Areas within Agricultural Lands

Critical Areas		Areas within Agricultural Lands							
		Irrigated		Dryland		Rangeland		Total	
		Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent
Wetlands		22	0%	448	0%	5,466	0%	5,936	1%
Fish and Wildlife Habitat Conservation Areas^{1,2}		126	0%	340	0%	7,547	1%	8,013	1%
Critical Aquifer Recharge Areas		1,699	0%	1,322	0%	1,407	0%	4,427	0%
Geologic Hazards	Water Erosion	29,746	3%	302,959	27%	90,946	8%	423,652	38%
	Wind Erosion	36,773	3%	56,964	5%	37,739	3%	131,476	12%
Frequently Flooded Areas		4,018	0%	11,922	1%	13,912	1%	29,852	3%

Notes:

1. Excluding game species (see Table 6 for full list of game species)
2. Summary Priority and Habitat Species numbers are collapsed so that overlapping species or habitats are not double counted

Table 3

Stream Summary

Critical Areas		Areas within Agricultural Lands							
		Irrigated		Dryland		Rangeland		Total	
		Miles	Percent	Miles	Percent	Miles	Percent	Miles	Percent
Streams Total		307	8%	2,040	56%	867	24%	3,214	89%
<i>Shorelines of the State</i>		1		5		40		46	
<i>Fish Use or Potential Fish Use</i>		0		4		22		26	
<i>No Fish Use</i>		0		0		3		4	
<i>Unknown</i>		306		2,031		802		3,138	

County-wide Summary

Wetlands Data Summary

Table 4

Wetland Summary

Critical Areas	Acres within Agricultural Lands			
	Irrigated	Dryland	Rangeland	Total
Wetlands (all types)	22	448	5,466	5,936
<i>Freshwater Emergent Wetland</i>	11	284	4,353	4,648
<i>Freshwater Forested/Shrub Wetland</i>	1	11	125	136
<i>Lake/Pond</i>	5	93	772	870
<i>Riverine</i>	4	14	123	141
<i>Other</i>	2	47	94	142

County-wide Summary

Fish and Wildlife Habitat Conservation Areas - PHS Data Summary

Table 5

Priority Habitats and Species (PHS) Summary - excluding game species^{1,2}

Critical Areas	Acres within Agricultural Lands			
	Irrigated	Dryland	Rangeland	Total
Priority Habitats and Species	126	340	7,547	8,013
Birds	126	158	1,524	1,808
<i>American White Pelican</i>	0	2	44	47
<i>Burrowing Owl</i>	49	9	7	64
<i>Caspian Tern</i>	0	1	2	3
<i>Gull Species</i>	0	2	28	30
<i>Sandhill Crane</i>	39	9	3	51
<i>Shorebird Concentrations</i>	34	54	528	615
<i>Tundra Swan</i>	0	0	0	0
<i>Western Grebe</i>	0	2	44	47
<i>Waterfowl Concentrations</i>	38	140	1,514	1,693
Cliffs/bluffs	0	0	57	57
Shrub-Steppe	0	182	5,982	6,164
Prairies And Steppe	0	0	32	32

Notes:

1. Excluding game species (see Table 6 for full list of game species)
2. Summary Priority and Habitat Species numbers are collapsed so that overlapping species or habitats are not double counted

Table 6

PHS Summary (game species)¹

Critical Areas	Acres within Agricultural Lands			
	Irrigated	Dryland	Rangeland	Total
PHS (Game Species)	2,318	50,405	99,322	152,045
Birds	3	219	501	723
<i>Ring-necked Pheasant</i>	3	219	501	723
Mammals	2,314	50,405	99,321	152,040
<i>Mule Deer</i>	2,314	50,405	99,321	152,040
<i>Northwest White-tailed Deer</i>	588	1,742	5,747	8,077

Notes:

1. Summary Priority and Habitat Species numbers are collapsed so that overlapping species or habitats are not double counted

County-wide Summary

Geologically Hazardous Areas - Water Erosion Potential

Table 7

Water Erosion Potential

Critical Areas	Acres within Agricultural Lands			
	Irrigated	Dryland	Rangeland	Total
Water Erosion Potential	29,746	302,959	90,946	423,652
<i>Ringold soils and >15% slope</i>	411	544	577	1,532
<i>Severe to Very Severe</i>	29,336	302,415	90,369	422,120

County-wide Summary

Appendix B-5

Adams County Water Quality 303(d) Listings (2017)

**Adams County Water Quality 303(d) Listings (2017) –
Parameters with Potential Intersects with Agricultural Activities**

Water Quality Parameter	Potential Agricultural-related Source
4,4'-DDE	Byproduct of DDT
Ammonia-N	Organic waste products
Bacteria	Animal waste
Dieldrin	Insecticide
Dissolved Oxygen	Organic matter decomposition
pH	Indicator
Temperature	Erosion/sediment/canopy cover

Source: Washington Department of Ecology Water Quality Assessment Data accessed 2/7/2017

Appendix C

Benchmarks – Methods and Initial Results

APPENDIX C: Benchmarks – Methods and Initial Results

Methods

Linking Stewardship Practices to Resource Protection

Conservation practice benefits are related to critical areas functions and values through the use of conservation practice physical effect (CPPE) scores for each practice developed by U.S. Department of Agriculture (USDA; NRCS 2017), which have been tailored to Adams County conditions. The CPPE describes how Natural Resources Conservation Service (NRCS) practices affect the human-economic environment (e.g., Agricultural Viability) and natural resources (e.g., Critical Functions). CPPE, developed by USDA NRCS economists, helps field planners describe in detail how each practice affects agricultural viability and natural resource critical functions. Scores range between +5 and -5, with positive scores denoting a beneficial effect, 0 denoting no effect, and negative scores having an adverse effect.

For each of the four key critical area functions (i.e., water quality function, hydrology, soil, and habitat), resource concerns were averaged together to provide an overall function score. Where a resource concern was listed as not applicable to a particular practice, this resource concern was not factored into the average function score. Table 1 and Attachments 1 and 2 provide additional details on methods applied to summary tables of practice effects on resource function in Adams County:

- **Table 1: CPPE Resource Concerns for Adams County** summarizes the resource concerns identified as applicable to Adams County conditions, pared down for applicability from the comprehensive list of resource concerns in the NRCS National CPPE Summary Tool, dated July 28, 2015, and available from the NRCS CPPE webpage (NRCS 2017) at https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/econ/data/?cid=nrcs143_009740.
- **Attachment 1: Adams County CPPE Resource Concerns and Scores** provides a detailed summary of applicable individual resource scores (identified in Table 1) and average function scores per key critical area function for all NRCS conservation practices. Resource concerns listed as a zero (and colored in red) indicate the score is applicable to the conservation practice as having no effect. Zero scores not highlighted in red indicate a resource concern that is not applicable to the practice and is therefore not factored into the average function score.
- **Attachment 2: Adams County Practice Toolbox with CPPE Averaged Function Scores** provides an overview of NRCS conservation practices currently implemented in Adams County, showing quantitative scores, and additional applicable and key practices (scores greater than 3) for each function category.

Table 1
CPPE Resource Concerns for Adams County

Function	Resource Concern
Soil	The soil function score averaged soil erosion and soil condition scores based on the associated resource concerns listed below.
Soil Erosion	<ul style="list-style-type: none"> • Sheet and rill • Wind • Ephemeral gully • Classic gully • Streambank/shoreline/conveyance
Soil Condition	<ul style="list-style-type: none"> • Organic matter depletion • Compaction • Subsidence • Contaminants: Salts or other chemicals
Hydrology	<ul style="list-style-type: none"> • Excessive seepage • Excessive runoff, flooding, or ponding • Excessive subsurface water • Drifted snow • Inefficient water use on irrigated land • Inefficient water use on non-irrigated land
Water Quality	<ul style="list-style-type: none"> • Crop protection tools in surface water • Crop protection tools in groundwater • Nutrients in surface water • Nutrients in groundwater • Salts in surface water • Salts in groundwater • Excess pathogens and chemicals from manure, bio-solids, or compost applications in surface water • Excess pathogens and chemicals from manure, bio-solids, or compost applications in groundwater • Excessive sediments in surface water • Elevated water temperature • Petroleum, heavy metals, and other pollutants transported to surface water • Petroleum, heavy metals, and other pollutants transported to groundwater
Habitat	<ul style="list-style-type: none"> • Inadequate food • Inadequate cover/shelter • Inadequate water • Inadequate space

Application for Future Practices

The spreadsheets in Attachments 1 and 2 may be used to track enrollment in future practices and to continue to assess functional indicators of these practices. New NRCS practices may also be added to Adams County's palette of protection and enhancement tools (Attachment 2).

For practices outside of NRCS, equivalent function scores should be developed to estimate the benefit or impact on soil health, hydrology, water quality, and fish and wildlife habitat based on the understanding that scores range from +5 and -5, with positive scores denoting a beneficial effect and negative scores indicating an impact. The following steps are suggested for this process:

- Assessing whether the new practice is similar to existing NRCS practices and using the resource concern scores from the existing NRCS practice as a starting point to develop function scores.
- Using experience and available technical information to develop scores, with the understanding that although a practice may have a beneficial effect on a target resource, there may be impacts to other resources. Also, not all practices will have an effect on all possible resource concerns; many will have no effect, and some will not be applicable and should be listed as a zero.

Initial Results (2011 to 2016)

To track performance from implemented conservation practices from 2011 to 2016, enrollment in conservation practices was tabulated and average function scores (Attachment 2) were applied. This provided a functional indicator that accounted for the beneficial and adverse effects of each practice.

Although NRCS enrollment data are available since 2011, the discontinuation of practices during that period was not recorded. The rate of discontinuation of practices often varies based on whether implemented practices involve stewardship investment (e.g., irrigation management systems), stewardship actions (e.g., cover cropping), or permanent conversion into conservation easements. Table 2 summarizes the proposed approach to accounting for the varied disenrollment rates based on some of these categories of practices.

Figures 1 through 4 illustrate the functional indicator results from 2011 to 2016 based on reported practices enrolled/implemented and estimated discontinuation of practices within that time period. Figures 1 through 4 indicate a net gain in function over time for soil, hydrology, water quality, and habitat.

Table 2
Calculating Disenrollment for Conservation Practices

Assumed Range of Disenrollment/Discontinuation	Conservation Practice Category	Example Practices
None	Easements and Infrastructure <ul style="list-style-type: none"> • Permanent conservation practices 	<ul style="list-style-type: none"> • Permanent easements • Major infrastructure
Lower 0 to 2%	Conservation Investments <ul style="list-style-type: none"> • High barriers to entry/exit: <ul style="list-style-type: none"> – Conservation investments – Maintenance cost – Effectiveness • Increases land productivity • Lowers cost 	<ul style="list-style-type: none"> • Tillage management • Pest management • Nutrient management • Irrigation management • Fencing
Higher 0 to 6%	Conservation Actions <ul style="list-style-type: none"> • Low barriers to entry/exit: <ul style="list-style-type: none"> – Easily removed • Reduced land in production • Rotational use: <ul style="list-style-type: none"> – Market-driven rotation • Reliance on unstable conservation funding or incentives (e.g., Conservation Reserve Program) 	<ul style="list-style-type: none"> • Habitat restoration • Prescribed grazing • Cover crop • Range planting

Figure 1
Water Quality Functional Indictors: 2011 to 2016 NRCS Practice Enrollments



Figure 2
Hydrology Functional Indictors: 2011 to 2016 NRCS Practice Enrollments

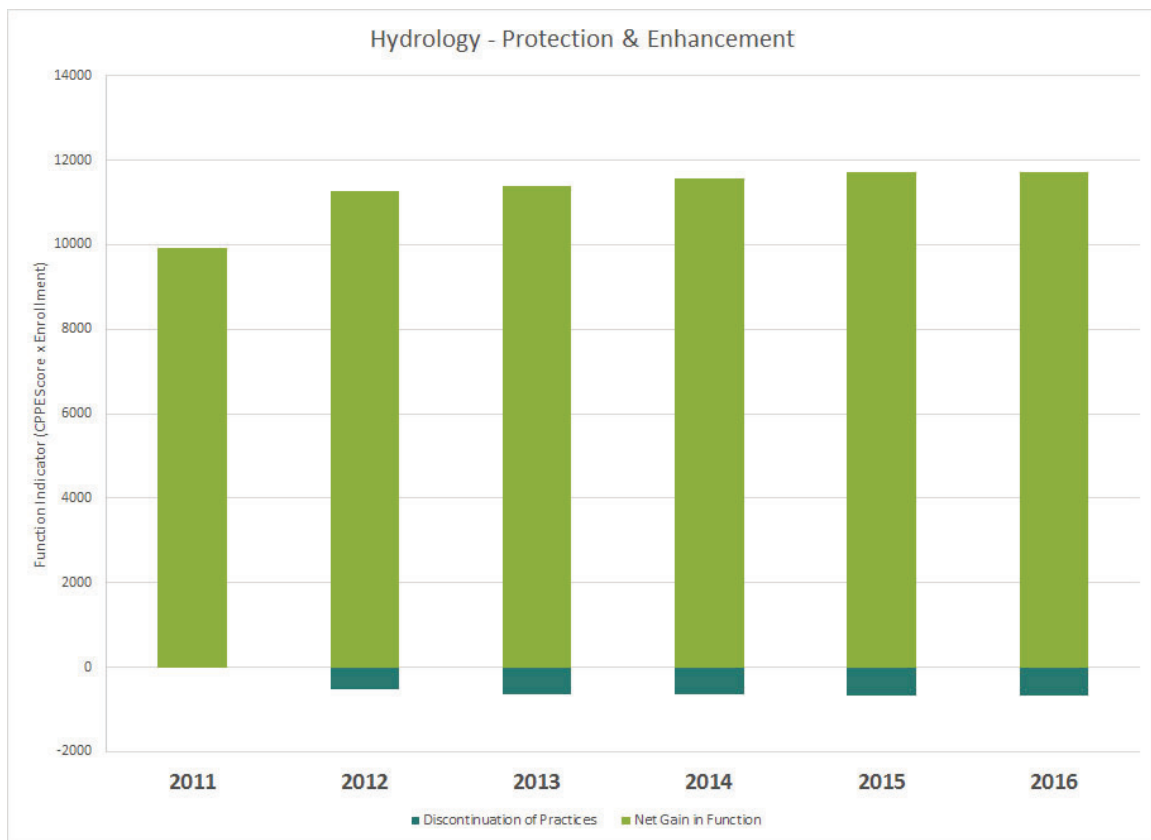


Figure 3
Soil Functional Indictors: 2011 to 2016 NRCS Practice Enrollments

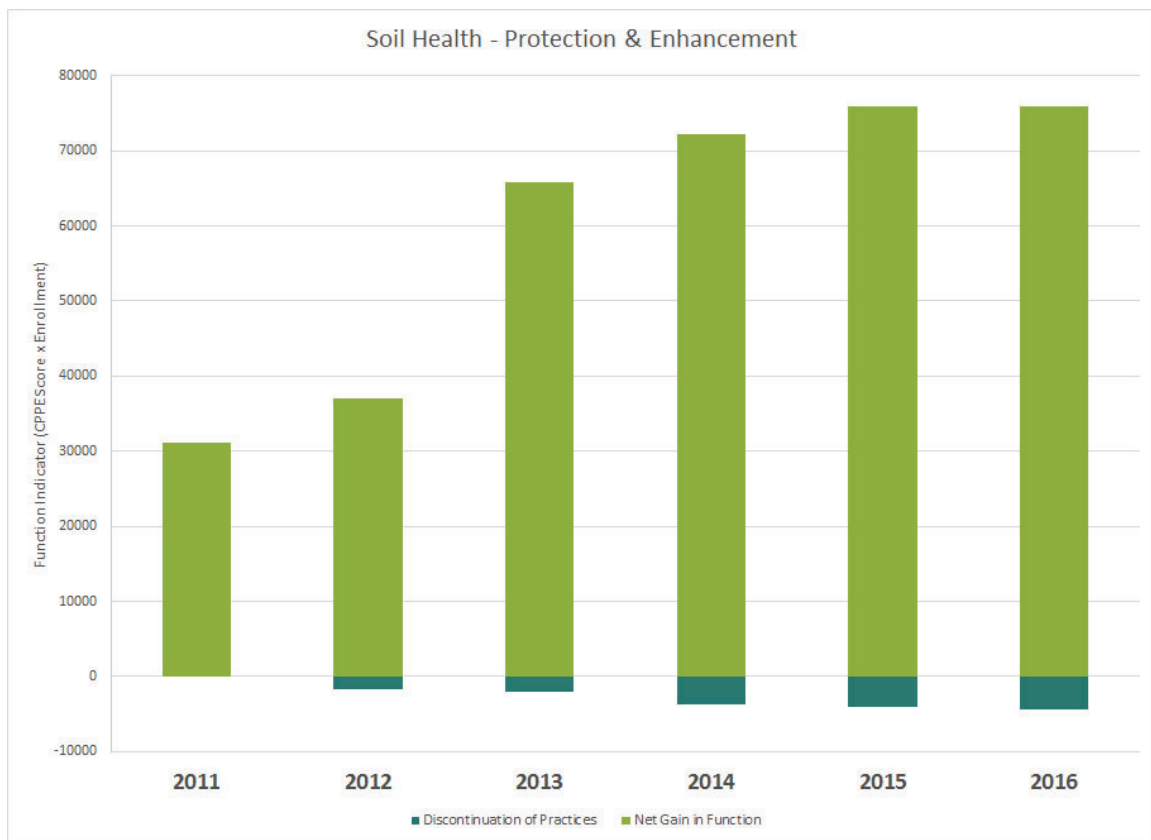
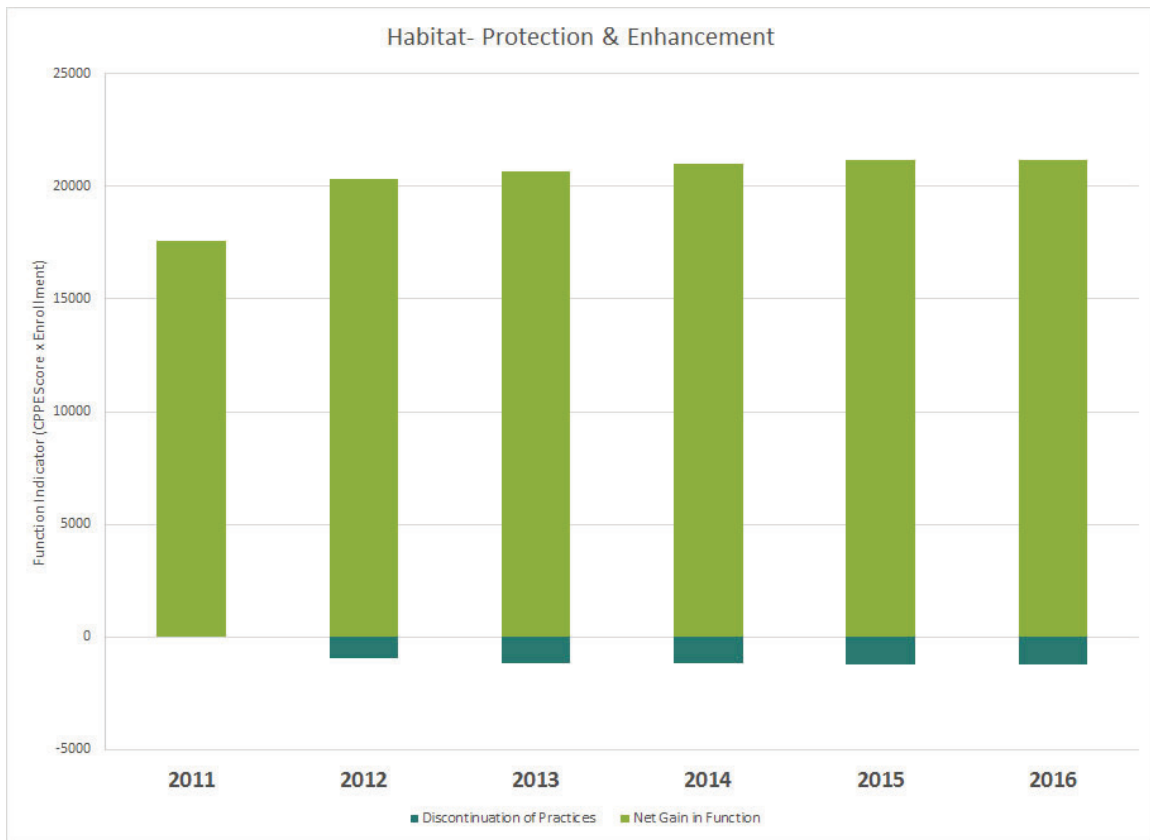


Figure 4
Habitat Functional Indictors: 2011 to 2016 NRCS Practice Enrollments



Reference

NRCS (Natural Resources Conservation Service), 2017. NRCS Conservation Practice Physical Effects CPPE|NRCS Economics. Cited March 2017. Available from:
https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/econ/data/?cid=nrcs143_009740.

Attachment 1

Adams County CPPE Resource Concerns and Scores

RESOURCE CONCERNS ->	Soil Erosion - Sheet and Rill	Soil Erosion - Wind	Soil Erosion - Lateral Gully	Soil Erosion - Classic Gully	Soil Erosion - Shoulder/Overbank Conveyance	Soil Erosion Average	Soil Condition - Organic Matter Depletion	Soil Condition - Compaction	Soil Condition - Subsidence	Soil Condition - Contaminants, Salts or Other Chemicals	Soil Condition Average	Water Quantity - Excessive Seepage	Water Quantity - Excessive Runoff, Flooding, or Ponding	Water Quantity - Excessive Surface Water	Water Quantity - Drifted Snow	Water Quantity - Infiltrated Water Use on Irrigated Land	Water Quantity - Infiltrated Water Use on Nonirrigated Land	Hydrology Average	Water Quality Degradation - Pesticides in Surface Water	Water Quality Degradation - Pesticides in Groundwater	Water Quality Degradation - Nutrients in Surface water	Water Quality Degradation - Nutrients in Groundwater	Water Quality Degradation - Excess Pathogens and Chemicals from Manure, Bio-solids or Compost Applications in Surface Water	Water Quality Degradation - Excess Pathogens and Chemicals from Manure, Bio-solids or Compost Applications in Groundwater	Water Quality Degradation - Excessive Sediment in Surface Water	Water Quality Degradation - Unfiltered Water Temperature	Water Quality Degradation - Petroleum, Heavy Metals and Other Pollutants Transported to Surface Water	Water Quality Degradation - Petroleum, Heavy Metals and Other Pollutants Transported to Groundwater	Water Quality Average	Fish and Wildlife - Inadequate Food	Fish and Wildlife - Inadequate Cover/Shell	Fish and Wildlife - Inadequate Water	Fish and Wildlife - Inadequate Space	Habitat Average	
Access Control	472	3	1	4	4	5	3.40	1	4	0	0	2.50	1	1	2	0	3	1.75	1	0	1	0	0	1	3	3	1	1	1.44	3	3	1	1	2.50	
Access Road	546	1	1	1	1	1	1.00	0	0	0	0	0	1	0	0	2	0	1.00	0	0	0	0	0	1	1	0	0	1	1.00	0	0	0	0	1.00	
Agrochemical Handling Facility	379	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0.00		
Air Filtration and Scrubbing	371	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0.00		
Alley Cropping	311	5	5	5	5	5	4.50	5	2	1	2.67	5	2	3	3	1	2.00	3	1	3	1	0	0	1	2	0	1	1.75	2	5	3	3	2.50		
Amending Soil Properties with Gypsum Products	331	1	1	0	0	0	1.00	1	0	0	1	1.00	0	1	0	0	1	1.00	0	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0.00		
Amendments for Treatment of Agricultural Waste	591	0	0	0	0	0	0.00	1	0	0	0	0.50	0	0	0	1	0	0.50	0	0	2	2	2	2	2	2	2	2.00	0	0	0	0	0.00		
Anaerobic Digester	346	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
Animal Manure Facility	316	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
Anoxic Polymers (PAM) Erosion Control	449	2	2	2	2	2	1.00	0	0	0	0	0.00	0	0	0	2	0	0.00	2	2	2	2	2	2	2	2	2	2.00	0	0	0	0	0.00		
Associated Ponds	397	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
Artificial Oxygen Passage	396	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
Baldring	319	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
Bivalve Aquaculture Gear and Buoy Management	499	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
Biom Management	314	1	1	1	1	1	1.00	0	1	0	0	0.00	1	0	0	0	2	1.50	-1	0	0	0	0	0	0	2	0	0	0.50	2	2	0	1	1.67	
Building Envelope Improvement	472	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
Channel Bed Stabilization	384	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
Clearing & Site Prep	336	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
Combustion System Improvement	372	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
Composting Facility	317	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
Conservation Cover	337	4	4	1	1	1	2.40	3	1	2	3.33	1	2	1	1	0	1.25	2	2	2	4	4	4	4	4	4	4	4	4	4.00	4	4	4	4	3.33
Conservation Crop Rotation	328	4	4	0	0	0	4.00	4	0	0	2	2.33	0	2	2	2	2	2.00	2	2	2	2	2	2	2	2	2	2	2.00	2	2	2	2	2.00	
Construct Wetland	456	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
Contour Buffer Strips	332	3	0	0	0	0	3.00	2	0	0	0	2.00	-2	1	-1	0	0	-0.67	2	0	0	0	0	0	0	0	0	0	0.50	2	0	0	0	0.50	
Cooling Ponds	339	2	0	0	0	0	2.00	0	0	0	0	2.00	0	0	0	0	0	2.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Contour Cultivation and Other Perennial Crops	331	4	0	1	0	0	2.50	2	0	0	0	2.00	-2	1	-1	2	0	0.25	1	-1	2	-1	1	-1	-1	0	0	0	0.43	0	0	0	0	0.00	
Controlled Traffic Farming	334	0	0	0	0	0	0.00	0	4	0	0	4.00	0	0	0	1	1	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Cover Crop	349	4	4	3	0	0	3.67	2	2	0	1	1.25	1	2	1	0	2	1.40	2	2	2	2	2	2	2	2	2	2	2.00	2	2	2	2	2.00	
Crop Area Planting	342	5	5	5	5	5	4.50	5	2	0	0	2.50	5	2	1	0	0	0.00	5	2	2	2	2	2	2	2	2	2	2.00	5	5	5	5	2.00	
Cross Wind Fences	589	0	0	0	0	0	0.00	1	0	0	0	1.00	0	0	0	0	0	0.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Cross Wind Trap Strips	590	0	4	0	0	0	4.00	2	0	0	0	2.00	0	0	0	0	0	0.00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Dam	481	0	0	-1	0	0	1.50	0	0	0	0	1.50	0	0	0	0	0	1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Dam Diversion	348	0	0	0	-1	-1	-1.00	0	0	0	0	0.00	0	0	0	2	2	2.00	0	0	0	0	0	0	0	-2	0	0	-2.00	-2	-2	-2	-2	-2.00	
Deep Tillage	324	0	0	0	0	0	0.00	-4	0	-1	2	0.50	-2	0	0	2	2	1.00	0	0	0	0	0	0	0	0	0	0	0.00	0	0	0	0	0.00	
Debrising Bomber	465	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Dike	316	0	0	0	1	-2	-0.50	0	0	0	0	0.00	-1	2	-1	0	0	0.00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Direction	262	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Drainage Water Management	454	0	0	0	0	0	0.00	-1	2	0	0	1.00	-1	-2	2	0	0	0.33	2	2	1	-1	-1	1	1	0	0	0	0.69	0	0	2	2	2.00	
Dry Hydrant	432	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	-1	-1	-1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
Dust Control from Animal Activity on Paved Surfaces	375	0	2	0	0	0	2.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Dust Control Unpaved Roads and Sidewalks	373	2	5	0	0	0	3.50	0	0	0	-1	-1.00	0	0	0	0	0	0.00	0	0	-1	0	0	0	0	0	0	0	-1.00	0	0	0	0	0.00	
Early Seasonal Weather Development/Management	647	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Emergency Animal Manure Management	368	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Farmstead Erosion Improvement	374	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Farm Management	592	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Fence	382	4	4	0	0	0	1.00	0	1	0	0	1.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Fuel Storage	395	4	4	0	0	0	2.00	4	0	0	0	2.00	4	0	0	0	0	2.00	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Field Operations Emissions Reduction	376	1	4	0	0	0	2.50	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Fiber Strip	339	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	2	0	1	0	2	1	1	3	1	5	4	1	2.56	2	2	2	2.00
Firebreak	394	-1	-4	-1	-4	0	-0.80	2	-2	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	-1.00	0	0	0	-1	-1.00	
Fish Harvesting in Tank	398	0	0	0	0	0	0.00	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	-1	0	-1	-1	-1	-1	-1	-1	-1.00	0					

Upland Wildlife Habitat Management	645	3	3	3	3	2	1	2.40	0	0	0	0	0	0.00	0	-3	2	0	0	0	0	0	0	0	0	0	0	0	0	2.00	5	5	0	5	5.00	
Vegetated Treatment Area	635	4	4	4	0	0	0	4.00	3	3	0	0	-2	1.33	-1	0	-2	0	0	0	0	0	0	0	0	0	0	0	0	1.50	0	0	0	0	0.00	
Vegetative Barrier	601	4	1	1	0	0	0	2.00	0	0	0	0	-2	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.60	1	1	1	1	1.00		
Vertical Drain	639	0	0	0	1	0	0	1.00	0	0	0	0	0	0.00	0	4	-2	0	0	0	0	0	0	0	0	0	0	0	1.00	0	0	0	0	0.00		
Waste Facility Closure	268	0	0	0	0	0	0	0.00	0	0	0	0	2	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0.00		
Waste Recycling	633	0	0	0	0	0	0	0.00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
Waste Separation Facility (inc)	632	0	0	0	0	0	0	0.00	1	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00		
Waste Storage Facility	213	0	0	0	0	0	0	0.00	1	1	0	0	1	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Waste Transfer	634	-1	-1	-1	-1	0	0	-1.00	0	-1	0	0	0	-1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Waste Treatment	636	0	0	0	0	0	0	0.00	1	1	0	0	0	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Waste Treatment Lagoon	309	0	1	0	0	0	0	0.00	1	0	1	0	0	1.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Water and Sediment Control Basin	638	0	0	0	2	2	0	2.00	0	0	0	0	0	0.00	-2	2	-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Water Harvesting Catchment	636	0	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00	
Waterline Facility	634	2	2	2	2	2	1	4	2.00	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Water Well	642	2	2	2	2	2	1	2.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Waterwreathing	688	0	0	0	-1	0	0	-1.00	1	0	0	0	0	1.00	0	1	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Well Decommissioning	381	0	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Wellhead Creation	638	0	0	0	0	0	0	0.00	2	0	0	0	0	2.00	0	2	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Wetland Enhancement	609	0	0	0	0	0	0	0.00	1	0	0	0	0	1.00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Wetland Restoration	667	0	0	0	0	0	0	0.00	1	0	0	0	0	1.00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Wetland Wildlife Habitat Management	644	0	0	0	0	0	0	0.00	0	0	0	0	0	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00
Windbreak/Shelterbelt Establishment	380	1	5	2	0	0	0	2.07	4	2	0	1	2.33	2	0	2	5	5	3	2.83	3	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0.00
Windbreak/Shelterbelt Renovation	608	1	5	2	0	0	0	2.07	4	2	0	1	2.33	2	0	2	5	5	3	2.83	3	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0.00
Woody Residue Treatment	384	1	1	1	1	2	1	1.00	-1	2	-2	0	-1.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00

Attachment 2

Adams County Practice Toolbox with CPPE Averaged Function Scores

Adams County Conservation Practices																		
NRCS Practice Code	Conservation Practice	Average CPPE Scores		Function Effects: Average CPPE Scores				Critical Areas					Agricultural Viability					
		Soil Erosion	Soil Condition	Soil ¹	Hydrology	Water Quality	Habitat	WET	FFA	CARA	GHA	FWHCA	Soil Health	Prevent Soil Loss	Moisture Management	Weed/ Pest Management	Pollinator/ Beneficial Organisms	Yield/ Fertility Management
313	Waste Storage Facility	0.00	1.00	0.50	1.00	1.75	0.00											
315	Herbaceous Weed Control	3.20	0.00	1.60	2.00	-0.25	1.67											
325	Seasonal High Tunnel	1.00	0.00	0.50	0.00	0.00	0.00					x			x			
327	Conservation Cover	2.20	3.33	2.77	1.25	2.89	3.33	x	x		x	x	x	x		x	x	
328	Conservation Crop Rotate	4.00	2.33	3.17	1.60	1.75	2.00	x			x	x	x	x	x	x	x	x
329	Residue and Tillage Management - No-Till/ Strip Till/ Direct Seed	4.00	2.00	3.00	0.80	2.00	1.67	x	x	x	x	x	x	x	x			x
340	Cover Crop	3.67	1.25	2.46	1.40	1.75	2.00	x	x	x	x	x	x	x	x	x	x	x
342	Critical Area Planting	4.60	2.67	3.63	0.00	2.33	2.00				x							
345	Residue Management - Mulch Till	4.00	1.50	2.75	1.33	2.20	1.67	x	x	x	x	x	x	x	x			x
350	Sediment Basin	1.33	0.00	0.67	-0.67	1.00	-0.33											
367	Roofs and Covers	0.00	0.00	0.00	-1.00	1.00	0.00											
380	Windbreak/Shelterbreak	2.67	2.33	2.50	2.83	1.40	3.00	x	x		x	x	x	x	x	x	x	x
382	Fence	1.00	1.00	1.00	0.00	2.00	0.00	x			x	x		x			x	
383	Fuel Break	-1.00	-2.00	-1.50	-1.00	-1.00	0.40									x		
384	Woody Residue Treatment	1.00	-1.50	-0.25	1.00	1.00	0.00									x		
386	Field Border	2.50	2.00	2.25	1.00	1.43	2.00	x	x	x	x	x		x	x			x
390	Riparian Herbaceous Cover	2.25	3.33	2.79	0.33	2.50	3.50	x	x		x	x		x		x	x	
391	Riparian Forest Buffer	2.60	2.33	2.47	0.67	2.83	4.00	x	x		x	x		x		x	x	
393	Filter Strip	0.00	5.00	2.50	0.00	2.36	2.00	x	x		x	x		x		x	x	
395	Stream Habitat Improvement and Management	5.00	0.00	2.50	0.00	2.00	3.00	x	x		x	x		x		x	x	
412	Grassed Waterway	3.33	1.00	2.17	2.50	1.33	1.00		x	x	x	1.33	x			x		
422	Hedgerow Planting	1.00	1.50	1.25	2.00	1.33	4.00	x	x	x	x	x		x	x			x
430	Irrigation Pipeline	2.00	0.00	1.00	1.33	0.89	0.00			x				x				x
441	Irrigation system, microirrigation (No)	0.00	0.50	0.25	2.00	1.33	1.00	x		x	x	x		x	x			x
442	Sprinkler System	2.00	0.50	1.25	2.67	1.55	1.00	x		x	x	x	x	x	x			x
449	Irrigation Water Management	2.00	1.50	1.75	1.50	1.82	0.00	x		x	x	x						
472	Access Control	3.40	2.50	2.95	1.75	1.44	2.00	x	x	x	x	x	x	x	x	x		
484	Mulching	4.00	1.00	2.50	0.60	0.83	1.00	x	x	x	x	x	x	x		x	x	x
490	Tree/Shrub Site Preparation	-1.25	-1.50	-1.38	2.00	-0.50	0.00	x	x		x	x				x	x	
500	Obstruction Removal	0.00	0.00	0.00	2.00	0.00	-2.00											
512	Pasture and Hayland Seeding	1.00	1.50	1.25	1.00	1.00	1.00	x	x	x	x	x	x	x	x	x	x	x
516	Pipeline	0.00	0.00	0.00	0.00	0.00	0.00			x	x	x						x
528	Prescribed Grazing	3.00	2.67	2.83	1.50	1.30	2.67	x	x	x	x	x		x				x
533	Pumping Plant	0.00	2.00	1.00	2.00	0.00	0.00		x					x		x		x
550	Range Planting	3.20	3.00	3.10	0.75	1.33	2.67				x	x	x	x		x	x	x
561	Heavy Use Area Protection	2.00	0.50	1.25	-1.00	1.67	0.00				x	x		x				
574	Spring Development	1.00	-1.00	0.00	1.80	1.25	3.00		x					x		x		x
578	Stream Crossing	2.00	0.00	1.00	0.00	-0.67	0.00	x	x		x	x		x				
580	Streambank and Shoreline Protection	4.00	0.00	2.00	0.00	1.25	1.50				x			x				
584	Channel Bed Stabilization	2.00	0.00	1.00	2.00	1.00	1.25				x	1.00		x				
585	Stripcropping	4.00	2.00	3.00	0.00	1.17	1.67				x			x				
587	Structure for Water Control	0.00	0.00	0.00	2.00	1.00	2.00			x					x			
588	Cross wind Ridges	4.00	1.00	2.50	0.00	1.00	0.00				x			x				
590	Nutrient Management	0.00	1.67	0.83	0.00	3.50	0.00			x		x	x					x
595	Pest Management	2.00	2.00	2.00	0.00	4.00	2.00			x		x	x			x	x	
600	Terrace	2.60	0.50	1.55	0.80	0.36	1.00				x			x				
601	Vegetative Barrier	2.00	-2.00	0.00	0.00	1.60	1.00	x	x	x	x	x		x	x			x
612	Tree/Shrub Establishment	3.60	2.33	2.97	1.20	1.17	2.33	x		x	x	x		x			x	
612	Tree Planting	3.60	2.33	2.97	1.20	1.17	2.33	x		x	x	x		x			x	
614	Watering Facility	2.20	0.00	1.10	0.00	1.71	4.00					x						x
642	Water Well	2.00	1.00	1.50	2.00	-1.00	2.00					x			x			x
643	Restoration and Management of Rare and Declining Habitats	2.00	-1.00	0.50	0.00	2.00	4.00					x				x	x	
644	Wetland Wildlife Habitat Management	0.00	0.00	0.00	2.00	2.00	4.00	x				x		x		x	x	
645	Upland Wildlife Habitat Management	2.40	0.00	1.20	-0.50	2.00	5.00					x		x		x	x	
647	Early Successional Habitat Development/Management	0.00	0.00	0.00	0.00	-1.00	4.00					x				x	x	
659	Wetland Enhancement	0.00	1.00	0.50	2.00	1.50	4.00	x				x		x		x	x	
666	Forest Stand Improvements	0.75	0.00	0.38	3.00	0.75	2.33					x		x		x	x	

Notes:
1. Soil function scores are based on the average scores for Soil Condition and Soil Erosion as summarized in Attachment 1.
CARA: Critical Aquifer Recharge Areas
FFA: Frequently Flooded Areas
FWHCA: Fish and Wildlife Habitat Conservation Areas
GHA: Geologically Hazardous Areas
WET: Wetlands

Appendix D

Existing and Related Plans, Programs, and Regulations

APPENDIX D: Existing and Related Plans, Programs, and Regulations

The Growth Management Act (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 Voluntary Stewardship Program (VSP) is part of the GMA, but was also written to work with other existing programs, plans, and applicable rules and regulations. This appendix provides an overview of the existing resources used in the Adams County VSP Work Plan and describes how they relate to other applicable rules and regulations (the regulatory environment).

Existing Conservation Programs

As described in the Adams County VSP Work Plan, the VSP provides a voluntary framework for critical areas protection and enhancement actions carried out by agricultural producers while maintaining and improving agricultural viability. Other similar programs are available to agricultural producers that are designed to incentivize protection and enhancement of critical areas through conservation practices. The availability of these programs is variable, as they are heavily influenced by federal and state program funding, the regulatory environment, industry standards, and the agricultural market. Many of these programs have been in place since the July 22, 2011, baseline and have contributed to conservation practices being implemented across Adams County.

There are a variety of voluntary incentive programs provided by federal, state, and local entities to agricultural producers. The VSP was written to be compatible with existing conservation programs to achieve protection and enhancement of critical areas. Table 1 includes a summary of federal programs, and Table 2 includes a summary of state and local programs available to agricultural producers. These tables provide a general representation of available federal, state, and local programs and are not intended to provide an exhaustive list.

The following list includes international organizations that offer a variety of voluntary conservation and certification programs to agricultural producers:

- **USDA Good Agricultural Practices (GAP):** GAP is a USDA program providing voluntary audits which verify that fruit and vegetables are produced, handled, and stored as safely as possible using industry recognized agriculture practices.
- **GLOBALG.A.P.:** GLOBALG.A.P. is a non-profit organization that provides a voluntary GLOBALG.A.P. certification for eligible crops and livestock that meet or exceed 16 standards for safe and environmentally sound agricultural practices.
- **Safe Quality Food Institute (SQFI):** SQFI offers certifications recognized by the Global Food Safety Initiative for best agricultural and livestock practices.

- **PrimusLabs:** PrimusLabs, located in North and South America, is a food safety company that provides a GAP auditing program that certifies agricultural producers who comply with standard operating procedures for food safety.
- **Farmed Smart:** The Pacific Northwest Direct Seed Association oversees the Farmed Smart Program, which is designed to certify producers who use sustainable practices. The program defines conservation standards and provides educational tools to producers regarding the environmental benefits of direct seeding.

Table 1
Federal Conservation Programs

Lead	Description	Program	Details
Natural Resources Conservation Service (NRCS)	NRCS provides technical and financial assistance to help agricultural producers make and maintain conservation improvements on their land. NRCS also offers conservation easement programs and partnerships to leverage existing conservation efforts on farm lands.	Environmental Quality Incentives Program (EQIP) ¹	Voluntary program providing financial and technical assistance for agricultural producers to plan and implement conservation practices improving soil, water, plant, animal, air, and related natural resources.
		Conservation Stewardship Program (CSP) ²	Voluntary program providing technical assistance for agricultural and forest landowners to develop plans for conservation, management, and enhancement activities.
		Agricultural Conservation Easement Program (ACEP) ³	Providing conservation partners with financial and technical assistance through agricultural land easements to restore, protect, and enhance wetlands.
		Agricultural Water Enhancement Program (AWEP) ⁴	Voluntary program providing financial and technical assistance to agricultural producers for implementing agricultural water-enhancement activities.
		Wildlife Habitat Incentive Program (WHIP) ⁵	Voluntary program for wildlife habitat conservation and enhancement on agricultural land, non-industrial private forest land, and Native American land.
		Regional Conservation Partnership Program (RCPP) ⁶	Providing conservation partners with financial assistance to support high-impact conservation projects. NRCS recently awarded \$5.5 million in funds during the next 5 years to the Palouse Watershed RCPP through the 2014 Farm Bill. The RCPP provides additional opportunity within Water Resource Inventory Area (WRIA) 34 for increased conservation practices that enhance producer operations, and improve soil and water quality and wildlife habitat. These practices and programs likely only represent a small portion of practices being implemented but that are currently unaccounted for in the County.

¹ www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/eqip/

² www.nrcs.usda.gov/csp

³ www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/easements/acep/

⁴ www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/whip/

⁵ www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/awep/

⁶ <https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/farmbill/rcpp/>

Lead	Description	Program	Details
Farm Service Agency (FSA)	FSA oversees several voluntary, conservation-related programs that work to address several agriculture-related conservation measures.	Conservation Reserve Program (CRP) ⁷	Voluntary reserve program conserving environmentally sensitive land through agricultural protections and plant species to improve environmental health.
		Conservation Reserve Enhancement Program (CREP) ⁸	Similar to the CRP, voluntary program targeting high-priority conservation issues. The contract period is typically 10 to 15 years.

Table 2
State and Local Conservation Programs

Lead	Description	Program(s)	Details
Washington State Conservation Commission (WSCC)	WSCC works with conservation districts (CDs) to provide voluntary, incentive-based programs for implementation of conservation practices. WSCC supports the CDs through financial and technical assistance; administrative and operational oversight; program coordination; and promotion of CD activities and services.	Coordinated Resource Management (CRM) Program ⁹	Voluntary and locally led program for landowners seeking to resolve land-use and natural resource issues through local coalitions and consensus building.
		Irrigation Efficiencies Grant Program (IEGP) ¹⁰	Providing financial incentives to landowners willing to install irrigation systems that save water.
		Natural Resource Investments (non-shellfish) Grants ¹¹	Grant program for landowners to complete natural resource enhancement projects necessary to improve water quality in non-shellfish growing areas.
		Office of Farmland Preservation (OFP) ¹²	Identifying and addressing farmland loss through agriculture conservation easement programs, providing technical assistance, developing farm transition programs, and providing data and analysis on trends.

⁷ www.fsa.usda.gov/programs-and-services/conservation-programs/conservation-reserve-program/

⁸ www.fsa.usda.gov/FSA/webapp?area=home&subject=low&topic=cep

⁹ <http://scc.wa.gov/coordinated-resource-management/>

¹⁰ <http://scc.wa.gov/iegp/>

¹¹ <http://scc.wa.gov/wq-nonshellfish/>

¹² <http://scc.wa.gov/office-of-farmland-preservation/>

Lead	Description	Program(s)	Details
Washington State Department of Fish and Wildlife (WDFW)	WDFW provides financial assistance for habitat projects that restore and/or preserve fish and wildlife habitat.	Aquatic Lands Enhancement Account (ALEA) Volunteer Cooperative Grant Program ¹³	Grant program for qualifying landowners who undertake projects that benefit Washington state's fish and wildlife resources.
Washington State Recreation and Conservation Office	The 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.	ALEA ¹⁴	Local and state agencies and Native American Tribes can apply for grants to fund aquatic habitat-enhancement projects.
		Salmon Recovery Funding Board Salmon Recovery Grants ¹⁵	Grant program for eligible parties seeking to improve important habitat conditions or watershed processes to benefit salmon and bull trout.
		Farmland Preservation Grants ¹⁶	Grant program for local agencies and non-profits to buy development rights on farmlands to ensure the lands remain available for farming in the future.
Washington State Department of Ecology (Ecology)	Ecology provides funding for water-quality improvement and protection projects.	Water Quality Financial Assistance Program ¹⁷	Grant and loan program for high-priority projects to protect and improve the health of Washington state waters.
		Farmed Smart Partnership ¹⁸	Regional voluntary program overseen by the Pacific Northwest Direct Seed Association, in coordination with Ecology, that certifies agricultural producers for environmentally friendly and sustainable dryland agriculture practices.

¹³ <http://wdfw.wa.gov/grants/alea/index.html>

¹⁴ <http://www.rco.wa.gov/grants/alea.shtml>

¹⁵ http://www.rco.wa.gov/grants/sal_rec_grants.shtml

¹⁶ <http://www.rco.wa.gov/grants/farmland.shtml>

¹⁷ <http://www.ecy.wa.gov/programs/wq/funding/funding.html>

¹⁸ <http://www.ecy.wa.gov/programs/wq/nonpoint/Agriculture/farmedsmart.html>

Lead	Description	Program(s)	Details
Adams Conservation District (Adams CD)	Adams CD provides financial and technical support is provided for education and the promotion of natural resource conservation.	Grant Programs ¹⁹	Grant programs offer assistance through the WSCC grant program for implementing best management practices to conserve soil, improve water and air quality, and enhance wildlife habitat.
		Partnering Programs ^{20,21}	Partnerships with other agencies include the water resource inventory area (WRIA) 34 Palouse Watershed Regional Conservation Partnership Program and the West Palouse local work group, comprising Adams and Lincoln county conservation agencies, organizations, and landowners.
Grant County Conservation District	GCCD works through voluntary, incentive-based programs to assist landowners and agricultural operators with the conservation of natural resources including cost-share, and assistance in the development of range management and farm conservation plans.	Cost-share Assistance Programs ²²	Program providing technical assistance and cost-share assistance for projects that implement best management practices to address natural resources priority areas, livestock management, small farms, vacant lot weed control, and wildlife conservation.
		Irrigation Water Management Cost-share ²³	Program providing cost-share assistance for farmers to install and utilize water management technology in coordination with the Grant Public Utility District.
Washington State University (WSU) Extension	The WSU Extension program connects agricultural and natural resource stakeholders and industries, as well as the public, to extend research-based information and conduct locally relevant applied research in the fields of agriculture and natural resource sciences.	Agriculture and Natural Resources Program ²⁴	Program providing technical assistance, research, and education to producers.

¹⁹ <http://www.adamscd.com/assistance/>

²⁰ *Ibid.*

²¹ <https://www.lincolncd.com/partnering-programs>

²² <http://www.columbiabasinncds.org/projects>

²³ <http://www.columbiabasinncds.org/project-page>

²⁴ <http://anr.cw.wsu.edu/>

Related Plans and Programs

As required by the Revised Code of Washington (RCW) 36.70A.720(1)(a), the VSP Work Plan must incorporate applicable water quality, watershed management, farmland protection, and species recovery data and plans. Table 3 includes a summary of the planning documents and programs referenced for the VSP Work Plan and appendices. These include watershed management and wildlife management programs prepared specific to Adams County.

The County includes portions of six watersheds, which are known as Water Resource Inventory Areas (WRIAs). Most of the County is in the Upper Crab-Wilson (WRIA 43), which drains southwest toward the Columbia River. The northern portion of the County drains northward into the Columbia River (Lower Lake Roosevelt WRIA 53) and the Spokane River (Lower Spokane WRIA 54). Small portions of the Grand Coulee (WRIA 42), Lower Crab (WRIA 41), and Palouse (WRIA 34) watersheds are also present in the County.

Within the six watersheds, there are two Washington State Department of Ecology water quality improvement projects, or Total Maximum Daily Loads (TMDLs), for the Palouse River within WRIA 34.²⁵

Table 3
Summary of Planning Documents

Plan or Program	Date	Author/Agency	Description
<i>Watershed Plans</i>			
Water Resource Area (WRIA) 34 – Palouse			
Palouse Watershed Plan	2007	HDR and EES	The Palouse Watershed Plan is intended to identify, prioritize, and develop solutions to water resource management issues within the Palouse watershed. This plan was used to assess existing conditions and management recommendations in the VSP Work Plan.
Rock Watershed HUC: 17060109 Rapid Watershed Assessment Profile	2006	NRCS	The Rapid Watershed Assessment presents quantitative and qualitative information to develop a watershed profile and provide a baseline to make decisions about conservation needs and recommendations.
Palouse Subbasin Management Plan	2004	Gilmore, S.	The Palouse Subbasin Management Plan includes three components, assessment, inventory, and management. These components are intended to support basin-wide efforts toward a coordinated ecosystem-based approach to fish and wildlife habitat protection and restoration efforts. This plan

²⁵ <http://www.ecy.wa.gov/programs/wq/tmdl/TMDLsbyCounty/adams.html>

Plan or Program	Date	Author/Agency	Description
			was used to assess existing conditions and management recommendations in the VSP Work Plan.
Final Draft Phase II – Level 1 Technical Assessment for the Palouse Basin (WRIA 34)	2004	Golder Associates	The Phase II – Level 1 Technical Assessment for the Palouse Basin (WRIA 34) identifies existing water resources and strategies for increasing water supplies within the management area. The assessment collects existing data for land and water uses for future water management activities.
WRIA 43 – Upper Crab-Wilson			
Watershed Assessment Report: WRIA 43	2005	Kennedy/Jenks Consultants	The Watershed Assessment Report objectives are to summarize data, propose strategies to increase availability of water supplies, identify water quality impairments, define approaches to improve water quality where needed, and identify data gaps and recommend options for addressing them.
WRIA 43 Watershed Management Plan	2006	The WRIA 43 Watershed Planning Unit	The WRIA 43 Watershed Management Plan is intended to provide a framework for management of water resources in the watershed with local input to protect the interests and values of residents and landowners within the watershed.
WRIA 43 Upper Crab/Wilson Creek Detailed Implementation Plan 2nd Draft	2008	WRIA 43 Water Resource Management Group, Inc.	The Detailed Implementation Plan outlines the implementation phase of watershed planning based on grant funding cycles and availability.
Other Applicable Guidance Documents			
Adams County Shoreline Master Program (SMP)	2015	Adams County	The SMP includes shoreline goals and policies for management and protection of shorelines of the state located within the County. Existing agriculture activities are exempt from the SMP.
Shoreline Restoration Plan for Shorelines in Adams County	2015	Adams County and The Watershed Company	The Restoration Plan describes how and where shoreline ecological functions can be restored within County's SMP jurisdiction.
Palouse River Chlorinated Pesticide and polychlorinated biphenyl (PCB) Total Maximum Daily Load (TMDL): Water Quality Improvement Report and Implementation Plan	2007	Washington State Department of Fish and Wildlife	The TMDL is prepared for impaired waterbodies to determine the amount of a pollutant that can be discharged to the waterbody and still meet standards. The TMDL provides implementation and adaptive management measures to protect water quality and meet TMDL goals.
Shrub-steppe and Grassland Restoration	2011	Washington State Department of Fish and Wildlife	This publication provides guidance for shrub-steppe and grassland restoration practitioners within the Columbia River Basin.

Plan or Program	Date	Author/Agency	Description
Manual for the Columbia River Basin			
Management Recommendations for Washington's Priority Habitats: Riparian	1997	Washington State Department of Fish and Wildlife	The riparian habitat management plan provides statewide riparian management recommendations based on the best-available science.
Washington State Recovery Plan for the Greater Sage Grouse	May 2004	Washington State Department of Fish and Wildlife	The greater sage grouse recovery plan prescribes strategies to recover the species such as protecting and restoring habitat.
Priority Habitats and Species List (PHS)	2016	Washington State Department of Fish and Wildlife	The Washington State Department of Fish and Wildlife manages the PHS list to track and document state-listed habitats and species located throughout the state.

Federal, State, and Local Regulations that Apply to Agriculture

The VSP is provided as an alternative to protecting critical areas used for agricultural activities through development regulations under the GMA. Despite its voluntary nature, it is still the intent of the VSP to improve, and not limit, “compliance with other laws designed to protect water quality and fish habitat,” per RCW 36.70A.700 and 36.70A.702. Per RCW 36.70A.720, the development regulations used to achieve the goals and measurable benchmarks for protection of critical areas must be incorporated into the VSP Work Plan.

Tables 4 and 5 include a summary of federal, state, and local development regulations that are used to achieve the goals and measurable benchmarks of the VSP Work Plan. This list includes the most common environmental regulations affecting agriculture. The list does not include all regulations potentially impacting agricultural producers in the County. For instance, regulations on taxation, employment practices, marijuana production, and other regulations are not included. Because no regulations are enforced via the VSP, regulatory enforcement in the County provides a “regulatory backstop.” For example, the Washington State Department of Ecology will continue to regulate wetland conversions on agricultural lands through the local Water Pollution Control Act.²⁶ Continued compliance with these regulations provides additional assurance the functions and values of critical areas are protected.

As illustrated in Figure 1, the VSP is intended to balance critical areas protection and agricultural viability at the County level through voluntary actions by agricultural producers. VSP is not a replacement for compliance with other laws and regulations, but participation in the program can often help agricultural producers comply with these requirements.

²⁶ Washington State Department of Ecology, 2013. The Voluntary Stewardship Program and Clean Water. Available at: <https://fortress.wa.gov/ecy/publications/publications/1310030.pdf>.

Figure 1
Balanced Approach of Critical Areas Protection and Agricultural Viability

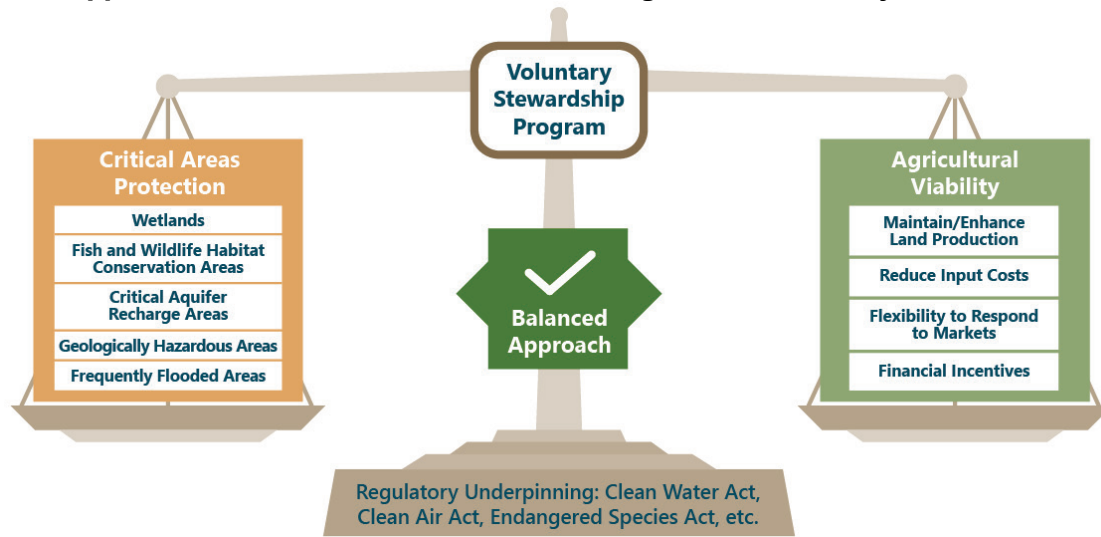


Table 4
Federal Regulations that Apply to Agriculture

Regulation(s)	Agency	Description	VSP Intersect
Agricultural Act (Farm Bill) ²⁷	U.S. Department of Agriculture	The Farm Bill, reauthorized in 2014, eliminates direct payments and continues crop insurance.	The Farm Bill includes the “swampbuster” conservation policy prohibiting land owners from converting wetlands to cropland. The “sodbuster” provision requires participating parties to maintain a specified level of conservation.
Clean Water Act (CWA) ²⁸	U.S. Environmental Protection Agency (USEPA); regulated locally by Washington State Department of Ecology	The CWA regulates discharges of pollutants into waters of the United States, including discharges of dredge or fill material in wetlands. CWA exemptions for agriculture are designed to be consistent with and support existing U.S. Department of Agriculture programs.	Compliance with the CWA maintains or enhances water quality, which in turn benefits critical areas, including wetlands and fish and wildlife habitat conservation areas.
Safe Drinking Water Act (SDWA) ²⁹		The SDWA protects public drinking water supplies in the United States, including sole-source aquifers. The USEPA provides technical and financial resources under the Clean Water State Revolving Fund for improving water quality, protecting drinking water sources, and controlling nonpoint source pollution.	The SDWA is designed to protect critical aquifer recharge areas, which are important sources for drinking water and vulnerable to contamination.
National Pollution Discharge Elimination System (NPDES) ³⁰		NPDES is promulgated under the CWA to regulate discharges to waters of the United States from animal feeding operations.	Regulated discharges to waters of the United States help to protect water quality in critical areas, including wetlands and fish and wildlife habitat conservation areas.

²⁷ <https://www.fsa.usda.gov/programs-and-services/farm-bill/index>

²⁸ <https://www.epa.gov/laws-regulations/summary-clean-water-act>

²⁹ <https://www.epa.gov/sdwa>

³⁰ <https://www.epa.gov/npdes>

Regulation(s)	Agency	Description	VSP Intersect
Endangered Species Act (ESA) ^{31,32}	National Marine Fisheries Service and the U.S. Fish and Wildlife Service	The ESA protects threatened and endangered species and critical habitat throughout the United States.	ESA-listed species and critical habitat are protected through avoidance and minimization measures such as the “no-spray” pesticide buffer zones near ESA-listed salmon-bearing waterbodies. The no-spray buffer zones are 60 feet for ground and 300 feet for aerial pesticide applications.
Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) ³³	U.S. Environmental Protection Agency	FIFRA regulates pesticide distribution, sale, and use and includes labeling and registration requirements.	Compliance with FIFRA is intended to maintain or enhance water quality, which in turn benefits critical areas, including wetlands, fish and wildlife habitat conservation areas, and critical aquifer recharge areas.
National Emissions Standards for Hazardous Air Pollutants (NESHAP) ³⁴	U.S. Environmental Protection Agency	NESHAP regulates hazardous air pollutant emissions, including from new and existing facilities that manufacture active ingredients for organic pesticide used in herbicides, insecticides, and fungicides.	These regulations are intended to reduce or eliminate hazardous air pollutant emissions with the potential to spread via aerial application to critical areas, including wetlands and fish and wildlife habitat conservation areas.

³¹ <http://www.nmfs.noaa.gov/pr/laws/esa/>

³² <https://www.fws.gov/endangered/>

³³ <https://www.epa.gov/laws-regulations/summary-federal-insecticide-fungicide-and-rodenticide-act>

³⁴ <https://www.epa.gov/stationary-sources-air-pollution/national-emission-standards-hazardous-air-pollutants-neshap-9>

Table 5
State and Local Regulations that Apply to Agriculture

Regulation(s)	Agency	Description	VSP Intersect
<i>Revised Code of Washington (RCW)</i>			
Title 15 Agriculture and Marketing	Washington State Department of Agriculture	RCW Title 15 includes general regulations pertaining to agricultural practices.	<ul style="list-style-type: none"> Regulations cover pest and disease control, nutrients, and commodity commissions.
Title 16 Animals and Livestock	Washington State Department of Agriculture	RCW Title 16 includes general regulations pertaining to animals and livestock practices.	<ul style="list-style-type: none"> Regulations cover range areas, meat licensing, feed lot certification, and fencing.
Title 17 Weeds, Rodents, and Pests	Washington State Noxious Weed Control Board*	RCW Title 17 includes general regulations pertaining to weed, rodent, and pest control.	<ul style="list-style-type: none"> RCW Title 17.06 establishes intercounty weed districts.
Title 36 Counties	<i>Various</i>	RCW Title 36 includes regulations pertaining to counties, including the VSP.	<ul style="list-style-type: none"> RCW Titles 36.70A.700-904 comprise the VSP, a program designed to promote plans to protect and enhance critical areas while maintaining and improving agricultural viability.
Title 77 Fish and Wildlife	Washington Department of Fish and Wildlife	RCW Title 77 includes fish and wildlife enforcement regulations.	<ul style="list-style-type: none"> Salmon recovery and enhancement programs include habitat projects and plans, including voluntary, incentive-based enhancement programs. In-water construction activities (i.e., hydraulic projects) are regulated under RCW Title 77.55.
Title 87 Irrigation	Irrigation Districts	RCW Title 87 regulates irrigation and irrigation districts.	<ul style="list-style-type: none"> RCW Title 87.03 establishes irrigation and improvement districts.
Title 89 Reclamation, Soil Conservation, and Land Settlement	Conservation Districts, Office of Farmland Preservation, and Irrigation Districts	RCW includes general regulations pertaining to reclamation and local conservation districts.	<ul style="list-style-type: none"> RCW Title 89.08 establishes conservation districts. RCW Title 89.10 establishes the Office of Farmland Preservation. RCW Title 89.12 includes adoption of the Columbia Basin Project Act and related regulations.

Regulation(s)	Agency	Description	VSP Intersect
Title 90 Water Rights – Environment	<i>Various</i>	RCW Title 90 regulates various aspects of water rights and appropriation for public and industrial purposes.	<ul style="list-style-type: none"> • RCW Title 90.42-46 includes regulations pertaining to water resource management, regulation of public groundwater, and reclaimed water use. • RCW Title 90.48 includes the Water Pollution Control Act, which regulates agricultural discharges to surface waters and wetlands. • RCW Title 90.64 includes dairy nutrient-management regulations. • RCW Title 90.90 includes the Columbia River Basin water supply rules for allocation and development of water supplies.
<i>Washington Administrative Code (WAC)</i>			
Title 16	Washington State Department of Agriculture	WAC Title 16 includes Washington State Department of Agriculture rules pertaining to agriculture regulation, certification, and marketing.	<ul style="list-style-type: none"> • WAC Titles 16-200 through 16-202 include standards for nutrient and crop protection. • WAC Titles 16-611 includes standards for nutrient management.
Title 173	Washington State Department of Ecology	WAC Title 173 includes Washington State Department of Ecology rules for air and water quality protection.	<ul style="list-style-type: none"> • WAC Titles 173-15 through 173-27 include state Shoreline Management Act rules and permitting requirements. The County currently implements the SMP under these state rules. • WAC Titles 173-134A sets the Quincy groundwater management and zones. • WAC Title 173-158 includes floodplain management rules. • WAC Title 173-166, 173-170, and 173-173 includes rules for drought relief programs, agricultural water supply facilities, and measuring and reporting water usage. • WAC Title 173-220 includes NPDES rules for discharges to waters of the state. • WAC Title 173-430 includes rules for agricultural burning.

Regulation(s)	Agency	Description	VSP Intersect
Title 220 and 232	Washington State Department of Fish and Wildlife	WAC Title 173 includes Washington State Department of Fish and Wildlife rules for management of fish and wildlife species and habitat.	<ul style="list-style-type: none"> WAC Title 220-410 defines game management areas, including the Game Management Units in Adams County. WAC Title 220-620 describes the volunteer cooperative fish and wildlife enhancement program. WAC Title 220-660 includes the Washington State Hydraulic Code, which regulates in-water construction activities (hydraulic projects) through Hydraulic Project Approvals. WAC Title 232-28 includes wildlife interaction rules, including those pertaining to damage of commercial crops and livestock.
Title 246	Washington State Department of Health	WAC Title 246 includes Washington State Department of Health rules, including those for protection of water systems.	<ul style="list-style-type: none"> WAC Titles 246-290 and 246-291 includes rules for Group A and B public water supplies and water systems, respectively. These include regulations for using greywater for irrigation purposes.
<i>Adams County Regulations</i>			
Critical Areas and Resource Lands	Adams County Building and Planning	The Adams County Critical Areas and Resource Lands Ordinance is promulgated under Adams County Code (ACC) Chapter 18.06	<ul style="list-style-type: none"> ACC 18.06.090 exempts existing and ongoing agricultural operations occurring within critical areas and their buffers from the Critical Areas and Resources Lands Ordinance. If agricultural activities cease, then that land would be subject to the ordinance. ACC 18.06.330 supports the Columbia Basin Groundwater Management Area (GWMA) and local CDs in working with agricultural producers to protect groundwater quality.
SMP	Adams County Building and Planning	The Adams County SMP is promulgated under ACC 18.08.	<ul style="list-style-type: none"> The SMP covers new agricultural uses and activities within shorelines of the state (defined as 200 feet from mean higher high water) and does not limit or modify existing or ongoing agricultural practices.

*Includes agencies responsible for overseeing agriculture-specific regulations. Other agencies may be assigned jurisdiction for non-agriculture related regulations described therein.