



# Douglas County Voluntary Stewardship Program Work Plan

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*Approved April 30, 2018*

*"Volunteer or voluntold, how do you like your agriculture?"*



WORK PLAN  
for the  
DOUGLAS COUNTY  
VOLUNTARY STEWARDSHIP PROGRAM



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Cover photos (clockwise from top left):

Apple tree near the city of Bridgeport, Credit: Olivia Schilling

Wheat field and homestead on the Waterville Plateau, Credit: Amanda Ward

Lower East Foster Creek, Credit: Olivia Schilling

<p style="text-align: center;"><b>VSP WORK PLAN STATUTORY REQUIREMENT RCW 36.70A.720(1)</b></p>	<p style="text-align: center;"><b>LOCATION ADDRESSED IN THIS WORK PLAN</b></p>
<p>(a) Review and incorporate applicable water quality, watershed management, farmland protection, and species recovery data and plans</p>	<ul style="list-style-type: none"> <li>• Section 1.8, p.9; Existing Plans</li> <li>• Section 6.1.3, pp. 59-60; 303d lists</li> <li>• Section 6.5.3, pp.87-90; groundwater quality</li> <li>• Section 7.2, p.101; the MSGCP</li> <li>• Section 7.3, p. 103; Watershed Management Plan</li> <li>• Section 7.4, p. 107; existing CD programs</li> <li>• Section 7.5, p. 109; CWPP and Firewise</li> <li>• Section 7.7, p. 111; SGI</li> <li>• Section 9.3, p. 131; Indicator Monitoring</li> </ul>
<p>(b) Seek input from tribes, agencies, and stakeholders</p>	<ul style="list-style-type: none"> <li>• Section 1.4, p.6; Summary of outreach</li> <li>• Appendix C, p. 170; Work Group Outreach Documentation</li> </ul>
<p>(c) Develop goals for participation by agricultural operators conducting commercial and noncommercial agricultural activities in the watershed necessary to meet the protection and enhancement benchmarks of the work plan</p>	<ul style="list-style-type: none"> <li>• Section 8.4, p. 120; The benchmarks are participation goals necessary to protect and enhance critical areas</li> </ul>
<p>(d) Ensure outreach and technical assistance is provided to agricultural operators in the watershed</p>	<ul style="list-style-type: none"> <li>• Section 10.1, p. 141; Outreach</li> <li>• Section 10.2, p. 143; Technical Assistance</li> <li>• Section 10.3.5, p. 145; Participation Goal</li> <li>• Appendix J, p. 312; Outreach Materials</li> <li>• Appendix K, p. 332; Initial Budget</li> </ul>
<p>(e) Create measurable benchmarks that, within ten years after the receipt of funding, are designed to result in (i) the protection of critical area functions and values and (ii) the enhancement of critical area functions and values through voluntary, incentive-based measures</p>	<ul style="list-style-type: none"> <li>• Chapter 8, pp. 117-127; Goals and Benchmarks</li> <li>• Table 8-2, p. 121; Protection and Enhancement Benchmarks</li> <li>• Attachment 1; Protection and Enhancement Benchmarks</li> </ul>
<p>(f) Designate the entity or entities that will provide technical assistance</p>	<ul style="list-style-type: none"> <li>• Section 10.2, p. 143; Technical Assistance</li> </ul>
<p>(g) Work with the entity providing technical assistance to ensure that individual stewardship plans contribute to the goals and benchmarks of the work plan</p>	<ul style="list-style-type: none"> <li>• Section 7.8, p. 112; Farm-Scale Planning</li> <li>• Section 10.3.2, p. 144; Farm-Scale Planning</li> <li>• Section 10.4.2, p. 147; Implementation Process</li> <li>• Appendix L, p. 333; ISP Checklist</li> </ul>
<p>(h) Incorporate into the work plan any existing development regulations relied upon to achieve the goals and benchmarks for protection</p>	<ul style="list-style-type: none"> <li>• Section 7.10, p. 115; Regulatory Context</li> </ul>

<p>(i) Establish baseline monitoring for: (i) Participation activities and implementation of the voluntary stewardship plans and projects; (ii) stewardship activities; and (iii) the effects on critical areas and agriculture relevant to the protection and enhancement benchmarks developed for the watershed</p>	<p>(i) Section 9.1, p. 130; Program implementation monitoring  (ii) Section 9.2, p. 131; Benchmark monitoring  (iii) Section 9.3, p. 131; Indicator monitoring</p>
<p>(j) Conduct periodic evaluations, institute adaptive management, and provide a written report of the status of plans and accomplishments to the county and to the commission within sixty days after the end of each biennium</p>	<ul style="list-style-type: none"> <li>• Section 1.7, p. 8; Douglas County VSP Statutory Timeline</li> <li>• Section 10.5, p.148; Reporting</li> <li>• Section 9.5, pp.136-140; Adaptive Management</li> <li>• Attachment 1, Table 9-1, and Table 9-2; Adaptive management for benchmarks</li> <li>• Attachment 2 and Table 9-3; Adaptive management for indicators</li> <li>• Section 9.5.3 and Table 9-4, p. 140; Programmatic adaptive management</li> </ul>
<p>(k) Assist state agencies in their monitoring programs</p>	<ul style="list-style-type: none"> <li>• Section 9.4, p. 135; Assistance to State Agencies</li> </ul>
<p>(l) Satisfy any other reporting requirements of the program</p>	<ul style="list-style-type: none"> <li>• Section 10.5, p.148; Reporting</li> </ul>

# Acknowledgments

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*Pheasants Forever/Sage Grouse Initiative*

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*Washington Department of Ecology*

*National Resource Conservation Service*

*Washington State Farm Bureau*

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*Washington State Conservation Commission*

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## PURPOSE

The purpose of this document is to provide a detailed plan of how Douglas County will implement the Voluntary Stewardship Program (VSP) in accordance with the VSP Act (Engrossed Substitute House Bill (ESHB) 1886 in 2011).

# 1.0 Introduction

Washington State's Voluntary Stewardship Program (VSP) became law (Appendix A) in the state of Washington in 2011 under RCW 36.70A.705. *The VSP aims to protect critical areas where they intersect with agricultural activities, through voluntary, incentive-based measures, while at the same time maintaining and/or improving the long term viability of agriculture.*

The purpose of this document is to provide a detailed plan of how Douglas County will implement VSP in accordance with the VSP Act (Engrossed Substitute House Bill (ESHB) 1886 in 2011). This document is written for use by VSP Technical Service Providers (TSPs) and technical reviewers. Targeted outreach documents are available for producers and can be found in Appendix J.

## 1.1 Legislative Backdrop and Context

The roots of the VSP lie in conflicts between the Critical Area Ordinances of the Growth Management Act and agriculture. The state of Washington's Growth Management Act (GMA) states, "Each county and city shall adopt development regulations that protect critical areas" (RCW 36.70A.060(2)). The five critical areas the GMA identifies are: (1) fish and wildlife habitat conservation areas, (2) wetlands, (3) geologically hazardous areas, (4) frequently flooded areas, and (5) areas with a critical recharging effect on aquifers used for potable water. In accordance with the GMA, originally passed in 1990, Douglas County enacted a Critical Areas Ordinance. Douglas County's ordinance exempted, "agricultural activities normal or necessary to general farming conducted according to industry-recognized best management practices including the raising of crops or the grazing of livestock" from regulations. (DCC 19.18.030(C)). However, in 2006, it was determined that agricultural activities are not exempt from the regulations of the GMA in the state of Washington Supreme Court Case *Swinomish v. Skagit Co.*

Historically, the regulations of the GMA have been difficult to implement in locations where critical areas and agricultural activities intersect. There are many reasons for this difficulty including the financial and time costs associated with permitting, the potential for revenue producing agricultural lands being removed from production, the uncertainty and complexity involved with regulation enforcement, and the threat of forced compliance. In 2006, farm groups attempted to address the taking of agricultural lands due to regulations imposed by the GMA with Initiative 933, but it failed by a 60% vote.

The Washington State Legislature chose to address these issues in 2007 when it tasked the William D. Ruckelshaus Center, a non-profit think tank jointly housed by Washington State University and the University of Washington, to find a solution that would protect critical areas and promote agricultural viability in the state. The process brought together stakeholders on this issue for discussion and development of a recommendation to the Legislature. During this time, a moratorium was placed on requiring local governments to update their critical area ordinances as they specifically applied to agricultural activities.

The VSP was the solution presented to the Washington State Legislature by the Ruckelshaus Center. These recommendations were enacted by the VSP Act. This bill amended the Growth Management Act (RCW 36.70A) to allow three options for protecting critical areas:

- Permits the County to use a voluntary stewardship program in conjunction with stakeholders in lieu of enacting further critical areas regulations in regards to agricultural uses. At the state level, the voluntary stewardship program is to be administered by the Washington Conservation Commission.
- Continue under existing law and update critical areas regulations for agricultural uses by July 22, 2013.
- Limit the voluntary stewardship program to certain watersheds in the county, and update the critical areas regulations for other watersheds.

(ESHB 1886)

Douglas County was one of 27 counties in the state to opt into the VSP program. This action officially occurred on January 3, 2012 through the adoption of TLS 12-01 (Appendix B). Prior to the adoption of this resolution, the county conferred with tribes, environmental, and agricultural interests, provided public notice to affected and interested individuals, and held a public meeting as required by 36.70A.710. In addition to opting into the VSP, the resolution identified all of Douglas County for participation in the program and nominated the Moses Coulee (WRIA 44) watershed and the Foster Creek (WRIA 50) watershed for consideration by the Washington Conservation Commission as state priority watersheds per the requirements of RCW 36.70A.710.

VSP legislation allows for the county to designate itself, or another entity to implement VSP. Douglas County elected to have the Foster Creek Conservation District act as the administrative lead agency with respect to VSP as agreed upon on the 19<sup>th</sup> of December, 2015, through an *Interlocal Cooperation Agreement Between Douglas County and the Foster Creek Conservation District*. The terms of this agreement designate the county as “the financial lead agency between the Parties and the Washington State Conservation Commission,” and state that the district, “shall carry out all activities necessary to meet the requirements of the VSP” (2015).

## 1.2 Purpose and Intent

The purpose of this work plan document is to provide a detailed analysis of how Douglas County will implement VSP in accordance with the VSP Act.

The stated intent of the VSP is to:

- Promote plans to protect and enhance critical areas within the area where agricultural activities are conducted, while maintaining and improving the long-term viability of agriculture in the state of Washington and reducing the conversion of farmland to other uses;

- Focus and maximize voluntary incentive programs to encourage good riparian and ecosystem stewardship as an alternative to historic approaches used to protect critical areas;
- Leverage existing resources by relying upon existing work and plans in counties and local watersheds, as well as existing state and federal programs to the maximum extent practicable to achieve program goals;
- Encourage and foster a spirit of cooperation and partnership among county, tribal, environmental, and agricultural interests to better assure the program success;
- Improve compliance with other laws designed to protect water quality and fish habitat; and
- Rely upon voluntary stewardship practices as the primary method of protecting critical areas and not require the cessation of agricultural activities.

(RCW 36.70A.700)

### 1.3 Scope

The VSP aims to protect critical areas where they intersect with agricultural activities. RCW 36.70A.710(5) states, “[VSP] applies to all unincorporated property upon which agricultural activities occur within a participating watershed.” Thus, VSP’s statutory scope and jurisdictional limits exclude non-agricultural actors and factors that do not fit within the intersection of agricultural activities and critical area conditions.

Degradation to baseline natural resource conditions may occur due to non-agricultural effects beyond the control of agricultural producers (e.g., climate change, natural events, wild fires, floods, conversions, etc...), or other changes outside of the scope of the VSP (e.g. urban development, mapping errors, changes in program eligibility conditions, etc...). Changes to baseline conditions may also occur due to effects originating outside county jurisdiction over unincorporated lands.

Any identified degradations to baseline critical area functions and values, or declining resource trends in indicators of such functions, that are not caused by agricultural activities will not be counted against the Douglas County agricultural community for VSP critical area protection reporting purposes.

The VSP statute encourages, but does not require, enhancement of critical area functions and values above 2011 baseline conditions. This plan is focused on maintaining program viability by protecting critical area functions and values that existed on July 22, 2011. Critical area enhancements are strongly encouraged, and are likely to occur through the implementation of this work plan.

RCW 36.70A.702 further elaborates on the scope of VSP. It establishes, among other things (see Appendix A), that “Nothing in RCW 36.70A.700 through 36.70A.760 may be construed to: ... (2) Require an agricultural operator to discontinue agricultural activities legally existing before July 22, 2011; ... or (4) Grant counties or state agencies additional authority to regulate critical areas on lands used for agricultural activities...”

## 1.4 Roles in VSP

**Agricultural Operators** (see definition Section 1.8) are not required to participate in VSP.

**The Washington State Conservation Commission (WSCC)** is responsible for administering the VSP. The WSCC is responsible for establishing policies and procedures for implementing the program, administering funding, and reviewing and evaluating (along with the technical panel) work plans and work group reports. The statutory requirements of the commission's duties are referenced in RCW 36.70A.705 and RCW 36.70A.740 in Appendix A.

**The County** has the initial authority to opt-in to the VSP program, designate participating watersheds, recommend priority watersheds, convene and confer with stakeholders, and designate the VSP Watershed Work Group and Administrative Entity. The statutory requirements of the county's duties are referenced in RCW 36.70A.715 and RCW 36.70A.735 in Appendix A.

**Technical Service Providers (TSPs)** are the entities responsible for providing technical assistance to agricultural operators in Douglas County. These entities are identified in Section 10.2 per RCW 36.70A.720(1)(f).

**Foster Creek Conservation District (FCCD)** was designated by Douglas County as the administrative entity for VSP implementation. FCCD shall carry out all administrative activities necessary to meet the requirements of the VSP and shall be one of the primary TSPs.

**South Douglas Conservation District (SDCD)** shall act as one of the primary TSPs.

**The Director** of the conservation commission will approve the work plan. The completed work plan will be submitted to the director, who then submits the plan to the technical panel for review. If the technical panel determines whether, at the end of ten years after receipt of funding, the work plan, in conjunction with other existing plans and regulations, will protect critical areas while maintaining and enhancing the viability of agriculture in the watershed, then the director must approve the plan. If the plan has not been approved within two years and nine months after receipt of funding, the director shall submit the plan to the Statewide Advisory Committee for resolution. If the Statewide Advisory Committee recommends approval, the director must approve the plan. The statutory requirements of the commission's duties are referenced in RCW 36.70A.725 in Appendix A.

**The Technical Panel** is responsible for reviewing the work plan after its submission for approval and reporting to the director. The technical panel shall assess whether at the end of ten years after receipt of funding, the work plan, in conjunction with other existing plans and regulations, will protect critical areas while maintaining and enhancing the viability of agriculture in the watershed, in addition to meeting all other statutory requirements of THE VSP ACT. Additionally, the technical panel assists in reviewing the two and five-year status reports submitted by the work group. The technical panel consists of a member from the Washington State Conservation Commission, the Washington Department of Agriculture, the Washington Department of Fish and Wildlife, and the Washington Department of Ecology. The technical panel review of the work plan is described in RCW 36.70A.725.



**The Statewide Advisory Committee** is responsible for advising the commission and other agencies involved in development and operation of VSP. Specifically, if the director has not approved a work plan within two years and nine months from the receipt of funding, the Statewide Advisory Committee will work with the work group to resolve issues with the work plan. If the Statewide Advisory Committee recommends approval, the director must approve the work plan. The committee is also involved in review of reports submitted by the watershed group under RCW 36.70A720(2)(b). The committee shall consist of two persons representing county government, two persons representing agricultural organizations, and two persons representing environmental organizations. The commission, in conjunction with the governor's office, shall also invite participation by two representatives of tribal governments.

**The VSP Watershed Work Group** is responsible for developing, agreeing to, and submitting the work plan for approval. Upon approval, the work group is responsible for administering and implementing the work plan over the life of VSP. The watershed group must include broad representation of key watershed stakeholders and, at a minimum, representatives of agricultural and environmental groups and tribes that agree to participate. Participation in the Douglas County work group is voluntary. In initiating the process, FCCD invited interested parties to participate, and asked them to fill out a simple application. Statutory requirements of the work group's duties are referenced in RCW 36.70A.720 and below in Section 1.4.

At the time of work plan completion, the following people are members of the Douglas County watershed work group:

*Dave Billingsley, Rancher, Landowner*

*Robert Ramm, Dryland Farmer, Landowner*

*Tim Behne, Dryland Farmer, Landowner*

*Alex McLean, Dryland Farmer, Landowner*

*Jeff Rock, Dryland Farmer, South Douglas Conservation District*

*Norman Tupling, Dryland Farmer, Chelan-Douglas Farm Bureau*

*April Clayton, Orchardist, Landowner, Chelan-Douglas County Farm Bureau*

*Britt Dudek, Orchardist, Chelan-Douglas County Farm Bureau President*

*Curt Soper, Director, Chelan-Douglas Land Trust*

*Amanda Barg, Habitat Biologist, Washington Department of Fish and Wildlife*

*Jessica Gonzales, Sagebrush Steppe Ecosystem Conservation Coordinator, US Fish and Wildlife Service*

*Aaron Rosenblum, VSP Coordinator, FCCD*

The following entities, and the sectors they represent, participated in some of the work group meetings, but are not members of the work group:

*Washington State University Extension, Agriculture/Research*

*Greater Wenatchee Irrigation District, Agriculture*  
*The Nature Conservancy, Environmental*  
*Pheasants Forever/Sage Grouse Initiative, Environmental/Agency*  
*Washington Department of Agriculture, Agency/Government*  
*Washington Department of Ecology, Agency/Government*  
*National Resource Conservation Service, Agency/Government*  
*Washington State Farm Bureau, Agency/Government*  
*Cascadia Conservation District, Agency/Government*  
*Douglas County Planning Department, Agency/Government*  
*Washington State Conservation Commission, Agency/Government*

*Don Brigham and Ben Floyd of Anchor QEA provided meeting facilitation services and support for seven of the ten workgroup meetings between August 2016 and June 2017.*

Members of the Confederated Tribes and Bands of the Yakama Nation and the Confederated Tribes of the Colville Reservation were invited to participate in the Douglas County VSP process (Appendix C). Contacts for the tribes were kept updated via email, usually twice per month, regarding work plan development, meeting announcements, and work plan/meeting materials. The updates were sent out through a bulk email list that was used to keep all stakeholders informed about the Douglas County VSP process. Appendix C also documents outreach attempts and invitations to participate in the work group to environmental and agricultural groups, as well as the general public.

The work group met monthly, operating under a set of agreed upon ground rules (Appendix I) that were formalized at the work group meeting on December 7, 2016. Each month, topics were discussed that led to the development of this work plan. All work group meetings were open to the public and provided periods in which the public was allowed to participate in accordance with the Open Public Meetings Act (RCW 42.30). Additionally, meeting agendas, minutes, and other documents related to the meetings were posted on FCCD's website. To facilitate public involvement, meeting announcements were published in three local newspapers; the Empire Press, the Wenatchee World, and the Quad City Herald. Minutes from each meeting can be found in Appendix I.

## 1.5 Core Elements of the Work Plan

VSP legislation specifically outlines the requirements of this VSP Work Plan. The table included as a cover page to this document identifies the location that each requirement is addressed in this work plan. The requirements are:

(1) A watershed group designated by a county under RCW 36.70A.715 must develop a work plan to protect critical areas while maintaining the viability of agriculture in the watershed. The work plan must include goals and benchmarks for the protection and enhancement of critical areas. In developing and implementing the work plan, the watershed group must:

- (a) Review and incorporate applicable water quality, watershed management, farmland protection, and species recovery data and plans;
- (b) Seek input from tribes, agencies, and stakeholders;
- (c) Develop goals for participation by agricultural operators conducting commercial and noncommercial agricultural activities in the watershed necessary to meet the protection and enhancement benchmarks of the work plan;
- (d) Ensure outreach and technical assistance is provided to agricultural operators in the watershed;
- (e) Create measurable benchmarks that, within ten years after the receipt of funding, are designed to result in (i) the protection of critical area functions and values and (ii) the enhancement of critical area functions and values through voluntary, incentive-based measures;
- (f) Designate the entity or entities that will provide technical assistance;
- (g) Work with the entity providing technical assistance to ensure that individual stewardship plans contribute to the goals and benchmarks of the work plan;
- (h) Incorporate into the work plan any existing development regulations relied upon to achieve the goals and benchmarks for protection;
- (i) Establish baseline monitoring for: (i) Participation activities and implementation of the voluntary stewardship plans and projects; (ii) stewardship activities; and (iii) the effects on critical areas and agriculture relevant to the protection and enhancement benchmarks developed for the watershed;
- (j) Conduct periodic evaluations, institute adaptive management, and provide a written report of the status of plans and accomplishments to the county and to the commission within sixty days after the end of each biennium;
- (k) Assist state agencies in their monitoring programs; and
- (l) Satisfy any other reporting requirements of the program

RCW36.70A.720(1)

Ultimately, to gain approval from the technical panel, this work plan must demonstrate that, “at the end of ten years after receipt of funding, the work plan, in conjunction with other existing plans and regulations, will protect critical areas while maintaining and enhancing the viability of agriculture” in participating Douglas County watersheds (RCW 36.70A.725(2)). If the technical panel finds that the work plan successfully explains how this will be accomplished, then they must recommend its approval to the director (RCW 36.70A.725(3)(a)(i)), and the director must approve the plan (RCW 36.70A.725(3)(a)(ii)).

## 1.6 VSP Failure or Lack of Funding

If a VSP Work Plan is not approved within 3 years of initial funding (see below), if plan goals and benchmarks are not met after adaptive management efforts, or if the makes a lack of adequate funding determination for a watershed (RCW 36.70A.740, RCW 36.70A.735(2)(c)), the county maintains the responsibility for protecting critical areas under the GMA with more standard regulatory approaches. For agricultural operations this would impose regulatory protection at the parcel level. The VSP statute clearly spells out the county’s options to proceed should failure or lack of funding occur in RCW36.70A.735.

There are differing consequences under VSP statute for failing to meet protection goals and benchmarks versus failing to meet enhancement goals and benchmarks. To avoid confusion or unintended fail-out consequences when the work group makes 5-year watershed success or failure determinations, care needs to be taken to distinguish achievement of protection goals and benchmarks from achievement of enhancement goals and benchmarks. Separate assessments will also support more effective workload management and minimize wheel-spinning on unnecessary adaptive management efforts.

If protection goals and benchmarks are not met in a watershed, and adaptive management efforts fail to meet the protection goals and benchmarks within a six-month extension period (if granted per RCW 36.70A.730), that watershed will fail out of VSP and the county will be required to update critical area regulations on agricultural activities under one of the options in RCW 36.70A.735. If enhancement goals and benchmarks are not being met the VSP statutes merely call for efforts to implement voluntary enhancements once funding becomes available (RCW 36.70A.720(2)(b) and (c)).

## 1.7 Douglas County VSP Statutory Timeline

TASK	DATE
Receipt of funding	January 22, 2016
Deadline for work plan approval via the Technical Panel review process	October 22, 2018
Deadline for work plan approval via the statewide Advisory Committee	January 22, 2019
Biennium status report	August 29, ODD YEARS
Five-year status report	January 22, 2021
Ten-year status report	January 22, 2026
Future status reports	January 22, Every five years

Table 1-1: Douglas County VSP Statutory timeline

## 1.8 Existing Resource Management Plans and Strategies

The work group reviewed and incorporated data and information from several existing resource management plans and strategies in Douglas County during the development of this work plan. These plans and strategies include the *Multiple Species General Conservation Plan (MSGCP) for Douglas County*, the *Watershed Management Plan, Moses Coulee and Foster Creek Watersheds WRIA 44 & 50*, the *Community Wildfire Protection Plan for Douglas County*, Natural Resource Conservation Service (NRCS) programs including the Environmental Quality Incentives Program and the Conservation Stewardship Program, the Sage Grouse Initiative, and existing conservation district programs. Detailed information on how this VSP work plan incorporates the above plans and strategies is included in Chapter 7.0, Protection and Enhancement Strategies.

## 1.9 Definitions

**Agricultural activities** “means agricultural uses and practices including, but not limited to: Producing, breeding, or increasing agricultural products; rotating and changing agricultural crops; allowing land used for agricultural activities to lie fallow in which it is plowed and tilled but left unseeded; allowing land used for agricultural activities to lie dormant as a result of adverse agricultural market conditions; allowing land used for agricultural activities to lie dormant because the land is enrolled in a local, state, or federal conservation program, or the land is subject to a conservation easement; conducting agricultural operations; maintaining, repairing, and replacing agricultural equipment; maintaining, repairing, and replacing agricultural facilities, provided that the replacement facility is no closer to the shoreline than the original facility; and maintaining agricultural lands under production or cultivation” RCW 90.58.065(2)(a).

**Agricultural equipment and agricultural facilities** “includes, but is not limited to: (i) The following used in agricultural operations: Equipment; machinery; constructed shelters, buildings, and ponds; fences; upland finfish rearing facilities; water diversion, withdrawal, conveyance, and use equipment and facilities including but not limited to pumps, pipes, tapes, canals, ditches, and drains; (ii) corridors and facilities for transporting personnel, livestock, and equipment to, from, and within agricultural lands; (iii) farm residences and associated equipment, lands, and facilities; and (iv) roadside stands and on-farm markets for marketing fruit or vegetables” RCW 90.58.065(2)(c).

**Agricultural land** means those specific land areas on which agriculture activities are conducted. RCW90.58.065(2)(d).

**Agricultural Operators** are individuals, groups, or for profit businesses of all types that engage in agricultural activities.

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

including but not limited to meat, upland finfish, poultry and poultry products, and dairy products” RCW 90.58.065(2)(b).

**Agricultural viability** can be defined as the ability of a farmer or group of farmers to productively farm on a given piece of land or in a specific area, maintain and enhance an economically viable farm business and/or achieve other non-economic goals, keep the land in agriculture long-term, and steward the land so it will remain productive.

**Benchmarks** are measurable criteria that, within ten years after the receipt of funding, are designed to result in (i) the protection of critical area functions and values and (ii) the enhancement of critical area functions and values through voluntary, incentive-based measures (RCW 36.70A.720(1)(e)). At five year intervals, the work group must report to the director on whether the protection and enhancement benchmarks have been met (RCW 36.70A.720(2)(b) and (c)). Failure to meet protection benchmarks will subject the county to RCW 36.70A.735.

**Best Management Practices (BMPs)** is a general term, and different agencies have different definitions. For the purpose of this work plan, all BMPs are conservation activities.

**Conservation activities** are all stewardship actions being implemented by Douglas County producers that protect, preserve, and/or enhance natural resources. These include NRCS Conservation Practices, and all other stewardship actions.

**Conservation Practice** is a conservation activity in which the landowner contracts with NRCS to receive cost share assistance. The activity must meet a technical standard provided by NRCS (see below).

**Conservation Practice Standard** are technical guides that are the primary scientific references for NRCS. They contain technical information about the conservation of soil, water, air, and related plant and animal resources, and provide technical standards that conservation actions must meet.

**Enhance** or **enhancement** means to improve the processes, structure, and functions existing, as of July 22, 2011, of ecosystems and habitats associated with critical areas. RCW 36.70A.703(4).

**Indicators** are measurable criteria that inform benchmarks, protection of critical area functions and values, and adaptive management. Failure to meet any indicator thresholds identified in adaptive management plans will not subject the county to RCW 36.70A.735.

**Protect** or **protecting** means to prevent the degradation of functions and values existing as of July 22, 2011. RCW 30.70A.703(8).

## 1.10 List of Abbreviations

<b>Abbreviation</b>	<b>Full Term</b>
<b>AMMP</b>	Adaptive Management and Monitoring Plan (MSGCP)
<b>BLM</b>	Bureau of Land Management
<b>CARA</b>	Critical Aquifer Recharge Areas
<b>CP</b>	NRCS Conservation Practice Standard
<b>CRP</b>	Conservation Reserve Program
<b>CPPE</b>	Conservation Practices Physical Effects tool
<b>CWGG</b>	Central Washington Grain Growers
<b>CWMA</b>	Cooperative Weed Management Area
<b>CWPP</b>	Community Wildfire Protection Plan
<b>DCWPA</b>	Douglas County Watershed Planning Association
<b>DNR</b>	Washington Department of Natural Resources
<b>DOE</b>	Washington Department of Ecology
<b>EIM</b>	Environmental Information Management (DOE)
<b>FFAs</b>	Frequently Flooded Areas
<b>FSA</b>	Farm Service Agency
<b>FWHCA</b>	Fish and Wildlife Habitat Conservation Areas
<b>GHA</b>	Geologically Hazardous Areas
<b>GIS</b>	Geographic Information Systems
<b>GMA</b>	Growth Management Act
<b>HCA</b>	Habitat Conservation Areas
<b>HCP</b>	Habitat Conservation Plan
<b>NAIP</b>	National Agriculture Imagery Program
<b>NASS</b>	National Agricultural Statistics Service
<b>NDVI</b>	Normalized Difference Vegetation Index
<b>NRCS</b>	National Resource Conservation Service
<b>OBIA</b>	Object Based Image Analysis

<b>Abbreviation</b>	<b>Full Term</b>
<b>RCW</b>	Revised Code of Washington
<b>RFPA</b>	Rural Fire Protection Area
<b>RMP</b>	Resource Management Plan
<b>SAFE</b>	State Acres for Wildlife Enhancement Program
<b>SDCD</b>	South Douglas Conservation District
<b>SGI</b>	Sage Grouse Initiative
<b>SSP</b>	Site Specific Plan (for the MSGCP)
<b>SWOT</b>	Strengths, Weaknesses, Opportunities, and Threats
<b>TSP</b>	Technical Service Provider
<b>USDA</b>	United State Department of Agriculture
<b>USFWS</b>	United States Fish and Wildlife Service
<b>VSP</b>	Voluntary Stewardship Program
<b>WDFW</b>	Washington Department of Fish and Wildlife
<b>WDOH</b>	Washington Department of Health
<b>WSDA</b>	Washington State Department of Agriculture

*Table 1-2: List of abbreviations used in this document*



## 2.0 County Context

This VSP Work Plan is specific to Douglas County, Washington. This Chapter provides information on the county for which this plan will be implemented.

### 2.1 Geographic Setting

The county is approximately 1,183,008 acres in size and is located close to the geographical center of Washington State. It lies on the northern edge of the Columbia Basin, just east of the Cascade Mountains. The Columbia River is the Work Plan boundary on the north, south, and west sides. On the east side, the county boundary lies just to the west of a chain of lakes, including Banks Lake and Sun Lakes.

There are two primary Water Resource Inventory Areas (WRIA) within Douglas County. They are Foster Creek WRIA 50 and Moses Coulee WRIA 44 (Figure 2-1). Both watersheds were nominated by The County to be considered priority watersheds under 36.70A.710(1)(b). Additionally, TLS 12-01 (Appendix B) identifies, “all other portions of unincorporated Douglas County not included in these two watershed resource inventory areas, for participation in the VSP.” These other areas

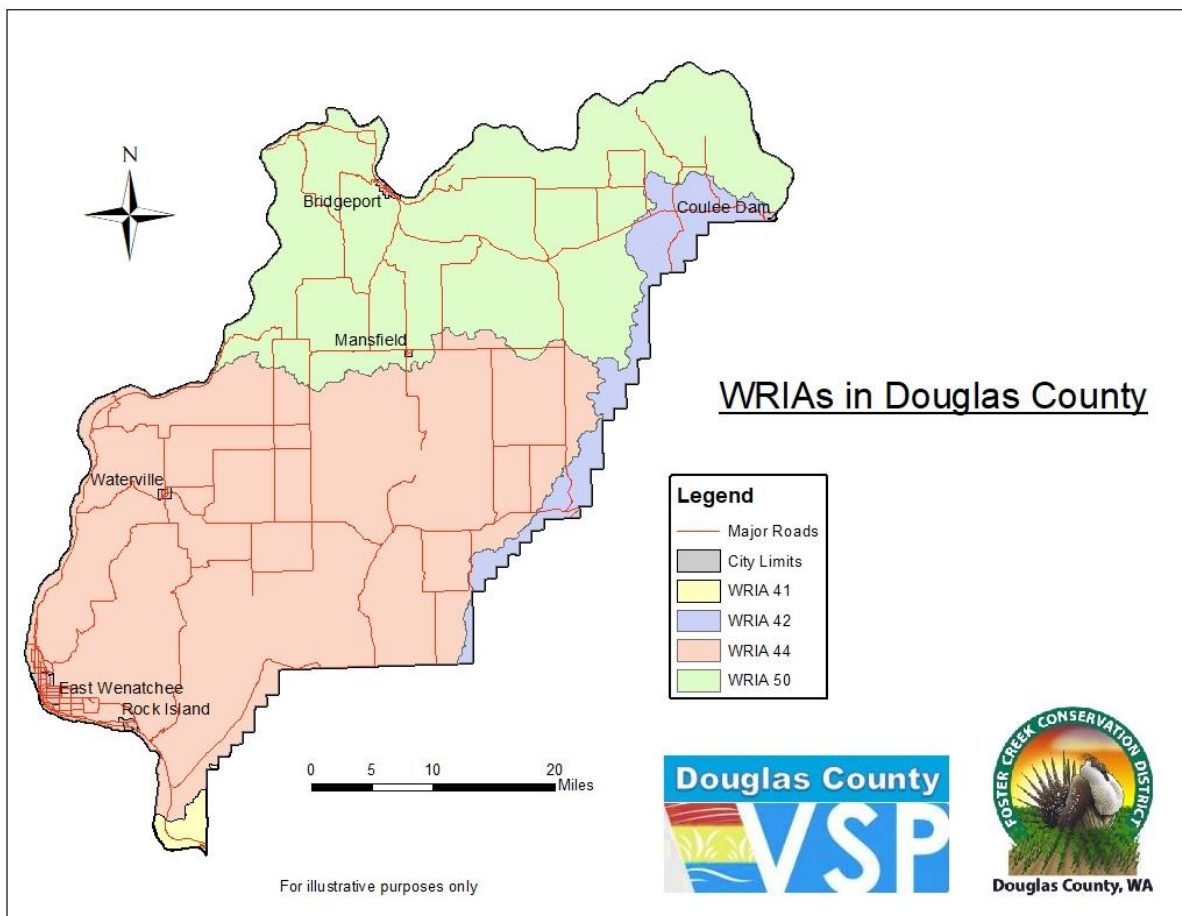


Figure 2-1: Location of State Water Resource Inventory Areas in Douglas County

include small portions of Grand Coulee WRIA 42 to the far east portion of the county and Lower Crab Creek WRIA 41 at the extreme southern tip of the county.

## 2.2 Population

The MSGCP describes the population of Douglas County in the following way:

The estimated population of Douglas County according to the 2010 Census is about 38,431 or about 21.1 persons/square mile (USDC 2010a). East Wenatchee is the largest city with a population of 13,190 and the County Seat, Waterville, has a 2010 population of 1,138 (USDC 2010b; USDC 2010c). Other incorporated cities include Rock Island, Mansfield, and Bridgeport. Over half the county population lives in unincorporated or rural areas. (MSGCP 2015)

## 2.3 Land Use

Approximately 1,027,628 acres, or 86.8% of land in Douglas County is privately owned (MSGCP 2015). Agriculture is the primary land use in Douglas County. Agricultural land use in Douglas County initially clustered around available ground and surface water sources. Most agricultural lands in production today were established in the late 1800s, when most of the county was homesteaded. Approximately 75 percent of historic natural habitat has been converted to agriculture in Douglas county (MSGCP 2015). Two current land use trends are apparent in the county: agricultural activities are consolidating into larger operations and predominately irrigated agricultural land is being removed from production and converted to commercial, industrial, and residential uses (MSGCP 2015). Land-use zoning within Douglas County is shown in Figure 2-2.

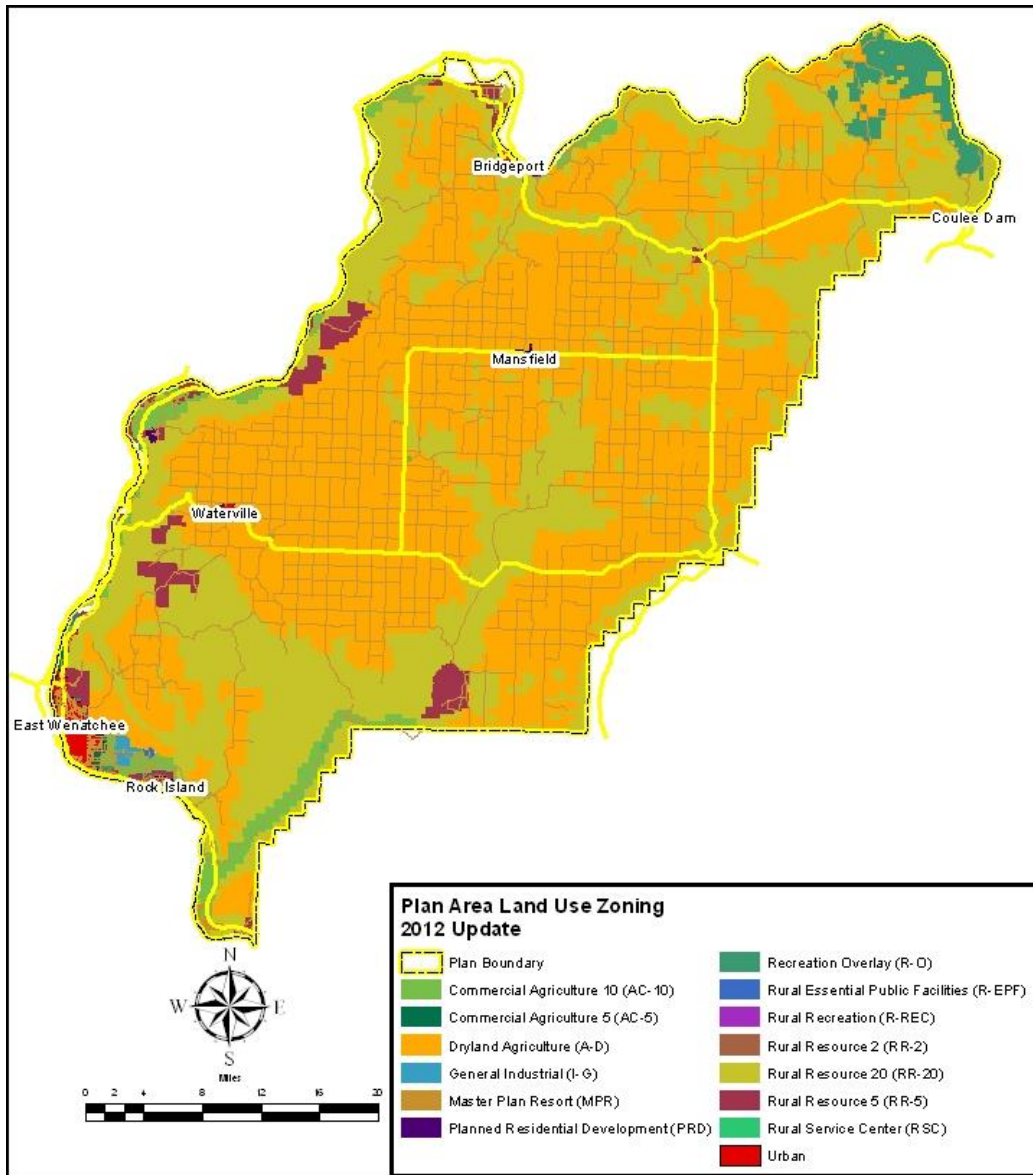


Figure 2-2: Current Land Use Zoning within Plan Area (MSGCP 2015, p. 31)

The predominant land use in Douglas County is agriculture. Per the Douglas County Code, the following land use zones permit agriculture as an accepted land use: Commercial Agriculture 10, Commercial Agriculture 5, Dryland Agriculture, Rural Recreation, Rural Resource 2, Rural Resource 20, Rural Resource 5, and Rural Service Center (DCC 18.0). Zoning regulations permit agriculture as an accepted use on 1,151,111 acres or 97% of the surface land area. Orchard activities occur along the Columbia River corridor and to some extent in the lower portion of Moses Coulee. The remainder of the county, located on the Waterville Plateau, is where the majority of grain, crop, and livestock production currently occurs. An in-depth discussion of agriculture in Douglas County appears in chapter 4.

## 2.4 Land Management Entities

There are several entities responsible for land management in Douglas County beyond private land owners. The majority of these lands are managed by various federal, state agencies, but there is also 21,657 acres of land owned or in easement held and managed by The Nature Conservancy. Land management objectives and practices vary greatly depending on the agency. The MSGCP refers to Washington Department of Fish and Wildlife, Bureau of Land Management, and The Nature Conservancy lands as Habitat Conservation Areas, (HCAs) (Figure 2-3) as they have multiple use or wildlife emphasis management priorities. Publicly owned lands are not eligible for participation in VSP, however, they do contribute to the overall functions and values of critical areas on the watershed scale, which will be measured as indicators in this VSP work plan. Further, the four entities listed below provide agricultural leases to producers and are important to the agricultural viability of Douglas County.

### 2.4.1 BLM Lands and Management in Douglas County

The BLM manages its lands in eastern Washington under the Spokane Resource Management Plan (RMP) (USBLM 1985; 1992). The RMP provides a comprehensive framework for managing and allocating public land and resources in the Spokane District. The RMPs are designed to last 20 years, but due to cost and complexity of development, it has become normal for them to last 30 or more years (Bryan Mulligan, personal communications, 2016). Specifically, the RMP:

Serves as the master plan, providing framework for site-specific decisions regarding conditional or prohibited uses and activities in some sites. It defines the intensity of management of various resources, the development of activity plans, such as grazing allotment management plans and habitat management plans, and the issuance of rights-of-way, leases, or permits. The RMP was developed to be consistent with all federal laws, regulations and requirements including but not limited to the Federal Land Policy Management Act (FLPMA), the Endangered Species Act (ESA), the National Environmental Policy Act (NEPA), and the Clean Water Act. (MSGCP 2015)

The BLM initiated the development of a new RMP in 2010, and work is currently ongoing. The planning process uses an interdisciplinary approach to identify and resolve new issues and to apply principles of multiple use and sustained yield. While the current RMP places emphasis on wildlife habitat, grazing and recreation, the new RMP *may* identify different priorities depending on which alternative is selected (Bryan Mulligan, personal communications, 2016). The new RMP will guide management of BLM lands in eastern Washington for 20-30 years when it is completed.

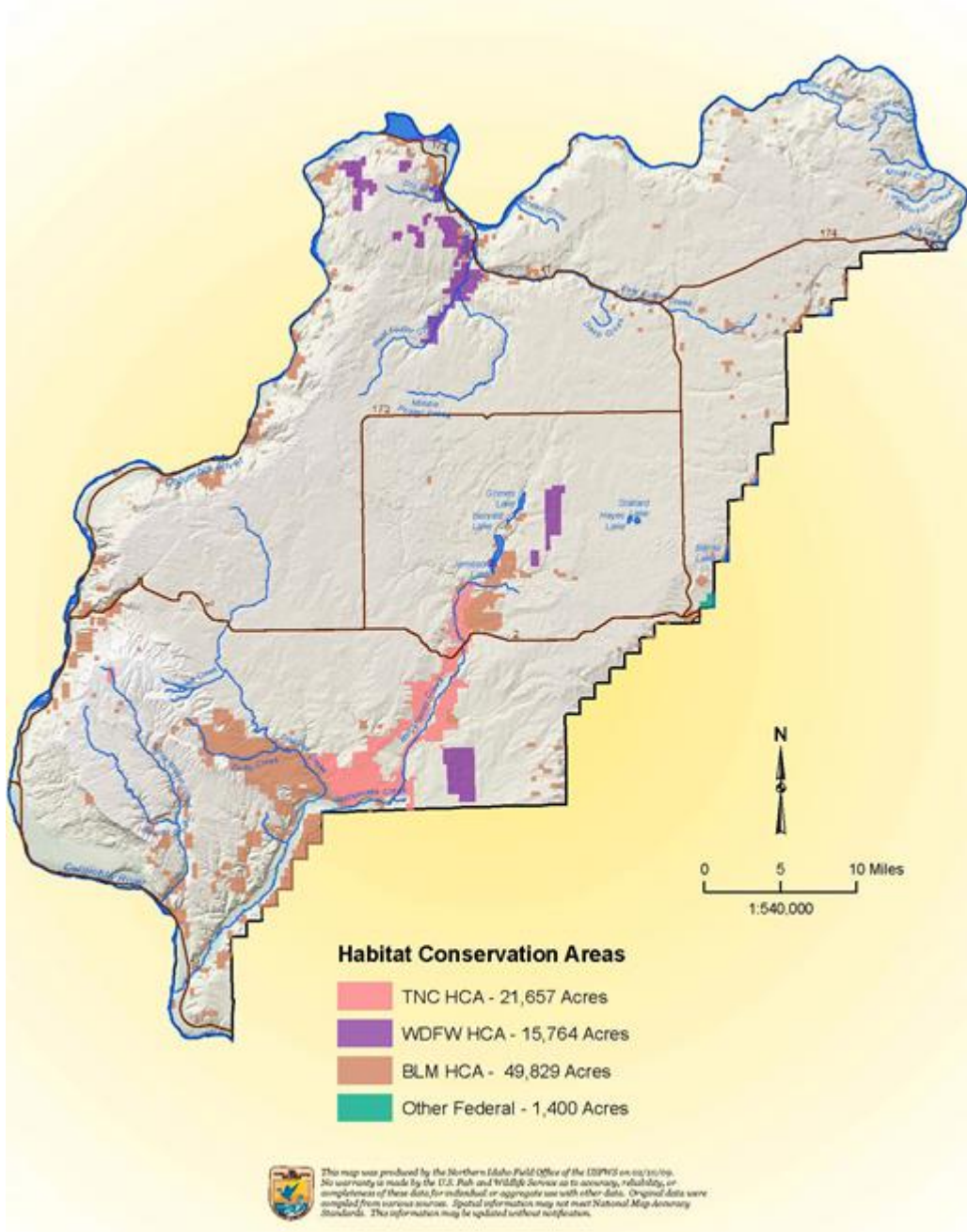


Figure 2-3: Habitat Conservation Areas (HCAs) in Douglas County (MSGCP 2015, p. 49)

The BLM lands in Douglas County are multiple-use areas and are managed to include an emphasis on wildlife habitat, grazing, and recreation. BLM’s policies and regulations require consideration of listed, sensitive, proposed, and candidate species and other game and nongame species. The BLM implements measures to minimize effects to species (e.g., seasonal restrictions at grouse leks), and improve habitats (e.g., ensuring sufficient forage and cover and improving riparian habitats). It is BLM policy to maintain viable populations of proposed or sensitive species. BLM also manages an Area of Critical

Environmental Concern in Douglas County, which includes 200 acres near Brewster to protect a bald eagle winter roost (Bryan Mulligan, personal communications, 2016).

#### 2.4.2 WDFW Lands and Management in Douglas County

WDFW manages over 16,000 acres in Douglas County. This acreage is split into two wildlife management areas: Wells Wildlife Area and Sagebrush Flat Wildlife Area. WDFW has developed management plans for the two areas. WDFW goals and objectives included in the *WDFW 2011-2017 Strategic Plan* (WDFW 2010) that are relevant to the Wells Wildlife and Sagebrush Flat Wildlife areas are listed below:

*Goal I: Healthy and diverse fish and wildlife populations and habitats*

- Objective: protect, restore and enhance fish and wildlife populations and their habitats.
- Objective: ensure WDFW activities, programs, facilities and lands are consistent with local, State, and Federal regulations that protect and recover fish, wildlife, and their habitats.

*Goal II: Sustainable fish and wildlife-related opportunities*

- Objective: provide sustainable fish- and wildlife-related recreational and commercial opportunities compatible with maintaining healthy fish and wildlife populations and habitats.
- Objective: improve the economic well-being of Washington by providing diverse, high quality recreational and commercial opportunities.

*Goal III: Operational Excellence and Professional Service*

- Objective: provide sound operational management of WDFW lands, facilities, and access sites.

#### Wells Wildlife Area:

The Wells Wildlife Area was created as part of the Wildlife Mitigation Agreement between WDFW and Douglas County PUD in 1974. The Wildlife Management Agreement is a component of the Wells Hydroelectric Project Federal Energy Regulatory Commission License No 2149. Currently, there are three units of the Wells Wildlife Area located in Douglas County totaling 3,408 acres: Central Ferry Canyon—1,908 acres, West Foster Creek—1,050 acres, and Bridgeport Bar—450 acres. All three units are located in the northwest portion of the county (WDFW 2006a). WDFW developed the *Wells Wildlife Area Management Plan* in 2006. This plan was updated in 2007, 2008, 2009, 2010, and 2012, and a current update is in development.

The majority of habitat types on the Wells Wildlife Area are shrub-steppe and steppe. Riparian habitat is scattered throughout the Wildlife Area along creek bottoms, lakes, and springs. Habitat types have been degraded by past agricultural activities and grazing (WDFW 2006a). Habitat on the Wells Wildlife Area is considered critical to WDFW's goal of maintaining and increasing the population of Columbian sharp-tailed grouse, greater sage-grouse, and Columbia Basin pygmy rabbit, as well as other species dependent on these habitats (WDFW 2006a).

(MSGCP 2015)

## Sagebrush Flat Wildlife Area:

The Sagebrush Flat Wildlife Area was approved as a wildlife mitigation project in 1992. It was incorporated in 2002 as part of Northwest Conservation and Power Council's Columbia Basin Fish and Wildlife Program as partial mitigation for adverse impacts caused by the construction and operation of Chief Joseph and Grand Coulee dams. Since 1991, ten separate purchases have occurred that form the current wildlife area, with the most recent purchase in 2002. The Bonneville Power Administration continues to provide operations and maintenance funding for the Sagebrush Flat Wildlife Area (WDFW 2006b).

The predominant vegetation type on the Sagebrush Flat Wildlife Area is big sagebrush (*Artemisia tridentata*) and bluebunch wheatgrass (*Pseudoroegneria spicata*), although each unit has different habitat characteristics. The Bridgeport Unit features a 6.4-mile-long stream corridor, numerous springs, and north facing draws. These areas support a variety of shrubs and trees, including serviceberry (*Amelanchier alnifolia*), rose (*Rosa ssp.*), chokecherry (*Prunus virginiana*), hawthorn (*Crataegus douglasii*), black cottonwood (*Populus trichocarpa*), quaking aspen (*Populus tremuloides*), and water birch (*Betula occidentalis*). These species form critical riparian habitat that provides food and shelter for Columbian sharp-tailed grouse during the winter (WDFW 2006b). The Chester Unit provides seasonal ponds and meadows that provide habitat for a variety of wildlife species, including mule deer and migrating waterfowl (WDFW 2006b).

The Sagebrush Flat Unit contains one of the largest expanses of deep-soil sagebrush habitat in the region. The vegetation and soil characteristics of this unit make it the focal point for restoration of Columbia Basin pygmy rabbits (WDFW 2006b).

(MSGCP 2015)

### 2.4.3 The Nature Conservancy Lands and Management in Douglas County

The MSGCP describes Nature Conservancy Lands and Management in Douglas County as follows:

The Nature Conservancy (TNC) is a private, non-profit conservation organization committed to preserving the plants, animals, and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive. As TNC lands are privately held, they are eligible for inclusion in VSP in areas where agricultural activities occur. TNC manages almost 22,000 acres in Douglas County. TNC's Moses Coulee/Beezley Hills Preserve totals more than 30,000 acres of shrub-steppe and occupies land in both Douglas and Grant Counties. The Conservancy is taking the following actions to ensure the long-term conservation of this habitat and its resident species (TNC 2008):

*“Partnering with public and private landowners to advance the long-term conservation of 400,000 acres of functional shrub-steppe by identifying lands that connect existing shrub-steppe and by evaluating strategies that improve management and support conservation on private lands.*

*“Working with partners to restore riverbank and stream habitat that has been degraded or modified, ensuring the protection of the seeps, springs and small pools that are critical to life in this arid environment.*

*“Collaborating with management and regulatory agencies, farmers and ranchers to ensure that appropriate habitat, knowledge, and management capacity are available to support viable populations of greater sage-grouse, Columbian sharp-tailed grouse, and pygmy rabbits.*

*“Providing habitat for 14 of the 15 bat species reported in Washington; the Moses Coulee Preserve is known as the single most-important location for this key group of animals in the state. Working with partners, researchers, and volunteers to create an inventory and monitoring program to gain the knowledge needed to ensure that appropriate conditions exist and support the long-term conservation of Washington’s bat species.”*

The Nature Conservancy’s long term goals are to: “conserve a large, fully functional example of Washington’s shrub-steppe ecosystem through the collaborative efforts of private and public landowners supported by the greater community; and to begin the healing process necessary for the long-term survival of one of Washington’s most important and imperiled ecosystems.”

(MSGCP 2015)

#### 2.4.4 Washington Department of Natural Resources Lands and Management in Douglas County

The Washington Department of Natural Resources manages numerous inholdings of land within Douglas County. Many of these lands are leased for agricultural purposes. Department of Natural Resources land is managed consistent with 332 WAC.

## 2.5 Infrastructure

Infrastructure in Douglas County is described by the MSGCP:

The most important mode of transportation in Douglas County is surface roads. The road network provides delivery routes for agricultural products traveling from farms and ranches to storage or processing points. Roads also facilitate the delivery of supplies and equipment to farms and ranches and the movement of farm equipment. The primary east-west route is US 2, which runs across the county from near Coulee City to just north of East Wenatchee. SR 97 enters the county near East Wenatchee and runs north along the shore of the Columbia River before exiting the county near Chelan. On the east side of the county, SR 17 runs north from near Coulee City to Bridgeport. SR 174 runs from Coulee Dam to Leahy, while SR 172 travels from Sims Corner to Farmer. Finally, SR 28 enters the county at the extreme southern tip and runs north along the Columbia River to East Wenatchee. Most roads are managed and maintained by the county and are concentrated in the middle two-thirds of the county, with reduced access in the southern and northern areas (Figure [2-4]). (MSGCP 2015)



There is also an extensive network of energy development infrastructure in Douglas County (Figure 2-5). Five major dams on the Columbia River encircle the county. The Rock Island Dam and Rocky Reach Dam are operated by Chelan County PUD, the Wells Dam is operated by Douglas County PUD, the Chief Joseph Dam is operated by the Army Corps of Engineers, and the Grand Coulee Dam is operated by the Bureau of Reclamation. The Grand Coulee Dam also provides irrigation water to more than 670,000 acres of cropland as part of the Columbia Basin Project. However, the entirety of this land lies south of Douglas County. Major power lines operated by the Bonneville Power Administration, Chelan County PUD and Douglas County PUD also encircle the county. Douglas County residents and agricultural operators pay among the lowest electricity rates in the country thanks to this energy infrastructure.

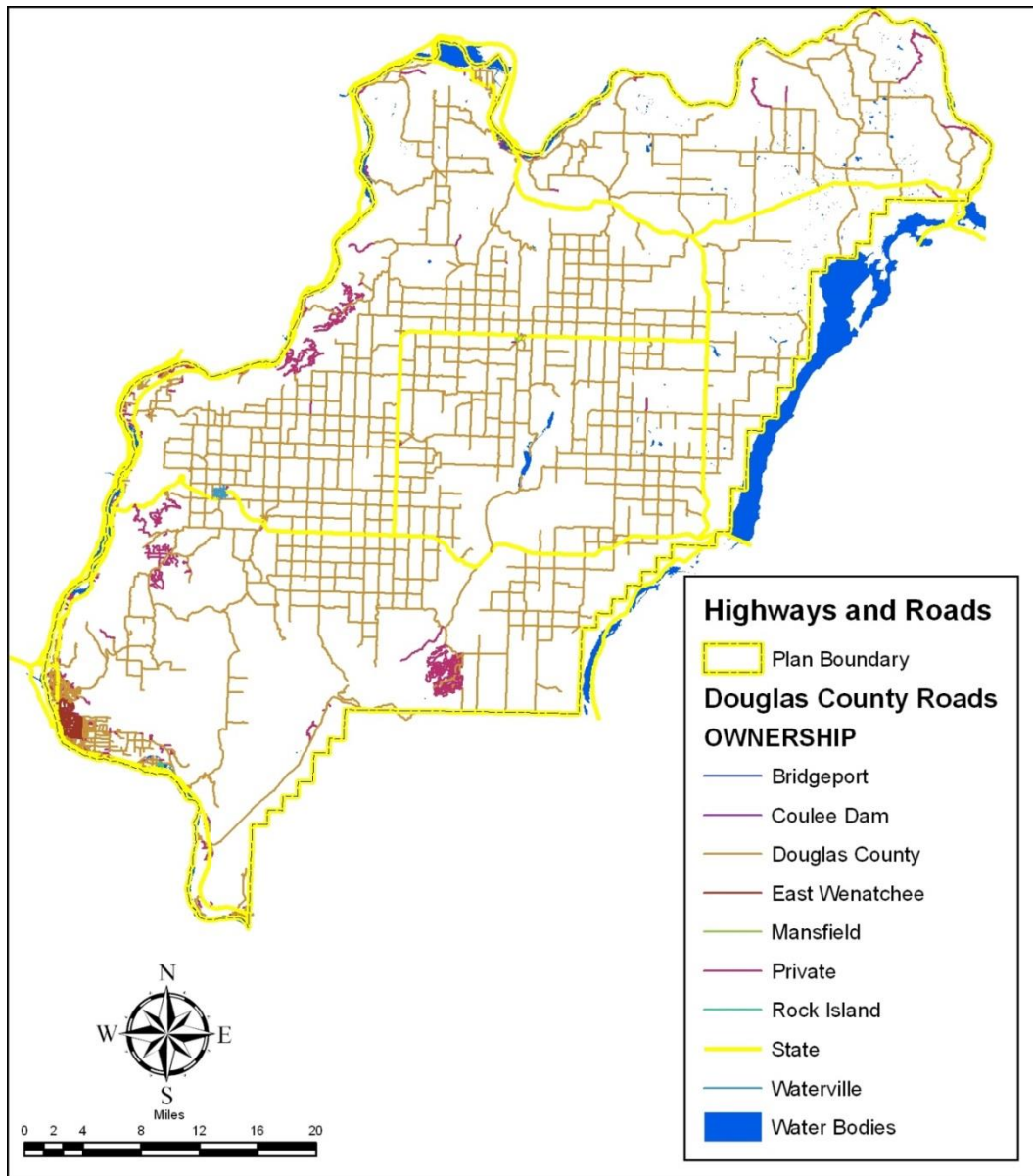


Figure 2-4: Transportation in Douglas County (MSGCP 2015, p. 34)

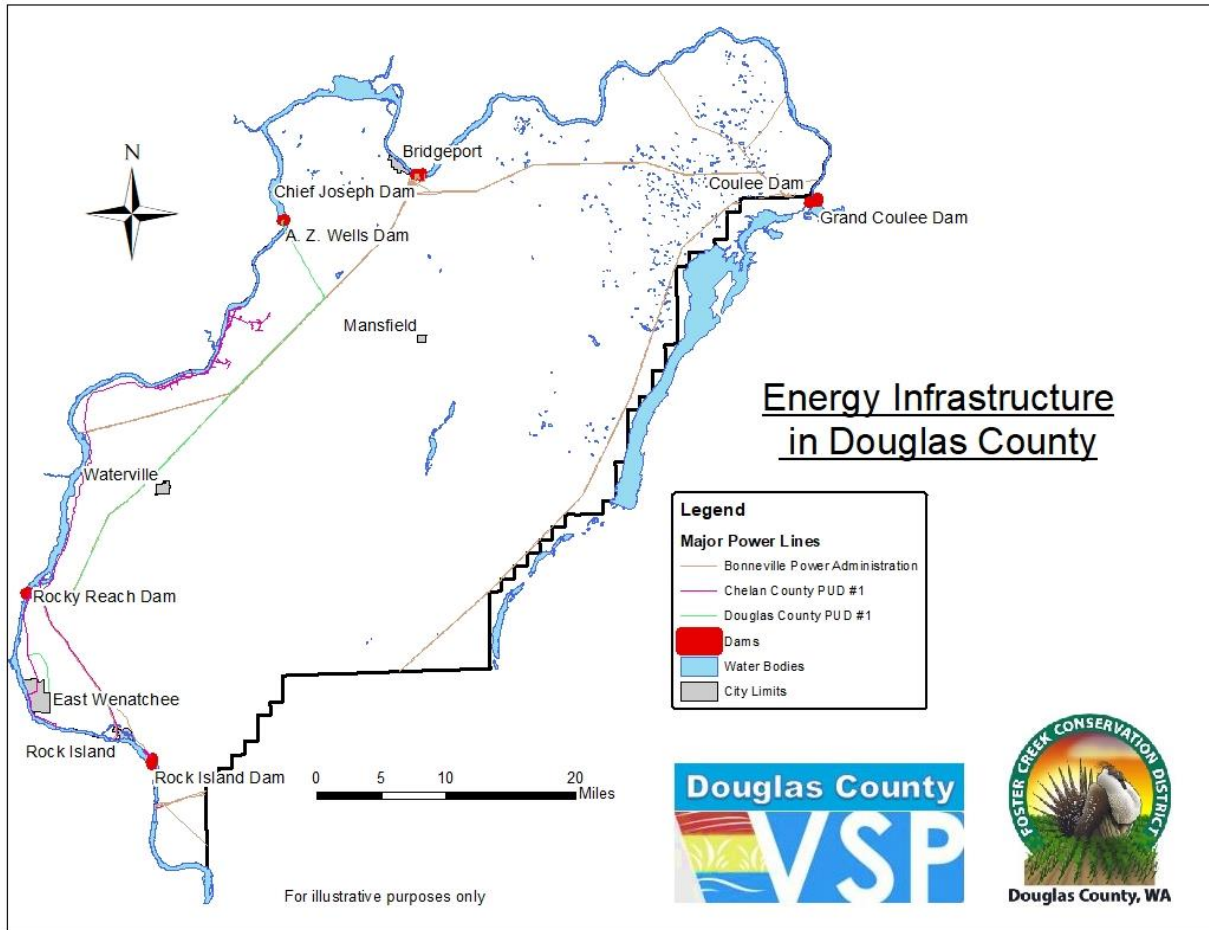


Figure 2-5: Energy Infrastructure in Douglas County

## 3.0 Environmental Context

This chapter summarizes the physical and environmental setting of Douglas County.

### 3.1 Geography and Geology

The majority of Foster Creek WRIA 50 and Moses Coulee WRIA 44 is rolling plateau, underlain by basalt bedrock, interspersed by intermittent drainages. General elevations range between 2,000 and 3,000 feet above mean sea level. Higher terrain is in the southwest at Badger Mountain and in the northeast in the Okanogan Highlands. Lower elevations include the Moses Coulee and areas along the Columbia River (Johnson 1974). WRIA 50 and WRIA 44 are part of a larger drainage, the Columbia River Watershed.  
(MSGCP, 2015)

The present day landscape and geology of WRIs 50 and 44 was formed over the last 18 million years by a sequence of extruding lava flows, glaciations and extreme flood events. The basalt bedrock comprising the two WRIs is formed by the Columbia River Basalt Group, a series of basalt lava flows ranging from 17.5 million years ago to 6 million years ago. This group consists of an estimated 311 individual flows containing over 41,000 cubic miles of basalt. The eruptions were not from a single vent but from very long cracks or fissures extending miles in length (FCCD 2004).

After basalt was extruded, the region was warped into broad basins in which several sub-basins were formed by locally intense folding by faulting. In these sub-basins, deposits of clay, silt, sand and gravel accumulated during the Pleistocene Epoch from approximately 1.6 million to 10,000 years ago (KCM 1995).

During the Pleistocene Epoch, the Okanogan Lobe of the vast Wisconsin Glacier advanced southward into Douglas County. The extent of this advance is marked by a large deposit of glacial till several miles wide called the "Withrow Moraine" which spans the county from Chelan southeast to the area just north of Coulee City. As the glacier retreated it left behind giant erratics, which are blocks of bedrock, some as big as a house churned up by the glacier, across northern Douglas County (FCCD 2004).

The most prominent feature in WRIA 44, the Moses Coulee, was formed by enormous floods from Lake Missoula, a glacially dammed lake. These floods released huge quantities of water when the ice dam holding them back broke that ripped down through bedrock creating the coulee. These Missoula Floods are responsible for what is known as the "Channeled Scablands" topography seen throughout Eastern Washington (FCCD 2004).

### 3.2 Climate

Annual precipitation in Douglas County can vary substantially, ranging from 6-24 inches, with an annual average of 11.2 inches (Figure 3-1) (USFWS 2013). The majority of the county receives precipitation around the average, but the western portion generally receives higher amounts (Figure 3-2). The

heaviest precipitation occurs during the winter months as snowfall. Snowfall averages range from 20 to 35 inches in the lower elevations and 40 to 80 inches on the plateau. Of the total annual precipitation, only about 15% is received in the summer months of June, July and August. Temperature ranges vary depending on elevation with an average winter temperature of 26°F and an average summer temperature of 65°F in Waterville (2,640 ft. elevation), and an average winter temperature of 32°F and an average summer temperature of 71°F in East Wenatchee (780 ft. elevation) (USFWS 2013). Subfreezing temperatures generally occur 140 to 160 days per year. Frost penetration of the soil varies from year to year, and spatially, but generally frost depth is 10 to 20 inches. Early snowfall insulates the ground and reduces the depth of freezing to a few inches, while lack of early snow results in deeper freezing of the soil (MSGCP 2015). Flooding and erosion often occurs when the underlying soil is frozen and there is heavy runoff from rain or snowmelt (Beieler 1981; Douglas County 1995; Johnson 1974).

The prevailing wind direction and speed in Douglas County varies depending on location and season. Statistically, 50 mile-per-hour winds can be expected, on average, once in two years, and 70 mile-per-hour winds once in 25 years (Thompson and Ressler 1988).

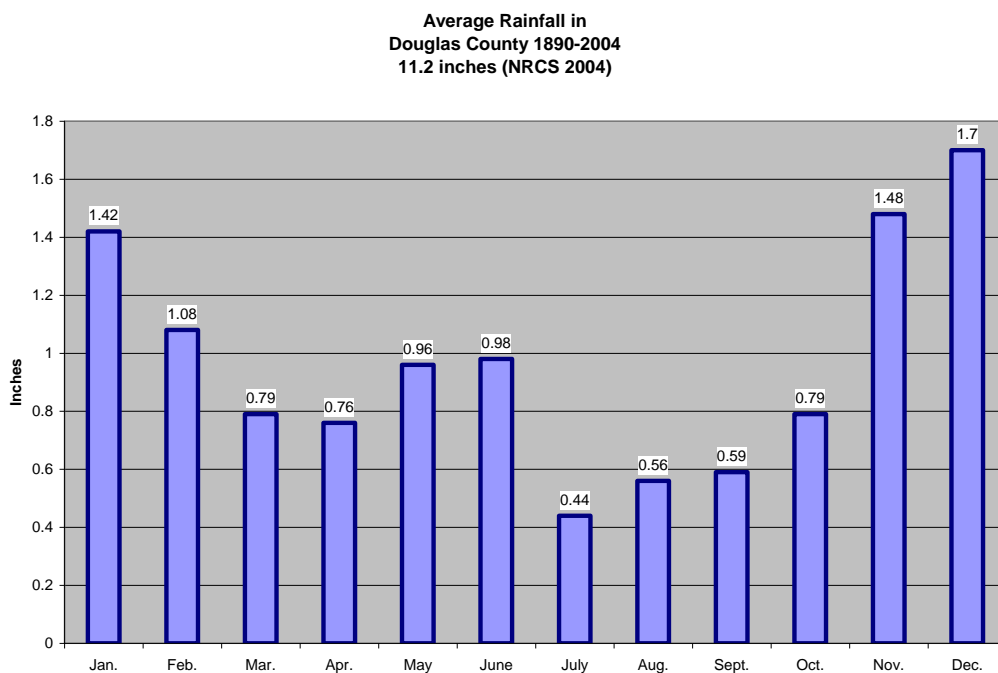


Figure 3-1: Average rainfall by month in Douglas County (USFWS 2013)

### 3.2.1 Climate Change

The Douglas County VSP Work Group has written the benchmarks and goals for critical area protection and agricultural viability with the potential effects of climate change in mind. However, the effects of climate change fall outside the scope and jurisdiction of VSP as discussed in Section 1.3. Identified changes to critical area functions and values will be assessed to determine cause as outlined by the adaptive management process (Section 9.5).

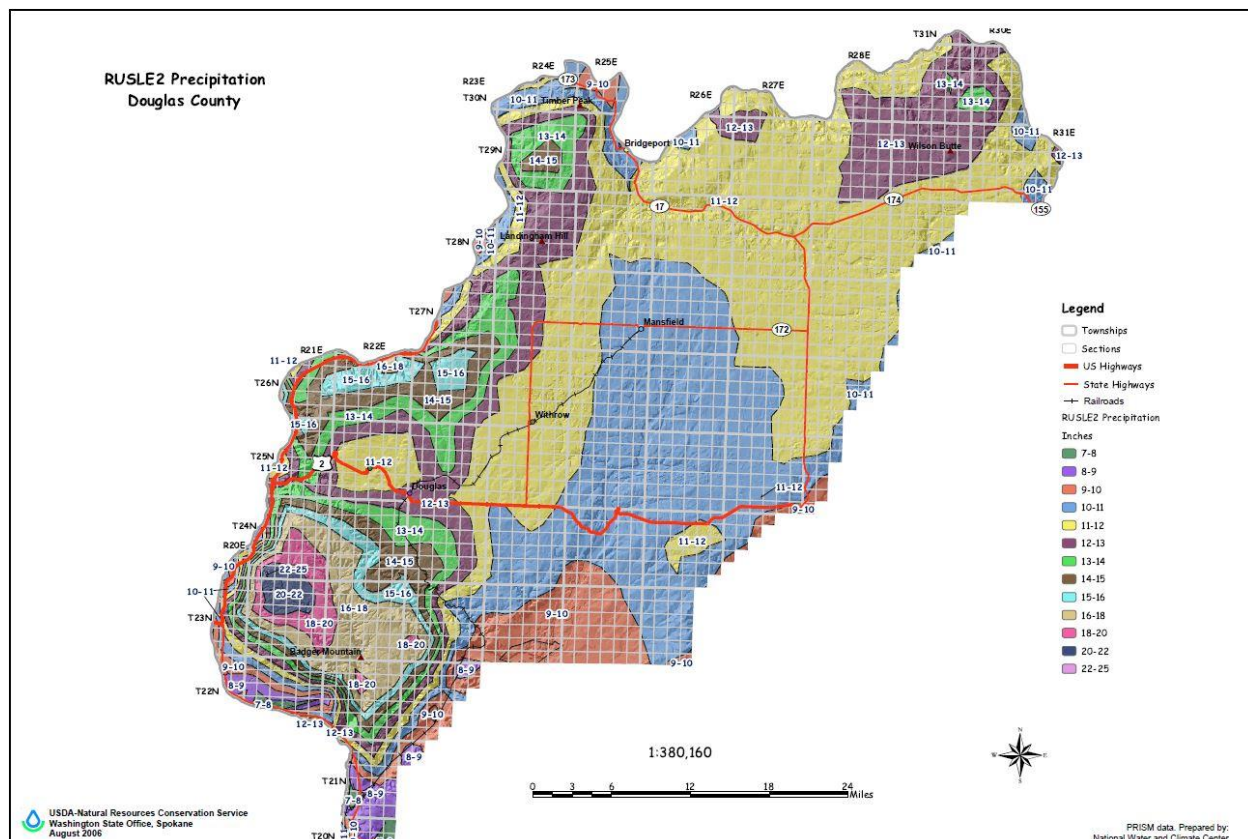


Figure 3-2: Average rainfall by location in Douglas County (USDA NRCS, 2006)

The following discussion of climate change is taken from the MSGCP:

Climate change is currently being researched and discussed regionally and nationally. Critical Areas in Douglas County may be impacted by climate change, but it is difficult to predict exactly how, when, or to what extent. There are varying models and predictions for the changes that might be expected over the next 50 years and beyond. Minor temperature variations of one to three degrees Fahrenheit are predicted, as well as potential changes to precipitation patterns and quantities within Douglas County. Winter precipitation is predicted to come more in the form of rain and less in the form of snow in the Pacific Northwest (University of Washington 2013). Freeze-free season is predicted to increase, and precipitation may increase in winter, spring, and fall but decrease during summer (Kunkel et al. 2013).

Recent studies have looked at likely climate change and changes in biodiversity (Lawler and Mathias 2007). The biodiversity study summarized that models predicted that the shrub-steppe is likely to undergo changes in the coming century. Changes may include increased extent of woodlands, increased fires, and resultant decreased wildlife habitats and increased erosion. Cheatgrass (*Bromus tectorum*) invasion may worsen with increased fires, out-competing native perennials and further altering the fires regimes. Warmer and drier summers may also make fire more frequent. Encroachment of woodlands and/or dry conifer forests or other vegetation

changes may also be enhanced due to increased atmospheric CO<sub>2</sub> resulting in increased plant water-use efficiencies.

Little et al. (2009) explored possible climate change impacts to several agricultural commodities in eastern Washington, including wheat. Positive or negative changes to crops depend on the direct effects of climate, but they also depend on increasing atmospheric carbon dioxide, which can increase crop yields for some plants and also increase water use efficiency. Little et al. (2009) noted that the resulting CO<sub>2</sub> effect on plants could be temporary (plants may adapt to new conditions, or growth of plants may be limited by other factors), but mounting experimental evidence involving agricultural crops show a definite beneficial effect of “CO<sub>2</sub> fertilization” on growth and yield of many crops. The projections assumed that plants have adequate supply of nutrients and are well protected from pests and weeds. The researchers assessed potential changes for 2020, 2040, and 2080 scenarios with respect to a baseline climate (1975-2005). The wheat studies were based on sites at Pullman and Saint John, WA, neither of which is in Douglas County. Earlier maturity in response to warming will allow dryland winter wheat to avoid some water stress resulting in increases for the 2020s and unchanged or slightly increased for the 2040s; while spring wheat is likely to be unchanged through the 2020s, but decline in the 2040s through the 2080s. Increased CO<sub>2</sub> fertilization effects result in further increases, and compensate for the decreases in spring wheat until the 2040s (at the Saint John site).

The Climate Change Impacts group (2009) conducted a literature review for the assessment of weed impacts from climate changes. Competition from weeds may increase, unless growers adapt accordingly. Most studies on climate change predict that pests, including weeds, may expand their geographic ranges in a changing climate. Warmer and wetter fall and winter weather may allow greater numbers and growth of annual weeds. The physiological plasticity of weeds and high degree of variation may provide weeds with a competitive advantage over crops or other native vegetation.

(2015)

### 3.3 Soils

In WRIA 44, the features known as scablands and loess islands were formed from the Missoula Floods. The result is a predominance of deep loess and silt soils with generally poor drainage characteristics (Beieler 1981). These soils are interspersed with numerous small isolated patches of very shallow soils that harbor a unique vegetation composition. On the basalt upland plateau of WRIA 50 and part of WRIA 44, silt-loam soil was deposited by the recession of the Okanogan lobe of the Wisconsin Glacier. As the glacier melted, it retreated up the valley leaving behind a blanket of glacial till and extremely fine loess. The till is up to 50 feet thick and composed of clay, silt, sand, gravel, cobbles, and boulders. The soil type is a sand-loam and deeper silt-loam soil that is deep and well drained (Beieler 1981). Across the plateau, thinner soils prevail on the west face of slopes as they face the prevailing western winds. The shorelines of the Columbia River are dominated by well-drained sands and gravels (KCM 1995).

## 4.0 Agricultural Context

Agriculture plays an integral role in the livelihood and character of Douglas County. For the purposes of this Work Plan, agricultural activities are defined as follows by the Shoreline Management Act:

Agricultural activities means agricultural uses and practices including, but not limited to: Producing, breeding, or increasing agricultural products; rotating and changing agricultural crops; allowing land used for agricultural activities to lie fallow in which it is plowed and tilled but left unseeded; allowing land used for agricultural activities to lie dormant as a result of adverse agricultural market conditions; allowing land used for agricultural activities to lie dormant because the land is enrolled in a local, state, or federal conservation program, or the land is subject to a conservation easement; conducting agricultural operations; maintaining, repairing, and replacing agricultural equipment; maintaining, repairing, and replacing agricultural facilities, provided that the replacement facility is no closer to the shoreline than the original facility; and maintaining agricultural lands under production or cultivation (RCW 90.58.065(2)(a)).

Per the Census of Agriculture, in 2012 Douglas County had a total of 849 farms totaling 814,109 acres (NASS 2012). This number is down 8% from the reported 883,094 acres in farmland in 2007. However, the 2012 figure still represents 68.8% of all lands in Douglas County. The average size of a farm in Douglas County is 958.9 acres.

Agriculture plays a major role in the economy of Douglas County. In 2012, the market value of agricultural products sold was \$199,041,000 (Figure 4-1), which ranks 12<sup>th</sup> in the state of Washington (NASS, 2012). This figure is up 3% from 2007.

Agriculture in Douglas County can be divided into three main categories, which are dryland agriculture, rangeland, and irrigated agriculture.



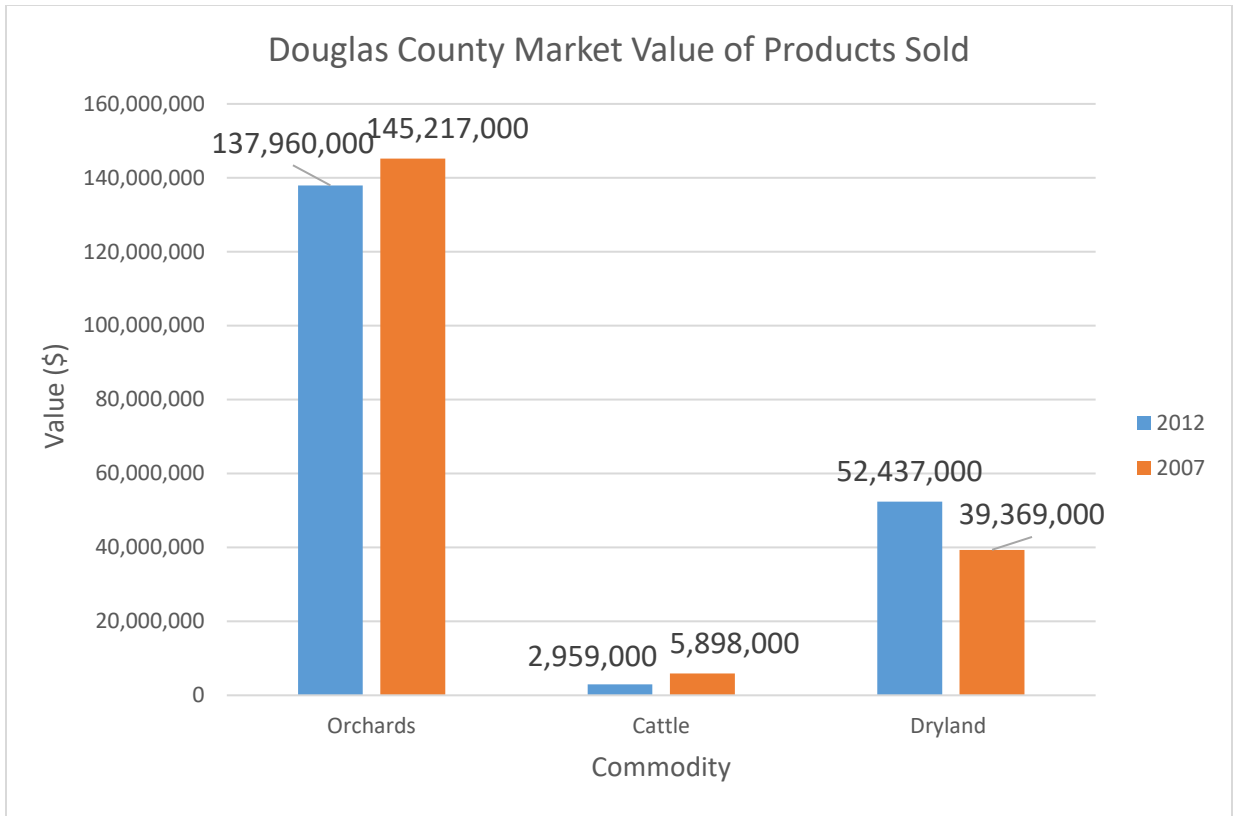


Figure 4-1: A breakdown of market value of products sold in 2012 and 2007 by commodity category (NASS 2012)

## 4.1 Dryland Agriculture

The MSGCP describes Dryland agriculture in Douglas County as follows:

Dryland crop farming takes up a large part of Douglas County’s land area, particularly on the Waterville Plateau. The predominant crop is winter wheat grown in a fallow rotation. Winter wheat is planted in the late summer, germinates and sprouts in the fall, overwinters as a dormant small plant, then matures in the spring. In a fallow rotation, the ground sits idle every other year in order to increase moisture and mineral/nutrient content of the soil.

(2015)

The total acreage in active production (not in fallow rotation) changes from year to year depending on individual farmers’ rotations and precipitation. Many farmers also include spring wheat as part of this rotation, which is seeded in early spring. Wheat production in Douglas County has remained stable over the last several years per the 2012 National Agricultural Statistics Service’s (NASS) Census of Agriculture (Figures 4-2 – 4-4). The county ranked fifth in the state in wheat production in 2012 (NASS). Data concerning number of bushels received by the Central Washington Grain Growers (CWGG) from 2007-2016 (Figure 4-5) confirms the level trend, but illustrates the year to year variation in production created by fallow rotations and the weather.

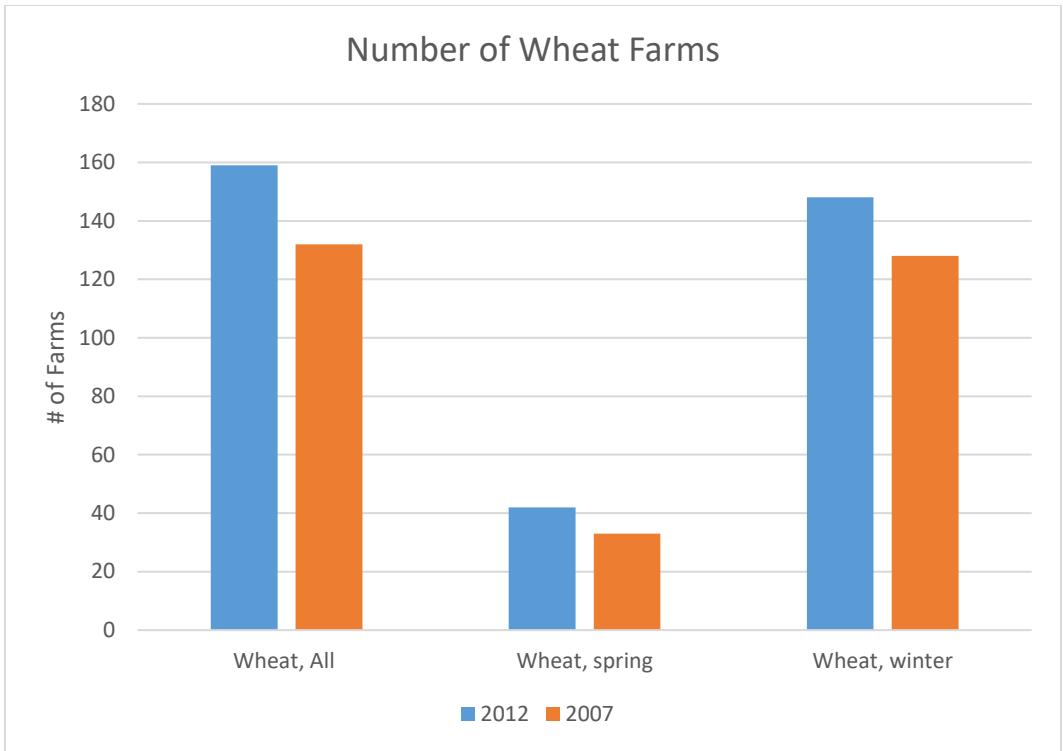


Figure 4-2: Number of Farms in Wheat Production in 2007 and 2012 in Douglas County (NASS 2012)

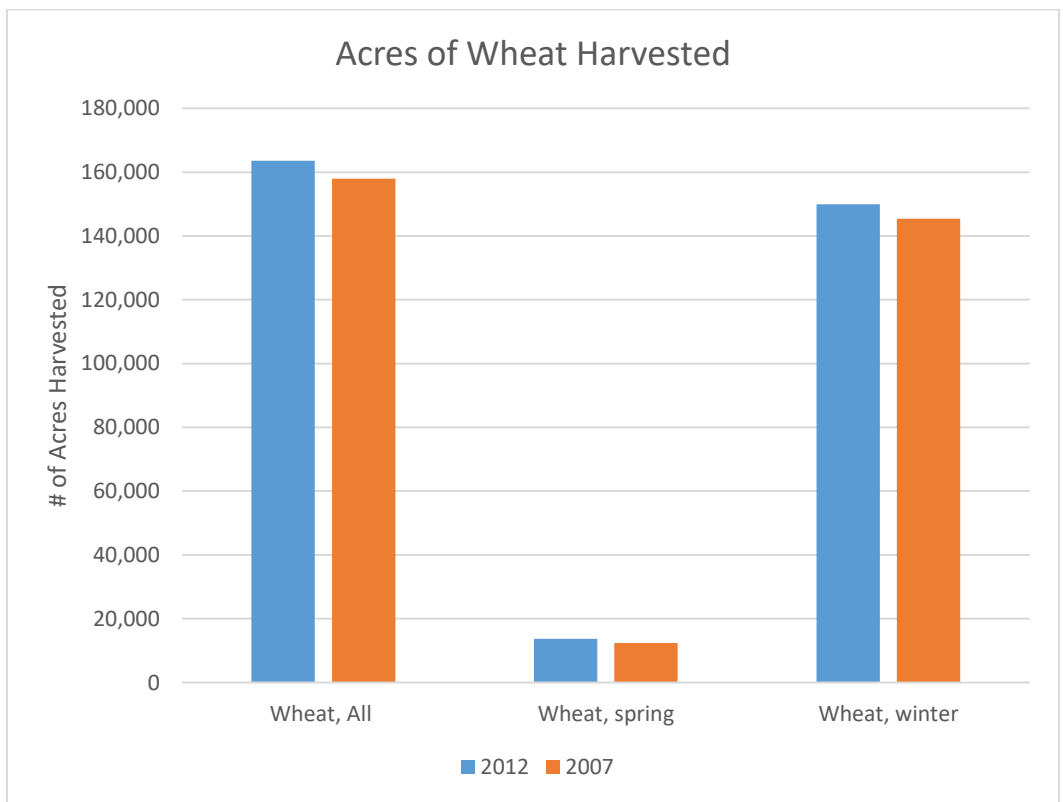


Figure 4-3: Acres of wheat harvested in 2007 and 2012 in Douglas County (NASS 2012)

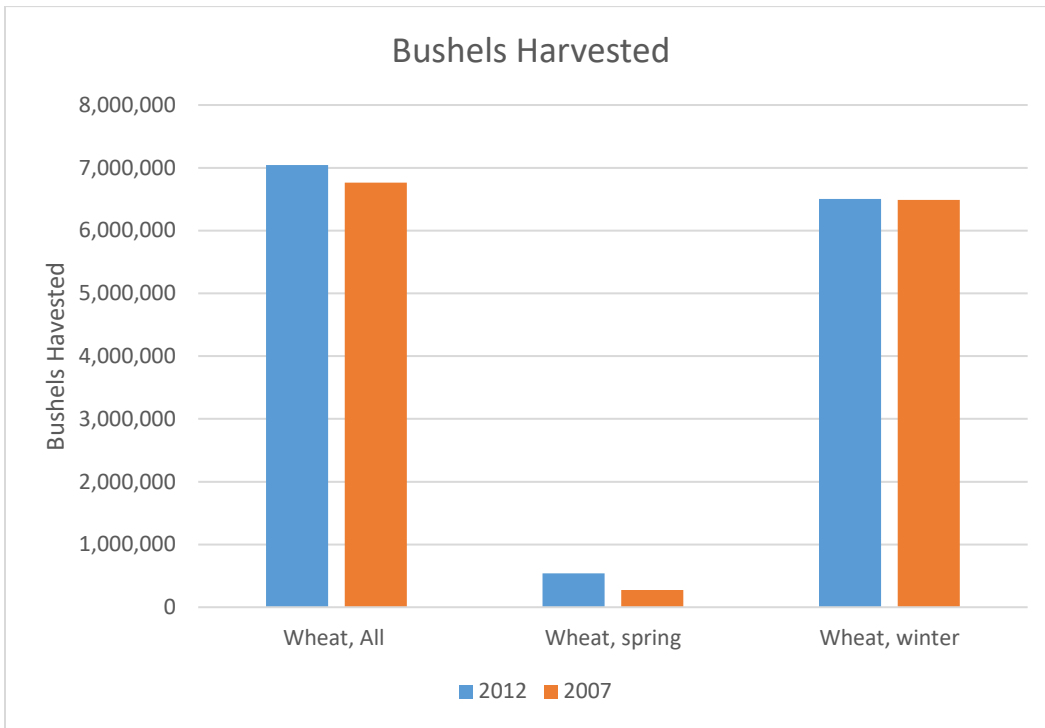


Figure 4-4: Amount of wheat harvested in 2007 and 2012 in Douglas County (NASS 2012)

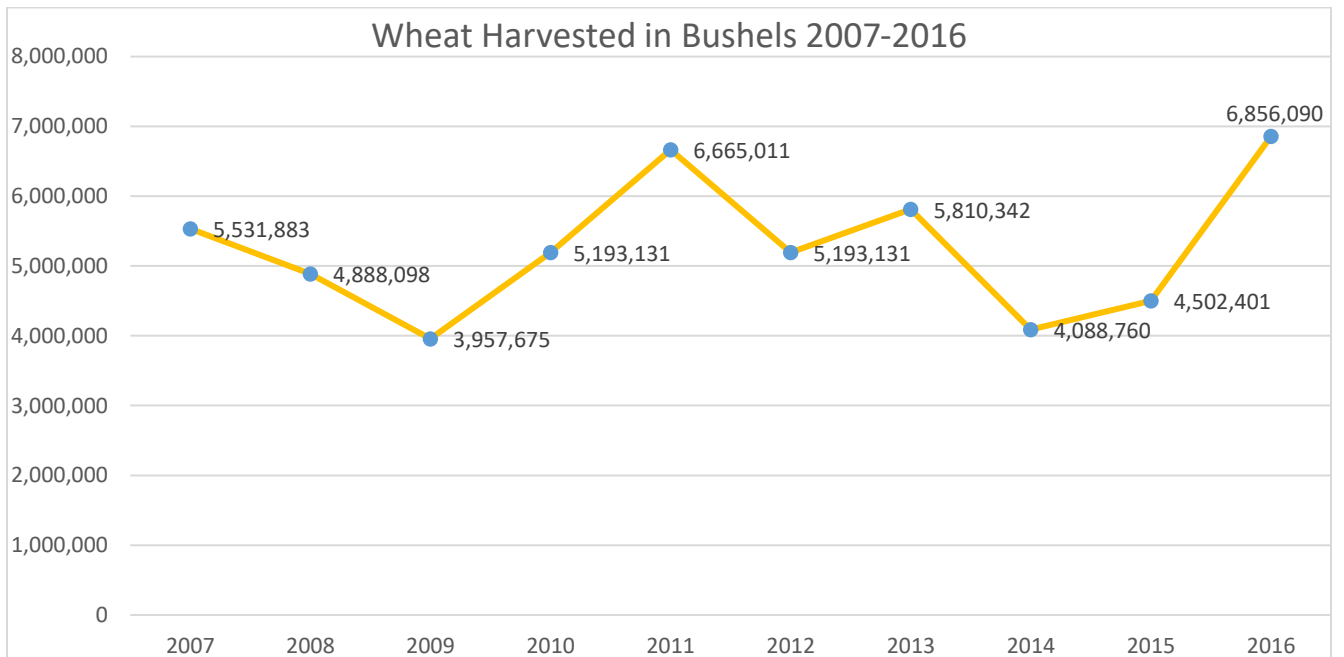


Figure 4-5: Amount of wheat harvest intake in Douglas County by the Central Washington Grain Growers (CWGG 2016)

The price of wheat has fluctuated from year to year, especially in the last decade. Recent declines have led to a 2016 price for soft white wheat that is only \$0.95 more than the price was in 1976 (Figure 4-6). This price is low compared to many other agricultural commodities, which puts a strain on many Douglas County dryland farmers (see SWOT analysis below). Figure 4-6 shows a decline in wheat prices in recent years. Since the start date of VSP in 2011, the price of Soft White Wheat has dropped from \$6.35 to \$4.157, equaling a 35% reduction. However, the market price of commodities is not within the scope of the VSP work group and will not be actively addressed.

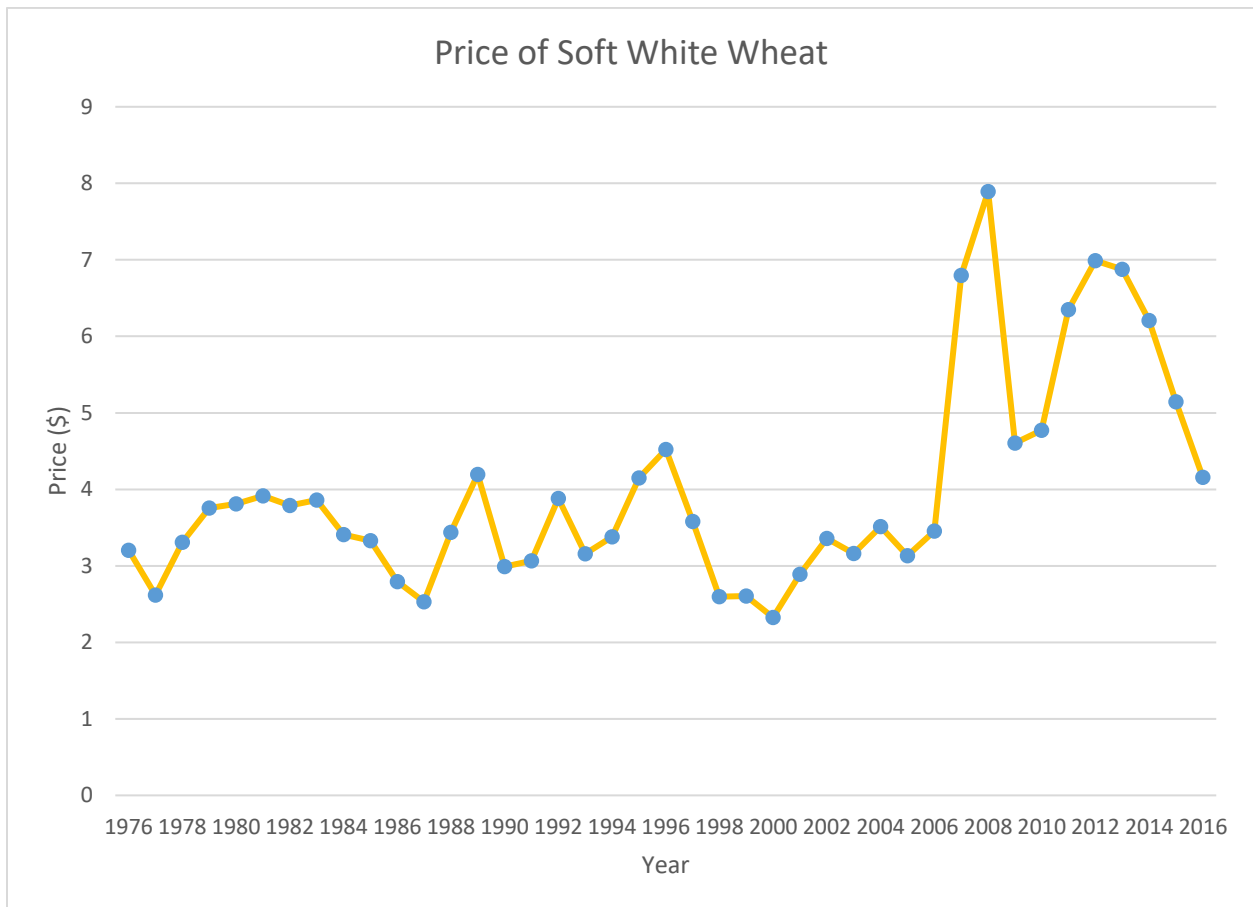


Figure 4-6: The annual average price of Soft White Wheat based on Waterville Price (CWGG 2016)

Dryland farmers in Douglas County are starting to diversify the crops they grow (Table 4-1). The ecological benefits of crop rotation have been well documented (Karlen et al. 2006, Leibig et al. 2007, Green et al. 2005). This VSP work plan will seek to increase participation in conservation activities that decrease soil erosion and promote soil health such as crop rotation and diversification.

COMMODITY	2012		
	FARMS	ACRES	Quantity
Barley (bushels)	10	3,894	128,643
Canola (pounds)	10	2,814	3,306,400
Corn for grain (bushels)	3	275	42,078
Peas (pounds)	3	459	6,426
Oats for grain (bushels)	2	Not reported	Not reported
Sunflower seed (pounds)	1	Not reported	Not reported

Table 4-1: A summary of non-wheat dryland crops in Douglas County (NASS 2012)

Table 4-2 shows a general list of agricultural activities that occur in dryland agricultural practices. This list is meant for illustrative purposes only and does not constitute an all-inclusive list of activities covered by this VSP work plan.

Activity Category	Activity
Field Creation/Management	Mowing native habitat
	Burning native habitat
	Plowing native habitat
	Mowing CRP lands
	Burning CRP lands
	Plowing CRP lands
	Green borders and buffers
Field Preparation	Mowing stubble
	Burning stubble
	Plowing/disking/harrowing
	Roughing
	Rock pile removal
	Rock picking
	Coil packing
Weed/Pest control	Sub-soiling
	Rod-weeding
	Burning
	Herbicide/Pesticide Application
Infrastructure	Road management

Activity Category	Activity
	Structures (fences, etc.)
	Wildlife water
	Irrigation systems
	Wildlife reserves
Crop Management	Seed treatment
	Conventional seeding
	Direct seeding
	Fertilization-ground
	Fertilization-aerial
	Irrigation
	Harvesting
	Swathing
	Baling
	Hauling
	Storage
	Grazing
	Conservation crops (CRP)
	Mowing/brush beating
	Burning
	Cover Cropping
Seeding	
Predator control	

*Table 4-2: An illustrative list of dryland agricultural activities*

Conservation Reserve Program (CRP)

As part of the 1985 Farm Bill, Congress created the Conservation Reserve Program (CRP) to address concerns over soil erosion and as a cropland retirement mechanism to help a struggling farm economy due to the large surplus of crops. CRP is a land conservation program in which farmers receive a yearly rental payment in exchange for temporarily removing agricultural land from production and planting species that will address soil erosion concerns. The ultimate goal of the program is, “to re-establish valuable land cover to help improve water quality, prevent soil erosion, and reduce loss of wildlife habitat” (USDA 2016). To accomplish these goals, the federal government has historically paid an established dollar amount per acre to the farmer to keep that ground out of production, but maintained

with adequate vegetative cover and noxious weed control. The typical CRP contract in Douglas County is 10 or 15 years.

CRP lands are federally classified as agricultural lands. The state Shoreline Management Act definitions (RCW 90.58.065), which VSP definitions rely upon, also expressly define “agricultural activities” and “agricultural land” to include CRP lands “allowing land used for agricultural activities to lie dormant because the land is enrolled in a local, state, or federal conservation program, or the land is subject to a conservation easement.”

A limit exists on the amount of land in the county that can be enrolled in the CRP program. This cap is usually set at 25% of the total eligible acreage registered with the Farm Service Agency, however, Douglas County currently has a waiver allowing up to 33% of the total eligible acreage. As of 2016, 183,109.47 acres are enrolled in the CRP program for a total in annual rental payments of \$9,177,100 (Rudd, 2017). This is an 8.6% increase since the 2011 value of 167,364 acres enrolled in CRP (WSDA 2011).

The above Figure includes acres enrolled in the U. S. Department of Agriculture State Acres for Wildlife Enhancement (SAFE) program. The SAFE program provides farmers a payment to restore native vegetation, “in order to meet high-priority state wildlife conservation goals” (USDA 2016). In Douglas County, these lands are managed as conservation cover specifically designed for greater sage-grouse and Columbian sharp-tailed grouse (FCCD 2015).

The total acreage quantities enrolled in CRP and SAFE vary by year and depend on program funding and signup opportunities. Federal funding for land retirement programs (like CRP) has been decreasing in recent years, while spending on performance-based programs like the Conservation Security Program (CSP), and the Environmental Quality Program (EQIP) is increasing.

Agricultural viability can also be affected by CRP by reducing the amount of land in agricultural production and the economic viability of local businesses which support agricultural operations. Encouragement in CRP participation will need to be balanced with protection of agricultural viability.

## 4.2 Rangeland

The MSGCP describes Rangeland activities as follows:

Due to soil types and climate, a portion of the land on the Douglas Plateau is not suitable for dryland crop production, but is adequate for rangeland grazing. Rangeland activity is primarily beef cattle production consisting of cow/calf operations. Calves are born in early spring and weaned in October and November. The largest concentrations of rangeland areas are located at the fringes of the Waterville Plateau, immediately adjacent to basalt cliff breaks.  
(2015)

A number of ranchers lease land to graze from public agencies such as BLM, WDFW, and DNR. While land managed by public agencies is not included in VSP, it is an important aspect of agricultural viability in Douglas County.

Data from the 2012 Agricultural census (NASS) indicate some significant shifts in cattle operations in Douglas County in the past decade. While the number of farms reporting to have cattle operations has stayed the same, 77 in 2007 and 79 in 2012, the total number of cattle has changed significantly (Figure 4-7). As expected, this decrease in total cattle is correlated to a decrease in the total market value of the commodity, ranking Douglas County 24<sup>th</sup> in the state in 2012. However, the decrease in head of cattle by 32.4% compared to the decrease in total market value of 49.9%, indicate a decrease in the market value of cattle as a commodity in Washington. A recent NASS report estimates the number of cattle in Douglas County in 2016 to be 7,300 (NASS 2016), indicating minimal change since 2012.

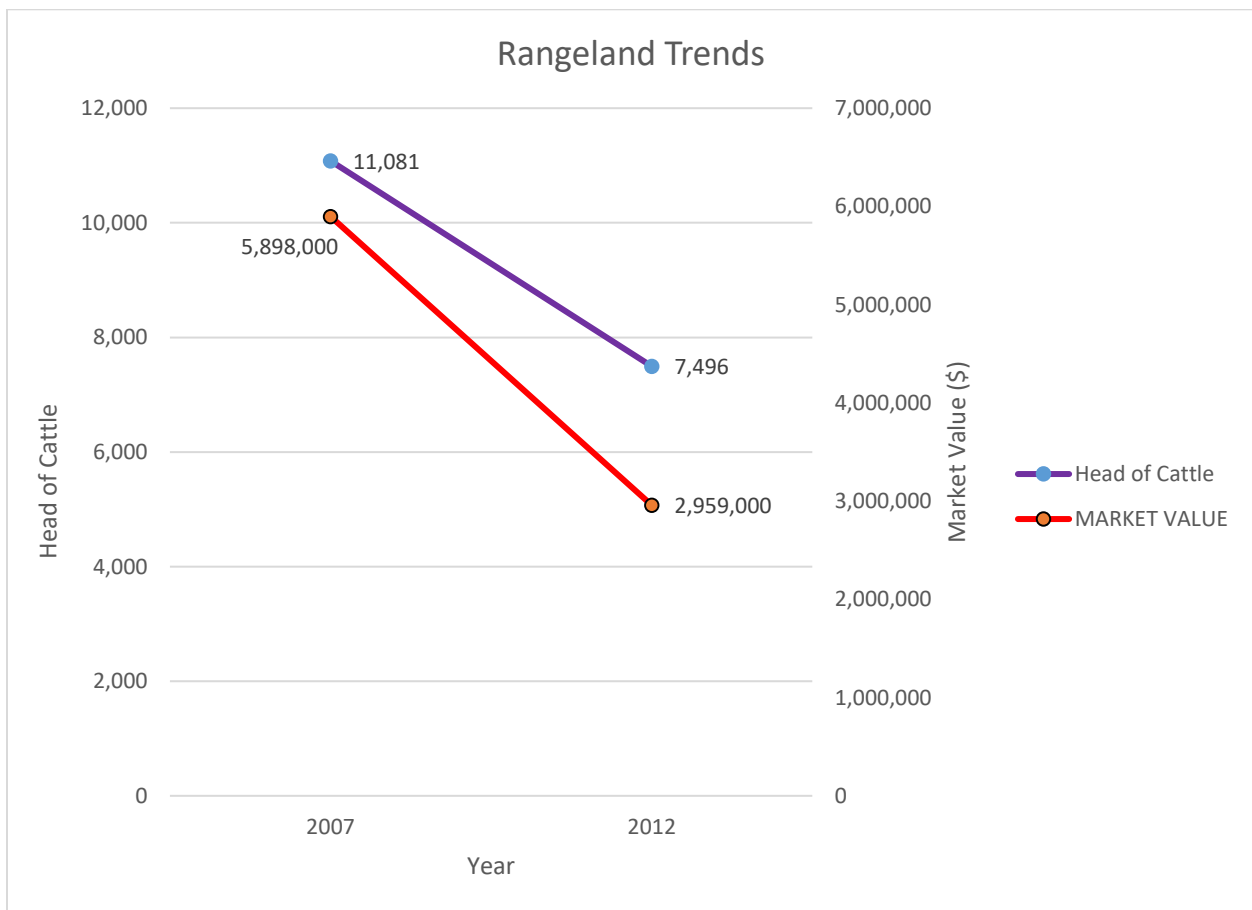


Figure 4-7: NASS data showing trends in amount of cattle and their market value in Douglas County (2012)

Table 4-3 shows a general list of agricultural activities that occur in rangeland agricultural practices. This list is meant for illustrative purposes only and does not constitute an all-inclusive list of activities covered by this VSP work plan.



Activity Category	Activity
Range Infrastructure	Road management
	Trail management
	Water development
	Structures (fences, etc.)
Livestock Management	Grazing system
	Moving and herding
	Water distribution
	Salt distribution
	Wintering
	Confinement
	Calving
	Feeding
	Vaccinations
	Manure management

*Table 4-3: An illustrative list of rangeland agricultural activities*

### 4.3 Irrigated Agriculture

Irrigated Agriculture in Douglas County is limited in extent to areas where sufficient water exists. The WRIA 44/50 Final Assessment prepared by Pacific Groundwater Group (2003) found that water withdrawn from the Columbia River account for 90% of all water rights allocations in WRIsAs 44 and 50, and 64% of that water is used for irrigation. It also found that 90% of inland water allocations are used for irrigation, with the inland source being predominately groundwater (ibid).

“The predominant agricultural activity along portions of the Columbia River corridor is irrigated tree-fruit production...Irrigated agriculture extends up into Moses Coulee as well, where alfalfa, hay and other forage are also produced” (MSGCP 2015). The Washington State Department of Agriculture reports a total of 20,684 acres in irrigation in 2011 (Figure 4-8) (WSDA, 2011). While somewhat limited in extent, irrigated lands (mostly orchards) account for a large portion of the economic value of commodities sold in Douglas County (Figure 4-1).

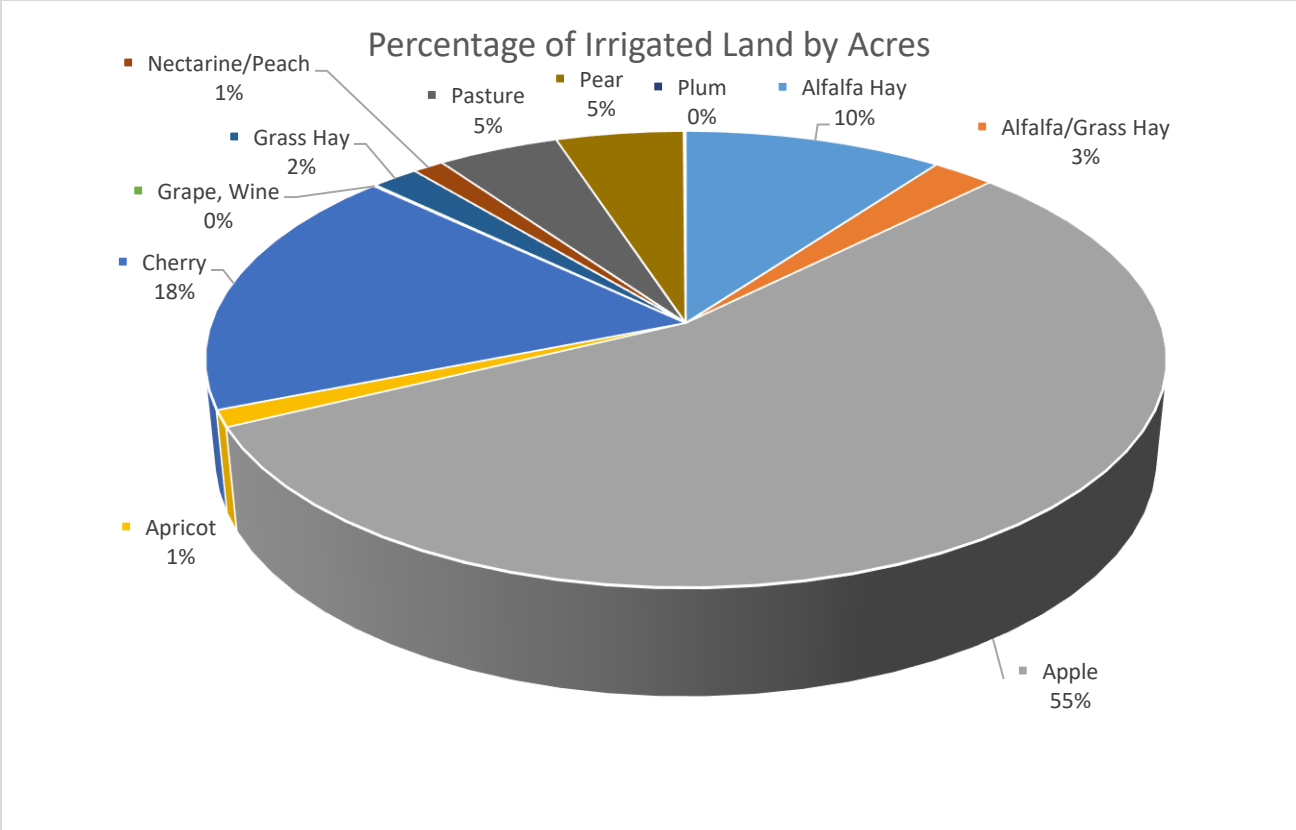


Figure 4-8: Proportions of irrigated acres by commodity in 2011 (WSDA)

The availability of irrigation water adjacent to the Columbia River in addition to sandy well-drained soils and long, warm growing seasons combine to produce high quality fruit. In 2012, there were a total of 326 orchards in Douglas County with a total of 13,930 acres in production (NASS 2012). Tree fruit commodities produced include apples, apricots, cherries, nectarines, peaches, pears, plums, and pluots (a hybrid of plums and apricots) (Table 4-4). Additionally, Douglas county has two vineyards, six farms producing blueberries, and a single farm producing each of the following: English walnuts, blackberries, red raspberries, and strawberries. In 2012, Douglas County ranked 7<sup>th</sup> in the state for value of its tree fruit, nuts, and berries sold (NASS).

Commodity	Farms	Acres
Apples	198	9,546
Apricots	29	136
Cherries	240	3,397
Nectarines	13	41
Peaches	35	197
Pears	56	603
Plums	1	not reported
Pluots	2	not reported

Table 4-4: Summary of tree fruit commodities in Douglas County 2012 (NASS 2012)

Table 4-5 shows a general list of agricultural activities that occur in irrigated agricultural practices. This list is meant for illustrative purposes only and does not constitute an all-inclusive list of activities covered by this VSP work plan.

Activity Category	Covered Activity
Crop Maintenance	Planting preparation
	Tree planting
	Summer pruning
	Flail mowing
	Ripping
	Tree removal
	Waste burning
	Waste chipping
	Seeding cover crop
	Irrigation and/or frost control
	Fertilization
	Pollination
	Thinning

Activity Category	Covered Activity
	Helicopter fruit drying
	Harvesting
Weed/Pest Control	Mowing
	Hail cannons
	Herbicide/Pesticide application
Infrastructure	Trellis management
	Fence management
	Road management
	Irrigation systems
	Netting
	Wind machines
	Water machines

*Table 4-5: An illustrative list of irrigated agricultural activities*

## 4.4 Mapping Agricultural Activities

The mapping of agricultural activities (Figure 4-9) in Douglas County occurred through the procedures described in the following paragraphs. Figure 4-9 is meant for illustrative purposes only and is not meant to be used as a tool to determine VSP eligible lands. Determinations on the intersection of critical areas and agricultural activities will be made on a case by case basis by FCCD acting as the VSP Technical Service Provider.

Cropland mapping was provided by the Washington State Department of Agriculture (WSDA) and is based on the 2011 National Agriculture Imagery Program (NAIP) data. The cropland layer includes all irrigated and dryland crops, as well as fields in the CRP and SAFE programs. WSDA can provide an updated cropland layer to FCCD every two years as NAIP imagery is only produced in odd years. Cropland accounts for 548,184 acres or 46.33% of Douglas County.

As stated above, the total area of private agricultural lands in Douglas County is 814,109 acres. Therefore, rangeland accounts for 265,925 acres (total-cropland above) or 22.48% of the land in the county. However, mapping exactly where this privately-owned rangeland occurs is more difficult.

Potential rangeland was mapped using 2011 NAIP imagery. This imagery is a composite of four spectral bands, three visible and one infrared. FCCD staff ran the imagery through a Normalized Difference Vegetation Index (NDVI) tool in ArcGIS. NDVI tracks the wavelengths of light reflected from the earth's surface. As plants strongly absorb visible light for photosynthesis, from 0.4  $\mu\text{m}$  to 0.7 $\mu\text{m}$ , and strongly reflects near-infrared light, from 0.7 $\mu\text{m}$  to 1.1 $\mu\text{m}$ , NDVI is a useful tool for the remote sensing of

vegetation (NASA, 2017). The result of the NDVI tool is a raster data set with each cell containing a value. FCCD staff sampled from known rangeland areas to create a classification of rangeland NDVI values. This method produces a map of land that could potentially be used for grazing activities. Mapping exact locations of grazing for Douglas County would require a census of all landowners in the county because there are many privately owned lands that were formerly ranches, but now are managed for wildlife. This would be a time consuming process and is deemed not necessary for VSP work plan development. Potential rangelands also include land managed by public agencies. While grazing leases are active on some of these lands, they are managed per each agencies rules and guidelines (see Chapter 2.0) and are not eligible for VSP. A clearer picture of active grazing will develop as ranchers become involved with VSP.

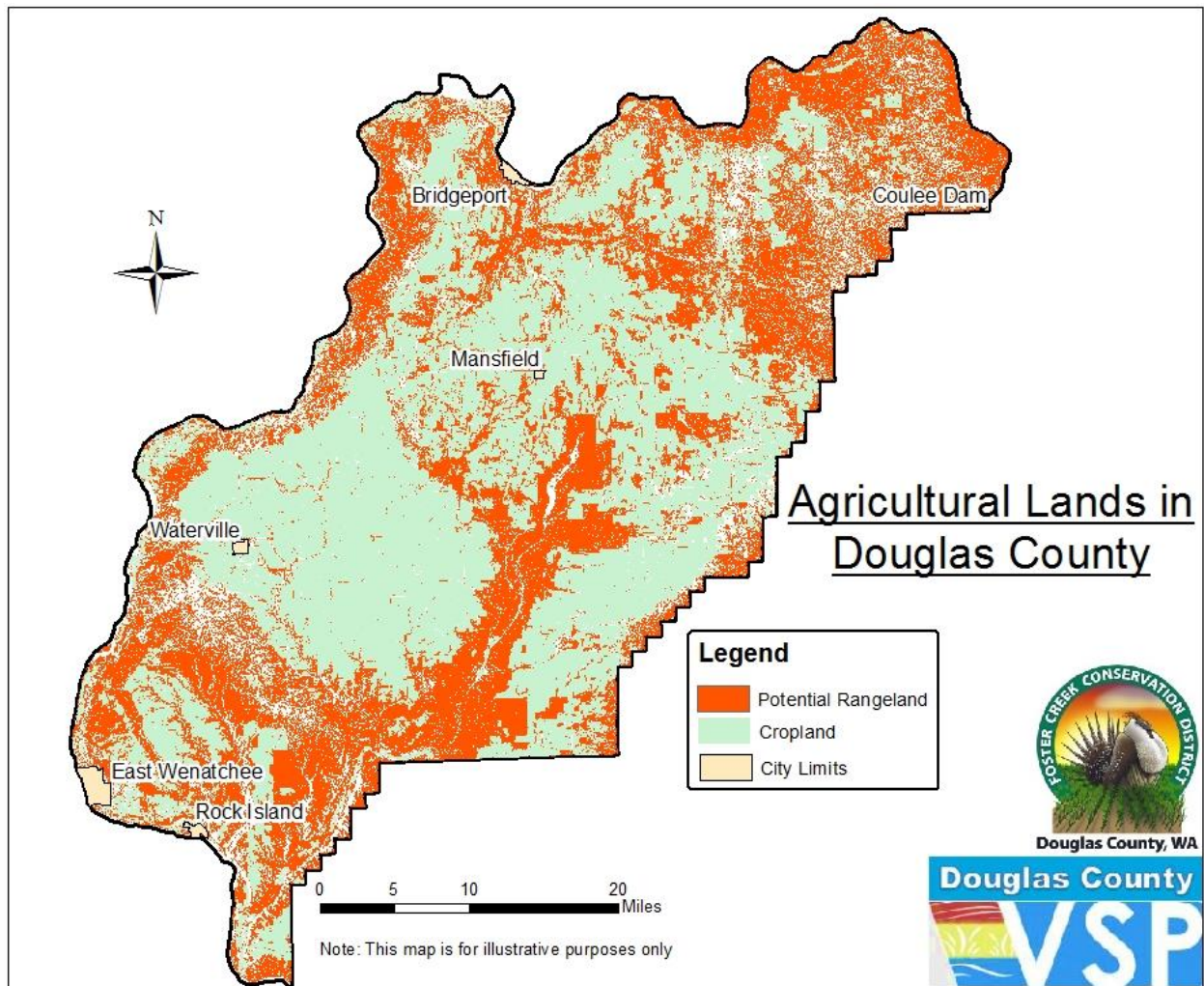


Figure 4-9: Agricultural Lands in Douglas County (WSDA 2011, FCCD)

## 4.5 SWOT Analysis

Over the course of two meetings, the Douglas County VSP work group engaged in a discussion of the strengths, weakness, opportunities, and threats (SWOT) of agriculture in the county. This SWOT analysis

was done for two reasons. The first was to more fully describe baseline agricultural conditions in Douglas County. The second was to better understand what agricultural viability means to Douglas County and how this VSP work plan can address it (see Chapter 5.0). Each item in the SWOT analysis in the tables that follow is also ascribed to the commodity grouping that it applies to.

**STRENGTHS**

<b>Item</b>	<b>Dryland</b>	<b>Rangeland</b>	<b>Irrigated</b>
WSU Extension is a huge asset and its support is valued	x	x	x
Dams and hydropower are major assets for this region because they provide low cost energy	x	x	x
Columbia River dams increase water stored and available to use for irrigation during the growing season			x
Columbia River dams provide flood control			x
Agricultural-Industrial infrastructure, such as fruit storage and transportation, is strong which helps to make us competitive			x
Farm-to-market roads are good	x	x	x
A sage grouse protection plan (MSGCP) is available to protect functions and values of this critical area and will provide regulatory certainty for participants	x	x	x
The remoteness from population centers tends to reduce pressure of converting agricultural land to residential and/or commercial	x	x	
A large percentage of land in Douglas County is privately owned	x	x	x
The CRP program helps to keep land from being sold, converted and developed.	x		
Douglas County has a long history of small, family-owned agriculture operations. This means that operators have a connection with their land and know how to run their operations in a sustainable way.	x	x	x
The SGI program provides financial incentives for conservation programs and easements for Douglas County operators	x	x	
A Community Wildfire Protection Plan has recently been developed	x	x	x
The Conservation Districts provide strong technical advice and look out for the best interests of producers	x	x	x

*Table 4-6: Strengths of agriculture in Douglas County*

**WEAKNESSES**

<b>Item</b>	<b>Dryland</b>	<b>Rangeland</b>	<b>Irrigated</b>
The average age of farmer in Douglas County is 60, and there is no influx of young farmers	x	x	x
The loss of laborers and the potential of a greater loss due to the current political agenda			x
The lack of available housing for labors			x
Telecommunications is spotty throughout the county	x	x	x
Most Agriculture on the plateau is dependent upon water from the sky and is susceptible to drought and climate change	x	x	
There is not much crop diversity in in Douglas County	x	x	x
There is no rail service	x	x	x
Land is necessary for sage-grouse recovery	x	x	x
There is no local control over the market value of crops	x	x	x
There is a lack of wildfire management personnel and infrastructure	x	x	x
Water in the Columbia River is not accessible due to existing water rights			x

*Table 4-7: Weaknesses of agriculture in Douglas County*

**OPPORTUNITIES**

<b>Item</b>	<b>Dryland</b>	<b>Rangeland</b>	<b>Irrigated</b>
The option to put land into conservation programs (like CRP) exists if so desired, giving producers financial flexibility	x		
The PUD can develop fiber optics and delivery networks just as they did for electricity	x	x	x
An aerial spraying company could develop here, as the need exists and airports are already in place.	x		x
Sage grouse conservation efforts have led to other opportunities including bird watching, hunting, and agro-tourism	x	x	x
The potential for greater hunting and fishing opportunities on private lands exists	x	x	x
Potential to take advantage of close major markets, such as Seattle and Portland, that are looking for environmentally friendly farmed products	x	x	x
The Farmed Smart Certification is one tool currently used by FCCD to help take advantage of the above opportunity	x		
VSP can be used as a way to coordinate and streamline government interaction with producers	x	x	x

*Table 4-8: Opportunities for agriculture in Douglas County*



## THREATS

Item	Dryland	Rangeland	Irrigated
Possible buy-out of small family farms by outside corporations			x
Government is a threat, specifically when buying farmland for a game reserve	x	x	
Small communities like Mansfield are dying, which threatens agricultural operators in many ways, including making them travel further for necessary goods and services, and recruiting young farmers	x	x	
The burden of government regulations upon small operators who can't afford the time or don't have the personnel to negotiate the regulations.	x	x	x
Agencies pushing toward no-till operations can be a threat because the practice requires very expensive new equipment	x		
Regulations can dissuade the next generation from wanting to be farmers because they don't want to put up with the hassle	x	x	x
Regulations can be inconsistent between government agencies	x	x	x
The inconsistencies of government programs and associated funding leads to uncertainties and misunderstandings	x	x	x
If funding is cut off to CRP, the loss of enrolled acres and the associated financial loss could be harmful	x		
The lack of control over government regulations, programs, funding, etc. i.e. the 2018 Farm Bill	x	x	x

<b>Item</b>	<b>Dryland</b>	<b>Rangeland</b>	<b>Irrigated</b>
Labor shortages could occur if borders are walled off or immigration policy changed			x
The potential threatened and/or endangered listing of sage grouse creates uncertainty for future operations	x	x	x
Dam removal on the Snake River can affect the wheat market here	X		
Weeds decrease production and increase input costs	x	x	x
Herbicide and Pesticide resistance will lead to decrease production and increased input costs	x	x	x
Decreased soil health can decrease production and increase input costs	X	x	x
Erosion associated with wind and water can lead a deficit of soil needed for production	x	x	X
Fire threatens to destroy crops, livestock and infrastructure	x	x	x

*Table 4-9: Threats to agriculture in Douglas County*

## 5.0 AGRICULTURAL VIABILITY

The VSP statute states, “a watershed group designated by a county under RCW 36.70A.715 must develop a work plan to protect critical areas while maintaining the viability of agriculture in the watershed” (RCW 36.70A.720(1)).

The Douglas County VSP work group has developed critical area protection strategies that maintain the viability of agriculture. However, the group also assessed agricultural viability independent of critical area protection to develop a plan to maintain and *enhance* agricultural viability in Douglas County.

To gain approval from the technical panel, this work plan must demonstrate that, “at the end of ten years after receipt of funding, the work plan, in conjunction with other existing plans and regulations, will protect critical areas while maintaining and enhancing the viability of agriculture in the watershed. Nowhere in the statute is “agricultural viability” defined. Based on work group discussions, and guidance from the Technical Panel, the Douglas County work group has defined agricultural viability in the following way:

Agricultural viability can be defined as the ability of a farmer or group of farmers to productively farm on a given piece of land or in a specific area, maintain and enhance an economically viable farm business and/or achieve other non-economic goals, keep the land in agriculture long-term, and steward the land so it will remain productive.

### 5.1 Objectives

The work group has developed agricultural viability objectives. These objectives are broad scale goals that, if achieved, will maintain and enhance agricultural viability in Douglas County. The objectives are based upon the work group’s SWOT analysis (see Chapter 4) and the work plan’s definition of agricultural viability above. The seven objectives are listed below:

1. Maintain or improve a vibrant agricultural economy
2. Maintain or increase agricultural production
3. Maintain or enhance land used for agricultural production
4. Maintain or increase participation in conservation activities
5. Use all available resources to provide adequate technical assistance and information to producers
6. Work with local, state and federal agencies to develop processes for regulatory and tax reform
7. Work with TSPs to ensure adequate agricultural infrastructure is maintained and/or enhanced.  
Agricultural infrastructure includes factors such as roads and storage facilities, and other factors that affect agriculture such as marketing and distribution opportunities.

## 5.2 Activities to Promote Agricultural Viability

The Douglas County work group has identified the following activities to address and achieve the objectives to maintain and enhance agricultural viability:

Activity 1: Seek additional funding to supplement VSP baseline implementation funding providing FCCD, and/or other TSPs, greater resources to assist agricultural operators and to implement the VSP work plan.

Activity 2: Work with existing entities to secure additional funding to increase cost share dollars available to producers wishing to implement incentive programs and/or purchase equipment necessary to implement the incentive programs.

Activity 3: Seek new incentives from the state legislature that recognize VSP participation.

Activity 4: Maintain or increase participation in conservation activities that enhance agricultural activities. Promote economical and effective water, soil, pest and nutrient management that maximizes production quality.

Activity 5: Continue to work with and support existing entities to develop new varieties adapted to Douglas County.

Activity 6: Continue to work with and support existing entities to develop new varieties resistant to insects and pathogens.

Activity 7: Work with the Douglas County Weed Management Task Force to assist in the implementation of weed management, and weed education and outreach in Douglas County

Activity 8: Work with existing entities to seek additional funding for weed management in Douglas County.

Activity 9: Use existing entities to work with Douglas County producers to implement Integrated Pest Management Strategies.

Activity 10: Work with all necessary parties to ensure that landowners have the rights and are allowed to place agricultural land into conservation easements, land trusts and similar holdings.

Activity 11: Encourage and promote compatible agricultural practices when land is placed into conservation easements, land trusts and similar holdings.

Activity 12: Use existing entities to maintain the viability of agriculture in the region through the promotion of hunting and wildlife management techniques, which coexist with agricultural activities. Recognize that hunting, wildlife viewing and farming are part of the rich cultural history of the region, which provides immense social and economic value.

Activity 13: Work with existing entities to continue to implement and revise the Community Wildfire Protection Plan.

Activity 14: Work with existing entities to assist in acquiring funding for and develop the infrastructure and personnel necessary to adequately fight wildland fires.

Activity 15: Use existing entities to conduct education and outreach activities to agricultural operators providing information about available tax incentives, financial assistance programs and other information related to agriculture. Potential activities include workshops, PSAs, an online clearinghouse for resources and information.

Activity 16: Continue to utilize existing entities to provide information on federal, state and local laws that affect agricultural activities.

Activity 17: Evaluate ways to streamline the application and permitting process at the local, state and federal levels for agricultural activities.

Activity 18: Promote Comprehensive Plan Policies and zoning regulations that support agricultural operators to keep land in farming and diminish its conversion to non-agricultural uses.

Activity 19: Support County, state and federal regulations that set appropriate densities and site planning for rural residential or urban residential uses that abut designated agricultural lands to minimize interface, protect necessary agricultural practices, and reduce pressure for agricultural conversion to development. For example, cluster zoning of new development as described by RCW 36.70A.177(2)(b).

Activity 20: Promote County policies and regulations that don't inhibit agricultural operations and that maintain and improve the long - term viability of agriculture. Work with the County Planning Department to review relevant codes to determine alternative strategies.

Activity 21: Work with local and state governments to ensure that capital investments and county and state transportation plans and telecommunication systems provide strong support for agricultural infrastructure.

Activity 22: Use existing entities to conduct education and outreach activities, such as workshops, to encourage an influx of more people into the agricultural community. Such activities will include successional planning and educational events at local schools on the importance of agriculture.

Activity 23: Use existing entities to conduct education and outreach activities in regards to the State of Washington Right to Farm Act (RCW 7.48.300-320). Activities directed toward agricultural operators will address approaches to minimize conflict with neighboring landowners. Activities directed toward landowners and the general public will promote awareness of the Right to Farm Act.

Activity 24: Use existing entities to assist agricultural operators with Right to Farm Act.

Activity 25: Use existing entities to conduct activities to promote VSP participation. Potential activities include branding, individual farm signs, and public service announcements.

Activity 26: Use existing entities to conduct activities to promote the recognition of local agricultural products. Potential activities include field signage, farmer's markets, and marketing efforts.

Activity 27: Use existing entities to promote and incentivize programs, such as the Farm Smart Certification.

Activity 28: Continue to use existing entities to promote awareness of the value of agriculture to the local economy and cultural lifestyle of Douglas County.

Activity 29: Work with existing entities to ask Washington members of the US Congress and the US Legislative Committees on Agriculture to keep funding for incentive based programs in future agricultural legislation.

Activity 30: Work with existing entities to ask Washington members of the US Congress and the US Legislative Committees on Agriculture to keep funding for the Conservation Reserve Program in future agricultural legislation.

Activity 31: Work with existing entities to ask Washington members of the US Congress and the US Legislative Committees on Agriculture to keep language in future farm bills that allows Continuous Conservation Reserve Program acres, such as State Acres for Wildlife Enhancement (SAFE), to be counted separate from the Conservation Reserve Program acre's cap of 25%.

Activity 32: Work with existing entities to promote incentive programs that are compatible with VSP's goals.

Activity 33: Convene an inter-agency committee aimed at coordinating, streamlining and simplifying government interactions and contact with Douglas County producers.

Activity 34: Hold an annual inter-agency meeting in which each agency will describe their anticipated incentive based funding opportunities for Douglas County Producers for the coming year(s). This information will be passed along to all producers in the county through outreach methods described in Section 10.1.

Objective	Activities That Address
1. Maintain or improve a vibrant agricultural economy	1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 34
2. Maintain or increase agricultural production	1, 2, 4, 5, 6, 7, 8, 9, 11, 27, 32
3. Maintain or enhance land used for agricultural production	1, 2, 4, 7, 8, 9, 10, 11, 13, 18, 19, 23, 27, 30, 31, 32
4. Maintain or increase participation and conservation activities to enhance agricultural activities	1, 2, 4, 8, 9, 25, 27, 29, 30, 31, 32, 34
5. Provide adequate technical assistance and information.	1, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 19, 20, 22, 24, 26, 27, 28, 32, 33, 34
6. Work with local, state and federal agencies to develop processes for regulatory and tax reform	1, 3, 17, 18, 19, 20
7. Assess adequate agricultural infrastructure	1, 2, 14, 21, 22, 32

Table 5-1: Summary of activities to address agricultural viability

### 5.3 Nexus of Agricultural Viability and Critical Area Protection

Through the development of this agricultural viability chapter, it became clear that there is a clear relationship between promoting agricultural viability and protecting critical areas. All of the critical area protection and enhancement strategies outlined in Chapter 7 promote agricultural viability. Additionally, there are many activities listed above that accomplish both tasks. This relationship highlights the beauty of the VSP, in that it illustrates that agricultural viability and critical area protection and/or enhancement are compatible and not mutually exclusive. The following is a list of activities to promote agricultural viability that also protect and enhance critical areas:

Objective	Activities That Address
Protect and enhance critical area functions and values	1, 2, 4, 7, 8, 9, 10, 12, 13, 25, 27, 29, 30, 31, 32

Table 5-2: Summary of activities that protect and enhance critical areas

## 6.0 Critical Areas

The VSP aims to protect critical areas where they intersect with agricultural activities, through voluntary, incentive-based measures, while at the same time improving the long term viability of agriculture. The five critical areas are: (1) fish and wildlife habitat conservation areas, (2) wetlands, (3) geologically hazardous areas, (4) frequently flooded areas, and (5) areas with a critical recharging effect on aquifers used for potable water. This chapter identifies the critical areas in Douglas County and their intersection with agricultural activities, as well as describes their baseline conditions and key functions.

### 6.1 Fish and Wildlife Habitat Conservation Areas

#### 6.1.1 Identification:

Douglas County Transportation and Land Services uses broad definitions to identify fish and wildlife habitat conservation areas (FWHCAs) in the Critical Area Element of the Countywide Comprehensive Plan. They reference resources to identify FWHCAs as appropriate:

1. The Washington Department of Fish and Wildlife's Priority Habitat and Species data and maps, as amended;
2. The Washington Department of Natural Resources Heritage data and maps, as amended; and
3. Other resources as they become available.

The Douglas County Code, Chapter 19.18 is more specific with respect to identifying FWHCAs:

- A. All fish and wildlife habitat conservation areas shall be identified by Douglas County to reflect the relative function, value and uniqueness of the habitat area as established through an approved habitat ranking evaluation submitted by the applicant for any development permit in accordance with the DCC. Douglas County may use the information sources in DCC Section 19.18.040 as guidance in identifying the presence of potential fish and wildlife habitat conservation areas and the subsequent need for a habitat boundary survey along with an on-site inspection, if necessary.
- B. Fish and wildlife habitat conservation areas include:
  1. Areas in which endangered, threatened, and sensitive species have a primary association;
  2. Habitats and species of local importance;
  3. Naturally occurring ponds under twenty acres and their submerged aquatic beds that provide fish or wildlife habitat;
  4. Waters of the state;
  5. Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity; or
  6. State natural area preserves and natural resource conservation areas.



Fish and wildlife habitat conservation areas do not include such artificial features or constructs as irrigation delivery systems, irrigation infrastructure, irrigation canals, or drainage ditches that lie within the boundaries of and are maintained by a port district or an irrigation district or company.

Under the Washington Administrative Code 365-190-130 the definition of a Fish and Wildlife Habitat Conservation Area is given as:

Fish and wildlife habitat conservation areas.

- (1) "Fish and wildlife habitat conservation" means land management for maintaining populations of species in suitable habitats within their natural geographic distribution so that the habitat available is sufficient to support viable populations over the long term and isolated subpopulations are not created. This does not mean maintaining all individuals of all species at all times, but it does mean not degrading or reducing populations or habitats so that they are no longer viable over the long term. Counties and cities should engage in cooperative planning and coordination to help assure long term population viability.

Fish and wildlife habitat conservation areas contribute to the state's biodiversity and occur on both publicly and privately owned lands. Designating these areas is an important part of land use planning for appropriate development densities, urban growth area boundaries, open space corridors, and incentive-based land conservation and stewardship programs.

The Douglas County Department of Transportation and Land Services uses information developed by WDFW known as Priority Habitat and Species (PHS) to help clarify and define the county code referenced above. PHS contains:

Information about the known location of Priority Habitats and Species in Washington State... [and] is a source of best available science that can inform local planning activities, development projects, conservation strategies, incentive programs, and numerous other land use applications (WDFW, 2017).

Douglas County planners in the Transportation and Land Services department use the following PHS GIS layers to define FWHCAs<sup>1</sup>:

Wildlife Living in Talus Cliffs - Talus Slopes, Cliff/Bluffs

Wildlife Living in Shrub Steppe Areas – Pygmy Rabbit, Burrowing Owl, Sage Grouse

Water Birds Nesting Areas – Cavity – nesting ducks, Waterfowl Concentrations, Wood Duck, Great Blue Heron, Common Loon

Eagle Nesting Areas – Bald Eagle

Heritage Points with a 1000-foot buffer

### 6.1.2 Intersection with Agricultural Activities:

Initial analysis of data sources from Douglas County and Washington Department of Fish and Wildlife indicated that over 773,000 acres are covered by the identification criteria. If this coverage is overlaid

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<sup>1</sup> Curtis Lillquist, Principal Planner, Douglas County Transportation and Land Services

with designated cropland it results in nearly 49% (374,400 acres) of intersection. Work group members are concerned that the breadth and vagueness of county critical area designations may prevent effective implementation of this work plan. Further, if the VSP should fail at some point, a return to a more regulatory approach would be required. In that case such broad designations would not comport with GMA goals for protection of property rights or constitutional due process case law requiring the county to demonstrate nexus and proportionality between regulatory burdens imposed and the cause and magnitude of an alleged harm.

Additionally, under the FWHCA definition in WAC 365-190-130, in order for land covered by any of the identifying criteria to be defined as an FWHCA, the lands must be managed “for maintaining populations of species in suitable habitats.” This leads the work group to understand that while large acreages of cropland intersect with the identifying criteria, those lands are not continually managed for wildlife species but for production agriculture.

The Department of Commerce Growth Management Act Handbook notes that “All designated critical areas must be protected, but not all critical areas must be protected in the same manner or to the same degree.” <http://www.commerce.wa.gov/wp-content/uploads/2016/08/gms-ca-handbook-critareas-2007.pdf>. The Washington State Legislature has directed VSP work groups to “focus and maximize voluntary incentive programs to encourage good riparian and ecosystem stewardship as an alternative to historic approaches used to protect critical areas”. If everything is critical nothing is critical. Assertions that every or nearly every acre in the county is a critical area are counter-productive. To that end, the work group respectfully requests Douglas county to provide more clarity as GMA updates are required in the future.

While there is a FWHCA designation across much of the county, the mapping is based upon wildlife data that requires generalized mapping to protect exact sensitive locations, such as sage-grouse mating locations known as leks. It is these locations that are truly “critical”. To help this work group focus and maximize mutual benefits from VSP efforts, technical assistance work under this work plan will be adaptively phased and focused on the highest priority critical area and agricultural viability issues identified in each watershed. The work group would like to reiterate even if a parcel of cropland intersects with the broad reaching FWHCA designation, there is nothing in VSP that precludes the farming of that ground (RCW 36.70A.702(2)).

Until county critical area designations are updated and clarified, this work plan directs technical assistance to focus first efforts, consistent with department of commerce minimum guidelines under Chapter 365-190 WAC, on county designated critical areas of high biodiversity or high priority habitats that have a clear overlap or intersection with agricultural activities under county jurisdiction, and that, as of the July 22, 2011 baseline, serve a critical role (not the whole county, and not lands that serve a secondary or non-critical role) in sustaining needed habitats and species for the functional integrity of the ecosystem, and which, if altered, may reduce the likelihood that the species will persist over the long term” (WAC 365-190-030). “This does not mean maintaining all individuals of all species at all times, but it does mean not degrading or reducing populations or habitats so that they are no longer viable over the long term” (WAC 365-190-130). Other factors to be considered include the degree of sensitivity to disturbance; rarity; connection to adjacent or nearby habitats; and connection to intact ecosystems or functions in a network of critical areas (WAC 365-190-090).

There are many sources of information available to the Douglas County VSP work group to focus implementation efforts in FWHCAs where they intersect with agricultural activities. WDFW, USFWS, NRCS, SGI, and FCCD have access to the exact locations of sensitive wildlife data referenced above that are truly important to manage, and can use this information to inform technical assistance and VSP implementation. The Arid Lands Initiative (SAH Ecologica and Arid Lands Initiative Team 2014) and the Washington Connected Landscapes Project (Washington Wildlife Habitat Connectivity Group 2010, 2012, 2013), both of which represent a partnership of public, private, and tribal interests, use a focal species approach to identifying habitat concentration areas, habitat linkages, and key pinch points and barriers to habitat connectivity in Douglas County. The Sage Grouse Initiative (see Section 7.7) provides updates to their sage grouse “priority implementation areas” at minimum, with every farm bill (about every four years). The resulting product is used to guide prioritization and implementation of conservation practices contracted under the SGI program, and is available for use by the VSP work group as well. USFWS and WDFW can provide technical assistance to help focus implementation in priority locations. Finally, the MSGCP implementation and monitoring committee (including personnel from USFWS, NRCS, SGI, WDFW, FCCD, BLM, and TNC) provides direction and focus for implementing the MSGCP, which is included as part of VSP implementation (see Section 7.2), but is information that can also be used by the VSP work group to set priorities. As discussed in Section 10.4, the VSP work group will set annual VSP implementation priorities.

#### 6.1.3 Baseline Conditions:

Habitat in Douglas County is composed of a variety of different types including: shrub-steppe, grassland, cliffs and talus, forest, riparian, wetland, streams, and lakes. The natural vegetation assemblages of Douglas County, as with everywhere, varies in response to temperature, available moisture, soil characteristics, elevation, landforms, and geology, creating diverse fish and wildlife habitats. The Multiple Species General Conservation Plan (MSGCP) (2015), developed for Douglas County by FCCD, places habitat types into the following groups, which are described in subsequent paragraphs.

1. Shrub-steppe
2. Conifer Forest
3. Riparian
4. Wetlands
5. Cliffs and Talus
6. Water: Lakes and Streams
7. Conservation Reserve Program Lands (CRP/SAFE)
8. Agricultural Lands

#### *Shrub-steppe*

The MSGCP describes shrub-steppe in the following way:

Shrub-steppe plant communities are the most widespread natural vegetative cover in Douglas County and are found largely on the upland areas, dry ravines, and slopes that lead to larger stream or river channels. Shrub-steppe plant communities in Douglas County were historically co-dominated by shrubs and perennial bunchgrasses with a microbiotic crust of lichens and mosses on the surface of the soil. Woody perennial shrub species include three-tip sagebrush (*Artemisia tripartita*), big sagebrush (*Artemisia tridentata*), stiff sagebrush (*Artemisia rigida*),

bitterbrush (*Purshia tridentata*), green rabbitbrush (*Chrysothamnus viscidiflorus*), and rubber rabbitbrush (*Ericameria nauseosa*). Perennial bunchgrass species include bluebunch wheatgrass (*Pseudoroegneria spicata*), Idaho fescue (*Festuca idahoensis*), and Sandberg bluegrass (*Poa secunda*).  
(MSGCP 2015)

A large diversity of perennial and annual forbs are present in healthy sagebrush steppe habitats in Douglas County. Important forbs in Douglas County include, but are not limited to, daisies (*Erigeron ssp.*), *Phlox ssp.*, beardtongues (*Penstemon spp.*), desert dandelions (*Agoseris*, *Microseris* and *Nothocalais ssp.*), larkspurs (*Delphinium spp.*), tiny trumpet (*Collomia linearis*), hawksbeards (*Crepis ssp.*), balsamroots (*Balsamorhiza ssp.*), biscuitroots (*Lomatium ssp.*), buckwheats (*Eriogonum spp.*), wild onions (*Allium ssp.*), Mariposa lilies (*Calochortus ssp.*), paintbrushes (*Castilleja ssp.*), and lupines (*Lupinus ssp.*).

The MSGCP continues:

Biological soil crust is an integral component of shrub-steppe. Biological soil crusts, also known as “cryptobiotic crust,” “microbiotic crusts,” or “cyanobiotic crusts,” are fragile microfloral communities composed of blue-green algae, bacteria, fungi, mosses, and lichens. These crust communities play an important role in stabilizing soils from wind and water erosion, contributing to soil productivity, influencing nutrient levels, retaining moisture, altering soil temperature, and aiding seedling establishment (Paige and Ritter 1999).  
(MSGCP 2015)

Shrub-steppe habitat in Douglas County has been historically degraded and continues to be threatened by interacting factors. It is difficult to find large stands of existing shrub-steppe that are still in relatively natural condition (USFWS 2012). More information on threats to shrub steppe habitat can be found in Section 6.6 later in this chapter.

### *Forest*

The MSGCP describes forests in Douglas County in the following way:

Forested areas are limited to about 8,000 acres within the semi-arid climate of Douglas County, and are found mostly on the north slope of Badger Mountain and in Corbaley Canyon. Forest habitat consists of stands of Douglas fir (*Pseudotsuga menziesii*) and ponderosa pine (*Pinus ponderosa*). These tree species are also widely scattered across Douglas County locations with moist soil, such as North facing slopes.  
(MSGCP 2015)

### *Riparian*

While somewhat limited in distribution by the arid climate, riparian habitats in Douglas County are highly diverse and important for both terrestrial and aquatic wildlife species. The MSGCP describes riparian habitats in the following way:

Riparian habitats occur along natural drainage corridors, the Columbia River, and other stream courses where soil and moisture conditions support the growth of trees and shrubs. Native

riparian vegetation is characterized by a mosaic of shrubby thickets with patches of deciduous trees and grass/forb-dominated plant communities. A diversity of shrub and deciduous tree species occurred historically and still occur in some places. These include snowberry (*Symphoricarpos albus*), wild rose (*Rosa* spp.), black hawthorn (*Crataegus douglasii*), common chokecherry (*Prunus virginiana*), bittercherry (*Prunus emarginata*), mock orange (*Philadelphus lewisii*), red osier dogwood (*Cornus sericea*), water birch (*Betula occidentalis*), willow (*Salix* spp.), black cottonwood (*Populus trichocarpa*), and quaking aspen (*Populus tremuloides*). (MSGCP 2015)

The riparian herbaceous layer includes, Rocky Mountain iris (*Iris missouriensis*), goldenrod (*Solidago* spp.), and a wide variety of grasses (family *Poaceae*), rushes (*Juncus* spp.) and sedges (*Carex* spp.). The presence of woody and herbaceous vegetation assists in moderating stream temperatures, sedimentation loads, streamflow, and large woody debris recruitment and transport (Knutson and Neaf 1997).

Small, intermittent streams and draws generally do not have the correct hydrology to naturally support riparian vegetation. Instead, these drainages and draws may consist of upland and transitional plant species, including big sagebrush (*Artemisia tridentata*), and basin wildrye (*Leymus cinereus*).

*Wetlands – see Section 6.2 below*

### *Cliffs and Talus*

The MSGCP describes cliffs and talus slopes in the following way:

Due to the geological history of the region, which includes numerous basalt lava flows, glaciation, and extensive ice-age flood events, there is much exposed basalt throughout the County. Extensive areas of cliffs and talus slopes are located in Moses Coulee, along the Columbia River, and along the eastern border of the county. More localized areas of cliffs and talus slopes are scattered throughout Douglas County.

Despite the relatively small area classified as cliffs and talus slopes, this land type provides important habitat for a number of wildlife species, primarily due to the presence of caves and crevices. Caves and crevices in Douglas County provide roosting areas for the majority of species of bats found in Washington; fourteen of the fifteen species known to occur in Washington have been documented in Moses Coulee (Hays, et al. 2013). (MSGCP 2015)

### *Water: Lakes and Streams*

The MSGCP describes water in Douglas County in the following way:

The Columbia River winds its way 156 miles along the County's northern, western, and southern perimeter, draining two major watersheds—Foster Creek Water Resource Inventory Area 50 (WRIA 50) and Moses Coulee Inventory Area (WRIA 44) (Pacific Groundwater Group 2003). Major natural lakes in Douglas County include Jamison Lake (332 acres), Atkins Lake (149 surface area in acres, dry since 1999), and Grimes Lake (124 acres). Several smaller lakes (less than 100 acres) and seasonal “potholes” are scattered throughout the area. The lakes are sustained by

groundwater and water levels can be indirectly related to water quantity in the streams. Man-made reservoirs are limited to the large impoundments within the Columbia River including Rock Island, Entiat, Pateros, and Rufus Woods Lakes, which, respectively, are the impoundments created by Rock Island Dam, Rocky Reach Dam, Wells Dam, and Chief Joseph Dam. (MSGCP 2015)

There are eight creeks of significant size in Douglas County: Foster Creek, Corbaley/Pine Canyon Creek, Sand Canyon Creek, Rock Island Creek, Coyote Creek, McCartney Creek, Rattlesnake Creek, and Douglas Creek/Moses Coulee. In addition, there are numerous smaller creeks and lakes within the WRIsAs. A detailed inventory and analysis of the water resources in Douglas County can be found in the *Douglas County Regional Shoreline Master Program* Appendices A -F, and can be found online here: [http://www.ecy.wa.gov/programs/sea/shorelines/smp/pdf/east\\_wenatchee\\_appendixah.pdf](http://www.ecy.wa.gov/programs/sea/shorelines/smp/pdf/east_wenatchee_appendixah.pdf)

Section 303(d) of the Federal Clean Water Act established a process to identify and clean up polluted waters. Every two years, all states are required to perform a water quality assessment of the surface waters in the state. The Washington Department of Ecology (DOE) is the state agency responsible for compiling data and identifying polluted waters. The 303d list identifies waters whose beneficial uses, such as for drinking, recreation, aquatic habitat, and industrial use, do not meet the state’s surface water quality standards. These waters are classified as “Category 5” or “impaired” waters. Category 5 listings identified in Douglas County are listed in Tables 6-1 (non-Columbia River) and 6-2 (Columbia River). Information on DOE’s water quality monitoring program can be found at <http://www.ecy.wa.gov/programs/wq/links/standards.html>

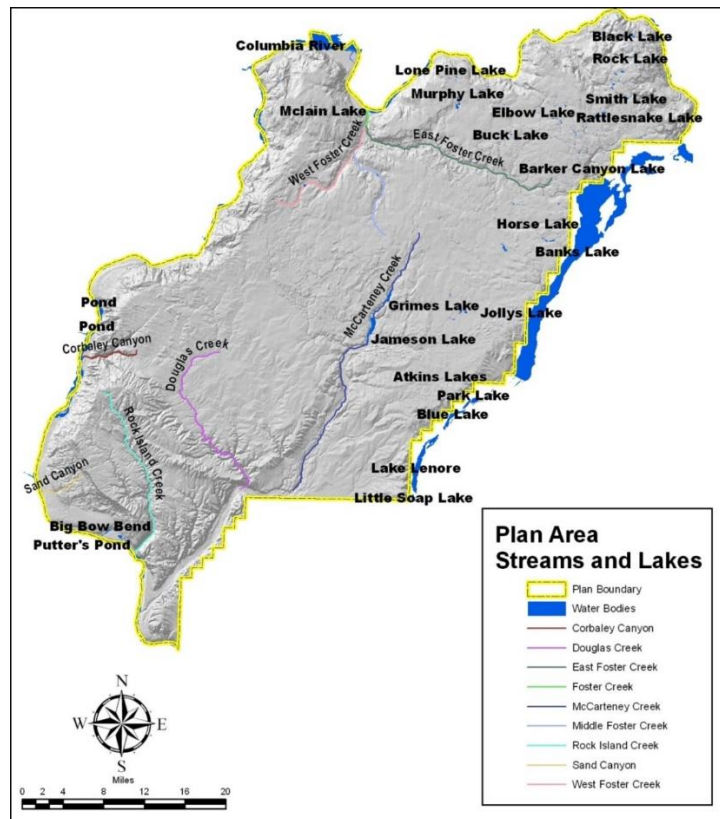


Figure 6-1: Streams and Lakes in and around Douglas County (MSGCP 2015, p.40)

Listing ID	Category	Medium	Parameter	Waterbody Name
73027	5	Water	Temperature	DOUGLAS CREEK
70537	5	Water	pH	DUTCH HENRY DRAW
73070	5	Water	Temperature	FOSTER CREEK
45925	5	Water	Bacteria	FOSTER CREEK
73068	5	Water	Temperature	FOSTER CREEK
47298	5	Water	Dissolved Oxygen	FOSTER CREEK
50609	5	Water	pH	FOSTER CREEK
50608	5	Water	pH	FOSTER CREEK
73069	5	Water	Temperature	FOSTER CREEK
73067	5	Water	Temperature	FOSTER CREEK
50611	5	Water	pH	FOSTER CREEK
50610	5	Water	pH	FOSTER CREEK
76800	5	Water	Chloride	GRIMES LAKE
70713	5	Water	Total Phosphorus	HAMMONDS LAKE
51197	5	Water	pH	MATTHIESEN CREEK
50631	5	Water	pH	MCCARTENEY CREEK
73028	5	Water	Temperature	MCCARTENEY CREEK
72379	5	Water	Bacteria	MCCARTENEY CREEK
50653	5	Water	pH	PINE CANYON CREEK
70720	5	Water	Total Phosphorus	PUTTERS LAKE
73023	5	Water	Temperature	ROCK ISLAND CREEK
45769	5	Water	Bacteria	ROCK ISLAND CREEK
51202	5	Water	pH	UPPER McCARTENEY CREEK
47934	5	Water	Dissolved Oxygen	UPPER McCARTENEY CREEK
73648	5	Water	Temperature	UPPER McCARTENEY CREEK

*Table 6-1: Non-Columbia River Category 5 listings in Douglas County*

Listing ID	Category	Medium	Parameter	Waterbody Name
11253	5	Water	Temperature	COLUMBIA RIVER (RUFUS WOODS LAKE)
42784	5	Water	Dissolved Oxygen	COLUMBIA RIVER (RUFUS WOODS LAKE)
66749	5	Water	Temperature	COLUMBIA RIVER (RUFUS WOODS LAKE)
6310	5	Water	Temperature	COLUMBIA RIVER (LAKE PATEROS)
8429	5	Water	Temperature	COLUMBIA RIVER (LAKE PATEROS)
11287	5	Water	Temperature	COLUMBIA RIVER (LAKE ENTIAT)
51659	5	Tissue	4,4'-DDD	COLUMBIA RIVER (LAKE ENTIAT)
51720	5	Tissue	4,4'-DDE	COLUMBIA RIVER (LAKE ENTIAT)
52656	5	Tissue	Polychlorinated Biphenyls (PCBs)	COLUMBIA RIVER (LAKE ENTIAT)
40950	5	Water	Temperature	COLUMBIA RIVER (LAKE ENTIAT)
72004	5	Water	pH	COLUMBIA RIVER (LAKE ENTIAT)
40949	5	Water	Temperature	COLUMBIA RIVER (LAKE ENTIAT)
51719	5	Tissue	4,4'-DDE	COLUMBIA RIVER
52655	5	Tissue	Polychlorinated Biphenyls (PCBs)	COLUMBIA RIVER
72002	5	Water	pH	COLUMBIA RIVER
73025	5	Water	Temperature	COLUMBIA RIVER
77627	5	Water	Dissolved Oxygen	COLUMBIA RIVER
40948	5	Water	Temperature	COLUMBIA RIVER
51658	5	Tissue	4,4'-DDD	COLUMBIA RIVER
51718	5	Tissue	4,4'-DDE	COLUMBIA RIVER
52654	5	Tissue	Polychlorinated Biphenyls (PCBs)	COLUMBIA RIVER
40947	5	Water	Temperature	COLUMBIA RIVER

*Table 6-2: Category 5 listings in the Columbia River surrounding Douglas County*

### *Conservation Reserve Program (CRP) and Safe Acres for Wildlife (SAFE)*

As part of the 1985 Farm Bill, Congress created the Conservation Reserve Program (CRP) to address concerns over soil erosion and as a cropland retirement mechanism to help a struggling farm economy due to the large surplus of crops. CRP is a land conservation program in which farmers receive a yearly rental payment in exchange for temporarily removing agricultural land from production and planting species that will address soil erosion concerns. The ultimate goal of the program is, “to re-establish valuable land cover to help improve water quality, prevent soil erosion, and reduce loss of wildlife habitat” (USDA 2016). To accomplish these goals, the federal government has historically paid an established dollar amount per acre to the farmer to keep that ground out of production, but maintained with adequate vegetative cover and noxious weed control. The typical CRP contract in Douglas County is 10 or 15 years.

A limit exists on the amount of land in the county that can be enrolled in the CRP program. This cap is usually set at 25% of the total eligible acreage registered with the Farm Service Agency, however, Douglas County currently has a waiver allowing up to 33% of the total eligible acreage. As of 2016, 183,109.47 acres are enrolled in the CRP program for a total in annual rental payments of \$9,177,100



(Rudd, 2017). This is an 8.6% increase since the 2011 value of 167,364 acres enrolled in CRP (WSDA 2011, 2016). However, 15,534 acres of CRP contracts are expiring in 2018 (Rudd, 2017).

The above figures include acres enrolled in the U. S. Department of Agriculture State Acres for Wildlife Enhancement (SAFE) program. The SAFE program provides farmers a payment to restore native vegetation, “in order to meet high-priority state wildlife conservation goals” (USDA 2016). In Douglas County, these lands are managed as conservation cover specifically designed for greater sage-grouse and Columbian sharp-tailed grouse (FCCD 2015).

The MSGCP states the following regarding CRP:

The first cultivated fields enrolled in CRP in Douglas County in the 1980s were seeded primarily with crested wheatgrass and other introduced grasses. Native grasses and forbs were seldom used. In some cases, non-native grasses were used because there were shortages of seed from native species and they were less expensive. Native grasses and forbs were more commonly used for CRP during the late 1990s [and are used today].  
(MSGCP 2015)

The quality of CRP stands and the associated habitat values are highly variable across the county, and in fact, from field to field. There are CRP fields that have mature shrubs, good bunchgrass cover, and forb composition, with minimal invasive species. However, there are also CRP fields that are primarily non-native/and or invasive species and not only provide minimal habitat values, but likely increase the risk of wildfire spread. CRP contracts limit activities that can occur on CRP lands, and in some instances, this can lead to the creation of a thick layer of dried litter that is highly flammable. A required practice on all CRP contracts, known as mid-contract management, can further decrease habitat values. Mid-contract management often requires producers to mow, disk, or harrow CRP fields to control weeds, regardless of current conditions of the stand. At times, these activities have increased invasive cover, and decreased shrub and bunchgrass cover.

CRP lands are federally classified as agricultural lands. The state Shoreline Management Act definitions (RCW 90.58.065), which VSP definitions rely upon, also expressly define “agricultural activities” and “agricultural land” to include CRP lands “allowing land used for agricultural activities to lie dormant because the land is enrolled in a local, state, or federal conservation program, or the land is subject to a conservation easement.”

The total acreage quantities enrolled in CRP and SAFE vary by year and depend on program funding, enrollment criteria, and signup opportunities, factors outside of local agriculture’s control. Federal funding for land retirement programs (like CRP) has been decreasing in recent years, while spending on performance-based programs like the Conservation Security Program (CSP), and the Environmental Quality Program (EQIP) is increasing. Further, it is possible that Douglas County’s 33% enrollment cap waiver may not be renewed in the future, an action also outside of local agriculture’s control. **Accordingly, CRP lands with temporary habitat improvements are included in VSP as enhancements to FWCHA because the level of CRP-based enhancement varies based upon many outside factors beyond the scope and intent of VSP (see Section 1.3). It is not the intent of VSP to hold local agricultural operators accountable for actions beyond their control.** For the 2011 baseline condition, CRP and SAFE lands were accounted for

as agricultural land with temporary habitat enhancement benefits, and not as a critical area that would need to be protected or offset by other stewardship strategies and practices to meet protection benchmarks. However, it is the goal of Douglas County VSP implementation to enroll expired CRP/SAFE acres into conservation activities that protect and/or enhance the functions and values of critical areas consistent with the goals and benchmarks of this work plan (see Adaptive Management Section 9.5). CRP will thus be accounted for in the enhancement benchmark as a reported value for each year CRP acreage is enrolled, on an aggregated watershed and county basis.

### *Agricultural Lands*

Currently, privately owned agricultural land comprises 814,109 acres of total land in the County (MSGCP 2015). Of this, 265,925 acres is rangeland and falls under the shrub-steppe habitat type described above. Cropland accounts for 548,184 acres in the county, and wildlife regularly use crop fields for various functions. There are many conservation activities that can improve a crop field's habitat values, and these activities and their role in this work plan are detailed in Chapter 7 and Chapter 8. More information about agricultural lands and activities in Douglas County can be found in Chapter 4.

### *Land Cover Types*

The nine main habitat types described in previous paragraphs have been further classified into 23 distinct land cover types in the MSGCP (2015). The MSGCP describes the process as follows:

FCCD utilized Landsat 7 multi-spectral scenes of the plan area in an effort to better stratify the land cover typing. Two scenes (April and July 2005) were processed using Leica Image processing software to identify distinct spectral signatures between the land cover types. These signatures were grouped into a simplified classification scheme. NRCS Potential Natural Communities (PNCs) for the Plan Area were identified and associated with the refined groups to finalize the classifications. The NRCS PNCs combine dominant plant community information along with soil type, slope, and aspect. This step was essential to differentiate between different species of sagebrush in the plan area.  
(MSGCP 2015)

Type	Designation	Description
1	Urban	Human construction and non-agricultural influence. While small pockets of vegetation do appear in the analysis (lawns, parks, landscaping) these pockets were dissolved into the larger land cover type.
2	Irrigated Forage Crops	Irrigated agricultural production, but not typically permanent crops such as tree fruits. This land cover type is dominated by the production of alfalfa and grass hay, corn, potatoes, and legumes. While this is classified as an irrigated land type, the CPs recommended for this specific land cover type differ from the Irrigated Orchard land cover type.
3	Irrigated Orchards	Permanent irrigated crops such as tree fruits (apples, pears, cherries, and stone fruits), grape vines, and berries. These crops were differentiated from other irrigated forage crops due to their more-unique CP requirements.
4	Dryland Agriculture	Dryland crop production. In the Plan Area, wheat production on a two-year wheat/fallow rotation dominates the land cover type. Smaller amounts of canola, rapeseed, and dryland legumes are raised. In some areas, yearly cropping rotations have been used. These crops share similar CPs.
5	Riparian, Large Trees and Shrubs	Riparian plant communities and trees associated with these areas. This land cover type is typically found along surface water streams and is strip-like in nature. Riparian areas are also found in draws with intermittent surface water.
6	Three-Tip Sagebrush, Moderate Cover	Shrub-steppe plant communities with three-tip sage ( <i>Artemisia tripartita</i> ) as the primary shrub component. Moderate cover describes a range of sagebrush cover between ten and 40 percent.
7	Three-Tip Sagebrush, Dense Cover	Shrub-steppe plant communities with three-tip sage ( <i>Artemisia tripartita</i> ) as the primary shrub component. Dense cover describes a range of sagebrush cover greater than 40 percent.
8	Three-Tip Sagebrush, Light Cover	Shrub-steppe plant communities with three-tip sage ( <i>Artemisia tripartita</i> ) as the primary shrub component. Light cover describes a range of sagebrush cover less than ten percent.

Type	Designation	Description
9	Grasslands, Bare/Three-Tip Sagebrush	Shrub-steppe plant communities with less than one percent shrub cover. In the Plan Area, grasslands are typically bunch grass plant communities with considerable bare ground between them. This land cover type includes a range of shrub-less grasslands and their barren interstitial areas found within potential three-tip sage areas.
10	Big Sagebrush, Moderate Cover	Shrub-steppe plant communities with big sage ( <i>Artemisia tridentata</i> ) as the primary shrub component. Moderate cover describes a range of sagebrush cover between ten and 40 percent.
11	Big Sagebrush, Dense Cover	Shrub-steppe plant communities with big sage ( <i>Artemisia tridentata</i> ) as the primary shrub component. Dense cover describes a range of sagebrush cover greater than 40 percent.
12	Stiff Sagebrush, Grasslands	Shrub-steppe plant communities with stiff sage ( <i>Artemisia rigida</i> ) as the primary shrub component. This land cover type covers a range of sagebrush cover less than ten percent.
13	Grasslands, Bare/Stiff Sagebrush	Shrub-steppe plant communities with less than one percent shrub cover. In the Plan Area, grasslands are typically bunch grass plant communities with considerable bare ground between them. This land cover type includes a range of shrub-less grasslands and their barren interstitial areas found within potential stiff sage areas.
14	Bitterbrush, Moderate Cover	Shrub-steppe plant communities with bitterbrush ( <i>Purshia tridentata</i> ) as the primary shrub component. Moderate cover describes a range of bitterbrush cover between ten and 40 percent.
15	Bitterbrush, Dense Cover	Shrub-steppe plant communities with bitterbrush ( <i>Purshia tridentata</i> ) as the primary shrub component. Dense cover describes a range of sagebrush cover greater than 40 percent.
16	Non Shrub-steppe, Moderate Brush Cover	Non-shrub-steppe plant communities with brush as the primary shrub component. Moderate cover describes a range of brush cover between ten and 40 percent.

Type	Designation	Description
17	Non Shrub-steppe, Dense Brush Cover	Non-shrub-steppe plant communities with brush as the primary shrub component. Dense cover describes a range of brush cover greater than 40 percent.
18	Non Shrub-steppe, Light Brush Cover	Non-shrub-steppe plant communities with brush as the primary shrub component. Light cover describes a range of brush cover less than ten percent.
19	Non Shrub-steppe, Grasslands/Bare Ground	Non-shrub-steppe plant communities but with less than one percent shrub cover. In the Plan Area, grasslands are typically bunch-grass plant communities with considerable bare ground between them. This land cover type covers a range of shrub-less grasslands and their barren interstitial areas found within potential non-shrub-steppe areas.
20	Grasslands, Burned 2005	Recently burned areas (within 12 months of imaging). They may have originally been classified as a shrub-steppe, non-shrub-steppe, riparian, or coniferous forest, but have been converted due to wildfires. The typical progression of plant community restoration and re-growth begins with bunch grass plant communities.
21	Conifer Forest	Scattered stands of Douglas fir and ponderosa pine. Some isolated trees or small stands of trees are present within other land-cover types but were not classified as conifer forest if their stand size was below one quarter of an acre.
22	Rock and Rubble, Talus	Few or no plant communities and exposed basalt beds.
23	Water	Visible surface water along with established identifiable surface water lakes that may diminish or disappear at times due to varying precipitation conditions.

Table 6-3: Land Cover Types Identified by the Multiple Species General Conservation Plan (2015, pp. 44-46)

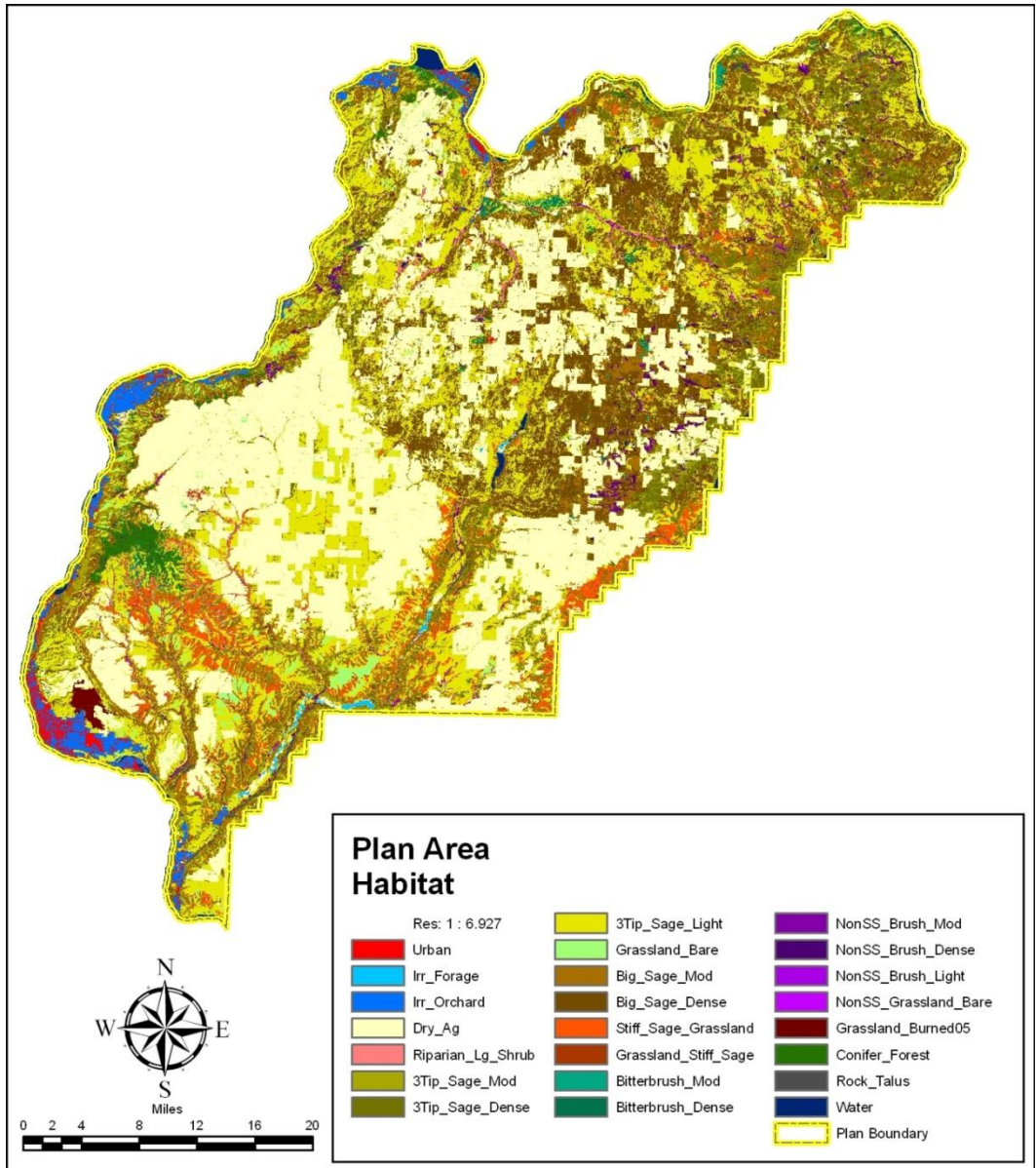


Figure 6-2: Land Cover Types in Plan Area (MSGCP 2015, p. 43)

### Species of Concern

Several species of management and conservation concern exist within Douglas County. While the intent of VSP does not include managing for specific wildlife species, this work plan is designed to protect and enhance habitat, which will in turn, benefit species of conservation concern.

There are four terrestrial species which are covered by the Douglas County Multiple Species General Conservation Plan. These species are, the Columbia Basin pygmy rabbit (*Brachylagus idahoensis*) (Federal endangered species), the Washington ground squirrel (*Urocitellus washingtonii*) (State candidate species), the greater sage-grouse (*Centrocercus urophasianus*) (State threatened species), and

the Columbian sharp-tailed grouse (*Tympanuchus phasianellus columbianus*) (State threatened species). There is an aquatic species of concern that has a limited distribution in Douglas County. The Chinook Salmon (*Oncorhynchus tshawytscha*) (Upper Columbia River Spring-run Chinook Salmon Ecologically Significant Unit) has breeding habitat in the lower mile of Foster Creek. A brief description of these species and their habitat in Douglas County is given in Appendix I.

#### 6.1.4 Summary of Key Functions

FWHCAs provide the required resources needed for fish and wildlife to complete their life cycle, including nesting, spawning, rearing, foraging, thermoregulation, predator avoidance, mating and migration. FWHCAs help improve water quality through erosion control and filtration provided by riparian areas and wetlands, improve hydrology through natural infiltration and water holding capacity of soils, improve soil health through the reduction of erosion and natural nutrient cycling, and provide a variety of habitats to the various fish and wildlife species of Douglas County.

## 6.2 Wetlands

### 6.2.1 Identification

The Douglas County Code Identifies Wetlands as follows:

All wetlands shall be identified and delineated in Douglas County to reflect the relative function, value and uniqueness of the wetland using the Washington State Wetlands Identification and Delineation Manual in conjunction with the Federal Manual for Identifying and Delineating Jurisdictional Wetlands. DDC 19.18B.020

Presently, the State of Washington has defaulted to using the Federal definition and procedure for delineating wetlands. In their Wetlands Delineations Manual, the US Army Corps of Engineers (1987) defines wetlands as:

Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

In the Corps' delineation manual, wetlands are identified by the presence of three different groups of indicators. These indicators are vegetation adapted to wet soils, presence of wetland hydrology, and presence of hydric soils. The manual provides a procedure detailing the identification and delineation of wetlands.

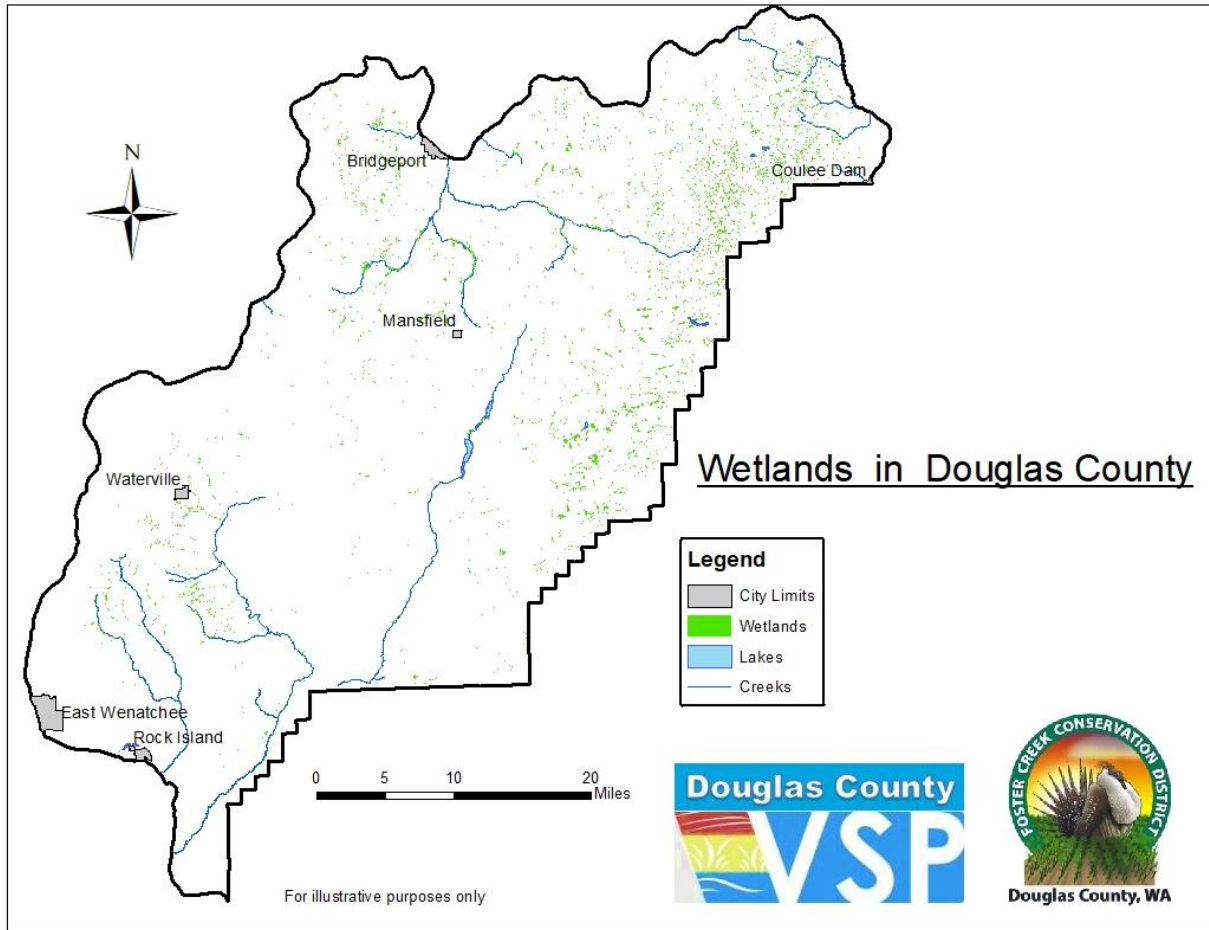


Figure 6-3: Wetlands in Douglas County as mapped by Moskal et al. 2013.

### 6.2.2 Intersection with Agricultural Activities:

Of the 20,312 acres of wetlands in Douglas County, 3,365.09 acres intersect cropland. This accounts for 16.5% of wetlands and 0.6% of cropland in Douglas County. However, the true intersection of wetlands and agricultural activities may be higher as some wetlands occur on lands mapped as potential rangeland and may have grazing occurring on them.

Agricultural activities and implemented conservation activities can affect the wetting or drying of wetlands. This topic and its relevance to VSP (as well as regulatory measures) is addressed in DOE’s publication, *Focus on Irrigation-Influenced Wetlands*. The publication states:

“In irrigated agricultural areas, wetlands can result from localized conditions (e.g., a leaking irrigation ditch) or as a result of a region-wide rise in groundwater resulting from regional irrigation projects. These types of wetlands are regulated by state wetland law and cannot be filled or drained without appropriate mitigation. However, if the irrigation practices are changed (such as moving irrigation away from a particular field for a year or two, or water conservation practices are implemented), and the wetland dries up and no longer performs



wetland functions, then no mitigation is required.”  
(DOE, 2010)

This means that irrigation efficiencies that dry a wetland up will not count against Douglas County’s wetland acreage for VSP tracking and reporting. For more information, see Section 9.3.

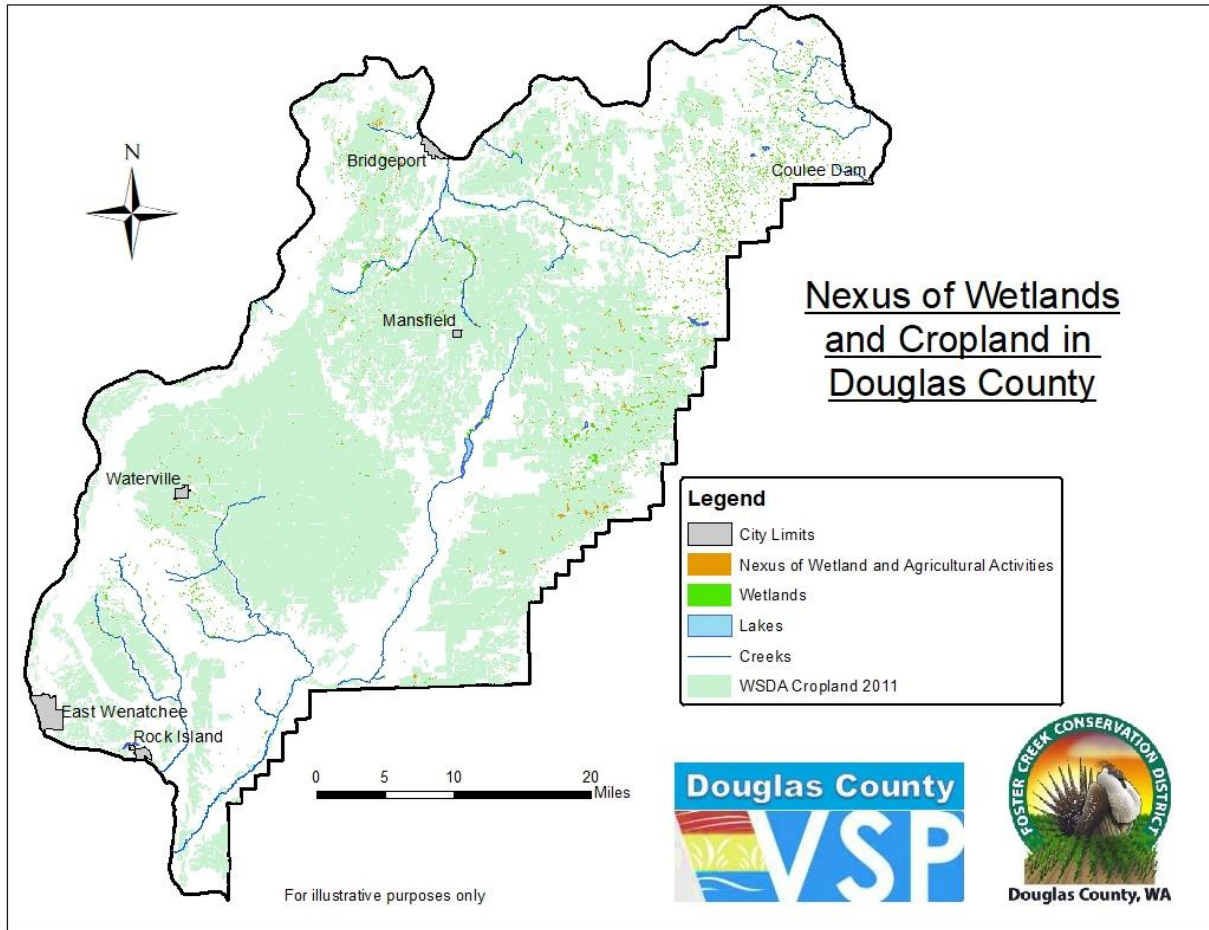


Figure 6-4: Nexus of wetlands and cropland in Douglas County. Data source WSDA (2011) and Moskal et al. (2013)

### 6.2.3 Baseline Conditions:

Wetlands are recognized as critical areas in the Growth Management Act in part because of the vast ecosystem services they provide to both the environment and society. The Washington State Department of Ecology (2016) lists the following benefits of wetlands: water purification, flood protection, shoreline stabilization, groundwater recharge, streamflow maintenance, habitat for fish and wildlife, and economic.

Wetlands in Douglas County are somewhat limited in distribution. In 2013, FCCD commissioned the University of Washington and Principal Investigator Dr. Moskal to conduct an assessment of wetlands in

Douglas County. One of the stated goals of this project was to identify and classify wetlands throughout the county (Moskal et al. 2013). This goal was accomplished using a combination of field data, aerial photos and Landsat satellite imagery through a process known as object-based image analysis (OBIA). OBIA increases the accuracy of wetland mapping over traditional methods such as the National Wetlands Inventory (NWI) (ibid). Moskal et al.'s final report, including a detailed description of the OBIA process is on file at the FCCD office.

The Moskal et al. 2013 study mapped a total of 20,312 acres of wetlands in Douglas County based on the US Army Corps of Engineers' manual, plus 1095 acres of open water ponds and lakes (Figure 6-3). Based on the above numbers, wetlands account for 1.7% of the land area in Douglas County. The vast majority of these wetlands are located in the North and East portions of the county. *Moskal et al.* then characterized each wetland into different types based on the Cowardin Classification system (Cowardin et al. 1979). A summary of the different wetland types is presented in Table 6-4. Figure 6-5 shows a breakdown of the percentages of wetland types in Douglas County. As is shown in the figure, the vast majority of wetlands are variations of the Palustrine Emergent type. In Douglas County, vegetation in these types of wetlands typically consists of species of cattails (*Typha ssp.*), bulrushes (*Scirpus ssp.*), rushes (*Juncus ssp.*), sedges (*Carex ssp.*), and hydrophytic grasses (*Poaceae* family). Migratory birds are frequently seen using these wetlands during their trips North and South each year.

<b>Wetland Code</b>	<b>Wetland Type</b>	<b>Description</b>
POW	Palustrine Open Water	This class consists of open water ponds with an unknown bottom.
PUB	Palustrine Unconsolidated Bottom	This class consists of permanently flooded ponds with an unconsolidated bottom that includes all wetland habitats with at least 25% cover of particles smaller than stones, and a vegetative cover less than 30%.
PEM	Palustrine Emergent	This class is characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants. Water regime modifier is unknown.
PEM1A	Palustrine Emergent Temporarily Flooded	As described above. Surface water is present for brief periods during the growing season, but the water table usually lies well below the soil surface for most of the season. Plants that grow both in uplands and wetlands are characteristic of the temporarily flooded regime.
PEM1C	Palustrine Emergent Seasonally Flooded	As described above. Surface water is present for extended periods especially early in the growing season, but is absent by the end of the season in most years. When surface water is absent, the water table is often near the land surface.
PSS	Palustrine Scrub Shrub	The Class Scrub-Shrub Wetland includes areas dominated by woody vegetation less than 6 m (20 feet) tall. The species include true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions. All water regimes except subtidal are included.
PFO	Palustrine Forested	The Class Forested Wetland is characterized by woody vegetation that is 6 m tall or taller. All water regimes are included except subtidal.

*Table 6-4: Description of Cowardin Classification*

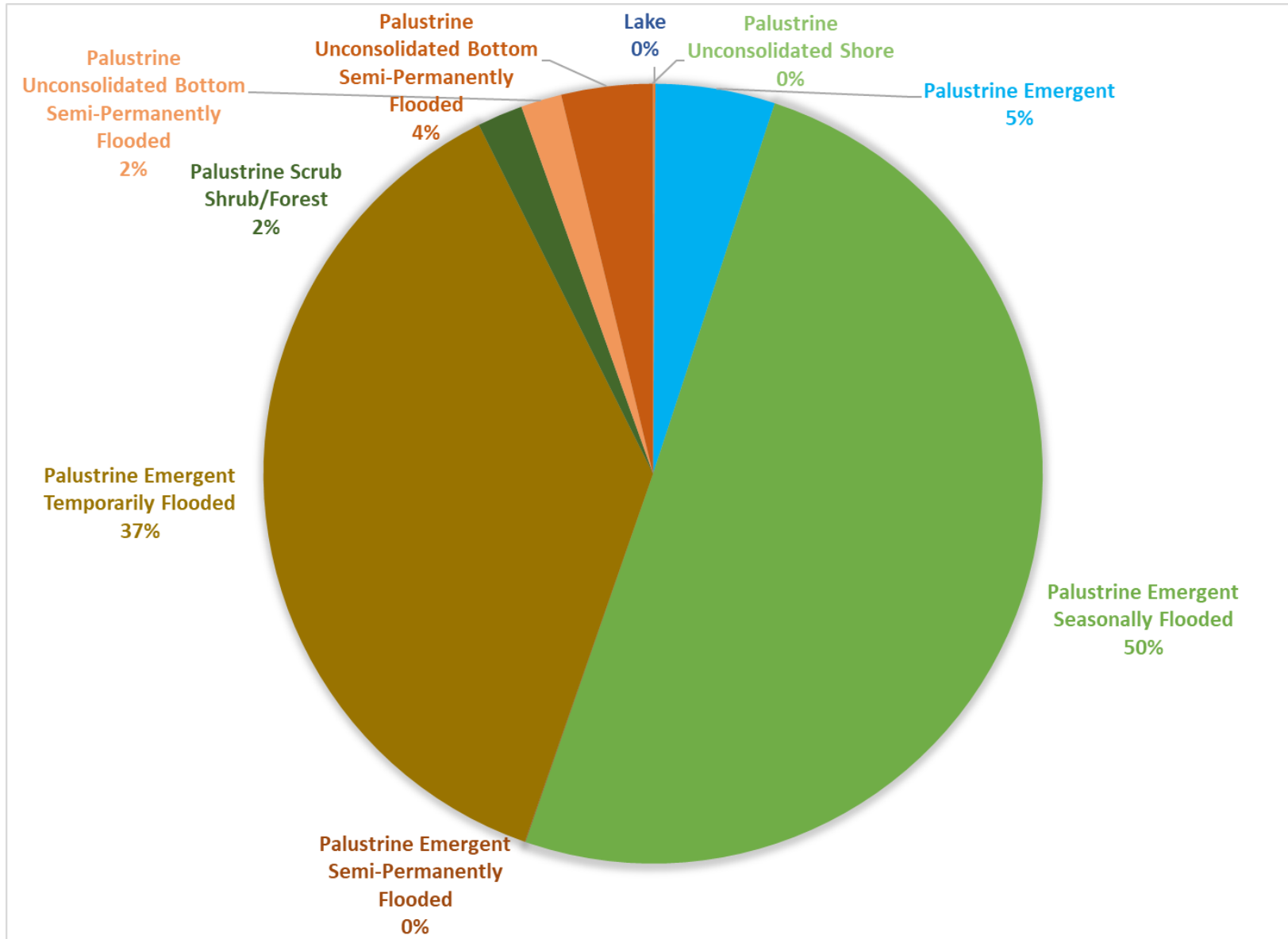


Figure 6-5: Wetland Types in Douglas County

The final component of the Moskal et al. study was a long-term temporal change analysis for wetlands in Douglas County. The authors summarized their findings as follows:

The results of the spatiotemporal analysis indicate that overall there has been a substantial reduction in overall surface water for wetlands throughout Douglas County. This trend is apparent when examining the surface water levels from 1984 – 2011 for all wetlands. [Figure 6-6 below] shows the frequency of wetlands greater than 75% full. The number of wetlands below 75% capacity has dramatically decreased from 318 in 1984 to 66 in 1994 to 49 in 2004 and finally 59 in 2011. (ibid)

The authors speculate that climate change is likely, “having a significant impact on wetlands in Douglas County” (ibid). However, they also identify several other factors likely impacting wetland hydrology in the county including farming practices, land conversion, and road construction. The authors indicate that further analysis is necessary to identify each individual factor’s role.

In Douglas County, one potential explanation for the decrease in wetlands over the past 30+ years is the advent of the Conservation Reserve Program (CRP). Over this time period vast quantities of cropland have been planted into conservation. The hydrology of a traditionally cultivated dryland field and an established CRP field are vastly different. CRP fields will act similar to natural shrub-steppe hydraulically, and have a greater water holding and storage capacity than a traditionally cultivated field. Figure 6-7 shows historic (1984) and baseline (2011) satellite images of a location in East-Central Douglas County. Anecdotally, producers have noted decreases in ponding areas, likely mapped as seasonal wetlands, when switching from conventional till to no-till operations.

Number of Wetlands >75% full

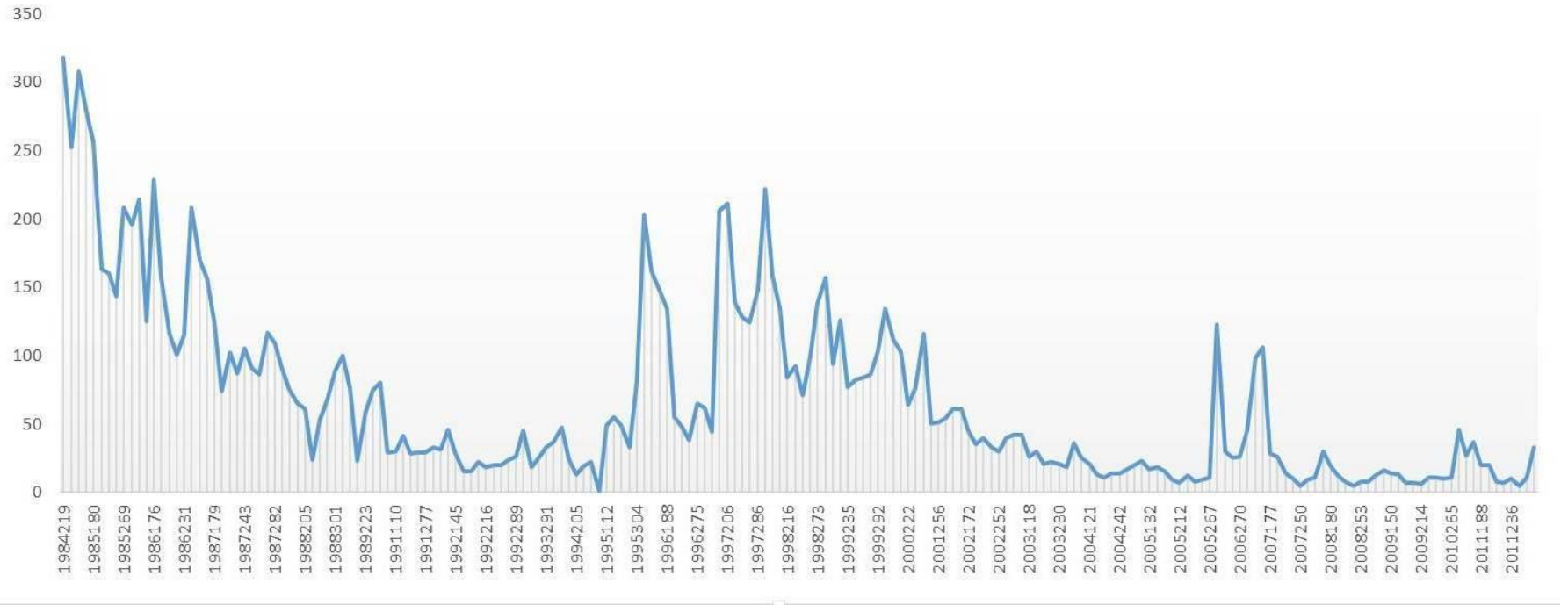


Figure 6-6: Number of wetlands with 75% or greater surface area inundation 1984-2011

Source: Moskal et al. 2013



Figure 6-7: Satellite image comparison of East-Central Douglas County historic (1984) and baseline (2011). Both photos are taken in December. Source: Google Earth

The trend in wetland decrease over the last 30+ years is confirmed by Halabisky et al. (2017). The authors state, “Since 1984, wetlands in the Glaciated Region of the Columbia Plateau have shown decreases in annual mean surface water area.” The paper also examines expected changes to wetlands in the Columbia Plateau region under future climate change scenarios using wetland specific regression models. The results show that effects to wetlands are largely driven by the hydrology of the wetlands:

In general, groundwater driven wetlands in the Glaciated Region are expected to show increases in annual maximum surface water area, to dry less frequently, and if they do dry out they will dry later in the season...On the other hand, surface water driven wetlands are expected to either show no change or to get drier.

(Halabisky et al. 2017)

Additionally, the authors note that groundwater driven wetlands are likely to be more sensitive to changes in precipitation, and surface water driven wetlands are more sensitive to changes in temperature (ibid).

The above independent research and anecdotal evidence suggest that the baseline for wetlands in Douglas County is that they are changing. A portion of this change may be linked to agriculture, but much of the change is outside of the control of local agriculture. While it is possible to take a snapshot of wetlands on July 22, 2011, evaluating wetlands in the context of longer timescales and external factors is at least equally important. The benchmarks and indicators set forth in chapter 8 attempt to reconcile the requirements of the VSP statute and the above facts.

Any identified degradations to baseline critical area functions and values, or declining resource trends in indicators of such functions, that are not caused by agricultural activities will not be counted against the Douglas County agricultural community for VSP critical area protection reporting purposes.

#### 6.2.4 Summary of Key Functions

Wetlands provide important terrestrial and aquatic wildlife habitat; improve water quality through filtration and reducing erosion through bank stabilization; improve hydrology by storing water acting to support base flows and reduce flooding potential; and sequester and store carbon.

### 6.3 Geologically Hazardous Areas

#### 6.3.1 Identification

Geologically Hazardous Areas (GHA) include areas susceptible to erosion, sliding, earthquake, or other geological events. The primary purpose of GHA designation is to identify areas that pose a threat to the health and safety of citizens, fish, and wildlife, when incompatible commercial, residential, or industrial development is sited in areas of significant hazard (<http://www.commerce.wa.gov/serving-communities/growth-management/growth-management-topics/critical-areas/>).

The Douglas County Code identifies GHA in the following manner:

Any land containing soils, geology or slopes that meet any of the following criteria shall be classified as having a known or suspected risk of being geologically hazardous areas:

1. Areas identified by the United States Department of Agriculture Natural Resources Conservation Service as having a “severe” rill and inter-rill erosion hazard;



2. Areas potentially subject to landslides based on a combination of geologic, topographic, and hydrologic factors. They include any areas susceptible because of any combination of bedrock, soil, slope (gradient), slope aspect, structure, hydrology, or other factors. Examples of these may include, but are not limited to, the following:
  - a. Areas of historic failures, such as:
    - i. Those areas delineated by the United States Department of Agriculture Natural Resources Conservation Service as having a “severe” limitation for building site development;
    - ii. Those areas mapped as class U (unstable), UOS (unstable old slides), and URS (unstable recent slides) in the Department of Ecology coastal zone atlas; or
    - iii. Areas designated as quaternary slumps, earthflows, mudflows, lahars, or landslides on maps published as the United States Geological Survey or Department of Natural Resources division of geology and earth resources.
  - b. Areas with all three of the following characteristics:
    - i. Slopes steeper than fifteen percent;
    - ii. Hillsides intersecting geologic contacts with a relatively permeable sediment overlying a relatively impermeable sediment or bedrock; and
    - iii. Springs or ground water seepage;
  - c. Areas that have shown movement during the Holocene epoch or which are underlain or covered by mass wastage debris of that epoch;
  - d. Slopes that are parallel or sub-parallel to planes of weakness (such as bedding planes, joint systems, and fault planes) in subsurface materials;
  - e. Slopes having gradients steeper than eighty percent subject to rock fall during seismic shaking;
  - f. Areas potentially unstable as a result of rapid stream incision, stream bank erosion, and undercutting by wave action;
  - g. Areas that show evidence of, or are at risk from snow avalanches;
  - h. Areas located in a canyon or on an active alluvial fan, presently or potentially subject to inundation by debris flows or catastrophic flooding; and
  - i. Any area with a slope of forty-five percent or steeper and with a vertical relief of ten or more feet except areas composed of consolidated rock. A slope is delineated by establishing its toe and top and measured by averaging the inclination over at least ten feet of vertical relief.
3. Areas subject to severe risk of damage as a result of earthquake induced ground shaking, slope failure, settlement, soil liquefaction, or surface faulting. One indicator of potential for future earthquake damage is a record of earthquake damage in the past. Ground shaking is the primary cause of earthquake damage in Washington. The strength of ground shaking is primarily affected by:
  - a. The magnitude of an earthquake;
  - b. The distance from the source of an earthquake;
  - c. The type of thickness of geologic materials at the surface; and
  - d. The type of subsurface geologic structure.
4. Other geological events:

a. Volcanic hazard areas shall include areas subject to pyroclastic flows, lava flows, debris avalanche, inundation by debris flows, mudflows, or related flooding resulting from volcanic activity.

b. Mine hazard areas are those areas underlain by, adjacent to, or affected by mine workings such as adits, gangways, tunnels, drifts, or airshafts. Factors that should be considered include: Proximity to development, depth from ground surface to the mine working, and geologic material.

DDC 19.18D.0

Based on polygons obtained from the Washington Department of Natural Resources (DNR) and Douglas County Transportation and Land Services (Figure 6-8), there is 498,629 acres of GHA in Douglas County.

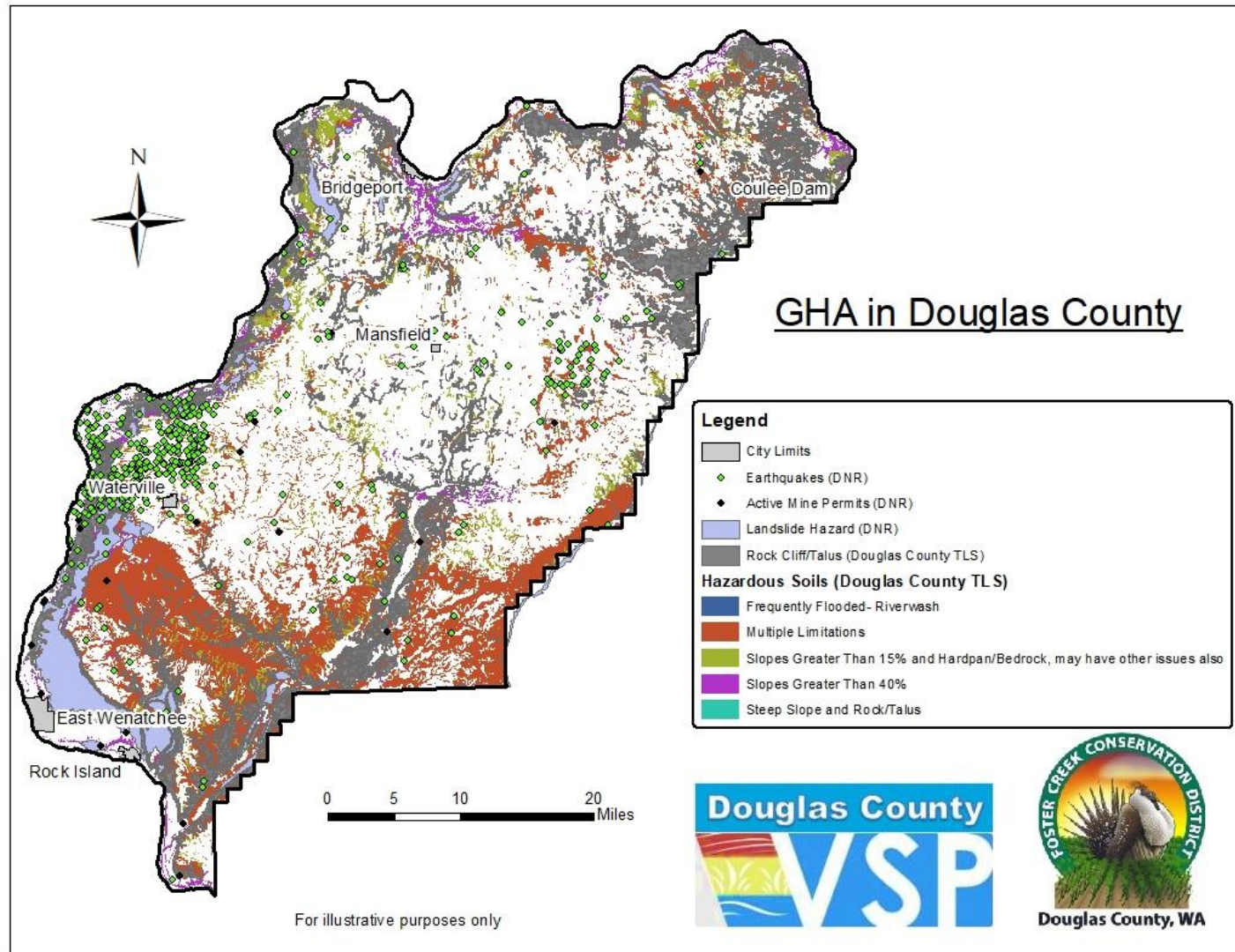


Figure 6-8: GHA in Douglas County. Source: DNR (2017) and Douglas County Transportation and Land Services

### 6.3.2 Intersection with Agricultural Activities:

99,571 acres of the 498,629 acres of GHA in Douglas County intersect cropland. This accounts for 19.96% of GHA and 18.7% of cropland in Douglas County. However, the true intersection of GHA and agricultural activities may be higher as some GHA occurs on lands mapped as potential rangeland and may have grazing occurring. This discrepancy is likely lower than with other critical areas as grazing normally doesn't occur on steep, rocky slopes.

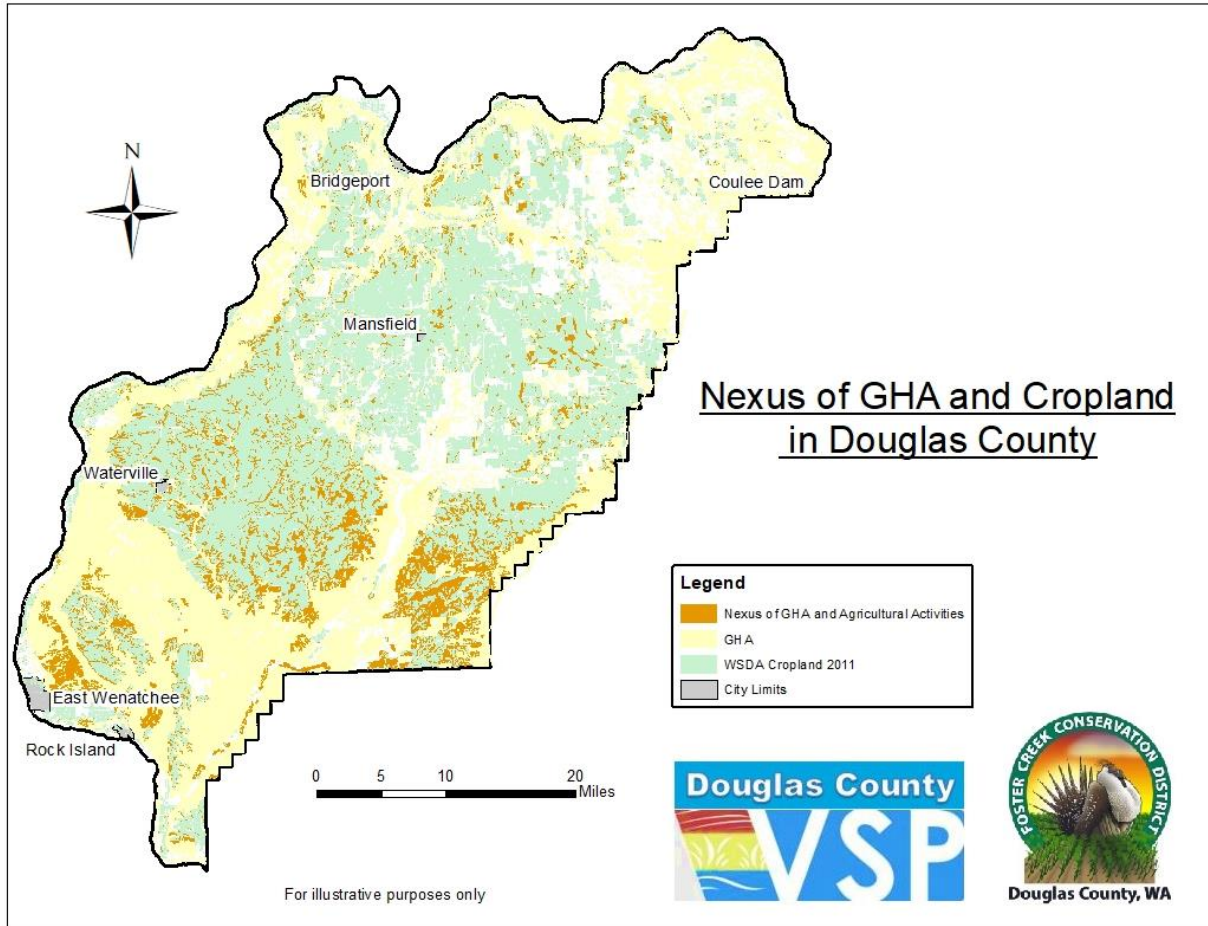


Figure 6-9: Nexus of GHA and cropland in Douglas County. Source: DNR (2017), WSDA (2011) and Douglas County Transportation and Land Services.

### 6.3.3 Baseline Conditions:

The unique geomorphic and geologic history of Douglas County (noted in Chapter 3.0) have played a large role in shaping current Geologically Hazardous Areas. Specifically, a long history of volcanism, glaciation, and glacial floods have left Douglas County with many steep slopes, rock/talus fields, and fine easily eroded glacial soil.

GHA data was provided by Douglas County Transportation and Land Services and is based upon a 2006 soils GIS layer from NRCS. Chuck Jones, of Alliance Consulting Group (July 2007), then developed

polygons for geologic hazards based on criteria set forth in the Douglas County Code (above). The table below summarizes those polygons by hazard type.

Parameter	Acres
Rock Cliff/Talus	192,321
Frequently Flooded-Riverwash	132.43
Multiple limitations <sup>2</sup>	302,036.05
Slopes Greater Than 15% and Hardpan/Bedrock, may have other issues also	132,071.69
Slopes Greater Than 40%	41,237.44
Steep Slope and Rock/Talus	3,776.48

*Table 6-5: Summary of GHA polygons based on individual shapefiles provided by Douglas County TLS*

The Washington Department of Natural Resources (DNR) also houses GIS information on GHAs. Relevant information for Douglas County includes landslide areas, earthquakes, and active mine permits.

Metadata attached to the landslide hazard shapefile provided by DNR gives the following description:

The Department of Natural Resources, Geology and Earth Resources Division (DGER), also known as the Washington Geological Survey, actively identify, assess, and map landslide hazards using modern geotechnical and geophysical methods. Our hazard maps are critical for land-use and emergency-management planning, disaster response, and building-code amendments. As our population grows, there is increasing pressure to develop in hazardous areas, thus delineating these areas is imperative. In response to the Growth Management Act's mandate to use the 'best available science', our geologists meet with local governments and citizens in at-risk communities to educate about geologic hazards and ensure these hazards are taken into account while planning for growth-management and disasters...According to Washington State legislative mandate RCW 43.92. "...the geological survey must conduct and maintain an assessment of seismic, landslide, and tsunami hazards in Washington. This assessment must include the identification and mapping of volcanic, seismic, landslide, and tsunami hazards, an estimation of potential consequences, and the likelihood of occurrence. The maintenance of this assessment must include technical assistance to state and local government agencies on the proper interpretation and application of the results of this assessment. DGER has designed and is implementing a GIS-based, statewide landslide database. (DGER, undated)

DNR data identify a total of 408 earthquakes from August 1971- 2011, and a total of 58 from 2012-2015. The majority of these earthquakes are centered just North and West of Waterville, with the rest being mostly scattered around the county. There is another concentration of epicenters in the eastern part of the county between Mansfield and Banks Lake.

There are a total of 22 active mine permits in Douglas County. Of these, 6 mines are listed as having a commodity type of "rock and stone" and the remaining 16 as "sand and gravel". The permits cover a total of 948.5 acres and are dispersed across the county. The mines are primarily operated by city,

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<sup>2</sup> "Multiple limitations" encompasses areas that have a combination of soil and topography characteristics that meet DCC GHA definition, per Douglas County Transportation and Land Services (personal communications, 2/21/18)

county and state governments/agencies, but 8 are privately operated. No active permits intersect agricultural activities based on current available mapping. A description of mines is included here as part of documenting baseline conditions of the critical area. The table below summarizes active mine permits.

APPLICANT	MINE NAME	LATITUDE	LONGITUDE	PERMIT ACRES	COMMODITY
DOT - DEPT OF TRANSPORTATION	QS-DO-45	47.62480164	-120.0273285	7	Sand and Gravel
DOUGLAS COUNTY TLS	PS-DO-106	47.53864221	-120.275481	32.9	Sand and Gravel
DOUGLAS COUNTY TLS	COYOTE	47.50335662	-119.7222327	26	Sand and Gravel
DOUGLAS COUNTY TLS	ZACHER	47.39686437	-120.1445388	28.4	Rock and Stone
DOUGLAS COUNTY TLS	Brandt Quarry	47.6135788	-119.8948669	27.6	Sand and Gravel
DOUGLAS COUNTY TLS	ROCK ISLAND	47.38234589	-120.1845402	30	Sand and Gravel
PIPKIN CONSTRUCTION	FARRINGTON	47.54133988	-120.273468	43	Sand and Gravel
DOT - DEPT OF TRANSPORTATION	PS-DO-1	47.60079889	-119.6669713	21.9	Sand and Gravel
DOUGLAS COUNTY TLS	CLARK PERRY QUARRY	47.99888821	-119.2031314	5	Rock and Stone
DOUGLAS COUNTY TLS	ST ANDREWS DO-182	47.7280596	-119.4468298	28.5	Sand and Gravel
APPLE VALLEY CONCRETE LLC	SLUSSER QUARRY DO-97	47.70132558	-119.9560036	5.5	Rock and Stone
CITY OF ROCK ISLAND	ROCK ISLAND POND	47.37208176	-120.1346436	50	Sand and Gravel
DOUGLAS COUNTY TLS	HOLCOMB QUARRY	47.82959763	-119.8053891	20	Rock and Stone
CITY OF WENATCHEE	CITY OF WENATCHEE	47.44004059	-120.2788696	37.2	Sand and Gravel
CPM DEVELOPMENT CORP	PALISADES	47.29597092	-120.0535126	150	Sand and Gravel
MITCHCO INC	MITCHELL PIT	47.62838745	-120.2170792	23.6	Sand and Gravel
CPM DEVELOPMENT CORP	ORONDO PIT	47.61974861	-120.2150518	320	Sand and Gravel
PIPKIN CONSTRUCTION	PIPKIN S&G	47.49296951	-120.2955933	24	Sand and Gravel
PRAZER CONSTRUCTION LLC	VULCAN PIT	47.23989487	-120.0599594	15	Sand and Gravel
TOMMER CONSTRUCTION CO INC	WESTERN SUNSET BSP	47.40929339	-120.2085895	28	Rock and Stone
DOUGLAS COUNTY TLS	SPRAUER QUARRY	47.73335057	-119.9305092	11	Rock and Stone
DOUGLAS COUNTY TLS	PIT 3 SW	47.56204145	-120.1727861	13.85	Sand and Gravel

Table 6-6: A summary of active mine permits in Douglas County (DNR)

### 6.3.4 Summary of Key Functions

GHAs, specifically cliff and talus slopes, can provide unique habitat for certain wildlife species. GHAs impact water quality and soil health through their susceptibility to erosion and landslides. Some GHAs occur in riverwash/frequently flooded areas, which provide important hydrological storage and control functions as well as riparian habitat necessary to many wildlife species in Douglas County.

## 6.4 Frequently Flooded Areas

### 6.4.1 Identification

The Douglas County Code identifies Frequently Flooded Areas (FFAs) in the following manner:

The areas of flood hazard identified by the Federal Insurance Administration in a scientific and engineering report entitled “The Flood Insurance Study for the Unincorporated Areas” dated July 17, 1978, and as revised on May 17, 1982, and any subsequent revisions thereto, with accompanying flood insurance rate maps, and any subsequent revisions thereto, is adopted by reference and declared to be a part of this chapter. The flood insurance study is on file at the offices of the Douglas County department of transportation and land services. Flood hazard areas also include those areas not designated in the flood insurance study but that have a historical pattern of flooding and mudslides. The best available information for flood hazard

area identification as outlined in DCC Section 15.48.040(D)(2) shall be the basis for regulation until a new FIRM is issued which incorporates the data utilized under that section.

DDC 15.48.030

Figure 6-10 illustrates the extent of FFAs in Douglas County.

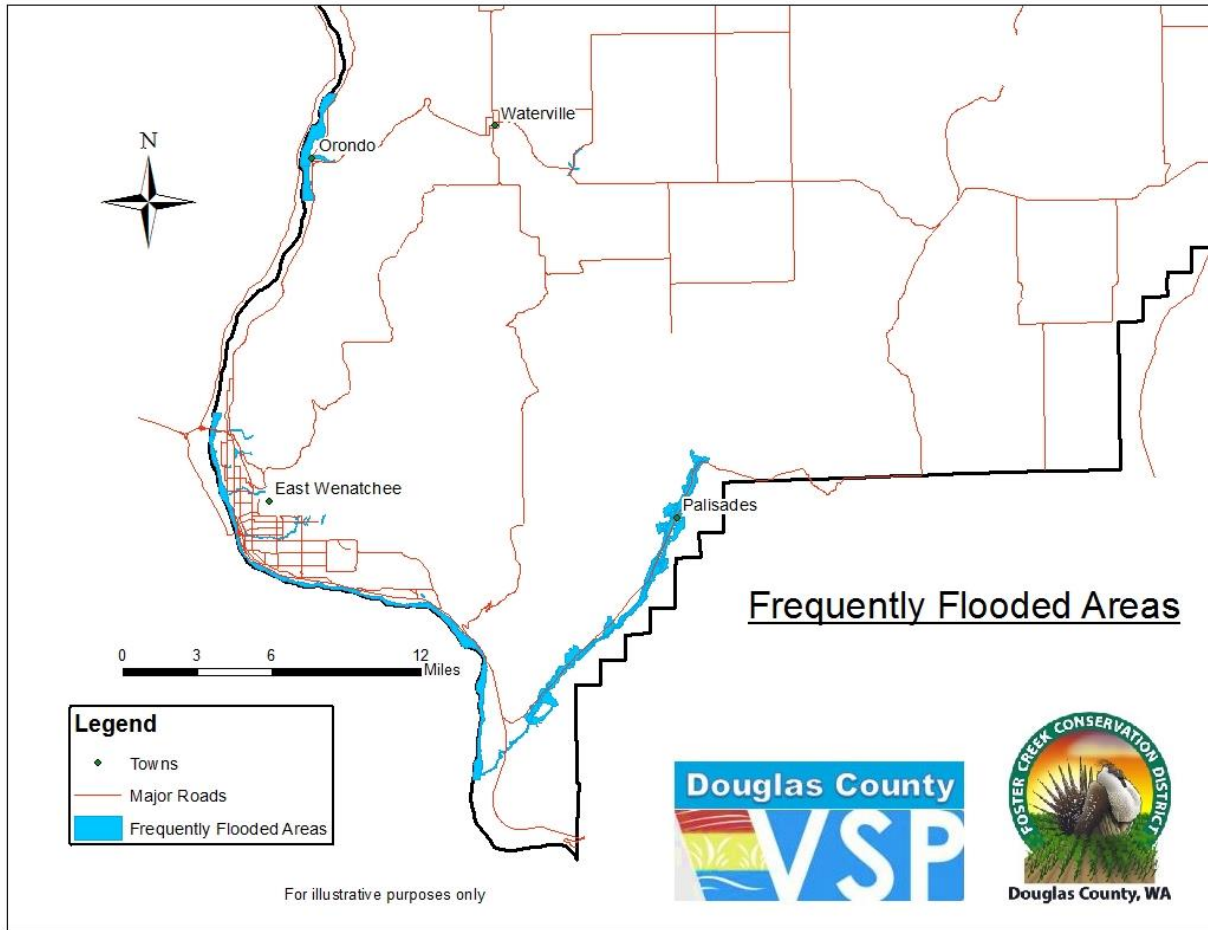


Figure 6-10: Frequently Flooded Areas in Douglas County. (Source: Douglas County Transportation and Land Services)

#### 6.4.2 Intersection with Agricultural Activities

Of the 4,869 acres of FFA in Douglas County, 1,003.2 acres intersect cropland (Figure 6-11). This accounts for about 20.6% of FFAs and 0.18% of cropland in Douglas County. However, FFAs' true intersection with agricultural activities may be higher as a portion of FFAs occur on lands mapped as potential rangeland and may have grazing occurring. The vast majority of the intersection occurs in the Palisades region along Douglas Creek where it flows out of the Moses Coulee. A small amount of intersection occurs in and around East Wenatchee where drainages known as Canyon A, Canyon B, and Sand Canyon flow through wheat fields on the flanks of the Badger Mountain area and into town where orchards are present.

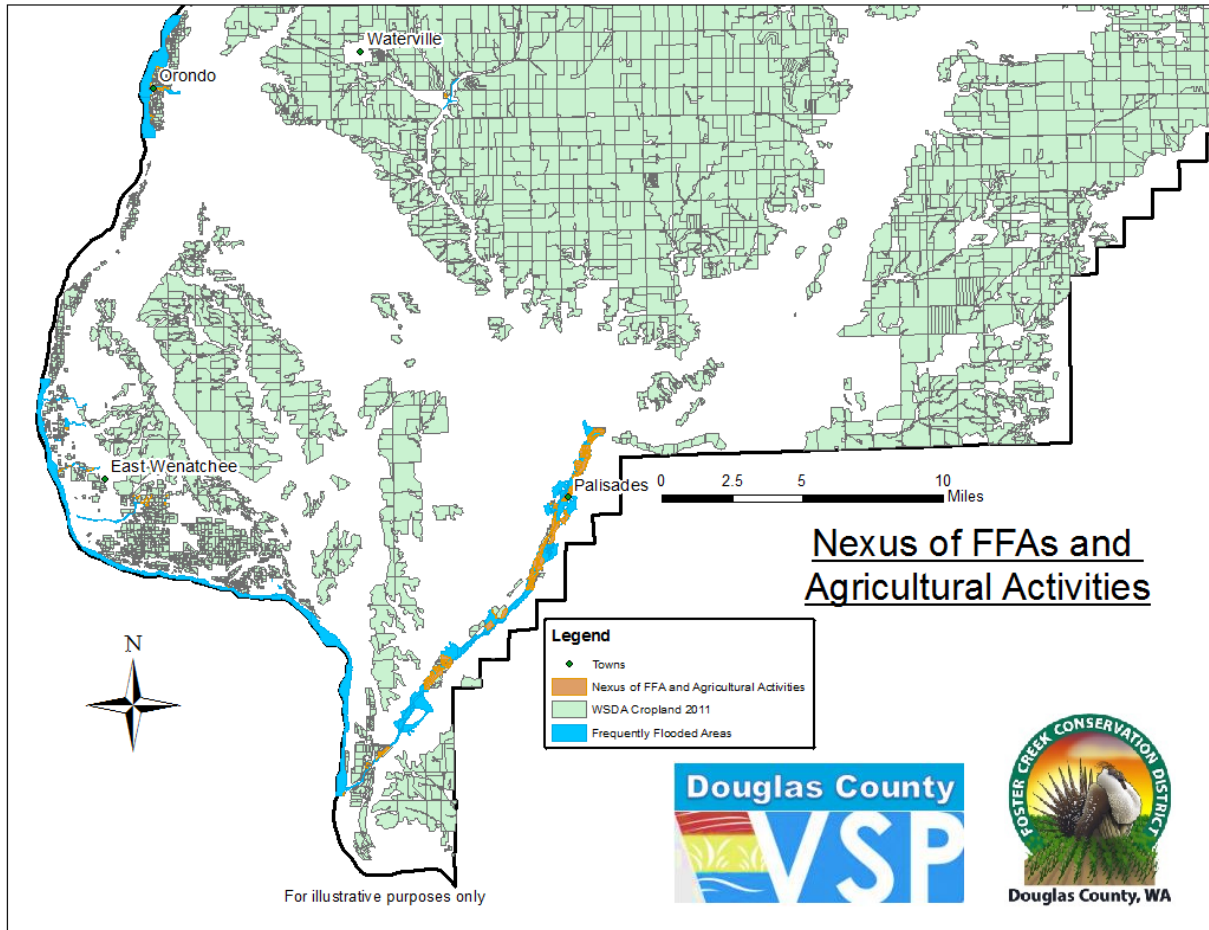


Figure 6-11: The Nexus of FFAs and Agricultural Activities (data source: WSDA 2011, Douglas County Transportation and Land Services)

### 6.4.3 Baseline Conditions

Floods in Douglas County result mostly from extreme events of short duration which are known as flash floods. Two distinct climatological patterns can cause flash floods in this area: summer thunderstorms and rain-on-snow events (KCM, Inc. 1995).

Flash floods resulting from thunderstorms occur most often in June and August when very high rainfall occurs over relatively small areas. Major thunderstorms in the region typically have peak rainfall intensities of 0.5 inches in 15 minutes, 1.25 inches in 1 hour, and 2.0 inches in 90 minutes. This type of flooding primarily occurs in small drainage basins, such as Canyons A and B and Sand Canyon above East Wenatchee. In 1995 it was predicted that a major flood causing significant damage can be expected to occur on average, once every ten years (KCM, Inc. 1995). However, potential changes to precipitation patterns and quantities within Douglas County are predicted with climate change. For a discussion on climate change in Douglas County see Section 3.2.1.

Rain-on-snow events typically occur in late winter or early spring, but can occur in the fall as well. They are normally associated with frozen ground, which limits infiltration into the soil and therefore causes a



greater than expected runoff intensity for a given amount of precipitation or snowmelt. This type of flooding more commonly affects larger drainage basins such as the Moses Coulee. Rain-on-snow events can be compounded when warm Chinook winds blow over the area and increase the speed of melting (KCM, Inc. 1995). This occurred during the March 1989 flood event (see below) in which a relatively minor amount of precipitation fell.

Floods in Moses Coulee frequently cause damage to cropland in the Palisades Irrigation District along Rattlesnake Creek and downstream from its confluence with Douglas Creek. Practically all flood damage in Moses Coulee is caused by waters of Douglas Creek, but occasionally a relatively high flow is experienced from Rattlesnake Creek (KCM, Inc. 1995). The bottom of Moses Coulee is relatively flat compared to either creek upstream, and floodwaters therefore, spread over the farmland and Coulee bottom to depths of 1 to 3 feet. During severe flood events, sand and silt deposits can exceed 2 feet in depth over much of the Palisades Irrigation District (KCM, Inc. 1995). Flooding events have caused frequent road damage in Moses Coulee.

Flooding can also result from large amounts of rainfall over long periods, such as during a frontal storm, or from snowmelt alone when warm periods abruptly follow a cold and snowy period. These types of flooding events are relatively uncommon in Douglas County (KCM, Inc. 1995).

*Information in this section is credited to the Douglas County Comprehensive Flood Hazard Management Plan (KCM, Inc. 1995). A detailed history of individual flooding events in Douglas County can also be found in the plan.*



**MARCH 12, 1989—Douglas Creek flooding and road damage in Moses Coulee. (photo courtesy of The Wenatchee World)**

#### 6.4.4 Summary of Key Functions

FFAs can provide important public safety benefits through flood water storage and conveyance. Additional important hydrological functions including controlling the timing and magnitude of flows and providing areas for important groundwater recharge. FFA's also support the riparian habitat essential to many wildlife species in Douglas County.

### 6.5 Critical Aquifer Recharge Areas

#### 6.5.1 Identification

The Douglas County Code identifies Critical Aquifer Recharge Areas (CARAs) in the following manner: "All aquifer recharge areas shall be classified by Douglas County as any area located within the ten-year capture zone identified by the Douglas County wellhead protection program." DCC 19.18E.020

The Washington State Department of Health, Office of Drinking Water identifies all ten-year wellhead protection zones (Figure 6-12). This area totals 28,185 acres.

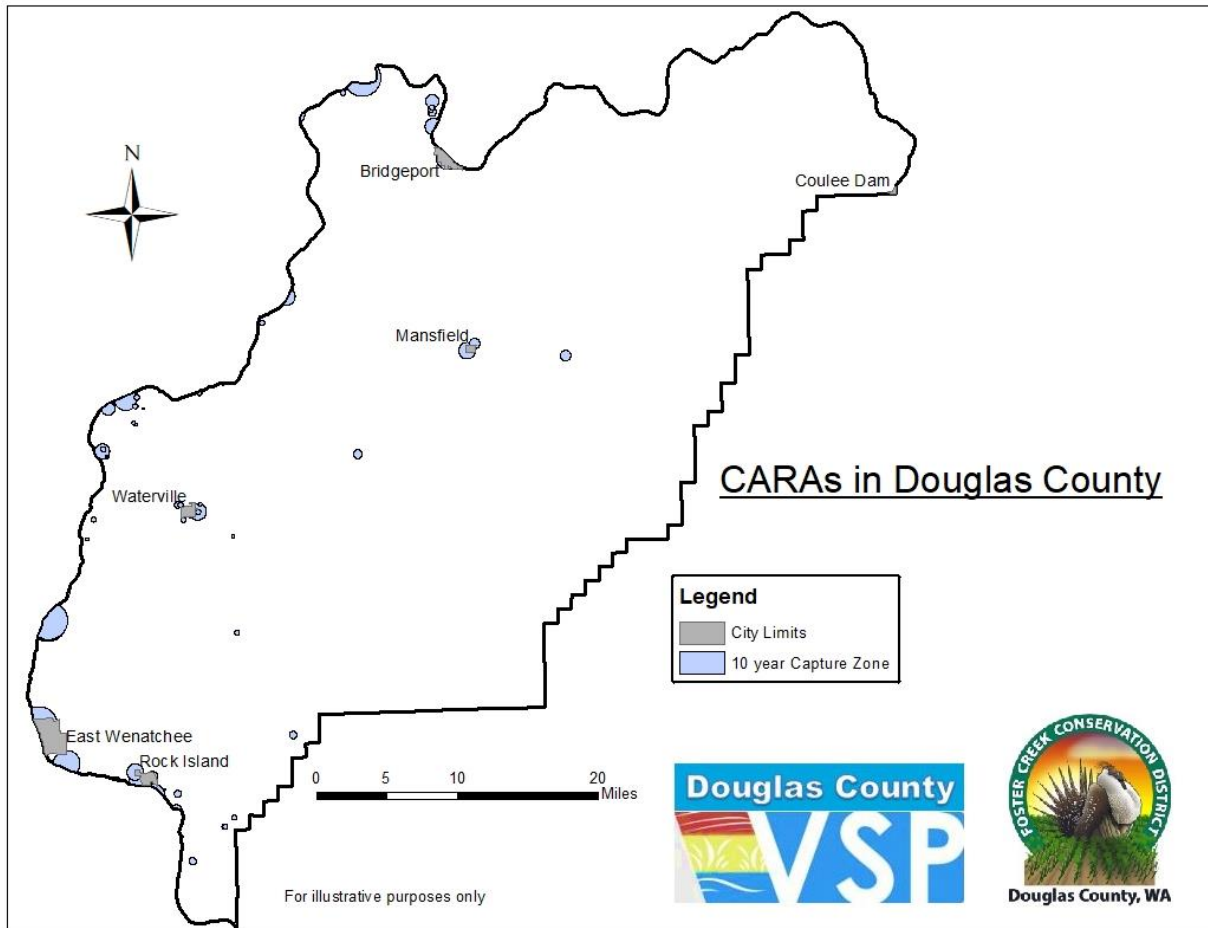


Figure 6-12: Critical Aquifer Recharge Areas in Douglas County as mapped by the Washington State Department of Health

### 6.5.2 Intersection with Agricultural Activities:

7,538 acres of ten-year wellhead protection zones have a nexus with mapped cropland. This accounts for 26.75% of CARA and 1.4% of all cropland in the county. However, CARAs' true intersection with agricultural activities may be higher as a portion of CARAs occur on lands mapped as potential rangeland and may have grazing occurring.

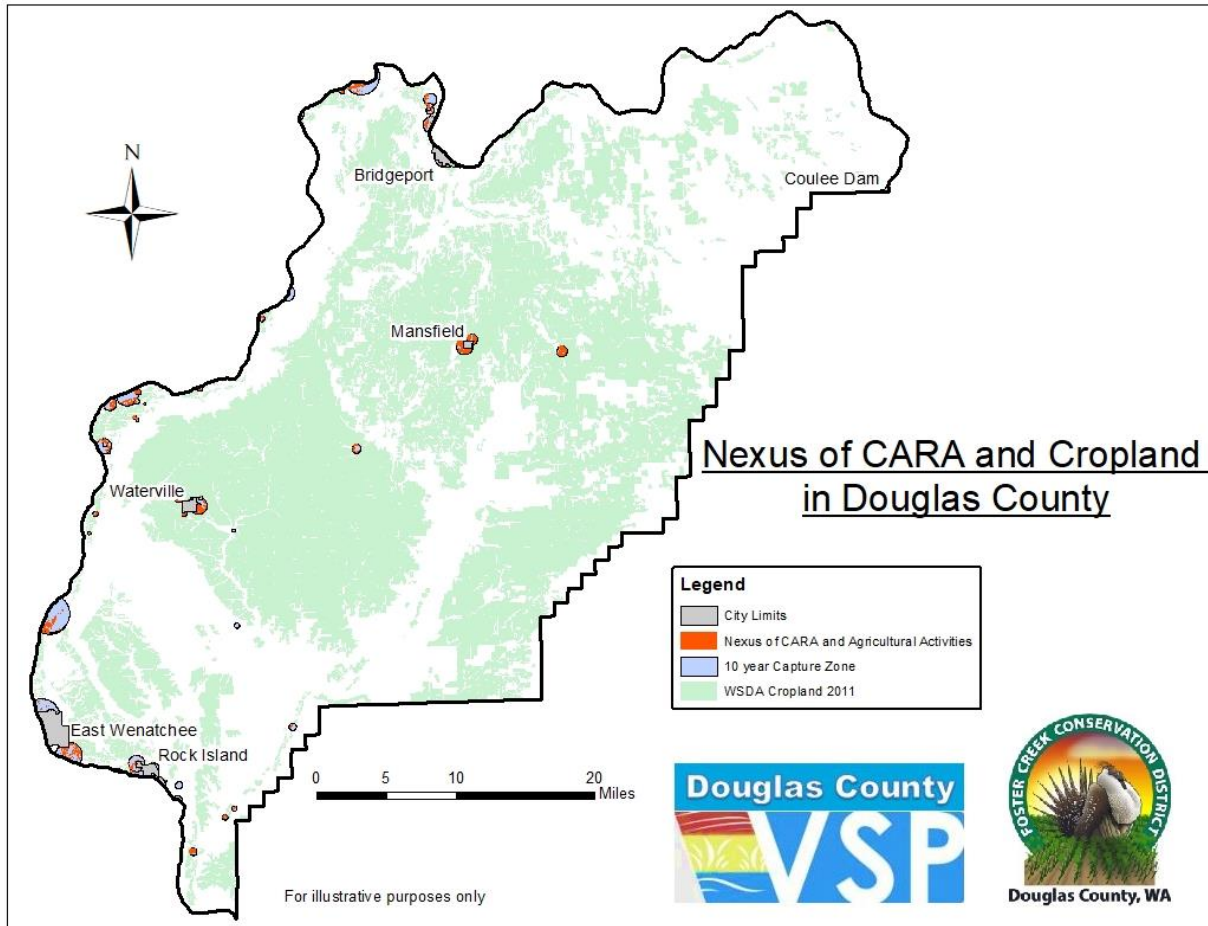


Figure 6-13: Nexus of CARA and Cropland in Douglas County

### 6.5.3 Baseline Conditions

Surface geology plays a major role in determining a CARA's susceptibility to contamination. The key determining factor is the size of the grains of the surface deposits. Deposits composed primarily of silt and clay, which are fine grained, slow the movement of water through the ground, whereas coarse grained deposits composed of sand and gravel allow water to pass through more readily (Washington Department of Ecology, 2016). The primary locations of concern in Douglas County based on grain size occur near the Columbia River where glacial outwash, flood, and alluvial deposits are found. These excessively drained soils can be clearly seen in Figure 6-14.

There are two primary sources of groundwater quality information available to Douglas County. These are the Washington Department of Health (WDOH) well monitoring data for public water supply and

The Nitrate Prioritization Project, an online story map developed and maintained by the Washington Department of Ecology (WDOE). The Nitrate Prioritization Project can be found online at: <https://fortress.wa.gov/ecy/publications/documents/1610011.pdf>

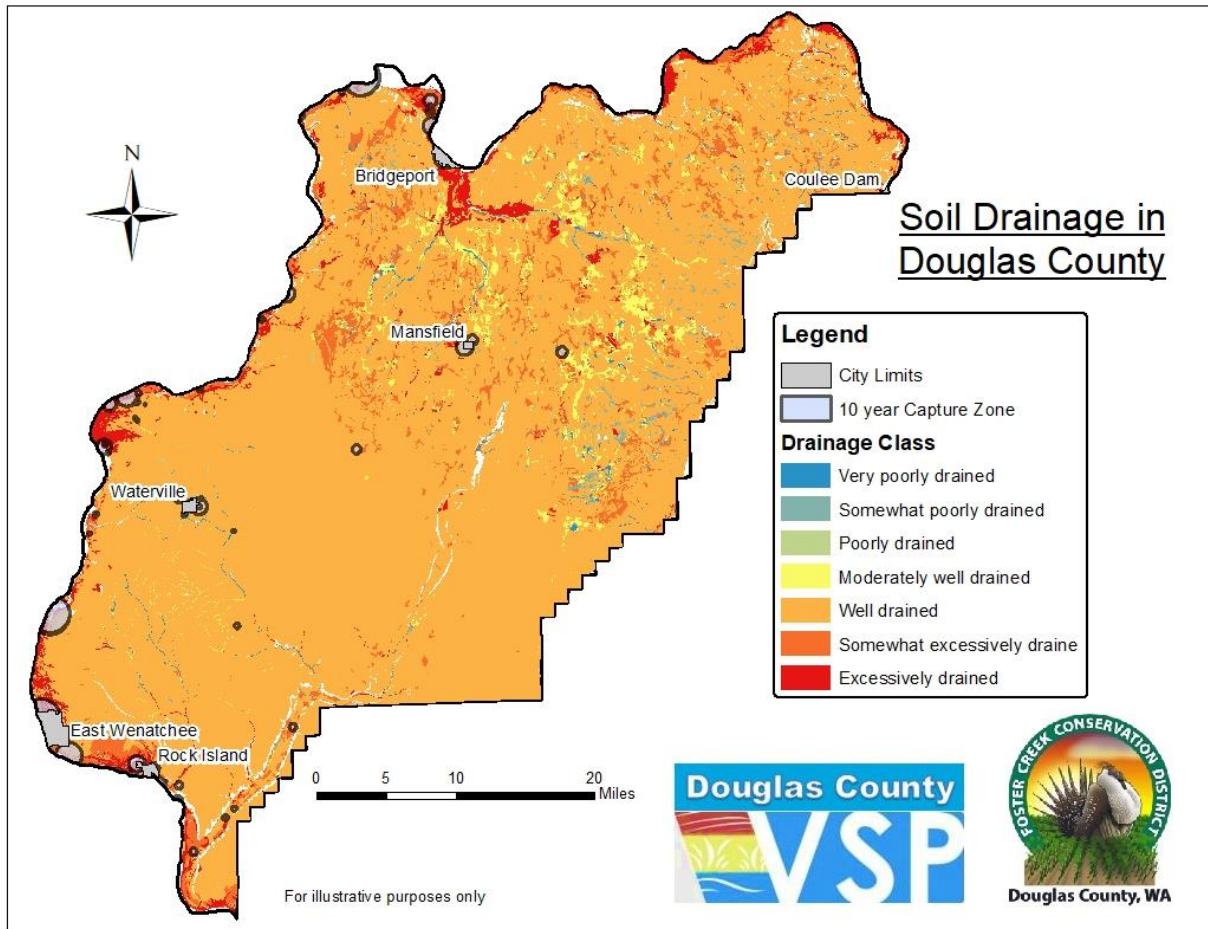


Figure 6-14: Soil Drainage classes in Douglas County (data: NRCS soil survey)

The Nitrate Project gathered public well monitoring data for Nitrate levels from the WDOH, WDOE and the United States Geological Survey dating back to 1970 and compiled the results. The results point to multiple areas of concern for Douglas County. Several test results showed multiple samples of nitrate levels  $\geq 5$  mg/L as N, indicating the location tends to allow high nitrates in the groundwater, and/or there are contamination issues. Additionally, there are results of nitrate levels  $\geq 10$  mg/L as N, which is the maximum contaminant level.

The Nitrate Project then developed Nitrate Priority Areas for groundwater based on nitrate levels, geology, soils, irrigation, land use, USGS risk maps and topography. Douglas County has multiple areas that are identified as priority areas (see Figure 6-15 below).

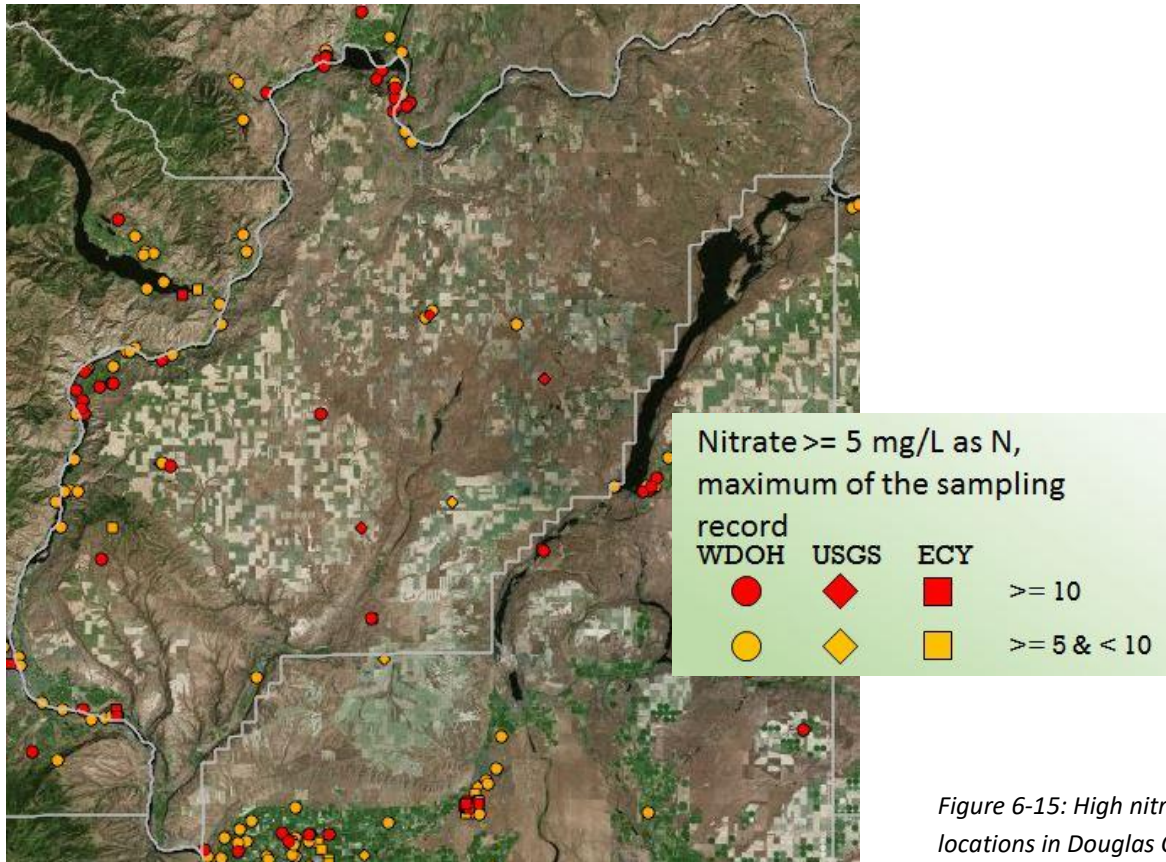
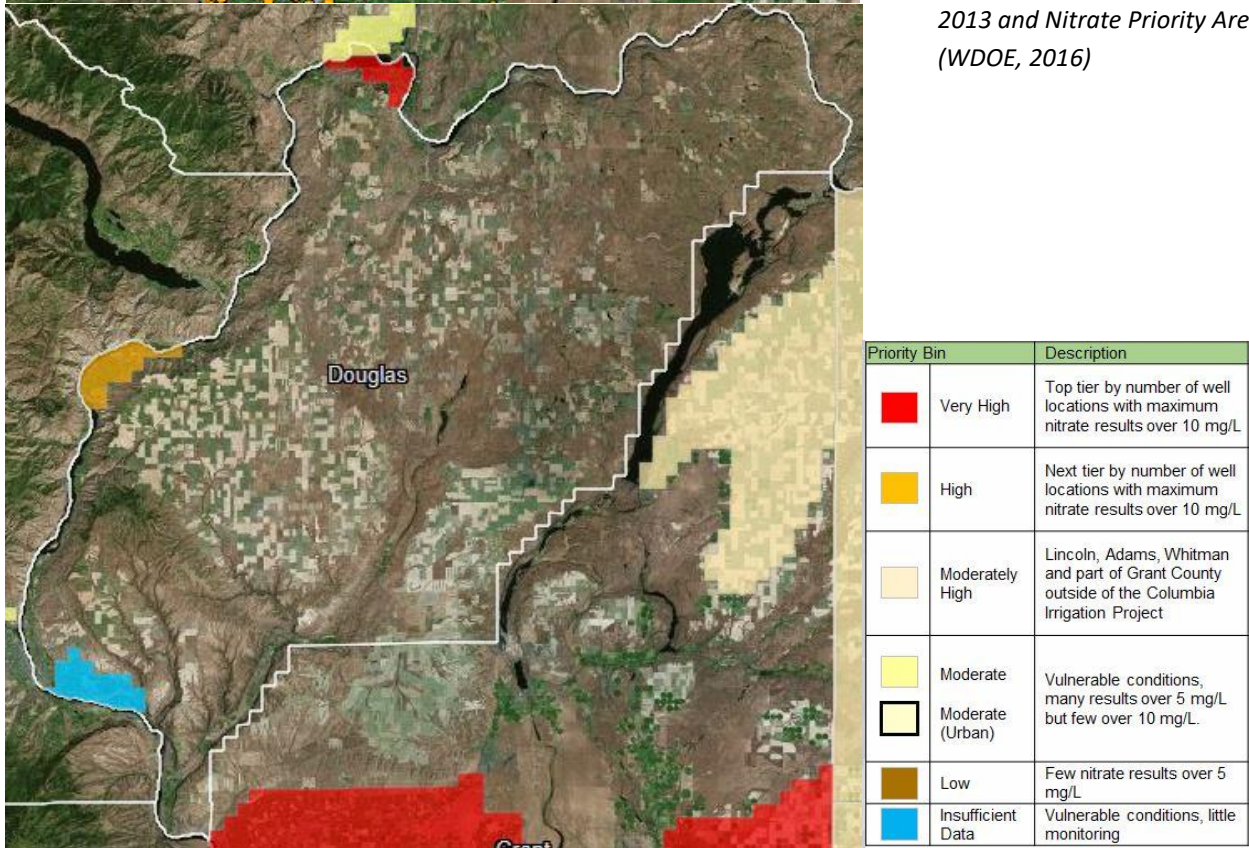


Figure 6-15: High nitrate sample locations in Douglas County 1970-2013 and Nitrate Priority Areas (WDOE, 2016)



The WDOH provided public water supply monitoring data to FCCD for the period of 2011 - March 2017. These data included results for parameters that could be contributed by agriculture, such as herbicides, insecticides, pesticides, and nitrates. During this time nitrate appeared in test results 661 times. Of these, 149 results were above the trigger level of  $\geq 5$  and  $< 10$  mg/L as N, and 43 results were higher than the maximum contaminate level of 10 mg/L as N. For the same date range there was only one other test result for all other parameters above a trigger level. Picloram was detected slightly above the trigger level, but still 500 times lower than the maximum contaminate level.

Data collection on long-term trends in groundwater elevations was collected as part of the Watershed Management Plan implementation effort. Data was collected from 2003-2013 from exempt wells located in areas identified during the Phase 1 Well Water Use Study as having potential for future groundwater level declines. In 2010 the Pacific Groundwater Group published a report of the findings. The results were summarized as follows:

Groundwater elevations in Water Resource Inventory Area (WRIA) 44/50 fluctuated seasonally between a high spring elevation and low late summer to fall elevation in most monitored wells. Seasonal fluctuations ranged from an apparent 20 feet to less than foot. In general, shallow wells within the alluvial aquifer or basalt wells completed in recharge areas (Badger Mountain) displayed the largest seasonal fluctuations, while deeper wells within the basalt aquifer and away from recharge areas displayed little seasonal fluctuation. Groundwater within the basalt aquifer is influenced by a more regional source; and therefore, groundwater elevations are less responsive to local recharge events. Precipitation was significantly greater than the previous two years but still below average. Groundwater declines previously attributed to low precipitation continued this year, suggesting an alternate cause. (PgG, 2010)

Monitoring of these wells is currently not funded. However, the Douglas County VSP work group has determined that this data is useful and important, and would like monitoring to continue as part of the VSP effort. More information on how the work plan seeks to fund this monitoring effort can be found in Sections 8.5 and 9.3. The Pacific groundwater Group report containing hydrographs for individual wells can be found online at <https://fortress.wa.gov/ecy/publications/publications/1203315.pdf>.

#### 6.5.4 Summary of Key Functions

CARAs provide important recharge of groundwater supply. This groundwater is used as public drinking water and as irrigation water, both essential to the way of life in Douglas County. Further, groundwater is important for maintaining stream base flows necessary for adequate aquatic wildlife habitat.

## 6.6 Threats to Critical Areas

Threats posed to critical areas' functions and values in Douglas County are outlined below. Degradation to baseline natural resource conditions resulting from the below threats may occur due to non-agricultural effects beyond the control of agricultural producers or other changes outside of the scope of the VSP. Changes to baseline conditions may also occur due to effects originating outside county jurisdiction over unincorporated lands. Any identified degradations to baseline critical area functions and values, or declining resource trends in indicators of such functions, that are not caused by agricultural activities will not be counted against the Douglas County agricultural community for VSP critical area protection reporting purposes.

This VSP work plan addresses each threat in chapter 7, Protection and Enhancement Strategies.

### 6.6.1 Fire

The MSGCP describes the risk of fire as follows:

Since Euro-American settlement in the shrub-steppe areas of Eastern Washington in the second half of the 19<sup>th</sup> Century, the fire regime across much of this habitat has been drastically altered. The historic fire return interval in Douglas County shrub-steppe was about 35-200 years, characterized by mosaic of both small, low and mixed severity fires that burned the understory, and higher severity fires that removed fire-intolerant shrub overstory (CWPP 2013). These infrequent fires helped maintain both shrub and grassland communities (USFWS 2012).

The current fire return interval is often much shorter. The primary cause of the altered fire return interval is the introduction of cheatgrass (*Bromus tectorum*) and other invasive plant species. Native shrub-steppe plant communities are characterized by discontinuous bunchgrass, which limit the ability of fire to spread. Cheatgrass and other invasive species form a continuous vegetative layer that, when dry, provides fuel for large fires that can burn thousands of acres at much more frequent intervals and a higher intensity. Cheatgrass also dries earlier, providing a longer fire season. This is significant in the sense that early season fires can cause high mortality of actively growing bunchgrass (USFWS 2012). Each time a fire burns, cheatgrass will outcompete native species in reestablishment, creating a higher percentage of cheatgrass composition and a positive feedback loop where fires become more frequent, intense, and wide spreading.

High intensity, frequent fires have severe ecological impacts on shrub-steppe habitats. Sagebrush and other shrubs do not tolerate a short-term fire regime, which can result in the loss of the shrub component over extensive areas after repeated fires. In addition, shrubs can burn with such intensity that they permanently destroy the understory plants. Recovery of sagebrush and other shrubs in a shrub-steppe community can take decades. This results in the loss of habitat on an essentially permanent basis for many wildlife species (USFWS 2012; Wambolt, et al. 2001; USGS 2013a). (MSGCP 2015)

The Community Wildfire Protection Plan (2013) provides extensive information on wildfire history and risk in Douglas County and can be found here:

[http://file.dnr.wa.gov/publications/rp\\_burn\\_cwpp\\_douglascounty.pdf](http://file.dnr.wa.gov/publications/rp_burn_cwpp_douglascounty.pdf). More information on how the CWPP will be incorporated into this VSP plan can be found in Chapter 7.

### 6.6.2 Invasive Plant Species

Cheatgrass (*Bromus tectorum*) and the closely related Japanese brome (*Bromus japonicas*) are almost ubiquitous in Douglas County. In addition to its effects on fire regimes mentioned above, the two bromes will outcompete native plants for resources. Tall tumble mustard (*Sisymbrium altissimum*) is a common post-fire recruit. It is often found with cheatgrass and likewise, will out compete native plants potentially leading to an altered ecological state. Several knapweeds, including diffuse knapweed (*Centaurea diffusa*) are dispersing across Douglas County. Knapweed species are aggressive and threatened to reduce and exclude desired native plant species (Whitson et al. 2001). Dalmatian toadflax (*Linaria dalmatica*) has also become increasingly widespread. It has a deep and extensive root system

which makes it very difficult to control (ibid). Other invasive species frequently found in upland shrub-steppe habitat include, bull thistle (*Cirsium vulgare*), Scotch thistle (*Onopordum acanthium*), Mullein (*Verbascum thapsis*), kochia (*Kochia scoparia*), sweet clover (*Melilotus officianlis*), rush skeletonweed (*Chondrilla juncea*) and Russian thistle (*Salsola tragus*).

Several weeds are found in riparian and wetland areas as well. Reed canary grass (*Phalaris arundinacea*), common reed grass (*Phragmites australis*), and quackgrass (*Elymus repens*) are invasive grass species that have replaced native riparian plant species and often form dense monocultures along the banks of perennial streams and in wetland complexes. Russian knapweed (*Centaurea repens*) and Canada thistle (*Cirsium arvense*) are both highly aggressive weeds with extensive creeping root systems, making them especially difficult to control. Russian olive (*Elaeagnus angustifolia*), Siberian Elm (*Ulmus pumila*), and black locust (*Robinia psuedoacacia*), all introduced tree species, can be found in riparian habitats in Douglas County. These species were originally planted by settlers and natural resource managers for shade trees and wildlife cover.

Almost 87% of Douglas County is held in private land, with many small inholdings of state Fish and Wildlife, and state Department of Natural Resources land, as well as small inholdings and larger tracts of Bureau of Land Management lands. The checkerboard pattern of land ownership across the county makes weed management on the landscape scale especially difficult. Agencies and private landowners alike lack the funding and resources to control weeds on all of their holdings. At times, this has created tensions between neighbors with different operating priorities implementing (or not) different weed management strategies. To further compound the issue, Douglas County is the only county in Washington that lacks a Noxious Weed Control Board to enforce the state's noxious weed laws.

### 6.6.3 Habitat Fragmentation

In Douglas County deep soil shrub-steppe habitat has largely been converted to agriculture, leaving shrub-steppe intact on shallow lithosols soil. This has created a fragmented shrub-steppe habitat. The effects of habitat loss and fragmentation are summarized in an excerpt from *Status of Washington's Shrub-steppe Ecosystem* (Dobler et al. 1996):

*“Although the magnitude of agricultural conversion of Washington's shrub-steppe is impressive, its effect on wildlife may be magnified by a pattern of land alteration that has resulted in extreme fragmentation of the remaining habitat. Species tend to evolve in concert with their surroundings, and for shrub-steppe wildlife this would mean species adapted to expansive landscapes of steppe and shrub-steppe communities. When landscapes are fragmented by conversion to land-use types different from what occurred naturally, wildlife that depends on the remnant native habitat may be subjected to adverse population pressures, including: isolation of breeding populations; competition from similar species associated with other, now adjacent, habitats; increased nest predation by generalist predators; and increased nest loss through parasitism by brown-headed cowbirds. It is not known to what extent these population pressures affect birds in fragmented shrub-steppe environments, although a recent study from Idaho (Knick and Rotenberry 1995) suggests that landscape characteristics influence site-selection by some shrub-steppe birds (Wiens et al. 1985; 1987). Most research on fragmentation effects on birds has occurred in the forests and grasslands of eastern and central North America, where conversion to agriculture and suburban/urban development has created a landscape quite*



*different from that which existed previously. The potential for fragmentation to adversely affect shrub-steppe wildlife in Washington warrants further research.”*

#### 6.6.4 Soil Erosion

Wind and water erosion are both issues in Douglas County. In cropland, erosion results from frequent tillage on steep slopes and during fallow periods when there is a lack of vegetation to hold soil in place. In shrub-steppe, erosion results from the combined effects of altered fire regimes and invasive weeds. Overgrazing impacts vegetation structure and leads to erosion in shrub-steppe and riparian areas. Highly erodible soils found in Geologically Hazardous Areas are especially susceptible to erosion. Eroded sediments that reach water bodies negatively impact instream habitat and water quality.

#### 6.6.5 Loss of productivity/over use

Most native grasses and forbs are poorly adapted to year-round, heavy grazing and trampling by livestock. Intense grazing eventually leads to a reduction in bunchgrass cover, altering the structure, function and resiliency of the system. Soil compaction is also a significant factor in heavily grazed lands, and affects water percolation, runoff, and soil nutrient content. The result is that overgrazed lands often have decreased levels of soil and site stability, hydraulic function and biotic integrity.

#### 6.6.6 Altered Hydrology

Altered hydrology has resulted from a combination of all of the above mentioned factors. Changes in water infiltration from land conversion, tilling, or compaction of soils can result in increased surface flows, issues with flooding, erosion, as well as decreased groundwater flows and aquifer recharge rates. The increase in peak storm flows causes the greatest damage. A 2004 study, *Historical Arroyo Development in the West Foster Creek Watershed, Washington: Spatial Extent, Timing, Causes, and Management Implications* (Blanton), examined historic aerial photos and determined that rapid channel incision and erosion occurred during past flood events of the mid-twentieth century. The study implicated the historic landscape scale conversion of natural habitat as changing the timing and intensity in which water was delivered to Foster Creek, creating large erosion events. This down cutting disconnected the channel and the floodplain leading to a loss of riparian vegetation, further destabilizing the channel integrity. This process greatly limits the functions of a stream and its associated floodplain as well as any potential benefits of a functional riparian corridor, channel migration zone, and floodplain.

#### 6.6.7 Soil and Water Contamination

Contamination of soil, surface and ground water may result from agricultural activities. Agricultural activities may affect the concentrations of inorganic chemicals, such as nitrate, in aquifers. Increases in use of pesticides, fertilizers, and other organic compounds may impact water quality. As stated in Section 6.5.3, there are portions of Douglas County groundwater recharge areas that are susceptible to contamination.

#### 6.6.8 Climate Change

Section 3.2.1 provides information on potential climate change impacts to critical areas in Douglas County.

## 6.7 Summary of Critical Areas

Each of the critical areas identified in this chapter provide important functions for the people and/or wildlife of Douglas County. Chapter 7 identifies strategies the Douglas County VSP will take to protect and enhance these functions. The tables below provide summary statistics for critical areas in Douglas County.

Critical Area	Total acres	WRIA 44	WRIA 50	WRIA 41	WRIA 42
<b>FWHCA<sup>3</sup></b>	773,006	398,986	311,745	530	61,469
<b>Wetlands</b>	20,312	10,206	7,585	0	3,875
<b>GHA</b>	498,629	313,473	152,178	3,979	52,428
<b>FFA</b>	4,869	4,726	143	623	0
<b>CARA</b>	28,185	21,415	6,681	87	3

Table 6-7: Acreage of critical areas by Watershed Resource Inventory Area

Critical Area	Total acres	WRIA 44	WRIA 50	WRIA 41	WRIA 42
<b>FWHCA<sup>3</sup></b>	375,400.5	227,792.8	135,606.5	0	12,001
<b>Wetlands</b>	3,365	1,798	1,379	0	283
<b>GHA</b>	99,571	83,167	14,255	625	3,041
<b>FFA</b>	1003.2	1,001	2.5	1	0
<b>CARA</b>	7,538	5,753	1,786	0	0

Table 6-8: Acreage of critical area and cropland nexus by Watershed Resource Inventory Area

Critical Area and Cropland Nexus	% of Total Critical Area	% of Total Cropland
<b>FWHCA<sup>3</sup></b>	48.5	68.4
<b>Wetlands</b>	16.5	0.6
<b>GHA</b>	19.96	18.7
<b>FFA</b>	20.6	0.18
<b>CARA</b>	26.75	1.4

Table 6-9: Summary showing percentage of the nexus by of total critical area and total cropland acreage

<sup>3</sup> Based on preliminary analysis of broad and vague critical area designation, see Section 6.1.2 for details.

## 7.0 Protection and Enhancement Strategies

The VSP statute mandates that, “A watershed group designated by a county under RCW 36.70A.715 must develop a work plan to protect critical areas while maintaining the viability of agriculture in the watershed” (36.70A.720(1)). The following sections describe the various strategies to be employed in Douglas County to meet the above mandate.

### 7.1 Conservation Activities

Douglas County agricultural producers have a history of, and are currently implementing a variety of conservation activities that protect and enhance critical areas, while at the same time improving the long term viability of agriculture. Conservation activities are a suite of actions producers can take to improve the conservation of soil, water, air, and related plant and animal resources. Conservation activities include NRCS Conservation Practices, in which the landowner contracts with NRCS to receive cost share assistance, and the activity must meet a technical standard provided by NRCS. NRCS conservation practices are developed from Land Grant University research with State and Federal agency input. These practices under-go review every 5 years and are vetted through the USDA Agricultural Research Service (ARS). In Douglas County NRCS funding to implement conservation practices is primarily available through the Environmental Quality Incentives Program (EQIP) and the Conservation Stewardship Program (CSP).

This VSP work plan recognizes that not all self-funded or other non-NRCS funded conservation activities meet the NRCS conservation practice standard. However, these activities are numerous and still highly important in critical area protection and enhancement, and they will contribute towards meeting the goals and benchmarks set forth in this work plan.

#### 7.1.1 Key Conservation Activities

The Douglas County VSP work group has identified several key conservation activities that protect and enhance critical areas and improve the long term viability of agriculture. These activities are listed below in no particular order. Key conservation activities were selected based on two factors: they must be widely used in Douglas County, and they must provide at least a slight to moderate improvement to one of the four generalized categories of critical area functions (see Section 7.1.3 below).

The key conservation activities below form the backbone of this work plan’s protection and enhancement benchmarks (see Chapter 8), and will be the focus of VSP planning and implementation efforts. The following is a brief description of each of the key conservation activities identified by the Douglas County VSP work group.

It is important to note that these are not the only conservation activities that contribute to critical area protection and enhancement. Other conservation activities may be counted toward meeting the goals and benchmarks of this work plan where applicable. Additionally, it is highly likely that what is considered a “key conservation activity” presently may not be in the future. The work group has chosen to reevaluate key conservation activities every two years in line with the adaptive management and reporting schedule. Further details on this can be found in Section 9.4.3 on programmatic adaptive management.

**Conservation Cover** (NRCS Code 327) is a permanent vegetation cover established and maintained to reduce sheet, rill and wind erosion; reduce nutrient and sediment delivery to improve ground and surface water quality; enhance wildlife, pollinator and beneficial wildlife habitat; or improve soil health.

**Conservation Crop Rotation** (NRCS Code 328) is a planned sequence of at least two different crops grown on the same ground over a period of time. The purpose is to reduce sheet, rill and wind erosion; maintain or increase soil health and organic matter content; reduce water quality degradation due to excess nutrients; improve soil moisture efficiency; reduce the concentration of salts and other chemicals from saline seeps; reduce plant pest pressures; provide feed and forage for domestic livestock; or provide food and cover habitat for wildlife, including pollinator forage, and nesting habitat.

**Cover Crop** (NRCS Code 340) is when grasses, legumes, and forbs are planted for seasonal vegetative cover. The purpose is to reduce erosion from wind and water; maintain or increase soil health and organic matter content; reduce water quality degradation by utilizing excessive soil nutrients; suppress excessive weed pressures and break pest cycles; improve soil moisture use efficiency; or minimize soil compaction.

**Fence** (NRCS Code 382) is a constructed barrier to animals or people to facilitate the accomplishment of conservation objectives by providing a means to control movement of animals and people, including vehicles.

**Field Border** (NRCS Code 386) is a strip of permanent vegetation established at the edge or around the perimeter of a field to reduce erosion from wind and water; protect soil and water quality; provide wildlife food and cover; provide pollinator or other beneficial organism habitat; increase carbon storage; or improve air quality.

**Microirrigation** (NRCS Code 441) is an irrigation system for frequent application of small quantities of water on or below the soil surface: as drops, tiny streams, or miniature spray through emitters or applicators placed along a water delivery line. The purpose is to efficiently and uniformly apply irrigation water and maintain soil moisture for plant growth; prevent contamination of ground and surface water by efficiently and uniformly applying chemicals; or establish desired vegetation (e.g., windbreaks).

**Irrigation Water Management** (NRCS Code 449) is the process of determining and controlling the volume, frequency and application rate of irrigation water. The purpose is to improve irrigation water use efficiency; minimize irrigation induced soil erosion, decrease degradation of surface and groundwater resources, manage salts in the crop root zone, manage air, soil, or plant micro-climate; or reduce energy use.

**Livestock Pipeline** (NRCS Code 516) is a pipeline and appurtenances installed to convey water for livestock or wildlife; reduce energy use; or develop renewable energy systems.

**Nutrient Management** (NRCS Code 590) is managing the amount (rate), source, placement (method of application), and timing of plant nutrients and soil amendments. The purpose is to budget, supply, and conserve nutrients for plant production; to minimize agricultural nonpoint source pollution of surface and groundwater resources; to properly utilize manure or organic by-products as a plant nutrient source; to protect air quality by reducing odors, nitrogen emissions (ammonia, oxides of nitrogen), and the formation of atmospheric particulates; or to maintain or improve the physical, chemical, and biological condition of soil.

**Integrated Pest Management** (NRCS Code 595) is a site-specific combination of pest prevention, pest avoidance, pest monitoring, and pest suppression strategies. The purpose is to prevent or mitigate off-site pesticide risks to water quality from leaching, solution runoff and adsorbed runoff losses; prevent or mitigate off-site pesticide risks to soil, water, air, plants, animals and humans from drift and volatilization losses; prevent or mitigate on-site pesticide risks to pollinators and other beneficial species through direct contact; or prevent or mitigate cultural, mechanical and biological pest suppression risks to soil, water, air, plants, animals and humans.

For the purposes of this work plan integrated pest management also includes the combination of cultural, mechanical, and biological, as well as chemical methods of pest treatment, with the purpose of reducing the amount of chemicals used in pest management, thereby reducing the potential for contamination and resistance.

**Prescribed Grazing** (NRCS Code 528) is managing the harvest of vegetation with grazing and/or browsing animals to improve or maintain desired species composition and vigor of plant communities; improve or maintain quantity and quality of forage for grazing and browsing animals' health and productivity; improve or maintain surface and/or subsurface water quality and quantity; improve or maintain riparian and watershed function; reduce accelerated soil erosion, and maintain or improve soil condition; improve or maintain the quantity and quality of food and/or cover available for wildlife; or manage fine fuel loads to achieve desired conditions.

**Range Planting** (NRCS Code 550) is the establishment of adapted perennial or self-sustaining vegetation such as grasses, forbs, legumes, shrubs and trees. The purpose is to restore a plant community similar to the Ecological Site Description reference state for the site or the desired plant community; provide or improve forages for livestock; provide or improve forage, browse or cover for wildlife; reduce erosion by wind and/or water; improve water quality and quantity; or increase carbon sequestration.

**Residue and Tillage Management – No Till** (NRCS Code 329) is limiting soil disturbance to manage the amount, orientation and distribution of crop and plant residue on the soil surface year around. The purpose is to reduce sheet, rill and wild erosion; reduce tillage-induced particulate emissions; maintain or increase soil quality and organic matter content; reduce energy use; increase water use and precipitation storage efficiency; or provide food and escape cover for wildlife.

**Residue and Tillage Management – Reduced Till** (NRCS Code 345) is managing the amount, orientation and distribution of crop and other plant residue on the soil surface year round while limiting the soil-disturbing activities used to grow and harvest crops in systems where the field surface is tilled prior to planting. The purpose is to reduce sheet, rill and wind erosion; reduce tillage-induced particulate emissions; maintain or increase soil quality and organic matter content; or reduce energy use.

**Sprinkler System** (NRCS Code 442) is a distribution system that applies water by means of nozzles operated under pressure. The purpose is to accomplish efficient and uniform application of water on irrigated lands; improve plant condition, productivity, health and vigor; prevent the entry of excessive nutrients, organics, and other chemicals in surface and groundwater; improve condition of soil contaminated with salts and other chemicals; reduce particulate matter emissions to improve air quality; or reduce energy use.

**Structures for Wildlife** (NRCS Code 649) is a structure installed to replace or modify a missing or deficient wildlife habitat component to enhance or sustain non-domesticated wildlife or modify existing structures that pose a hazard to wildlife.

**Upland Wildlife Habitat Management** (NRCS Code 645) is to provide and manage upland habitats and connectivity within the landscape for wildlife with the purpose of treating upland wildlife habitat concerns identified during the conservation planning process that enable movement, or provide shelter, cover, food in proper amounts, locations and times to sustain wild animals that inhabit uplands during a portions of their life cycle.

**Watering Facility** (NRCS Code 614) is a means of providing drinking water to livestock or wildlife. The purpose is to store or provide designated access to drinking water for livestock or wildlife to supply daily water requirements; improve animal distribution; or provide a water source that is an alternative to a sensitive resource.

**Riparian Buffers** (DOE BMP) are generally recognized as a “separation zone” between a water body and a land use activity for the purposes of protecting ecological processes and water quality. The riparian buffer usually extends from the streams’ ordinary high water mark to the outer edge of the floodplain. Riparian buffers provide essential functions for river and stream ecosystems, including cover and shade, a source of fine or coarse woody material, nutrients, and organic and inorganic debris that maintain stream ecosystem function. Riparian buffers are relatively undisturbed by human activity and contain native vegetation consistent with the potential of the site.

**Organic Certification** (WSDA) indicates that an agricultural product has been produced by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity. Use of sewage sludge, irradiation, genetic engineering, and most synthetic fertilizers or pesticides is prohibited.

**Global G.A.P IFA Fruit and Vegetables Standard Certificate** assures that the commodity was grown using environmental management practices that meet the standard for sustainable agriculture. The certificate includes standards for several environmental categories including: waste and pollution management, conservation (including wildlife management), soil management and conservation, fertilizer application, water management, and integrated pest management.

**Pollinator Habitat Creation/Management** can be implemented through many voluntary conservation activities, as long as providing or managing pollinator habitat is a stated objective, including but not limited to: Conservation Cover, Field borders, Buffer Strips, Filter Strips, Hedge Rows, Wind Breaks. Pollinator habitat includes providing safe foraging, nesting, egg laying, and resting habitats.

### 7.1.2 Direct and Indirect Protection and Enhancement

Conservation activities can be implemented within or directly adjacent to a critical area (direct), or spatially removed from a critical area (indirect) (see Figure 7-1 for a conceptual representation). An example of a direct effect would include installing exclusion fencing to keep livestock out of a riparian area. While indirect effects occur within agricultural areas that are not adjacent to or within critical areas, their implementation still has benefits to critical area functions. For example, cover crops provide organic matter to the soil and reduce erosion which will benefit the hydrology, water quality, soil health, and habitat of a critical area, even if it is implemented outside of a direct intersect with that critical area.



Figure 7-1: Direct and Indirect Effects (Figure courtesy of Anchor QEA)

### 7.1.3 Conservation Practices Physical Effects Tool

The Conservation Practices Physical Effects (CPPE) tool, developed by the U.S. Department of Agriculture, describes how the NRCS conservation practices affect natural resources (e.g., critical area functions) and the human-economic environment (e.g., one aspect of agricultural viability). This planning tool provides a quantitative score detailing the magnitude of each practice's effect on a number of critical area functions and agricultural viability parameters. Technical reports (Appendix G) for each practice also include a qualitative statement on the benefit or impact to each parameter.

CPPE scores range between +5 and -5, with positive scores denoting a beneficial effect, and negative scores having an adverse effect. To develop generalized critical area function, (hydrology, water quality, soil health, and habitat) as well as agricultural viability, CPPE scores for each key conservation activity, CPPE scores for each parameter relevant to one of the generalized categories were averaged. Appendix G provides details on how CPPE scores were developed for Douglas County. A summary of the CPPE scores for key conservation activities are provided below.

Key Conservation Activities		Critical Area Functions: Protection Metrics (averaged CPPE Function Effects Score)					Critical Area Protections (Direct/Indirect)					Applicable Commodity type			
NRCS Code	Activity	Soil Health	Hydrology	Water Quality	F&W Habitat	Ag Viability	Wetland	Habitat	CARA	GHA	FFA	Dryland	Rangeland	Irrigated	
327	Conservation Cover	2.62	1.25	2.89	3.60	4.00	I	D, I	D, I	D, I	I	X	X		
328	Conservation Crop Rotation	3.00	1.60	1.75	2.00	2.60	I	D, I	D, I	D, I	I	X			
340	Cover Crop	2.66	1.40	1.75	2.50	3.00	I	D, I	D, I	D, I	D, I	X		X	
382	Fence	1.00	0.00	2.00	2.00	3.00	D	D	D	D, I	D, I		X		
386	Field Border	2.67	1.00	1.43	2.00	0.00	I	D	I	D, I	I	X		X	
441	Irrigation System - Micro irrigation	0.50	2.00	1.00	0.50	2.20	I	I	D, I					X	
449	Irrigation Water Management	1.67	1.50	1.82	1.00	2.25	I	I	I					X	
516	Livestock Pipeline	0.00	0.00	0.00	2.00	3.00	I	D					X		
590	Nutrient Management	0.83	0.00	3.50	0.00	2.50		I	D, I			X		X	
595	Pest Management	2.00	0.00	4.00	2.00	2.00		D, I	D, I			X	X	X	
528	Prescribed Grazing	2.88	1.50	1.30	4.00	3.16	D	D		D	I		X		
550	Range Planting	3.13	0.75	1.33	3.67	4.75		D	D	D, I	I				
329	Residue and Tillage Management - No-Till/ Strip Till/ Direct Seed	3.00	0.80	2.00	1.67	3.33	I	D, I	D, I	D, I	I	X			
345	Residue Management - Reduced Till	2.75	1.33	2.20	1.67	2.00	I	D, I	D, I	D, I	I	X			
442	Sprinkler System	1.00	2.67	1.55	1.00	2.20	I	I	D, I					X	
649	Structures for Wildlife	0.00	0.00	0.00	4.00	0.00		D				X	X	X	
645	Upland Wildlife Habitat Management	2.40	-0.50	2.00	4.50	3.33		D		D, I	I	X	X	X	
614	Watering Facility	2.00	0.00	1.71	2.33	3.00	D	D		D	I		X		
BMP	Riparian Buffer	Compare to Field Border and/or Range Planting					D	D		D	D	X	X	X	
WSDA	Organic Certification	Compare to Nutrient Management and Pest Management					D, I	D, I	D, I			X	X	X	
n/a	GlobalG.A.P IFA Fruit & Vegetables Standard Certificate	Many environmental standards must be met; CPPE comparison depends on the category of the standard					I	D, I	D, I	D, I	D, I				X
Multiple	Pollinator Habitat Creation/Management	Depends on which conservation activity is used						D				X	X	X	
<b>CPPE Score Key</b>															
5 Substantial Improvement															
4 Moderate to Substantial Improvement															
3 Moderate Improvement															
2 Slight to Moderate Improvement															
1 Slight Improvement															
0 No Effect															
-1 Slight Worsening															

Table 7-1: A summary of averaged CPPE scores for all key conservation activities, their potential intersect with critical areas, and the applicable commodity type



## 7.2 The Multiple Species General Conservation Plan

The Multiple Species General Conservation Plan (MSGCP) addresses wildlife habitat management in Douglas County for four rare animal species. These species are, the Columbia Basin pygmy rabbit (*Brachylagus idahoensis*) (Federal endangered species), the Washington ground squirrel (*Uroditellus washingtonii*) (former Federal candidate species), the greater sage-grouse (*Centrocercus urophasianus*) (former Federal candidate species), and the Columbian sharp-tailed grouse (*Tympanuchus phasianellus columbianus*) (State threatened species). Under Section 10 of the Endangered Species Act of 1973 (ESA; 16 U.S.C. § 1531 et seq.), private companies or individuals whose normal operation could result in the “take” of a federally-listed species may enter into an agreement called a Habitat Conservation Plan (HCP), which includes applying to receive an Incidental Take Permit, otherwise called a Section 10 permit from the U.S. Fish and Wildlife Service. “Take” is to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct. Section 10 permits allow the “incidental take” of threatened or endangered species, which can result from otherwise lawful activities, such as farming activities. The MSGCP is a programmatic HCP under which multiple Section 10 permits can be issued. A Finding of No Significant Impact for the Douglas County MSGCP was issued by the U.S. Fish and Wildlife Service on September 17, 2015, and the lifespan of the MSGCP is 50 years from that date, making it in effect until September 17, 2065. The ultimate goal of the MSGCP is to protect critical shrub steppe habitat while giving Douglas County producers regulatory assurances to continue farming as they have when they begin to participate in the MSGCP, without being held to future changes.

Most of the common agricultural activities implemented in Douglas County are covered by the MSGCP, with the exception of herbicide application and irrigated agriculture from surface waters. Douglas County land owners who obtain a Section 10 permit gain long-term assurances for their agricultural operations, while committing to implementing certain conservation measures to help the covered species and their habitat. Landowner participation in the MSGCP is voluntary.

To apply for a permit, interested landowners will work with FCCD or another appointee to develop a GCP Site Specific Plan (SSP). SSPs will provide a description of on-going and planned agricultural activities for included lands, conservation measures the landowner will implement, and must be consistent with the provisions and goals for minimizing and mitigating “take” of Covered Species as outlined in the MSGCP. The individual plans will be implemented by the Applicant/Permittee with technical assistance from FCCD. USFWS may provide technical assistance during development of the SSP. Figure 7-2 illustrates the SSP development process. Additional information on how the SSP compares and interacts with other types of planning activities in Douglas County can be found in Section 7-8.

To meet USFWS permit issuance criteria, a SSP will have to include a detailed plan of conservation activities to be implemented to protect and enhance habitat for the four species. Conservation activities from three different categories, NRCS conservation practices, additional land-use measures, and additional species specific measures will need to be included in the SSP for a permit to be issued. **All conservation measures implemented through the MSGCP and permit applications are also VSP conservation activities. This means that every permit issued will work towards meeting the goals and benchmarks of critical area protection set forth in this work plan.** A complete list of NRCS conservation practices, additional land-use measures, and additional species specific measures that can be included in a SSP can be found in Appendix D.

Further details on MSGCP implementation, monitoring, and adaptive management can be found in Appendix D. The complete MSGCP can be found online at: <http://www.fostercreekcd.org/programs/general-conservation-plan/>

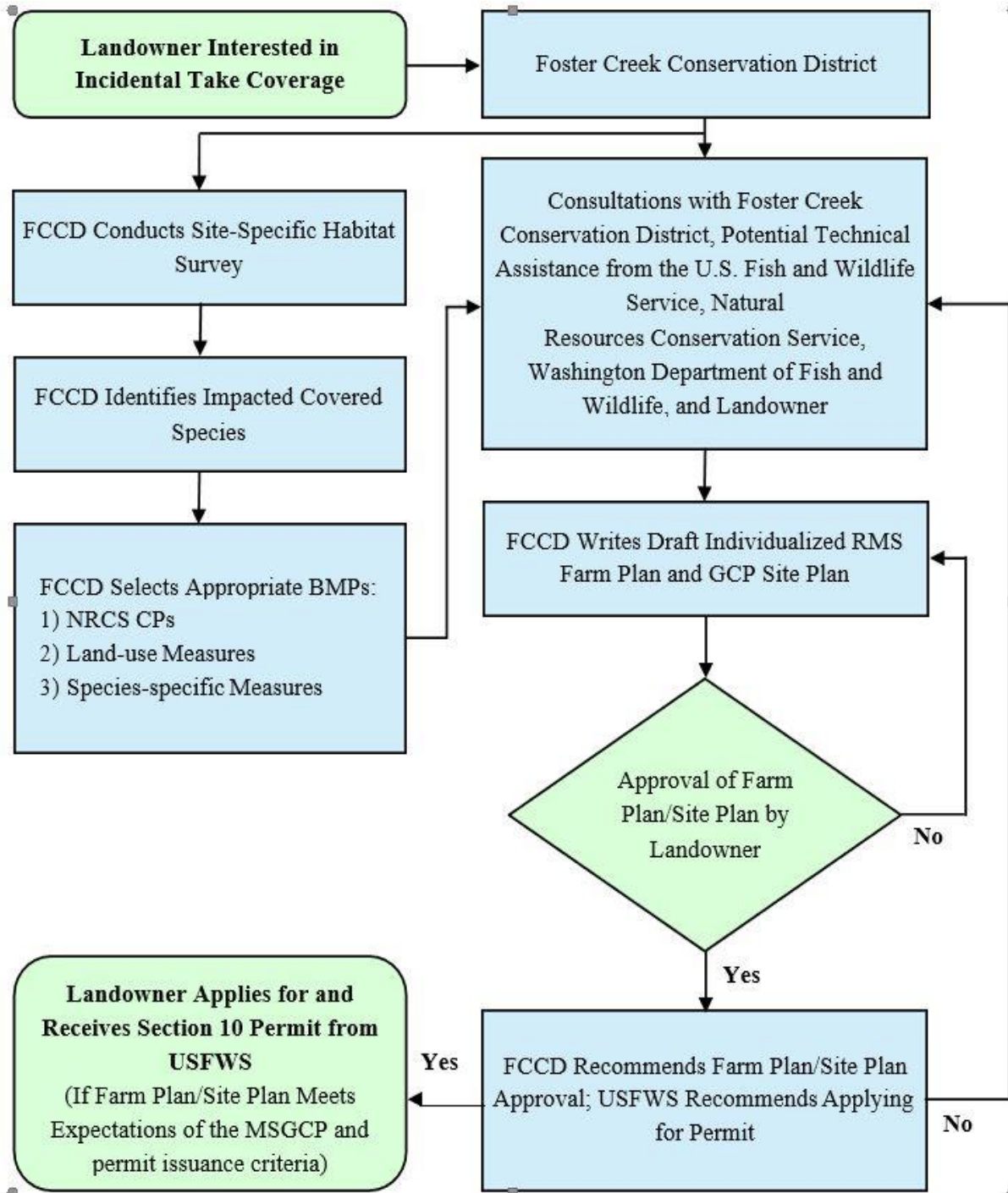


Figure 7-2: The SSP development process (Figure from the MSGCP, p.58)

## 7.3 The Watershed Management Plan

*The Watershed Management Plan, Moses Coulee and Foster Creek Watersheds WRIA 44 & 50* was developed under the Watershed Management Act (ESHB 2514). The plan was developed by the Douglas County Watershed Planning Association (DCWPA), which consisted of a thirty-one-member stakeholder team with representatives from agriculture, horticulture, and economic development interest groups; federal, state and local governments; and conservation or environmental groups. The goal of the DCWPA was “to plan for the future of the water resources that sustain our community, economy, and landscape” (FCCD, 2004). In developing the plan, the group collectively defined goals for water quantity, water quality, habitat, and instream flows. For each category, issues and potential actions to address the issues were identified. The plan is non-regulatory, thus, actions described in the plan are recommendations not requirements.

The Watershed Management Plan identified voluntary actions that protect or enhance critical areas in Douglas County, and this VSP work plan will incorporate them as potential protection and enhancement strategies. Actions that specifically address critical area protection and enhancement that will be adopted and implemented through the Douglas County VSP include the following:

- Action 4.** Promote on-farm agriculture water conservation and irrigation efficiency efforts such as replacing open laterals and trenches with closed pipe systems; replacing non-pressurized irrigation systems with pressurized sprinkler systems or drip irrigation systems; using soil moisture sensors to prevent over-watering; and constructing on-farm ponds to capture and reuse tailwater.
  
- Action 5.** Develop and encourage implementation of agricultural water conservation and irrigation efficiency efforts through regional or irrigation district infrastructure improvements such as lining canals, replacing open canals and ditches with closed pipe systems, or installing pump-back stations to capture tail water for reuse.
  
- Action 17.** Encourage continuation and expansion of conservation practices for protecting and restoring riparian areas such as plantings to establish a mature riparian corridor where feasible, bank stabilization, animal management, fencing, or alternative water sources.
  
- Action 18.** Encourage continuation and expansion of conservation practices in uplands (rangelands/cultivated) such as prescribed grazing, noxious weed control, critical area plantings, filter strips, conservation crop rotation, field borders, grass waterways, sediment ponds, or residue management.
  
- Action 19.** Pursue potential water storage projects in WRIs 44 & 50 for in-channel and off-channel sediment and erosion control, aquifer storage, bank storage, groundwater recharge, flood control, and habitat restoration or enhancement. Potential recommendations have been identified by the Pacific Groundwater Group based upon the findings from the *WRIA44/50 Storage Assessment and Feasibility Study, August 2004*. These recommendations are in need of further

analysis during the implementation phase. (Recommendation are listed in Appendix C [of the watershed management plan]).

**Action 20.** Consider impacts of global climate variability and change on water resources in WRIAs 44 & 50. Climate is a key driver in determining when, where, and how much water is available in Washington State. Small changes affecting the Pacific Northwest climate system can have significant impacts on regional water supplies, including those in the WRIAs 44 & 50

**Action 26.** Provide education on invasive and noxious weed management to private landowners.

**Action 28.** Stress to public and private landowners the need to budget for invasive and noxious weed management. This includes promoting invasive weed control efforts along recreation trails.

**Action 29.** Continue and expand weed survey and mapping to accurately identify and delineate land with populations of invasive or noxious weeds. The survey would allow land managers to predict areas that are potentially subject to weed invasion; to understand the biology of the invasion process and determine means by which weeds spread; to develop, implement, and evaluate weed management plans; to assess the economic impact of weed invasions; and to increase public awareness, education, and weed management efforts.

**Action 30.** Establish county-wide weed management committee to provide advice to landowners.

**Action 32.** Design and implement a scope of work for continued monitoring of water quality conditions to establish long-term data on ground and surface water quality for WRIAs 44 & 50.

**Action 34.** Ensure nutrients are applied so no significant runoff or subsurface flow containing nutrients or other contaminants occur beyond field boundaries. Encourage agricultural soil and/ or plant tissue testing to determine agronomic need for nutrient addition.

**Action 35.** Develop a water quality public education program intended to prevent or reduce nonpoint pollution. Educate non-agriculture pesticide users to apply pesticides following the label instructions and pertinent local, state, and federal regulations so groundwater and surface water standards are not violated. Pesticides are applied in appropriate forms and rates and during times so no significant contamination occurs below the root zone or transport beyond the edge of the field. Pesticides are stored, handled, and disposed of to minimize risk of accidental spill or leakage.

**Action 36.** Develop a water quality assistance program intended to prevent or reduce nonpoint pollution.

**Action 37.** Encourage continuation and expansion of conservation practices on individual

farms to reduce or prevent nonpoint pollution. On dry crop land, such practices may include contour buffer strips, cover crops, or nutrient management. On rangelands practices could include animal management, fencing or alternative watering facilities. In irrigated farmland, this may include practices such as filter strips, windbreak establishment, or nutrient management.

**Action 39.** Promote wellhead protection programs.

**Action 44.** Assess capacity to enhance riparian areas between water bodies and private, county, and state roadways.

**Action 45.** Work with private and public landowners to share cost, design, and implement projects that will protect or restore riparian vegetation, increase water quality, and enhance habitat.

**Action 46.** Assist landowners with voluntary maintenance, enhancement, restoration, or creation of wetlands.

**Action 47.** Support continued enrollment for Douglas County in the Conservation Reserve Program (CRP) and other Farm Bill Programs.

**Action 48.** Support conservation easements and other land conservation practices in riparian areas for purposes of protecting habitat that allow compatible multiple use.

**Action 55.** Encourage installation of checkdams, compatible with habitat needs, to increase groundwater recharge and ultimately surface flow. Checkdams are small earthen or rock barriers placed across streams or that capture water as it flows downstream. The pressure created by the impounded water helps to improve infiltration and raise the local groundwater table.

**Action 58.** Implement in-channel projects that address geologic processes such as deep-seated slope failure, toe erosion, or landslides. Includes continued work to minimize channel headcuts, stabilize banks, and vegetate gullies in the Foster Creek watershed.

**Action 59.** Assess and propose recommendations to address erosion and sedimentation conditions in the Moses Coulee.

**Action 60.** Encourage maintenance of drainage ditches, culverts, and other drainage structures to prevent clogging with debris and sediments.

**Action 61.** Encourage construction of retention and infiltration ponds that capture runoff from roads, development, farms, and irrigation return flows.

**Action 62.** In Foster Creek, implement habitat improvement projects to aid in restoration involving construction or placement of instream structures, such as cross

vanes, weirs, large woody debris, or side channels. Use beavers as a restoration tool.

**Action 63.** Design and implement scope of work for continued monitoring of habitat conditions.

(FCCD 2004)

Even though these actions were developed in 2004, they are still relevant today. In fact, some of the actions identified by the Watershed Management Plan almost exactly match the wording of objectives and/or protection and enhancement goals set forth in this work plan. Many of the above activities are ongoing, and will always have room for improvement. Some actions, such as actions 19, 32, 35, 36, and 63, have been implemented in part, but need further action or effort before they are completed. Action 30 has been completed, and now the emphasis is on continuing the Weed Management Task Force.

The watershed plan also identifies instream flow recommendations for Foster Creek and Douglas Creek. The Washington Department of Ecology has not promulgated a rule for either creek based on the recommendations. However, these recommendations were made to protect and preserve instream resources and uses such as habitat, water quality, and recreation. The Douglas County VSP work plan will use the instream flow recommendations as indicators of critical area functions and values (see Section 8.4). The watershed management plan states the following with regards to instream flow recommendations:

The planning unit recommends setting minimum instream flow at specific flow levels throughout the year for Foster Creek and Douglas Creek. On Foster Creek, the planning unit recommends the instream flow values be set at the Bridgeport irrigation diversion dam at RM 1.03. This would represent the minimum flow regime for surface water stream flows in the stream reach from the confluence with the Columbia River (RM 0.0) upstream to the dam (RM 1.03). The recommended flows are as follows (all flows in cfs):

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
5.0	5.0	5.3	9.5	6.3	4.2	2.8	1.3	1.5	2.7	3.9	5.0

The planning unit recommends the instream flow values be set in Douglas Creek at RM 1.3 at USGS Gage Station No. 4635. This would represent the minimum stream flow regime for the stream reach from the Palisades Irrigation Dam (RM 0.7), above the confluence of Douglas Creek with Moses Coulee, upstream to Pegg Canyon located at RM 1.8. These instream flow values will not apply to the Moses Coulee or alluvial fan of Douglas Creek. The following flow numbers (in cfs) are recommended for upper Douglas Creek:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
13.0	15.0	15.0	13.3	13.0	13.0	12.0	12.0	12.0	12.0	13.0	13.0

(FCCD 2004)

The complete watershed management plan can be found online at <http://www.ecy.wa.gov/programs/eap/wrias/Planning/images/wsmmp-wria44-50-final.pdf>.

## 7.4 Conservation District Programs

FCCD and South Douglas Conservation District both implement a number of programs that help contribute to the critical area protection and enhancement goals and benchmarks of this work plan. Brief summaries of the main programs are provided below.

**Water quality and riparian restoration:** The projects are based on recommendations from the Watershed Management Plan for Moses Coulee and Foster Creek Watersheds WRIA 44 & 50. Current projects involve invasive weed control and planting riparian vegetation to improve the stream's connection with the floodplain, increase stream shading, increase filtration, and decrease turbidity. FCCD is considering using beaver dam analogues and other in-stream structures as restoration tools in the future. Six projects are currently funded totaling about 30 acres of restored riparian habitat.



*Volunteers help FCCD restore a stretch of West Foster Creek on Make a Difference Day 2017*

**Biocontrols:** Biological weed control is the act of bringing back together the weed and its natural enemies. This program facilitates the purchase of biocontrol agents by landowners through education and outreach on use, bulk purchasing and distribution. Cost share is available at times to help landowners purchase biocontrols. A total of 147,800 biological control bugs have been released in Douglas County through this program since 2011.

**Direct Seed:** A cost share program that provides incentives for producers to test the direct seed cropping system and see how it works in their operation. A total of 5,560 acres are currently enrolled across Douglas County in this program.

**Cost Share:** A wide variety of different cost share projects are implemented by landowners with help from the conservation districts. Example of projects that have been implemented since 2011 include: irrigation efficiencies for orchards, fuels reductions, erosion control structures, riparian restoration, retention ponds, wildlife guzzlers, a manure composting facility, grassed waterways, soil testing, windbreaks, and fencing projects.

**Firewise:** The Firewise Program encourages homeowners and communities to prepare for wildfire. Landowners are provided with free assessments and educational events. Cost share is available for activities to reduce fuels. An estimated 250 acres in fuels reduction has been completed through this program since 2011.

**Farmed Smart:** A certification program developed by the Pacific Northwest Direct Seed Association that recognizes dryland producers for using sustainable practices. The certification has six initiatives that are evaluated and proven in order to become certified: improving water quality, improving air quality, improving soil quality, improving wildlife habitat, conserving energy and reducing carbon footprint, and improving economic viability and stability.



*Larinus minutus feeds on knapweed*  
*Photo: Olivia Schilling*



## 7.5 Strategies to Deal with Wildfire

The Douglas County VSP workgroup spent a significant portion of one work plan development meeting discussing the threat of fire to critical areas and agricultural viability, the actions currently being done, and what the VSP effort can do to address the threat. The following sections describe the results of this conversation.

### 7.5.1 Community Wildfire Protection Plan

The *Douglas County Community Wildfire Protection Plan (CWPP)* is the result of a collaborative multijurisdictional planning effort to address the threat of wildland fire in Douglas County. The mission statement of the CWPP is:

To make Douglas County residents, communities, state agencies, local and federal governments, and businesses less vulnerable to the negative effects of wildland fires through the effective administration of wildfire hazard mitigation grant programs, hazard risk assessments, wise and efficient fuels treatments, and a coordinated approach to mitigation policy through federal, state, regional, and local planning efforts. To also provide a plan that will not diminish the Private Property Rights of land/asset owners within Douglas County.

CWPP, 2013

The CWPP was approved by the Douglas County Commissioners in December of 2013, and is slated for an update every 5 years following the approval. The VSP work group agreed that the VSP effort should not duplicate this effort in any way, but rather support and build upon it. To that end, the Douglas County VSP Coordinator will attend CWPP update meetings and provide input on how to improve the synergy between the two plans to better meet both plan's goals and objectives. Potential areas of overlap in the CWPP and VSP include using voluntary stewardship activities as a tool to address wildfire risk and acquiring funding for cost-share activities that meet the goals of the CWPP and VSP.

Additionally, the CWPP provides mapping of high risk fire areas and proposes fire risk mitigation and fuels reduction projects. These resources will be used by the VSP implementation effort as a way to focus outreach and implementation of conservation activities that address wildfire.

### 7.5.2 Firewise

The South Douglas Conservation District runs the Firewise program in Douglas County. These activities potentially contribute to several goals and benchmarks of this VSP work plan, but specifically address BM-17: Maintain and/or increase voluntary conservation activities that manage fuel loads to decrease the risk of fire.

### 7.5.3 Rural Fire Protection Areas

Douglas County currently has a portion of land that is not protected by a fire district (Figure 7-3). In July of 2017 the Sutherland Canyon Fire burned more than 38,000 acres of sagebrush habitat in this area.

One proposed idea to improve wildland fire fighting in this area is to establish a Rural Fire Protection Area (RFPA). RFPAs are a legally recognized firefighting group, the same as a fire district, made up of local landowners. They are tax exempt and non-taxing, being funded through membership fees and

grants. RFPAs members are provided training and a seat at the incident command planning table during firefighting activities.

It is clear that providing fire protection where there isn't currently would be a huge benefit to critical area protection and agricultural viability. What is not clear is how exactly VSP could interact with a RFPAs. One suggestion was that the VSP coordinator and/or the conservation districts could assist the RFPAs through the regulatory framework of establishing a RFPAs. Another suggestion was to provide grant writing support and assistance to the RFPAs once it is established.

It is important to note that, at the time of this work plan's approval, RFPAs are not legally recognized in the state of Washington. In 2018 legislation was introduced that would recognize RFPAs, but it did not get approved. This would be the first step necessary to forming an RFPAs in Douglas County.

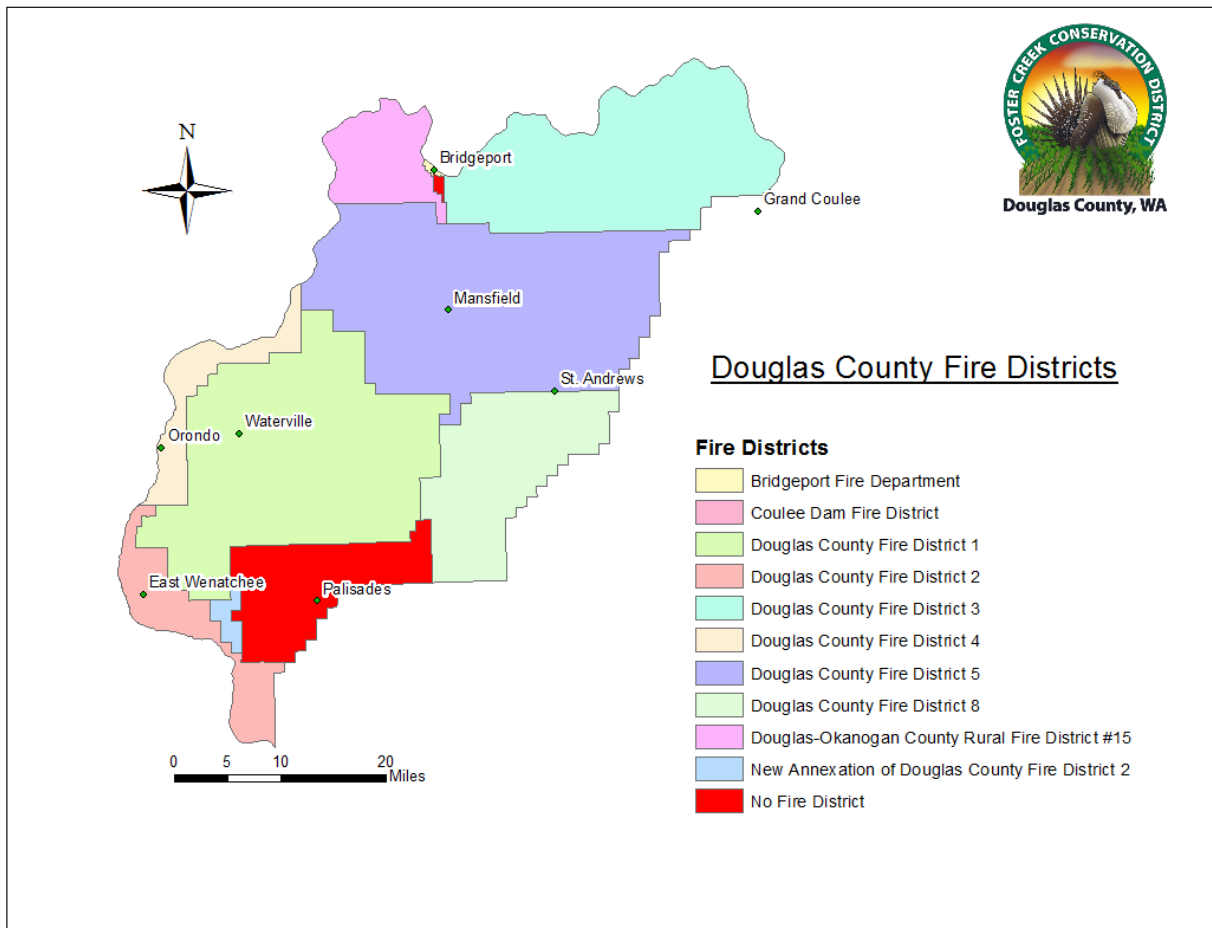


Figure 7-3: Fire Districts in Douglas County

#### 7.5.4 VSP Opportunities for improvement

Other wildfire related issues that were discussed as opportunities for VSP implementation include:

- Establish a fuels management program with cost-share and/or other incentives
- Establish a program to target cheatgrass
- Provide technical assistance and cost-share for fire recovery actions such as integrated weed management and habitat restoration

- Include in Individual Stewardship Plans an emergency grazing plan for ranchers who have pasture burnt in a wildfire

## 7.6 Douglas County Cooperative Weed Management Area

During development of the work plan, the Douglas County VSP work group discussed and is in favor of forming a Douglas County Cooperative Weed Management Area (CWMA) to be used as part of the protection and enhancement strategy. The Center for Invasive Species Management defines CWMA as follows:

A Cooperative Weed Management Area (CWMA) is a partnership of federal, state, and local government agencies, tribes, individuals, and various interested groups that manage invasive species (or weeds) within a defined area. [CWMA] share six basic characteristics:

- CWMA operate within a defined geographic area, distinguished by a common geography, weed problem, community, climate, political boundary, or land use.
- CWMA involve a broad cross-section of landowners and natural resource managers within its defined boundaries.
- CWMA are governed by a Steering Committee.
- CWMA make a long-term commitment to cooperation, usually through a formal agreement among partners.
- CWMA have a comprehensive plan that addresses the management or prevention of invasive species within its boundaries.
- CWMA facilitate cooperation and coordination across jurisdictional boundaries.

CWMA bring together local citizens, landowners, nonprofit organizations, industry, and city, county, state, tribal, and federal representatives to work towards a common goal—effective control of invasive species.

[www.weedcenter.org/cwma](http://www.weedcenter.org/cwma), 2014

In Douglas County, any comprehensive weed management plan would need to adopt and implement an integrated weed management strategy, reducing the reliance on chemicals to control weeds. As such, all projects implemented as part of a CWMA would likely contribute to multiple water quality and habitat improvement objectives and benchmarks described in Chapter 8 of this work plan.

As of the submission of this work plan to the technical panel for approval, FCCD has been awarded a grant offered by the National Fish and Wildlife Foundation that assists in the initial formation of a CWMA. An agreement for the proposal is currently in development. Future VSP funding could be used in support of CWMA administration or funding acquisition for CWMA activities and specific projects.

## 7.7 Sage Grouse Initiative

*“The Sage Grouse Initiative is a partnership-based, science-driven effort that uses voluntary incentives to proactively conserve America’s western rangelands, wildlife, and rural way of life.”*

([www.sagegrouseinitiative.com/about](http://www.sagegrouseinitiative.com/about))

The Sage Grouse Initiative (SGI) is very active in Douglas County, with two full time employees housed in the NRCS Waterville field office. Current local priorities include implementing improved rotational grazing systems, installing sage grouse fence markers, installing escape ramps at livestock watering

facilities, and removing downed fences. Local staff are also working on developing and implementing two new SGI Crop and Transitional programs. The goal of these programs is to convert marginal cropland into rangeland that can be grazed, but also provides improved habitat values for wildlife. SGI staff are also planning on developing a mesic habitat improvement program in the near future.

Key conservation activities identified in this work plan that are implemented under the SGI program include prescribed grazing, range planting, structures for wildlife, upland wildlife habitat management, and watering facilities. Other activities implemented by SGI that are not identified as key conservation activities will still count towards meeting the “Protect and/or enhance terrestrial habitat through implementation of voluntary conservation activities” objective identified in Chapter 8 of this work plan. All conservation activities implemented through SGI are included in NRCS contract data, and as such, are wholly accounted for when NRCS provides anonymous, summarized contract data to the VSP coordinator (see Section 9.2 for further details).

## 7.8 Farm-Scale Planning

Individual farm-scale planning activities will be an important tool in achieving critical area protection and enhancement in Douglas County. The process provides landowners a one on one opportunity to discuss their operation with technical service providers, receive feedback, and ultimately develop a stewardship plan that meets their needs and protects and/or enhances critical areas.

Some landowners expressed concern that they would be required to receive a farm plan to participate in VSP. There is no requirement to receive any type of farm level planning to implement conservation activities as part of this VSP work plan. Participating in the VSP Producer Survey does not require any type of farm level planning. More information on the VSP implementation process and relationship of the four types of VSP participation can be found in Chapter 10.

There are three different types of farm-scale plans that are included under the broad VSP umbrella. The three plans serve different purposes, but all help producers address critical area protection and agricultural viability concerns, and ultimately help producers implement conservation activities consistent with the goals and benchmarks of this work plan. **As such, all three types of plans count as “VSP Individual Stewardship Plans” discussed in the VSP statute.** Table 7-2 was prepared as an outreach item for producers and technical service providers to clarify the purpose, differences, and interactions of the three types of plans.

Table 7-2: 3 Types of Farm Scale Planning Under the Douglas County VSP Umbrella

	<b>3 Types of Farm-Scale Planning Under the Douglas County VSP Umbrella</b>		
	<b>Individual Stewardship Plan (ISP)</b>	<b>Multiple Species General Conservation Site Specific Plan (Site Plan)</b>	<b>NRCS Conservation Plan</b>
<b>Purpose</b>	Identify critical area and agricultural viability concerns, and develop strategy to address the concerns	Identify resource concerns; identify conservation activities that protect shrub-steppe habitat	Identify resource concerns and conservation practices to address them
<b>Necessary to apply for...</b>	ISP not necessary to apply for funding/cost-share, or implement conservation activities	Incidental Take Permit (ITP)	NRCS program funding/cost share
<b>Applicable Programs</b>	VSP, other FCCD and SDCD programs	MSGCP, VSP	EQIP, SGI, CSP, VSP, MSGCP
<b>Entity Responsible for technical assistance</b>	FCCD, SDCD	FCCD, USFWS	NRCS, FCCD, SDCD
<b>Evaluation Tools</b>	PHS, 303d lists, critical area maps, Natural Heritage program rare plants and ecosystems lists. Will be largely open ended, based on landowner needs/concerns and applicable critical areas	FSA Farm/Tract/field maps, Producer Farm Data Report, Report of Acreage FSA-578, CRP and SAFE contract(s), and baseline condition assessment tool per land use.	Resource Concerns Checklists, Integrated Erosion Tool, Win-PST, Water Quality TN 1, Range Reconnaissance, Rangeland Health Assessment, Stream Assessment, Biological TN 14, Sage Grouse Habitat Evaluation Guide, Sage Grouse Threats Checklist
<b>Field inventory required</b>	No	Yes	Yes
<b>Monitoring required</b>	No	Yes, per conditions of the permit	No (certain conservation practices do require monitoring once contracted with NRCS)
<b>Plan intensity level</b>	Varies, depends on landowner needs and concerns, but generally low-moderate	Moderate	High
<b>Products</b>	Narrative describing plan to address critical area and agricultural viability concerns	Description of covered agricultural activities; map of covered agricultural activities and habitat maintained with quantified acres for each; description of voluntary conservation activities to benefit covered species' habitat, including steps taken to minimize and mitigate impacts to covered species; a long-term monitoring plan	Field inventory; narrative of resource concerns; suggested conservation practices to address resource concerns
<b>Fee</b>	No	None to receive the Site Plan, but the Incidental Take Permit application fee for USFWS is \$100	No
<b>Funding source</b>	VSP implementation	VSP implementation (partially), NRCS task order (partially), Others needed	NRCS, WSCC
<b>Relationship to other plans (no plan is mutually exclusive)</b>	To be used if operator is not interested in Incidental Take Permit or NRCS programs. Applicable information from this plan can be transferred to either of the other plans as long as the operation and circumstances remain consistent.	Can be acquired without any other plan, although a common route will be to receive a NRCS Conservation Plan prior to a Site Plan. Information from the NRCS Conservation Plan can be used to develop the Site Plan.	Will commonly be used as a first step towards applying for an Incidental Take Permit. Information from the NRCS Conservation Plan can be used to develop the Site Plan.
<b>Point of Contact</b>	FCCD Office 509-888-6372	FCCD Office 509-888-6372	NRCS Waterville Office 509-422-2750

## 7.9 Summary of Threats and Protection and Enhancement Strategies

Threat	Protection and Enhancement Strategies	Monitoring <sup>1</sup>
Fire	Community Wildfire Protection Plan	Remote Vegetation Monitoring and Change Detection
	BM-17	
	Firewise program	
	Post-fire support and technical assistance with restoration	
	Develop a fuels management program	
Invasive Plant Species	Farm scale planning - fire breaks, potential fire lines	The CWMA will develop a Comprehensive Weed Management Plan that will outline a strategy to map and monitor invasive species at the watershed scale.
	Cooperative Weed Management Area	
	Conservation activities that contribute to BM-3, BM-8, BM-10, BM-13, BM-14	
	Biocontrol Program	
	Watershed Management Plan actions	
Conversion/Fragmentation	Farm scale planning - Technical Assistance with an emphasis on Integrated Weed Management	Remote Vegetation Monitoring and Change Detection
	Conservation activities that contribute to BM-3, BM-10, BM-13, BM-14, BM-15, BM-16, BM-18	
	Conservation Reserve Program and Safe Acres for Wildlife - if acres are unenrolled encourage enrollment into conservation activities that contribute to BMs listed above	
Erosion	MSGCP - watershed scale connectivity will be considered in developing Site Specific Plans that contain habitat restoration or conversion of unproductive dryland fields back to habitat	Water quality monitoring with a turbidity parameter will be a good indicator to measure erosion over time
	Conservation activities that contribute to BM-3, BM-7, BM-10, BM-14	
	Watershed Management Plan actions	
	Conservation Reserve Program and Safe Acres for Wildlife - if acres are unenrolled encourage enrollment into conservation activities that contribute to BMs listed above	
Loss of productivity	Farm scale planning - encourage conservation activities that contribute to BMs listed above	Monitoring activities undertaken by the MSGCP will assess on the ground habitat values at enrolled and control points across the county
	Conservation activities that contribute to BM-2, BM-3, BM-11, BM-12, BM-14	
	Sage Grouse Initiative	
Altered Hydrology	Farm scale planning - provide quality technical assistance to promote sound rotation and management activities that contribute to the BMs listed above	Ground and surface water levels across the county will provide a good indicator of hydraulic function
	Conservation activities that contribute to BM-1, BM-2, BM-3, BM-4, BM-5, BM-6, BM-10	
	Watershed Management Plan actions	
	Conservation Reserve Program and Safe Acres for Wildlife - if acres are unenrolled encourage enrollment into conservation activities that contribute to BMs listed above	
Contamination to soil, surface water, and groundwater	Farm scale planning - provide quality technical assistance to promote activities that protect natural hydraulic function and storage and contribute to the BMs listed above	WA Department of Health groundwater quality monitoring data relevant to agriculture. Surface water quality monitoring will be conducted across the county with the parameters pH and dissolved oxygen used to detect contamination.
	Conservation activities that contribute to BM-3, BM-7, BM-8, BM-9, BM-10	

<sup>1</sup> For more detailed information on indicators and monitoring please refer to chapters 8 and 9, and Appendix H

Table 7-3: A summary of Critical Area Threats and Protection and Enhancement Strategies

## 7.10 Regulatory Context

VSP legislation and this VSP work plan cannot “limit the authority of a state agency, local government, or landowner to carry out its obligations under any other federal, state, or local law” (RCW 36.70A.702(5)). This means that agricultural operators are still subject to the regulations of other applicable federal, state, and local laws. In fact, it is the stated intent of VSP to “improve compliance with other laws designed to protect water quality and fish habitat” (RCW 36.70A.700(f)). To accomplish this the Douglas County VSP work group may, “request a state or federal agency to focus existing enforcement authority in that participating watershed, if the action will facilitate progress toward achieving work plan protection goals and benchmarks,” once the work plan is approved (RCW 36.70A.720(3)). However, “nothing in RCW 36.70A.700 through 36.70A.760 may be construed to grant counties or state agencies additional authority to regulate critical areas on lands used for agricultural activities” (RCW 36.70A.702(4)). Further, this work plan may, “incorporate into the work plan any existing development regulations relied upon to achieve the goals and benchmarks for protection” (RCW 36.70A.720(1)(h)).

**The Douglas County VSP work plan does not rely on any existing development regulations to achieve critical area protection in areas where they intersect with agricultural activities.** Additionally, the work group does not anticipate requesting a state or federal agency to focus existing enforcement authority in a participating watershed. However, this work plan, and the work group, expect compliance with all other environmental regulations, and acknowledge that other federal, state and local laws help to achieve protection of critical areas in Douglas County.

Federal, state, and local laws relevant to this section include but are not limited to:

Clean Air Act of 1956, as amended (42 U.S.C. §7401 et seq.)

Agricultural Act of 2014 (H.R.2642) (as well as future “Farm Bills”)

Federal Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 et seq)

Federal Insecticide, Fungicide, and Rodenticide Act of 1947, as amended (P.L. 80-104)

Federal Land Policy and Management Act of 1976, as amended (P.L. 94-579)

Federal Noxious Weed Act, as amended (P.L. 93-629; 7 U.S.C. 2801 et seq.)

Federal Water Pollution Control Act of 1948, as amended (33 U.S.C. §1251-1376)

Food Quality Protection Act of 1996, as amended (P.L. 104-170)

National Environmental Policy Act of 1969, as amended (P.L. 91-190)

National Historic Preservation Act of 1966 (P.L. 89-665), as amended (16 U.S.C. 470 et seq.)

Washington State Endangered, Threatened, and Sensitive Species (WAC Chapters 232-12-014 and 232-12-011)

Washington Hydraulic Code (WAC Chapter 77.55)

Washington State Clean Air Act (RCW Chapter 70.94)

Washington State Environmental Policy Act (RCW Chapter 43.21C)

Washington Water Law (RCW Chapter 90)

American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act  
(Secretarial Order 3206)

Washington State Regulatory Fairness Act (RCW Chapter 19.85)

Douglas County Code (DCC Chapters 1.0-20.0) (excluding Critical Area Ordinances)

Douglas County Regional Shoreline Master Program (TLS 08-09-32B & TLS 09-08-41B)



## 8.0 Goals, Benchmarks, and Indicators

The VSP statute states that the work group must, “create measurable benchmarks that, within ten years after the receipt of funding, are designed to result in (i) the protection of critical area functions and values and (ii) the enhancement of critical area functions and values through voluntary, incentive-based measures” (RCW36.70A720(1)(e)). This chapter describes how the Douglas County VSP work plan meets this statutory requirement.

Using the definition in VSP statute, “‘Protect’ or ‘protecting’ means to prevent the degradation of functions and values existing as of July 22, 2011” and “‘Enhance’ or ‘enhancement’ means to improve the processes, structure, and functions existing, as of July 22, 2011, of ecosystems and habitats associated with critical areas” (RCW 36.70A.703). The VSP statute encourages, but does not require, enhancement of critical area functions and values above 2011 baseline conditions.

### 8.1 The case for participation benchmarks

In developing this VSP work plan, the work group discussed two different options for setting benchmarks for critical area protection and enhancement: 1) directly monitor ecological attributes of a critical area’s functions and values; and 2) measure the county-wide participation levels of conservation activities that protect and enhance critical area functions and values. The work group chose to use the second option for the following reasons:

- It is the best way to directly measure agriculture’s contribution to critical area protection and enhancement. Ecological parameters can change for a wide variety of reasons completely outside the control of local agriculture. Douglas County producers do not want to be held accountable for things completely outside of their control.
- There is a direct correlation between conservation activities and critical area protection and enhancement. This correlation is provided by the Conservation Practice Physical Effects tool, which is discussed in Section 7.1.3 and further elaborated on in Section 8.2 below.
- Douglas County producers have a long history of implementing conservation activities and are committed to continuing to implement them.
- The data to track participation in conservation activities is readily available in most cases, and easy to obtain in others. More information on monitoring participation levels is provided in Chapter 9.
- Measureable trends in ecological parameters may take years to decades to become detectable, which does not line up well with the reporting cycle of VSP.

The work group does recognize the importance of directly monitoring ecological attributes of functions and values. Ecological attributes will be monitored as indicators of critical area protection and enhancement and are discussed in further detail in Section 8.5.

## 8.2 Linking conservation activities to critical area protection and enhancement and the work plan benchmarks

The Conservation Practice Physical Effects (CPPE) tool discussed in Chapter 7 provides the necessary linkage between implementing conservation activities and the resulting critical area protection. CPPE provides a specific quantified metric of the benefit to each generalized critical area function for each key conservation activity implemented. A county wide benefit for each generalized critical area function resulting from the implementation of a specific conservation activity can then be computed using the formula below where the CPPE score for the particular function is multiplied by the number of acres enrolled in the conservation activity, and then corrected for the number of acres discontinued during the same time period.

### County-wide benefit of

**conservation activity implementation** = (CPPE Score \* acres enrolled) – (CPPE Score \* acres discontinued)

For example, 4015 acres have been enrolled in Conservation Crop Rotation since 2011 and an estimated 13 acres have been discontinued. Conservation Crop Rotation has a CPPE score of 3.00 for soil health and 1.6 for hydrology. Therefore, the total benefit of Conservation Crop Rotation to soil health in Douglas County =  $(3.00 * 4,015) - (3.00 * 13) = 12,045 - 39 = 12,006$  CPPE units.

For hydrology,  $(1.6 * 4,015) - (1.6 * 13) = 6,424 - 20.8 = 6,403.2$  CPPE units.

Total county-wide benefits can be calculated for each benchmark of this work plan by adding the results of the above formula of each contributing key conservation activity that pertains to the particular benchmark. **However, to simplify the tracking and reporting process, the Douglas County VSP will use acres enrolled to track progress toward meeting benchmarks.**

## 8.3 The process for setting the 2011 baseline and protection and enhancement benchmarks

The following steps were taken to establish the 2011 baseline and protection and enhancement benchmarks:

1. Acquired historic conservation practice enrollment data for Douglas County from the Waterville NRCS office<sup>4</sup>.

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<sup>4</sup> The current contact person is Bryce Kruger, Soil Conservationist, 509-745-8362

2. Conducted a quality assurance scan of data and removed all clear duplications and corrected errors. For example, Field Border was reported in linear feet in some years and acres in other years. Records of changes made to raw data are available in the FCCD office in Waterville.
3. Computed the average historical annual enrollment for each key conservation activity for the period of available data to the VSP start date, 2004-2011.
4. Estimated the percentage of acres annually enrolled in each key conservation activity that were discontinued each year. Table 8-1 summarizes the process used to estimate discontinuation.
5. Computed the average annual acreage discontinued for each conservation activity.
6. Summed the average annual acreage discontinued for all conservation activities that contribute to the benchmark. This number represents the number of acres that need to be enrolled in the conservation activities each year to maintain the level of activities being implemented in 2011.
7. Multiply the result from step six by five to get the 5-year protection benchmark. I.e. every 5 years this many acres need to be enrolled in the conservation activities that contribute to the benchmark to maintain critical area protection.
8. Enhancement benchmarks were established by summing the average historic annual enrollment of each conservation activity that contributes to a benchmark and then multiplying by 5.

Average historical annual enrollment data (2004-2011) were used to set baseline conditions, instead of only 2011 enrollment data, because the average better represents what conservation activities were taking place in Douglas County in July of 2011. The data show enrollment in different NRCS conservation practices varies from year to year. These variances can be small, as with Field Borders where the historical average enrollment is 13.5 acres/year with a range of 1.8-23.5 acres in a single year, to very large, as with Upland Wildlife Habitat Management where the historical average enrollment is 1,755 acres/ year with a range of 0.0-20,740 acres in a single year. The year to year variation can be attributed to a variety of things, including but not limited to funding, local/state/national priorities, and technical service provider expertise. Therefore, it makes more sense to use historical average of enrollment to set benchmarks rather than a single year.

Only when there is an extreme outlier in the data does using this approach bias averages. One conservation practice, Pest Management, does contain an outlier. In 2008, 18,211 acres were enrolled, with the next highest enrollment year being almost 13,000 acres less. Current benchmarks as shown below include this outlier in the annual historic average.

Discontinuation Rate	Discontinuation Category	Example Practices
None (0%)	<ul style="list-style-type: none"> <li>Permanent Conservation Practices</li> </ul>	<ul style="list-style-type: none"> <li>Permanent Easements</li> <li>Major Infrastructure</li> </ul>
Lower (3%)	<ul style="list-style-type: none"> <li>High Barriers to Entry/Exit               <ul style="list-style-type: none"> <li>Conservation investments</li> <li>Maintenance cost</li> <li>Effectiveness</li> </ul> </li> <li>Increases Land Productivity</li> <li>Lowers Cost</li> </ul>	<ul style="list-style-type: none"> <li>Tillage Management</li> <li>Pest Management</li> <li>Nutrient Management</li> <li>Irrigation Management</li> <li>Fencing</li> </ul>
Higher (6%)	<ul style="list-style-type: none"> <li>Low Barriers to Entry/Exit               <ul style="list-style-type: none"> <li>Easily removed</li> </ul> </li> <li>Reduced land in production</li> <li>Rotational use               <ul style="list-style-type: none"> <li>Market driven rotation</li> </ul> </li> <li>Reliance on unstable conservation funding or incentives</li> </ul>	<ul style="list-style-type: none"> <li>Habitat Restoration</li> <li>Prescribed Grazing</li> <li>Cover Crop</li> <li>Range Planting</li> </ul>

*Table 8-1: Discontinuation of conservation activities*

## 8.4 Benchmarks

Table 8-2 in this section shows the protection and enhancement benchmarks as required by RCW36.70A720(1)(e). Table 8-2 can also be found in Attachment 1 to the work plan.

Table 8-2: Protection and Enhancement Benchmarks

Goal	Objective	Benchmark	Key voluntary conservation activities		Historic Enrollment Data 2004-2011		Estimated Yearly Discontinuation			Every 5 year Protection Benchmark <sup>1 2</sup> (add an additional x acres, feet, etc.)	Every 5 year Enhancement Benchmark <sup>3</sup> (add an additional x acres, feet, etc.)	VSP Implementation 2012-2017			
			NRCS Code	Activity	Unit	Average Annual	Annual %	Average Annual Discontinuation	Summed Annual Discontinuation			NRCS	CD projects	Self-funded	Total
Protect and/or enhance baseline hydraulic functions and values of critical areas in Douglas County where agricultural activities occur	Protect and/or enhance natural hydraulic storage capacity through the implementation of voluntary conservation activities	<b>BM-1</b> Maintain and/or increase voluntary conservation activities that promote soil-water holding capacity	328	Conservation Crop Rotation	Acres	216.8	6%	13	24.8	<b>124</b>	2,993.0	26,884.90	5560		32,444.90
			340	Cover Crop	Acres	19	6%	1							
			329	Residue and Tillage Management- No Till	Acres	362.8	3%	10.8							
			345	Residue and Tillage Management- Reduced Till	Acres	None	3%	0							
		<b>BM-2</b> Maintain and/or increase voluntary conservation activities that limit soil compaction	528	Prescribed Grazing	Acres	2,392.30	6%	143.5	155.3	<b>776.70</b>	13,870.5	80,805.20	5560		86,365.20
			329	Residue and Tillage Management- No Till	Acres	362.8	3%	10.8							
			345	Residue and Tillage Management- Reduced Till	Acres	None	3%	0							
			340	Cover Crop	Acres	19	6%	1							
		<b>BM-3</b> Maintain and/or increase voluntary conservation activities that protect riparian and wetland systems	528	Prescribed Grazing	Acres	2392.3	6%	143.5	143.5	<b>717.5</b>	11,961.5	57,935.30			57,935.30
			382	Fence	Feet	9401.6	3%	282	282	<b>1,410.20</b>	47,008.0	102,841.70			102,841.70
	614		Watering Facility	#	4	0%	0	0	<b>0</b>	20.0	52			52	
	<b>BM-4</b> Maintain and/or increase voluntary conservation activities that decrease evapotranspiration	328	Conservation Crop Rotation	Acres	216.8	6%	13	23.8	<b>119</b>	2,898.0	26,037	5,560		31,597	
		329	Residue and Tillage Management- No Till	Acres	362.8	3%	10.8								
		345	Residue and Tillage Management- Reduced Till	Acres	None	3%	0								
	Promote the efficient and beneficial use of water in Agriculture	<b>BM-5</b> Maintain and/or increase voluntary conservation activities that promote the efficient use of irrigation water	442	Sprinkler System	Acres	18.5	0%	0	1	<b>5</b>	297.0	86.5			86.5
			441	Irrigation System - Micro irrigation	Acres	5.5	0%	0							
			449	Irrigation Water Management	Acres	35.4	3%	1							
		<b>BM-6</b> Maintain and/or increase voluntary conservation activities that promote the beneficial use of water in ranching	614	Watering Facility	#	4	0%	0	0	<b>0</b>	4.0	52			52
			516	Livestock Pipeline	Feet	4,338.10	0%	0	0	<b>0</b>	21,690.5	103,986.40			103,986.40

Table 8-2: Protection and Enhancement Benchmarks

Goal	Objective	Benchmark	Key voluntary conservation activities		Historic Enrollment Data 2004-2011		Estimated Yearly Discontinuation			Every 5 year Protection Benchmark <sup>1 2</sup> (add an additional x acres, feet, etc.)	Every 5 year Enhancement Benchmark <sup>3</sup> (add an additional x acres, feet, etc.)	VSP Implementation 2012-2017			
			NRCS Code	Activity	Unit	Average Annual	Annual %	Average Annual Discontinuation	Summed Annual Discontinuation			NRCS	CD projects	Self-funded	Total
Protect and/or enhance baseline water quality functions and values of critical areas in Douglas County where agricultural activities occur	Protect and/or enhance surface water quality by implementing voluntary conservation activities that manage the amount of chemicals and sediments delivered to waterbodies	<b>BM-7</b> Maintain and/or increase voluntary conservation activities that reduce wind or water soil erosion	328	Conservation Crop Rotation	Acres	216.8	6%	13	169.3	<b>847</b>	15,131.5	84,820	5,560		90,380
			340	Cover Crop	Acres	19	6%	1							
			329	Residue and Tillage Management- No Till	Acres	362.8	3%	10.8							
			345	Residue and Tillage Management- Reduced Till	Acres	None	3%	0							
			449	Irrigation Water Management	Acres	35.4	3%	1							
			528	Prescribed Grazing	Acres	2392.3	6%	143.5							
		<b>BM-8</b> Maintain and/or increase voluntary conservation activities that manage chemicals and nutrients	590	Nutrient Management	Acres	6127.8	3%	183.8	279.3	<b>1,397</b>	46,509.5	369.00	1,478.50		1,847.50
			595	Pest Management	Acres	3174.1	3%	95.5							
			Organic Certification <sup>4</sup>		Acres	<b>2011 Acreage = 2,200</b>									
		<b>BM-9</b> Maintain and/or increase voluntary conservation activities that filter chemicals and sediment	328	Conservation Crop Rotation	Acres	216.8	6%	13	15	<b>75</b>	1,246.5	4,868.60	29.4		4,898.00
			340	Cover Crop	Acres	19	6%	1							
			386	Field Border	Acres	13.5	6%	1							
<b>BM-3</b> Maintain and/or increase voluntary conservation activities that protect riparian and wetland systems	See BM-3 above														
<b>BM-5</b> Maintain and/or increase voluntary conservation activities that promote the efficient use of irrigation water	See BM-5 above														

Table 8-2: Protection and Enhancement Benchmarks

Goal	Objective	Benchmark	Key voluntary conservation activities		Historic Enrollment Data 2004-2011		Estimated Yearly Discontinuation			Every 5 year Protection Benchmark <sup>1 2</sup> (add an additional x acres, feet, etc.)	Every 5 year Enhancement Benchmark <sup>3</sup> (add an additional x acres, feet, etc.)	VSP Implementation 2012-2017				
			NRCS Code	Activity	Unit	Average Annual	Annual %	Average Annual Discontinuation	Summed Annual Discontinuation			NRCS	CD projects	Self-funded	Total	
Protect and/or enhance baseline water quality functions and values of critical areas in Douglas County where agricultural activities occur	Protect and/or enhance surface water quality by implementing voluntary conservation activities that reduce water temperatures	<b>BM-3</b> Maintain and/or increase voluntary conservation activities that protect riparian and wetland systems	See BM-3 above													
		<b>BM-1</b> Maintain and/or increase voluntary conservation activities that promote soil-water holding capacity	See BM-1 above													
		<b>BM-10</b> Implement voluntary conservation activities that enhance and restore riparian and wetland habitat	Department of Ecology BMP - Riparian Buffer	Enhancement Only			25			29.4			29.4			
	Protect and/or enhance groundwater quality by implementing voluntary conservation activities that manage the amount of chemicals to groundwater	<b>BM-5</b> Maintain and/or increase voluntary conservation activities that promote the efficient use of irrigation water	See BM-5 above													
		<b>BM-8</b> Maintain and/or increase voluntary conservation activities that manage chemicals and nutrients	See BM-8 above													
		<b>BM-9</b> Maintain and/or increase voluntary conservation activities that filter chemicals	See BM-9 above													

Table 8-2: Protection and Enhancement Benchmarks

Goal	Objective	Benchmark	Key voluntary conservation activities		Historic Enrollment Data 2004-2011		Estimated Yearly Discontinuation			Every 5 year Protection Benchmark <sup>1 2</sup> (add an additional x acres, feet, etc.)	Every 5 year Enhancement Benchmark <sup>3</sup> (add an additional x acres, feet, etc.)	VSP Implementation 2012-2017			
			NRCS Code	Activity	Unit	Average Annual	Annual %	Average Annual Discontinuation	Summed Annual Discontinuation			NRCS	CD projects	Self-funded	Total
Protect and/or enhance baseline soil health functions and values of critical areas in Douglas County where agricultural activities occur	Protect and/or enhance soil health by implementing voluntary conservation activities that preserve the physical structure and amount of soil	BM-2 Maintain and/or increase voluntary conservation activities that limit soil compaction	See BM-2 above												
		BM-7 Maintain and/or increase voluntary conservation activities that reduce wind or water soil erosion	See Bm-7 above												
		BM-11 Maintain and/or increase voluntary conservation activities that decrease soil bulk density and increase heterogeneity	328	Conservation Crop Rotation	Acres	216.8	6%	13	24.8	124	2,993.0	27,146.90	5,560	32,706.90	
			340	Cover Crop	Acres	19	6%	1							
			329	Residue and Tillage Management- No Till	Acres	362.8	3%	10.8							
			345	Residue and Tillage Management- Reduced Till	Acres	None	3%	0							
	550		Range Planting	Acres	None	6%	0								
	BM-12 Maintain and/or increase voluntary conservation activities that add organic matter to soil	328	Conservation Crop Rotation	Acres	216.8	6%	13	24.8	124	2,993.0	27,146.90	5,560	32,706.90		
		340	Cover Crop	Acres	19	6%	1								
		329	Residue and Tillage Management- No Till	Acres	362.8	3%	10.8								
		345	Residue and Tillage Management- Reduced Till	Acres	None	3%	0								
		550	Range Planting	Acres	None	6%	0								
Protect and/or enhance soil health by implementing voluntary conservation activities that benefit soil fertility	BM-8 Maintain and/or increase voluntary conservation activities that manage chemicals and nutrients	See BM-8 above													



Table 8-2: Protection and Enhancement Benchmarks

Goal	Objective	Benchmark	Key voluntary conservation activities		Historic Enrollment Data 2004-2011		Estimated Yearly Discontinuation			Every 5 year Protection Benchmark <sup>1 2</sup> (add an additional x acres, feet, etc.)	Every 5 year Enhancement Benchmark <sup>3</sup> (add an additional x acres, feet, etc.)	VSP Implementation 2012-2017					
			NRCS Code	Activity	Unit	Average Annual	Annual %	Average Annual Discontinuation	Summed Annual Discontinuation			NRCS	CD projects	Self-funded	Total		
Protect and/or enhance baseline fish and wildlife habitat functions and values of critical areas in Douglas County where agricultural activities occur	Protect and/or enhance terrestrial habitat through implementation of voluntary conservation activities	<b>BM-13</b> Maintain and/or increase voluntary conservation activities that manage or enhance upland habitat for wildlife	645	Upland Wildlife Habitat	Acres	1,755	6%	105.3	105.7	<b>529</b>	8,792.5	55,124.70			55,124.70		
			327	Conservation Cover	Acres	3.5	6%	0.2									
			550	Range Planting	Acres	None	6%	0									
			649	Structures for Wildlife	#	None	6%	0									
		<b>BM-14</b> Maintain and/or increase voluntary conservation activities that manage or enhance livestock compatibly with wildlife	528	Prescribed Grazing	Acres	2392.3	6%	143.5	143.5	<b>717.7</b>	11,961.5	57,935.30			57,935.30		
			382	Fence	Feet	9401.6	3%	282	282	<b>1,410.20</b>	47,008.0	102,841.70			102,841.70		
			614	Watering Facility	#	4	0	0	0	<b>0</b>	20.0	52.00			52.00		
		<b>BM-15</b> Maintain and/or increase voluntary conservation activities that manage or enhance orchard compatibility with wildlife	n/a	Global G.A.P IFA Fruit & Vegetables Standard Certificate	Data is currently lacking, but will be collected as part of the VSP implementation process. The primary source of data collection will be through the VSP Producer Survey. A quantified benchmark will be set following data collection. Other sources of data will be evaluated and incorporated as part of the adaptive management process.												
			Multiple <sup>5</sup>	Pollinator Habitat Creation/Management													
			649	Structures for Wildlife													
		<b>BM-16</b> Maintain and/or increase voluntary conservation activities that manage or enhance dryland farming compatibility with wildlife	328	Conservation Crop Rotation	Acres	216.8	6%	13	24.8	<b>124</b>	2,993.0	12,980.40	5560			18,540.40	
			340	Cover Crop	Acres	19	6%	1									
			329	Residue and Tillage Management- No Till	Acres	362.8	3%	10.8									
		<b>BM-17</b> Maintain and/or increase voluntary conservation activities that manage fuel loads to decrease the risk of fire	528	Prescribed Grazing	Acres	2392.3	6%	143.5	344.3	<b>1,721.60</b>	36,657.0	112,786.00	1,478.50			114,264.50	
			645	Upland Wildlife Habitat Management	Acres	1755	6%	105.3									
			595	Pest Management	Acres	3184.1	3%	95.5									

Table 8-2: Protection and Enhancement Benchmarks

Goal	Objective	Benchmark	Key voluntary conservation activities		Historic Enrollment Data 2004-2011		Estimated Yearly Discontinuation			Every 5 year Protection Benchmark <sup>1 2</sup> (add an additional x acres, feet, etc.)	Every 5 year Enhancement Benchmark <sup>3</sup> (add an additional x acres, feet, etc.)	VSP Implementation 2012-2017			
			NRCS Code	Activity	Unit	Average Annual	Annual %	Average Annual Discontinuation	Summed Annual Discontinuation			NRCS	CD projects	Self-funded	Total
Protect and/or enhance baseline fish and wildlife habitat functions and values of critical areas in Douglas County where agricultural activities occur	Protect and/or enhance riparian and wetland habitat through implementation of voluntary conservation activities	<b>BM-3</b> Maintain and/or increase voluntary conservation activities that protect riparian and wetland habitat	See BM-3 above												
		<b>BM-10</b> Maintain and/or increase voluntary conservation activities that enhance and restore riparian and wetland habitat	See BM-10 above												
	Protect and/or enhance aquatic habitat through implementation of voluntary conservation activities	<b>BM-7</b> Maintain and/or increase voluntary conservation activities that reduce wind or water soil erosion	See BM-7 above												
		<b>BM-8</b> Maintain and/or increase voluntary conservation activities that manage chemicals and nutrients	See BM-8 above												
		<b>BM-9</b> Maintain and/or increase voluntary conservation activities that filter chemicals and sediment	See BM-9 above												
		<b>BM-3</b> Maintain and/or increase voluntary conservation activities that protect riparian and wetland systems	See BM-3 above												
		<b>BM-1</b> Maintain and/or increase voluntary conservation activities that promote soil-water holding capacity	See BM-1 above												

Table 8-2: Protection and Enhancement Benchmarks

Goal	Objective	Benchmark	Key voluntary conservation activities		Historic Enrollment Data 2004-2011		Estimated Yearly Discontinuation			Every 5 year Protection Benchmark <sup>1 2</sup> (add an additional x acres, feet, etc.)	Every 5 year Enhancement Benchmark <sup>3</sup> (add an additional x acres, feet, etc.)	VSP Implementation 2012-2017			
			NRCS Code	Activity	Unit	Average Annual	Annual %	Average Annual Discontinuation	Summed Annual Discontinuation			NRCS	CD projects	Self-funded	Total
Protect and/or enhance baseline critical area functions and values throughout Douglas County where agricultural activities occur	Protect and/or enhance critical areas by securing conservation easements that allow compatible agricultural activities	<b>BM-18</b> Maintain and/or increase the number of acres in conservation easements that have active, compatible agricultural activities occurring		Conservation easement	Acres	<b>2011 total = 560</b>									

<sup>1</sup> Estimate of enrollments needed to offset anticipated disenrollment rates and maintain baseline protection at the watershed level. Adjustments, based on actual enrollment and/or disenrollment data, may be needed to correct estimated acres or feet of new enrollment needed to maintain baseline protections (see adaptive management Section 9.5 for details).

<sup>2</sup> To ensure that conversions from Agriculture to non-Agriculture uses do not inappropriately skew benchmarks, acre or feet metrics assessed and reported here may also be assessed and reported as a percentage of acres or feet.

<sup>3</sup> To promote long-term program success, the work group will make separate assessments to determine whether protection goals and benchmarks are being met, on one hand, and whether enhancement goals and benchmarks are being met, on the other. See page 7 of this work plan for more detail on the differing statutory consequences for failing to meet protection goals and benchmarks versus failing to meet enhancement goals and benchmarks.

<sup>4</sup> Organic Certification data from WSU at <http://csanr.wsu.edu/trends-in-washington-agriculture/organic-statistics/>

<sup>5</sup> Pollinator habitat can be implemented through many voluntary conservation activities, as long as providing pollinator habitat is a stated objective, including but not limited to: Conservation Cover, Field borders, Buffer Strips, Filter Strips, Hedge Rows, Wind Breaks

## 8.5 Indicators

Indicators are measurable ecological attributes that inform benchmarks, protection of critical area functions and values, and adaptive management. Failure to meet any of the indicator thresholds identified in adaptive management plans will not subject the county to RCW 36.70A.735.

The primary purpose of the indicators set forth in this work plan is to help understand what effect the conservation activities contained in the participatory benchmarks are having to the physical parameters of critical areas. Indicators directly measure functions and values, or their proxies, of critical areas. However, as noted above in Section 8.1, it may be difficult to discern agriculture's impact to indicators and any trend in indicators may take years to become apparent. Changes in such indicators may also be affected by many non-agricultural factors or actors beyond the scope and jurisdiction of the VSP and beyond the control of agriculture. Any declining trend in indicators that is not clearly caused by agricultural activities will be excluded to ensure that such effects are not inappropriately counted against the Douglas County agricultural community for VSP reporting purposes.

The secondary purpose of setting indicators is to attempt to house relevant ecological data collected in Douglas County in one location. The goal is to facilitate cooperation among the various federal, state, and local agencies in making more effective, coordinated, and informed land management decisions.

Goal	Indicator	Parameter	Monitoring <sup>1</sup>
Protect and/or enhance baseline fish and wildlife habitat functions and values of critical areas in Douglas County where agricultural activities occur	I-1	Extent of shrub-steppe habitat in Douglas County	Remote Vegetation Monitoring and Change Detection Protocol
	I-2	Extent of riparian areas in Douglas County	
	I-3	Extent of wetlands in Douglas County	
	I-4	Extent of Conservation Reserve Program lands in Douglas County <sup>2</sup>	MSGCP monitoring. Data provided by FSA office in Waterville.
	I-5	Quality of shrub-steppe habitat in Douglas County	MSGCP monitoring: Producers participating in the MSGCP will collect long-term trend data at monitoring points on the ground that will include photo points and direct vegetation measurements. Habitat condition trend data can then be summarized at the watershed scale.
Protect and/or enhance baseline water quality functions and values of critical areas in Douglas County where agricultural activities occur	I-6	303d lists	Washington Department of Ecology
	I-7	Long term trend data for temperature, pH, dissolved oxygen, and turbidity	FCCD water quality program
	I-8	Groundwater quality monitoring	Washington Department of Health
Protect and/or enhance baseline hydraulic functions and values of critical areas in Douglas County where agricultural activities occur	I-9	Groundwater Quantity Monitoring*	Potential funding from: -DOE Centennial/319 Clean Water Program* -DOE Husseman's Grant* - Greater Wenatchee Irrigation District has real-time water level data
	I-10	In-stream flow monitoring*	Potential funding from: -DOE Centennial/319 Clean Water Program* -DOE Husseman's Grant* -WSDA* -Salmon recovery funding such as SRFB, TRIB, BPA (Foster Creek only)*
Protect and/or enhance baseline soil health functions and values of critical areas in Douglas County where agricultural activities occur	I-11	Long term crop yield/acre data	-Wheat yield data collected annually by the Central Washington Grain Growers - Meaningful yield data for orchardists at the county scale not currently available/attainable, will be reevaluated through programmatic adaptive management <sup>1*</sup>
	I-12	Turbidity parameter of water quality monitoring	See I-6 and I-7

<sup>1</sup>More detailed information on monitoring and adaptive management can be found in Chapter 9 and Appendix H

<sup>2</sup>CRP lands with temporary habitat improvements are included in VSP as enhancements to FWCHA only, see p. 61 for details

\*Monitoring not currently funded/implemented. VSP implementation will seek to fund monitoring effort

Table 8-3: Indicators of critical area protection in Douglas County

## 9.0 Monitoring and Adaptive Management

This chapter explains the Douglas County VSP monitoring and adaptive management strategy consistent with requirements in the VSP statute, specifically RCW 36.70a.720(1)(i-k).

### 9.1 Program Implementation Monitoring

There are five different types of implementation activities in the Douglas County VSP that will be monitored. These activities are, completing the producer survey, completing one of the three farm-scale stewardship plans, implementing conservation activities, participation in educational events, and VSP outreach events/tasks. Further explanation of each of these activities are discussed in Chapter 10 of this work plan. The methodology for accounting for and documenting these activities as part of the VSP implementation is described below.

A **VSP Implementation Database** will be developed and housed on the FCCD shared drive. The database will consist of one, or likely several Microsoft Excel, Access, or other database program documents and store all data relevant to VSP implementation. The database should organize information in such a way that it is easy to understand and easy to convert into VSP progress and status reports required by the VSP statute as discussed in Section 10.5.

The **VSP Producer Survey** will be administered both online and in hardcopy format. Surveys will be processed by the VSP Coordinator as they are received. A running total of total surveys received, as well as watershed scale survey results will be stored in the VSP implementation database.

As discussed in Section 7.8, there are three different types of **farm-scale stewardship plans** that fall under the VSP umbrella. Completion of farm-scale plans will be kept track of by the technical service provider that assists in the completion of the plan. Therefore, FCCD will track completion of Individual Stewardship Plans and MSGCP Site Specific Plans, SDCD will track completion of Individual Stewardship Plans they complete, and NRCS will track their Conservation Plans. FCCD will store data regarding plan completion in the VSP implementation database. NRCS and SDCD will provide data to FCCD on plans completed when requested, likely biennially as is needed for progress reporting.

Monitoring of **conservation activity implementation** is discussed in Section 9.2 below.

A wide variety of different **educational activities and events** that are relevant to critical area protection and enhancement and/or agricultural viability are undertaken by the various technical service providers (TSP) in Douglas County. Educational events are generally documented by the TSP that hosts the event. However, it is the responsibility of the VSP Coordinator to ensure that all educational events relating to VSP are accounted for in VSP reporting. In most cases, FCCD and the VSP Coordinator are aware of events hosted by other TSPs and the necessary information can be attained by a phone and/or email conversation following the event. At a minimum, the documentation should show the topic of the event and the number of people that attended. All information collected will be stored in the VSP Implementation Database.

All **VSP outreach events/tasks completed** as directed by the Communication and Outreach Plan (Section 10.1) will be tracked and recorded in the VSP Implementation Database. Where possible data for each event/task should include: when, where, who the target audience was, the primary mode of communication, and number of individuals reached.

It will be important to track participation by agricultural commodity type for all program implementation monitoring. Each agricultural commodity type has a different set of resource and agricultural viability concerns. If one specific commodity group is participating at a low level, programmatic adaptive management identified in Section 9.5.3 specifies actions to be taken to increase participation levels.

## 9.2 Benchmark Monitoring

Data tracking the implementation of conservation activities will be gathered from three different sources: NRCS enrollment data, CD project enrollment data, and the VSP producer survey. The following methods will be used to track the implementation of conservation activities and the Douglas County VSP protection and enhancement benchmarks:

- 1) In December of each year, the VSP Coordinator will request anonymous and summarized NRCS conservation practice enrollment data.
- 2) The data will be reviewed to ensure quality assurance. Obvious duplicates will be removed and errors will be rectified. NOTE: Enrollment data from the year in question and the previous two years is needed to do a QA check. This is because NRCS contracts are for three years and some practices get certified, and therefore recorded every year, while others do not. Duplicates are removed when data shows contracts with consecutive years of the exact same contract number, practice, and acres. Obvious inconsistencies need to be clarified with NRCS personnel.
- 3) The VSP coordinator will then gather all conservation activity implementation data from CD led projects from both FCCD and SDCD.
- 4) Data of self-funded conservation activities gathered via the VSP producer survey will be added to implementation totals.
- 5) Progress towards each benchmark will be calculated by summing enrollment data from all three sources for all conservation activities that contribute to that benchmark.

## 9.3 Indicator Monitoring

To the extent possible and available, Indicators used in this VSP work plan were built around existing monitoring efforts already taking place in Douglas County. This section identifies those monitoring efforts and provides references for further monitoring protocols and details.

**I-1 Extent of shrub-steppe habitat in Douglas County:** Data to be collected and analyzed by the VSP coordinator and/or FCCD GIS technician following the Remote Vegetation Monitoring and Change Detection Protocol. This protocol can be found in Appendix H of this work plan.

**I-2 Extent of riparian areas in Douglas County:** Data to be collected and analyzed by the VSP coordinator and/or FCCD GIS technician following the Remote Vegetation Monitoring and Change Detection Protocol. This protocol can be found in Appendix H of this work plan.

**I-3 Extent of wetlands in Douglas County:** Data to be collected and analyzed by the VSP coordinator and/or FCCD GIS technician following the Remote Vegetation Monitoring and Change Detection Protocol. This protocol can be found in Appendix H of this work plan.

**I-4 Extent of Conservation Reserve Program lands in Douglas County:** This is a requirement of the MSGCP Adaptive Management and Monitoring Plan (AMMP). Data at the county scale will be provided upon request by the Farm Service Agency. The AMMP can be found in Appendix D of this work plan.

**I-5 Quality of shrub-steppe habitat in Douglas County:** Data on shrub-steppe quality will be collected as part of the MSGCP AMMP (Appendix D). This data collection occurs on the ground at selected points in enrolled acres and non-enrolled control points. Fixed photo-point monitoring will occur at selected points annually. Quantitative data collection will occur every five years and include ground cover data, key species cover data, and key species density data. The data will be collected following protocols and using data forms developed by the Sage Grouse Initiative (SGI) (See Appendix D). For each monitoring point, a determination of habitat condition trend will be made, i.e. improving, decreasing, or static. Habitat condition trend data can then be summarized at the watershed and/or county level, e.g. 65% of monitoring sites show an improved condition, 30% show a static condition, and 5% show a decreased condition.

**I-6 303d lists:** Section 303(d) of the Federal Clean Water Act established a process to identify and clean up polluted waters. Every two years, all states are required to perform a water quality assessment of the quality of surface waters in the state. The Washington Department of Ecology (DOE) is the state agency responsible for compiling data and identifying polluted waters. The 303d list identifies waters whose beneficial uses, such as for drinking, recreation, aquatic habitat, and industrial use, do not meet the state's surface water quality standards. Information on DOE's water quality monitoring program can be found at <http://www.ecy.wa.gov/programs/wq/links/standards.html>

**I-7 Long term trend data for temperature, pH, dissolved oxygen, and turbidity:** These data will be collected as part of FCCD's water quality monitoring program. This program is funded by DOE and all data collected adhere to DOE standards and protocols. All data collected as part of this effort will be uploaded into the DOE's *Environmental Information Management* database. A detailed description of monitoring activities and protocols can be found in the document entitled *Quality Assurance Project Plan, Douglas County Water Quality Improvement Program* on file in the FCCD office. Figure 9-1 show the locations of monitoring points as of approval of this work plan. It is likely that additional monitoring locations will be added in the future, but future continuation of the monitoring program is contingent on successful grant applications.



### FCCD Water Quality Monitoring Locations

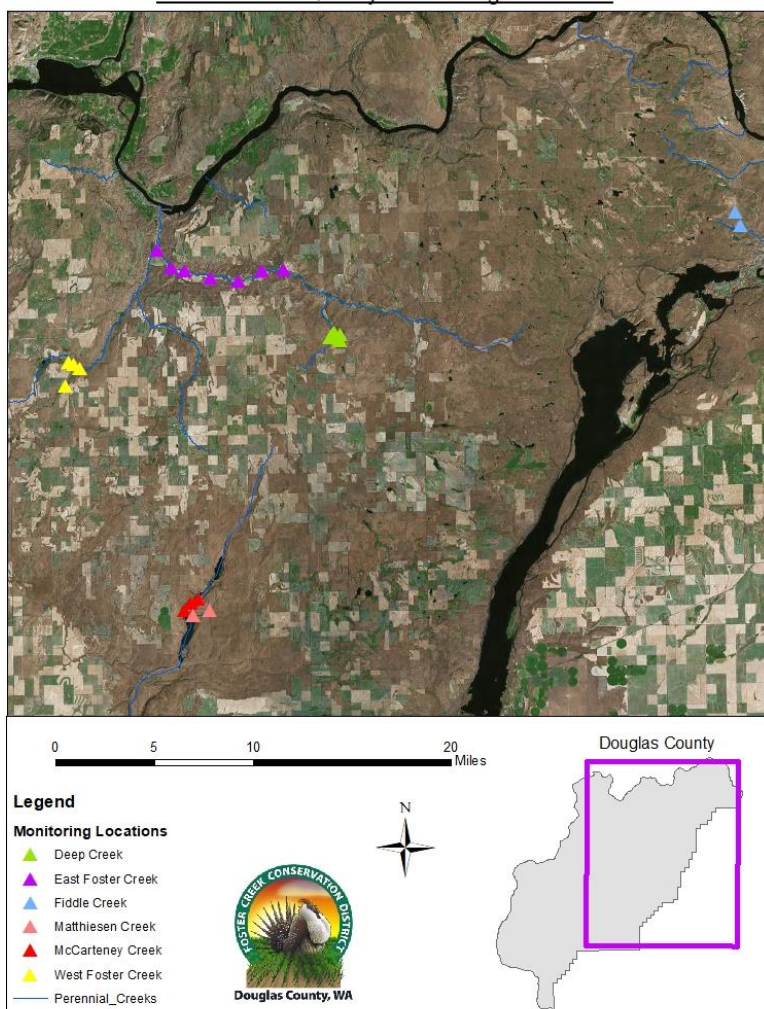


Figure 9-1: Current Water Quality Monitoring Locations

**I-8 Groundwater quality monitoring:** The Washington Department of Health (WDOH) conducts regular testing of all groundwater used for public drinking water. WDOH has agreed to provide annual reports on Douglas County monitoring results that potentially relate to agriculture, including nitrates, pesticides and herbicides. It is the responsibility of the VSP coordinator to contact WDOH to obtain the monitoring data on an annual basis to include in the annual report to the work group. The VSP coordinator should contact WDOH's Office of Drinking Water for data<sup>5</sup>. More information on WDOH's water quality monitoring program can be found at

<https://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater>.

<sup>5</sup> Phone #: 360-236-3197

Additional groundwater quality data would be available if a Groundwater Management/Advisory Area were established in Douglas County. A change to the monitoring of indicators would be initiated as part of the Programmatic Adaptive Management process (Section 9.5.3).

**I-9 Groundwater quantity monitoring:** Monitoring of this indicator is not currently funded or implemented. The VSP implementation effort will seek to fund this monitoring effort, and reporting on this indicator will begin once the monitoring has been funded. Future FCCD water quality program projects may fund monitoring of this indicator, especially for measuring groundwater quantity near streams to determine riparian area function.

Groundwater quantity monitoring was historically conducted for several years by FCCD staff. Although monitoring is not currently taking place, monitoring instruments remain in several wells around Douglas County. Wells to be monitored will be selected based on landowner agreement, geographic priority, spatial separation, and funding availability as part of the VSP implementation process. Monitoring requirements for this indicator may vary depending on the future funding source.

While county wide monitoring of this indicator is not currently funded, the Greater Wenatchee Irrigation District does have real-time water level information for several of their wells in the Orondo vicinity. To obtain data from the district, the VSP coordinator will place a request prior to the start of the irrigation season each spring.

**I-10 Instream flow recommendations:** Monitoring of this indicator is not currently funded or implemented. The VSP implementation effort will seek to fund this monitoring effort, and reporting on this indicator will begin once the monitoring has been funded.

*The Watershed Management Plan, Moses Coulee and Foster Creek Watersheds WRIA 44 & 50 set instream flow recommendations for Foster Creek, at the Bridgeport irrigation diversion dam at RM 1.03, and Douglas Creek at RM 1.3. The exact recommendations can be found in Section 7.3. Monitoring requirements for this indicator may vary depending on the future funding source.*

**I-11 Long term crop yield data:** Wheat yield data to be provided annually upon request from the Central Washington Grain Growers office located at 104 E Ash St, Waterville, WA 98858. Ph.: 509-745-8851

Data concerning spatial location of crops grown in Douglas County, which can be used to calculate total acreage in production for each crop, is generated by the WSDA Natural Resources Assessment Section. The VSP coordinator can obtain these GIS data by contacting WSDA, or by downloading the data here: <https://agr.wa.gov/PestFert/natresources/AgLandUse.aspx>.

Meaningful yield data for tree fruit is not currently available on the county level. In developing this work plan, the VSP coordinator contacted many groups including, the Apple Commission, Pear Bureau, Stone Fruit Association, Washington Tree Fruit Association, WSU Tree Fruit Research and Extension Center, and several individual packing warehouses. Total production is not measured on the county level. Statistics on boxes shipped out of Wenatchee is kept, but this includes not only Douglas County, but Chelan, Okanogan, and other parts of Washington as well. The amount, availability, and quality of data collected by packers varies. Adaptive management undertaken during future VSP implementation will reevaluate yield data for Tree Fruit in Douglas County, and incorporate it into I-11 if it can be done in a meaningful way.

In developing the work plan, the work group discussed shortcomings of I-11 for measuring soil health. The primary issue is that measuring the amount of wheat that makes it to grain elevators (or fruit that

makes it to or leaves packing warehouses) doesn't account for all production. There are a wide variety of reasons that a crop wouldn't make it to these collection points completely independent of soil health, such as lack of labor during harvest, weather damage, or low quality crop for some other reason. The group does acknowledge that soil health is a very difficult parameter to measure on a watershed scale. The group also acknowledges that I-11 is a decent measure of agricultural viability in Douglas County.

**I-12 Turbidity parameter of water quality monitoring:** See I-6 and I-7 above.

## 9.4 Assistance to State Agencies

The VSP statute states that, "State agencies conducting new monitoring to implement the program in a watershed must focus on the goals and benchmarks of the work plan" (RCW 36.70A.705), and that "In developing and implementing the work plan, the watershed group must...Assist state agencies in their monitoring programs" (RCW 36.70A720(1)(k)). There are two primary ways this work plan will meet the statute mandate:

- 1) All water quality data collected as part of indicator I-7 under FCCD's or any other VSP water quality monitoring program will be uploaded in the Department of Ecology's *Environmental Information Management* (EIM) database. EIM is a database containing data collected by DOE staff and affiliates. More information about EIM can be found at <http://www.ecy.wa.gov/eim/index.htm>.
- 2) In developing this work plan, the VSP work group and coordinator asked local WDFW staff how to best meet the above mandate. WDFW's response was that VSP could attempt to help WDFW gain access to private lands. To that end, TSPs will have conversations with landowners during farm-scale planning efforts to discuss the benefits that improved monitoring efforts can have on land and wildlife management decisions and will notify WDFW if the landowner is willing to allow access for specific species surveys or habitat monitoring efforts. The conservation districts and private landowners can also work with WDFW and USFWS to report back evidence of sensitive species. WDFW biologists can offer training to the conservation districts and interested private landowners. This would include all state and federally listed, as well as candidate species.

Additionally, WDFW is represented on the MSGCP Implementation and Monitoring Committee. All MSGCP and VSP implementation and monitoring activities will be closely coordinated between WDFW and FCCD. All habitat data collected as part of the MSGCP will be available to, and discussed with WDFW.

## 9.5 Adaptive Management

Adaptive management is an iterative process designed to inform and improve management decisions and actions. Sound adaptive management planning requires the identification of monitoring, timeframes, action thresholds, and actions to be taken if a threshold is reached. If monitoring data indicates that a threshold has been reached, then established actions will be implemented to address the issue. All adaptive management thresholds and responses set forth in this work plan are non-regulatory, although, in the case of adaptive management for the protection benchmarks, they are designed to prevent the “failing out” of VSP.

There are three different types of adaptive management in this work plan: adaptive management designed to ensure that the protection benchmarks of this work plan are met (Table 9-1); adaptive management designed to respond to changes in indicators of critical area functions (Table 9-2); and adaptive management designed to improve the VSP program and work plan over time (Table 9-3). The tables in the sections below describe adaptive management for the Douglas County VSP. These tables can also be found in Attachments 1 (benchmarks) and 2 (indicators).

### 9.5.1 Benchmarks

The adaptive management action threshold for all benchmarks (except see footnote Table 9-4) was determined based upon a buffered estimate of annual discontinuation. This buffered estimate was calculated by examining and accounting for the variation in historic conservation activity enrollment data. This approach helps to ensure that protection of critical areas in the context of VSP is achieved, and it allows the work group to be highly proactive in addressing enrollment shortfalls that could threaten the VSP protection standard. The following steps were taken to set the action threshold for adaptive management of benchmarks:

1. A standard deviation of historic (2004-2011) annual enrollment for each key conservation activity was calculated using excel.
2. The calculated standard deviation was added to average historic annual enrollment for each key conservation activity.
3. The product of step #2 was multiplied by the estimated discontinuation rate for each key conservation practice, resulting in a buffered estimate of annual discontinuation for each key conservation activity.
4. The action threshold for each benchmark was set by summing the buffered estimates of annual discontinuation for each key conservation activity that contributes to the particular benchmark.

Key Conservation Activities		Standard Deviation of Enrollment 2004-2011	Average Historic Annual Enrollment (2004-2011)	Average Enrollment (2004-2011) + Standard Deviation	Estimated Discontinuation	Buffered Estimate of Annual Discontinuation
NRCS Code	Activity					
327	Conservation Cover	5.15	3.50	8.65	6%	0.52
328	Conservation Crop Rotation	573.70	216.80	790.50	6%	47.43
340	Cover Crop	33.28	19.00	52.28	6%	3.14
382	Fence	10,974.55	9,401.60	20,376.15	3%	611.28
386	Field Border	6.25	13.50	19.75	6%	1.19
441	Irrigation System - Micro irrigation	7.48	5.50	12.98	0%	0.00
449	Irrigation Water Management	44.81	35.40	80.21	3%	2.41
516	Livestock Pipeline	3,947.66	4,338.10	8,285.76	0%	0.00
590	Nutrient Management	4,510.18	6,127.80	10,637.98	3%	319.14
595	Pest Management	5,938.69	3,174.10	9,112.79	3%	273.38
528	Prescribed Grazing	4,006.72	2,392.30	6,399.02	6%	383.94
550	Range Planting	0.00	0.00	0.00	6%	0.00
329	Residue and Tillage Management - No-Till/ Strip Till/ Direct Seed	476.25	362.80	839.05	3%	25.17
345	Residue Management - Reduced Till	0.00	0.00	0.00	3%	0.00
442	Sprinkler System	28.42	18.50	46.92	0%	0.00
649	Structures for Wildlife	0.00	0.00	0.00	0%	0.00
645	Upland Wildlife Habitat Management	3,499.68	1,755.00	5,254.68	6%	315.28
614	Watering Facility	3.67	4.00	7.67	0%	0.00
BMP	Riparian Buffer	Enhancement only				
WSDA	Organic Certification	Protection benchmark based on actual 2011 enrollment data, not a historical average				
n/a	GlobalG.A.P IFA Fruit & Vegetables Standard Certificate	To be determined through VSP implementation. Data will be collected through the VSP Producer Survey.				
Multiple	Pollinator Habitat Creation/ Management	To be determined through VSP implementation. Data will be collected through the VSP Producer Survey.				

Table 9-1: Setting the buffered estimate of annual discontinuation

Table 9-2: Adaptive Management Matrix for Benchmarks

Benchmark	Unit	Every 5 Year Protection Benchmark (add an additional x acres, feet, etc. to account for discontinuation)	Monitoring Method	Action Threshold: Annual Enrollment < the Summed Buffered Estimate of Annual Discontinuation for Contributing Conservation Activities	Actions	Evaluation Frequency	Who is Responsible
<b>BM-1</b> Maintain and/or increase voluntary conservation activities that promote soil-water holding capacity	Acres	124.0	- NRCS contract data - CD project data - VSP producer survey data	75.7	- Check the numbers through verification of data and survey results - Increase outreach to producers - Seek additional cost share opportunities	Annual	VSP Coordinator
<b>BM-2</b> Maintain and/or increase voluntary conservation activities that limit soil compaction	Acres	776.7	- NRCS contract data - CD project data - VSP producer survey data	412.2	- Check the numbers through verification of data and survey results - Increase outreach to producers - Seek additional cost share opportunities	Annual	VSP Coordinator
<b>BM-3</b> Maintain and/or increase voluntary conservation activities that protect riparian and wetland systems	Acres	979.5	- NRCS contract data - CD project data - VSP producer survey data	400.5	- Check the numbers through verification of data and survey results - Increase outreach to producers - Seek additional cost share opportunities - Increase implementation of conservation activities that enhance and restore riparian and wetland habitat	Annual	VSP Coordinator
	Feet	1,410.2		611.3			
<b>BM-4</b> Maintain and/or increase voluntary conservation activities that decrease evapotranspiration	Acres	119.0	- NRCS contract data - CD project data - VSP producer survey data	72.6	- Check the numbers through verification of data and survey results - Increase outreach to producers - Seek additional cost share opportunities	Annual	VSP Coordinator
<b>BM-5</b> Maintain and/or increase voluntary conservation activities that promote the efficient use of irrigation water	Acres	5.0	- NRCS contract data - CD project data - VSP producer survey data	2.4	- Check the numbers through verification of data and survey results - Increase outreach to producers - Seek additional cost share opportunities	Annual	VSP Coordinator
<b>BM-6</b> Maintain and/or increase voluntary conservation activities that promote the beneficial use of water in ranching	Disenrollment rate = 0		- NRCS contract data - CD project data - VSP producer survey data	None		Annual	VSP Coordinator
<b>BM-7</b> Maintain and/or increase voluntary conservation activities that reduce wind or water soil erosion	Acres	847.0	- NRCS contract data - CD project data - VSP producer survey data	462.1	- Check the numbers through verification of data and survey results - Increase outreach to producers - Seek additional cost share opportunities	Annual	VSP Coordinator
<b>BM-8</b> Maintain and/or increase voluntary conservation activities that manage chemicals and nutrients	Acres	1,397.0	- NRCS contract data - CD project data - VSP producer survey data	592.5	- Check the numbers through verification of data and survey results - Increase outreach to producers - Seek additional cost share opportunities	Annual	VSP Coordinator
	Acres	2,200.0	data from WSU at <a href="http://csanr.wsu.edu/trends-in-washington-agriculture/organic-statistics/">http://csanr.wsu.edu/trends-in-washington-agriculture/organic-statistics/</a>	Enrollment drops to < 2,640 acres <sup>1</sup>			
<b>BM-9</b> Maintain and/or increase voluntary conservation activities that filter chemicals and sediment	Acres	75.0	- NRCS contract data - CD project data - VSP producer survey data	51.8	- Check the numbers through verification of data and survey results - Increase outreach to producers - Seek additional cost share opportunities	Annual	VSP Coordinator
<b>BM-10</b> Implement voluntary conservation activities that enhance and restore riparian and wetland habitat	Enhancement only		- NRCS contract data - CD project data - VSP producer survey data	Increase implementation of conservation activities that enhance and restore riparian and wetland habitat triggered if the trigger for BM-3 reached			
<b>BM-11</b> Maintain and/or increase voluntary conservation activities that decrease soil bulk density and increase heterogeneity	Acres	124.0	- NRCS contract data - CD project data - VSP producer survey data	75.7	- Check the numbers through verification of data and survey results - Increase outreach to producers - Seek additional cost share opportunities	Annual	VSP Coordinator
<b>BM-12</b> Maintain and/or increase voluntary conservation activities that add organic matter to soil	Acres	124.0	- NRCS contract data - CD project data - VSP producer survey data	79.2	- Check the numbers through verification of data and survey results - Increase outreach to producers - Seek additional cost share opportunities	Annual	VSP Coordinator
<b>BM-13</b> Maintain and/or increase voluntary conservation activities that manage or enhance upland habitat for wildlife	Acres	529.0	- NRCS contract data - CD project data - VSP producer survey data	315.8	- Check the numbers through verification of data and survey results - Increase outreach to producers - Seek additional cost share opportunities	Annual	VSP Coordinator
<b>BM-14</b> Maintain and/or increase voluntary conservation activities that manage or enhance livestock compatibility with wildlife	Acres	717.1	- NRCS contract data - CD project data - VSP producer survey data	383.9	- Check the numbers through verification of data and survey results - Increase outreach to producers - Seek additional cost share opportunities	Annual	VSP Coordinator
	Feet	1,410.2	- VSP producer survey data	611.3			
<b>BM-15</b> Maintain and/or increase voluntary conservation activities that manage or enhance orchard compatibility with wildlife	Adaptive management to be developed when data becomes available		- CD project data - VSP producer survey data	Adaptive management to be developed when data becomes available		Annual	VSP Coordinator
<b>BM-16</b> Maintain and/or increase voluntary conservation activities that manage or enhance dryland farming compatibility with wildlife	Acres	124.0	- NRCS contract data - CD project data - VSP producer survey data	28.8	- Check the numbers through verification of data and survey results - Increase outreach to producers - Seek additional cost share opportunities	Annual	VSP Coordinator
<b>BM-17</b> Maintain and/or increase voluntary conservation activities that manage fuel loads to decrease the risk of fire	Acres	1,721.6	- NRCS contract data - CD project data - VSP producer survey data	972.6	- Check the numbers through verification of data and survey results - Increase outreach to producers - Seek additional cost share opportunities	Annual	VSP Coordinator
<b>BM-18</b> Maintain and/or increase the number of acres in conservation easements that have active, compatible agricultural activities occurring	Disenrollment rate = 0		Data from Chelan Douglas Land Trust	None		Annual	VSP Coordinator

<sup>1</sup> This action threshold is 120% of actual 2011 enrollment, not the 2004-2011 average of enrollment.

Indicator	Parameter	Monitoring Responsibility	Action Threshold	Actions to be taken if threshold is reached	Evaluation Frequency	Action Responsibility
I-1	Extent of shrub-steppe habitat in Douglas County	VSP Coordinator	Loss of > 200 acres of shrub-steppe habitat (non-CRP/SAFE) from the 2011 baseline due to conversion to crop field	- Seek/implement enhancement projects to existing shrub-steppe - Seek/implement additional incentives to convert crop fields to habitat -Seek/implement additional conservation activities that contribute to habitat goals and benchmarks	biennial	FCCD
			<sup>1</sup> Loss of shrub-steppe vegetation cover > 20,000 acres in one year due to wildfire	- Implement additional control of invasive weed species in burn area if needed -Implement restoration after wildfire if needed	annual	FCCD
I-2	Extent of riparian areas in Douglas County	VSP Coordinator	Decrease of > 5% from the 2011 baseline in riparian cover across the county	- Determine the cause of loss through cross referencing of areal photos, fire maps, site visits, etc. and evaluate ways to address the loss -implement riparian restoration projects (if possible at locations of loss) -seek additional cost share for conservation activities that protect riparian areas	biennial	FCCD
I-3	Extent of wetlands in Douglas County	VSP Coordinator	Conversion of > 5 acres of naturally occurring wetlands in 2011 to agriculture	- Implement wetland restoration projects, especially for wetlands occurring in crop fields - Seek incentives to covert wetlands that are currently farmed -Seek landowners to implement additional conservation activities that protect existing wetlands	biennial	FCCD
I-4	Extent of Conservation Reserve Program and/or SAFE lands in Douglas County	MSGCP/FCCD	<sup>1</sup> Conversion of any conservation lands back to active farming	- Seek to enroll lands in conservation activities that contribute to the protection and enhancement goals of this work plan	annual	FCCD
I-5	Quality of shrub-steppe habitat in Douglas County	MSGCP/SGI/FCCD	A quantitative or qualitative (photo monitoring) decrease in shrub-steppe habitat quality at > 5% of monitoring locations	- Examine sample size and data variability, if more data is needed to make reasonable conclusions then adaptive management should focus effort to collect additional data - Evaluate potential cause of decrease in quality, i.e. fire, incorrect implementation, climate, incorrect conservation activity -Reevaluate and adjust conservation activities as needed to improve shrub-steppe quality	Every 5 years	FCCD
I-6	303d lists	Washington Department of Ecology	A new category 5 listing	- Focus outreach, restoration, and implementation of conservation activities that contribute to water quality goals and benchmarks in the HUC 12 of the listing	biennial	FCCD
I-7	Long term trend data for temperature, pH, dissolved oxygen, and turbidity	FCCD	A significant worsening in one or more water quality parameters	- Examine sample size and data variability, if more data is needed to make reasonable conclusions then adaptive management should focus effort to collect additional data - Focus outreach, restoration, and implementation of conservation activities that contribute to water quality goals and benchmarks in the HUC 12 of the monitoring station	Every 5 years	FCCD
I-8	Groundwater quality monitoring	Washington Department of Health	A result greater than the Maximum Contaminant Level standard for a parameter linked with agriculture	- Examine the trend of monitoring results for the well to determine if things are getting better, getting worse, staying the same, or not determinable from the data. If data is highly variable, or sample size too small, collect additional data. - A targeted education and outreach effort in the vicinity of the result. Topic may include proper application techniques, including chemigation and fumigation, and the importance of checking old wells for proper construction -Seek/implement additional conservation activities that address groundwater quality benchmarks in the vicinity of the result	annual	FCCD
I-9	Groundwater Quantity Monitoring*	FCCD	A decrease in > 10% of water level in a monitored well	- Examine sample size and data variability, if more data is needed to make reasonable conclusions then adaptive management should focus effort to collect additional data -Determine the role of climate and use patterns - Focus outreach and implementation of conservation activities that contribute to hydrology goals and benchmarks in the affected areas	annual	FCCD
I-10	In-stream flow recommendations*	FCCD	Water levels below recommendations set in the Watershed Management Plan Moses Coulee and Foster Creek Watersheds WRIA 44 & 50	- Examine sample size and data variability, if more data is needed to make reasonable conclusions then adaptive management should focus effort to collect additional data -Determine the role of climate - Focus outreach and implementation of conservation activities that contribute to hydrology goals and benchmarks in the relevant watershed	annual	FCCD
I-11	Long term crop yield/acre data	Central Washington Grain Growers	A significant decrease in long term yield/acre	- Examine sample size and data variability, if more data is needed to make reasonable conclusions then adaptive management should focus effort to collect additional data -Determine the role of climate - Focus outreach and implementation of conservation activities that contribute to soil health goals and benchmarks	Every 5 years	FCCD
I-12	Water quality turbidity parameter	FCCD	A significant worsening in the water quality parameters	- Examine sample size and data variability, if more data is needed to make reasonable conclusions then adaptive management should focus effort to collect additional data - Focus outreach, restoration, and implementation of conservation activities that contribute to water quality goals and benchmarks in the HUC 12 of the monitoring station	Every 5 years	FCCD

<sup>1</sup> Action threshold and action taken from the MSGCP

\*Monitoring not currently funded/implemented. VSP implementation will seek to fund monitoring effort

### 9.5.3 Programmatic

Item	Questions to answer	Potential Actions	Frequency
Key Conservation Activities	<ul style="list-style-type: none"> <li>- Is the activity still key in Douglas County?</li> <li>- Are there new/emerging activities that are relevant to include?</li> <li>- Which benchmarks are affected?</li> </ul>	<ul style="list-style-type: none"> <li>- Add new conservation activities and subtract old ones no longer relevant</li> <li>- Adjust benchmarks as necessary</li> </ul>	Every 2 years
Indicators	<ul style="list-style-type: none"> <li>- Is there new monitoring data that is relevant and can be incorporated as an indicator?</li> <li>- Has monitoring of a particular parameter stopped or is no longer relevant?</li> </ul>	<ul style="list-style-type: none"> <li>- Add or subtract indicators as necessary</li> </ul>	Every 2 years
Discontinuation Rates	Are the discontinuation rates used to estimate enrollment numbers accurate?	<ul style="list-style-type: none"> <li>- Evaluate producer survey results and compare to the estimated enrollment numbers</li> <li>- Evaluate if survey results justify a change to the discontinuation rates</li> <li>- Update protection benchmarks as necessary</li> </ul>	Every 2 years
Monitoring	<ul style="list-style-type: none"> <li>- Is new monitoring data available to incorporate into the VSP work plan?</li> <li>- Does current monitoring answer the questions we want it to answer?</li> <li>- Does current monitoring produce results that are acceptably precise and accurate?</li> </ul>	<ul style="list-style-type: none"> <li>- Incorporate new applicable monitoring efforts into VSP</li> <li>- Adjust current monitoring methods or approaches if needed</li> </ul>	Every 2 years
Adaptive Management	<ul style="list-style-type: none"> <li>- Are adaptive management triggers appropriate?</li> <li>- Are adaptive management actions appropriate?</li> </ul>	<ul style="list-style-type: none"> <li>- Adjust adaptive management triggers and actions as necessary</li> </ul>	Every 2 years
Implementation	<ul style="list-style-type: none"> <li>- Are participatory goals being met? Are they appropriate?</li> <li>- Is adequate technical assistance being provided to Douglas County producers?</li> </ul>	<ul style="list-style-type: none"> <li>- Seek new and innovative ways to provide outreach and promote VSP</li> <li>- Evaluate and fill technical assistance gaps and shortfalls</li> </ul>	Every 2 years
Climate	<ul style="list-style-type: none"> <li>- Has there been a significant change or trend in climate?</li> </ul>	<ul style="list-style-type: none"> <li>- Evaluate the work plan, specifically goals, benchmarks, indicators and adaptive management in light of climate trends and adjust accordingly</li> </ul>	Every 2 years

Table 9-4: Programmatic Adaptive Management Matrix



## 10.0 Implementation

This chapter describes how the Douglas County VSP work plan will be implemented following its approval.

### 10.1 Outreach

The Douglas County VSP work group has identified effective outreach as one of the most important aspects of VSP implementation. Further, the VSP statute requires that in developing the work plan, the work group must, “Ensure outreach and technical assistance is provided to agricultural operators in the watershed” (RCW 36.70A720(1)(d)). The work group stressed the need to make producers understand what the VSP is and why it is important for them to participate. Table 10-1 provides a blueprint for how effective outreach will be accomplished in Douglas County. Outreach materials referenced in Table 10-1 can be found in Appendix J.

Many of the communication channels and methods listed in Table 10-1 are already undertaken by the TSPs in Douglas County. These methods have proven to be an effective way to communicate with producers and the public, and as such, are included in this VSP work plan. For example, both conservation districts publish a quarterly newsletter that provides information on current activities and future opportunities. All TSPs operate and regularly update a website, which producers frequently check for updates to programs. FCCD and SDCD hold an annual meeting, (attended by about 50 producers in 2018) in which program updates and opportunities are presented by both districts and NRCS. Likewise, updates and opportunities are presented at the annual NRCS local working group meeting by all three TSPs.

The tactic of working with local commodity groups and channeling information through their meetings and newsletters is a relatively novel strategy in this outreach plan. The VSP work group believes that this will be a great way to communicate with producers who have not historically been as active or involved with the conservation districts or NRCS. The communication and outreach plan also brings a new degree of scheduling and accountability to TSPs for effectively communicating with producers. For more information on how outreach will be monitored, evaluated, and adaptively managed, see Sections 9.1, 10.3.5, 9.5.3, respectively.

Communication and Outreach Plan					
Information to be Communicated	Target Audience	Method/Location of Communication	Physical Communication Tool	Who is Responsible?	Frequency and Dates
Work group meeting notices and summaries	General Public	Newspaper	Notice/announcement	VSP Coordinator	One month and one week prior (notices), and one week after (summaries)
		VSP Email Lists	Agenda, minutes, materials		
		CD Webpages	Agenda, minutes, materials		
VSP program updates and status	All Producers	VSP Email Lists	Articles	VSP Coordinator	When updates are available
		CD Newsletters			Quarterly
		CD Webpages			When updates are available
		Newspaper			Quarterly
	Mailers, community event boards	Announcements	When updates are available		
	County Commissioners	In person presentation	Powerpoint, copy of work group annual report		biennial
	Other TSPs	In person presentation	Powerpoint, copy of work group annual report		Annual
Lawmakers	Legislative Days	Summary of accomplishments, workgroup recommendations	VSP Coordinator, work group members, or CD board members	Annual	
Increase VSP awareness and participation	All Producers	1 on 1 discussions with producers	Informal discussion of VSP	All TSPs	Ongoing
		VSP Kickoff Meeting	Targeted Presentation, Producer Trifold, Producer Handbook	VSP Coordinator	Following Work Plan Completion
		Local commodity group meetings (Cattlemans, Wheatgrowers, Tree Fruit Association, Farm Bureau, etc.)	Targeted Presentation, Producer Trifold, Producer Handbook, Poster Presentation	VSP Coordinator	1/year/group, or less if the group meets less
		Local NRCS, FSA, WSU, WFDW, irrigation districts, commodity group offices	Producer Trifold, Producer Handbook		Continuous, always kept supplied
		Commodity group newsletters	Articles		Send inquiry to each group at least 1/year
		FCCD/SDCD annual meeting	Targeted Presentation, Producer Trifold, Producer Handbook, Poster Presentation		Annual (winter)
		NRCS local working group meeting	Targeted Presentation, Producer Trifold, Producer Handbook, Poster Presentation		Annual
		Website	VSP Producer Handbook		Always
	VSP Producer Survey		During survey cycle		
	All Producers/General Public	Newspapers, Radio	Articles, interviews		VSP Coordinator or Outreach Coordinator
		Pybus Farmer's Market	Booth/Poster Presentation, Producer outreach booklet, general public tri-fold	Potential to coordinate with Chelan County and Cascadia CD	
		High Visibility Locations	VSP Participant Farm Signs	Opportunistic	
		NCW Fair	Producer Trifold, General Public Trifold	Annual	
		CD Newsletters	Producer Spotlight	Quarterly	
	VSP producer survey reminder	All Producers	Local commodity group meetings/offices	Postcard flyer w/ info and online link, physical survey	VSP Coordinator
Local NRCS, FSA, WSU, WFDW, and commodity group offices			Postcard flyer w/ info and online link, physical survey		
Commodity group newsletters			Articles		
FCCD/SDCD annual meeting			Postcard flyer w/ info and online link, physical survey		
NRCS local working group meeting			Postcard flyer w/ info and online link, physical survey		

Table 10-1: Communication and Outreach Plan

## 10.2 Technical Assistance

The following entities will be the primary resources providing technical assistance to Douglas County producers that will contribute to VSP implementation:

**Foster Creek Conservation District** (VSP programmatic and administrative lead entity)

203 s Rainier St  
Waterville, WA 98858  
509-888-6372  
Fostercreekcd.org

**South Douglas Conservation District**

206 N Chelan Ave  
Waterville, WA 98858  
509-745-9160  
Southdouglascd.com

**Natural Resource Conservation Service – Waterville Service Center**

203 E Locust St  
Waterville, WA 98858  
509-745-8362  
nracs.usda.gov

The following entities also provide technical assistance to Douglas County Producers:

**WSU Douglas County Extension Office**

203 S Rainier St  
Waterville, WA 98858  
509-745-8531  
extension.wsu.edu/chelan-douglas/

**The Farm Service Agency**

103 N. Baker St  
Waterville, WA 98858  
509-745-8561  
fsa.usda.gov

**Washington Department of Fish and Wildlife**

3860 State Highway 97A  
Wenatchee, WA 98801  
509-662-0452  
wdfw.wa.gov

## 10.3 The Four Levels of VSP Participation

There are four different ways producers in Douglas County can participate in the Douglas County VSP. The following subsections describe each of these levels. Figure 10-1 shows the process of VSP implementation across the levels.

### 10.3.1 VSP Producer Survey

The VSP Producer Survey is the base level for participation in the VSP program. Producer participation in the survey is quick and simple, but provides highly valuable information about conservation activity implementation in Douglas County. Additionally, the survey provides direction for future VSP implementation. The stated objectives of the producer survey are:

1. Identify and document implemented conservation activities that contribute to the critical area protection goals and benchmarks of the VSP work plan.
2. Identify conservation activities that Douglas County producers are interested in implementing to increase cost-share and technical service opportunities for those conservation activities.
3. Identify educational programs and materials would benefit Douglas County producers.
4. Encourage high producer participation, through the implementation of voluntary conservation activities, to ensure the success of the VSP.

The survey will be administered once every five years for a period of 12-18 months (the survey cycle). The survey is expected to be administered both online and in written format. The preliminary VSP Producer Survey can be found in Appendix E of this work plan. Verification of survey results, specifically the implementation of self-funded conservation activities, will occur as producers become more involved in VSP and interact with TSPs through the planning or implementation levels of participation.

### 10.3.2 Farm-Scale Planning

There are three different types of farm scale planning activities available to Douglas County producers that will ultimately help them to implement conservation activities consistent with the goals and benchmarks of this work plan. Each of the three plans fulfills a slightly different purpose, so the plan a producer chooses to receive will depend largely on their own operational goals and concerns. The three types of farm-scale planning activities and their goals are:

- **NRCS Conservation Plan:** Identify resource concerns and the appropriate conservation practices to address them.
- **MSGCP Site-Specific Plan (SSP):** Identify conservation activities and create a plan necessary to protect the habitat of the four covered species. The SSP is necessary to apply for a Section-10 Incidental Take Permit.
- **Individual Stewardship Plan (ISP):** Identify critical area and agricultural viability concerns and develop a plan to address them.

More information on farm-scale planning can be found in Section 7.8. Table 7-2 provides an overview and comparison of the three plans. An SSP checklist can be found in Appendix D.

The Douglas County VSP work group, along with many others around the state, discussed the need to have farm-scale planning documents be confidential. NRCS Conservation Plans are already exempt from public disclosure, but early in the VSP planning process uncertainty remained around other farm-scale plans developed as part of VSP implementation. In response to this feedback, the VSP Statewide Advisory Committee and WSCC issued Policy Advisory #01-17 in August of 2017. The policy advisory states that:

The Statewide Advisory Committee concurs with the position of the Commission that similar to farm plans developed by conservation districts, individual stewardship plans are confidential and exempt from disclosure, unless permission is granted by the landowner or operator, provided they are provided by or created in conjunction with a conservation district.  
(Policy Advisory #01-17)

The work group is pleased with this policy advisory and believes it will lead to increased participation in the program. All three types of farm-scale plans mentioned above are exempt from disclosure. However, once a SSP is used to apply for a Section 10 Incidental Take Permit, it becomes public information under the Freedom of Information Act. To further avoid issues with disclosure, where possible, landowners/operators will possess farm-scale plans, not TSPs, because landowners are not subject to open government regulations.

### 10.3.3 Implementation of Conservation Activities

The implementation of conservation activities is the ultimate goal of all other levels of VSP participation. It is the implementation of conservation activities that the protection and enhancement goals and benchmarks of this work plan are built around. Ultimately, the success of the Douglas County VSP depends on the implementation of conservation activities. Goals for the implementation of conservation activities can be found in Section 8.4.

### 10.3.4 Education

Attending educational events and/or activities is a key way in which Douglas County producers can participate in VSP. Educational events provide useful and demonstrated information to producers, allowing them to make more informed decisions, and ultimately, lead to the implementation of more conservation activities. Educational activities include all workshops, field tours, demonstrations, meetings, etc. in which methods and/or activities that protect and enhance critical areas while improving the long-term viability of agriculture are discussed.

### 10.3.5 Participation Goal

An important aspect of VSP is that it will provide the mechanism to track all of the good things that producers in Douglas County do to protect and enhance critical areas. To help develop a participation goal, it was important to provide context pertaining to current participation levels in the county.

To provide context for the participation goal, the work group attempted to examine participation data from the first five years of VSP (2012-2016), prior to implementation of this work plan. However,

depending on the type of participation and which entity was providing the technical service, detailed records of participation were not always initially kept, or retained for more than a few years. NRCS does have reliable participation data. From 2012-2016 NRCS contracted with a total of 159 producers. Therefore, through NRCS, 159 conservation plans were written and the same number of producers implemented conservation practices. There was no VSP producer survey administered between 2012-2016, and therefore, there was no participation at this level. The conservation districts do not have data specifically speaking to the number of farm plans they have written from 2012-2016. However, based on the types of projects implemented in that period, it is estimated that around 50 plans were developed that would be considered an ISP for the purposes of VSP. In addition to 50 or so producers who received plans, it is estimated that the conservation districts helped to implement conservation activities with another 50-60 producers who didn't need plans to implement conservation activities, i.e. to release biocontrols. It is not known how many self-implemented conservation activities occurred during this time period. It is also difficult to determine exactly how many producers have participated in educational activities between 2012-2016. Annually, FCCD and SDCD hold a meeting in which educational materials are presented. In 2018, 55 producers attended this meeting. In the fall of 2016, SGI held a rotational grazing workshop in which about 50 producers were present. During this time period, both conservation districts annually participated in (and hosted every third year) Envirothon, an event educating high school students about conservation and land management. An unknown amount of educational materials, including *20 Weeds to Know in Douglas County*, has been distributed to producers over this five-year period. Based on the available data and accounting for producers who are likely represented in multiple data points referenced above, it is estimated that between 20-30% of Douglas County producers participated in some way between 2012-2016.

Two important VSP implementation needs relating to outreach were identified by examining the available participation data:

- 1) A more comprehensive system for tracking VSP participation will need to be implemented (see Section 9.1 *Program Implementation Monitoring*).
- 2) The irrigated agriculture commodity group is very underrepresented in the 2012-2016 participation data. One aspect of initial VSP implementation will be to focus on improving participation of the irrigated agriculture community.

The Douglas County VSP work group has set the goal of having 30% of producers in the county participate in the program in one of the previously mentioned (Sections 10.3.1-10.3.4) ways during each 5-year period. This is not the level of participation needed to protect critical areas, which is identified by the protection and enhancement benchmarks in Section 8.4. Rather, this goal was set to ensure that outreach and technical assistance is being provided to, and reaching a significant proportion of producers in Douglas County.

While the participation goal is set to include all levels of participation across all commodity types, it will be important to examine the data broken down by each individual participation type and each individual commodity type. Doing this will allow the VSP workgroup to identify specific shortfalls in participation and adaptively manage outreach and implementation of VSP to increase participation in the specified

area. For more information on adaptive management related to implementation of this work plan see Section 9.5.3.

## 10.4 Implementation Plan

### 10.4.1 Implementation Schedule

The implementation schedule outlines important tasks to be completed and their timeframes following the approval of this work plan. Details on tasks to be completed can also be found in Chapter 9, Monitoring and Adaptive Management, Section 10.1, Outreach, and in Section 10.6, Reporting.

#### Annual

- VSP coordinator makes a progress report to the work group.
- Evaluate progress made towards the protection and enhancement benchmarks.
- Evaluate annual indicators – extent of wildfire, amount of CRP conversion, and groundwater quality data.
- Identify if any adaptive management triggers have been reached.
- Set VSP implementation priorities and budget for the following year. If triggers have been reached, then priorities are based on identified adaptive management actions.
- The VSP coordinator hosts a meeting with the primary TSPs to provide VSP updates and progress reports, and answer implementation questions.
- Conduct outreach tasks as specified in Section 10.1

#### Biennial

- Conduct Remote Vegetation Monitoring and Change Detection Protocol
- Evaluate indicators – Extent of shrub-steppe, riparian, and wetland habitat; 303d lists
- Provide written reports to the county and the Conservation Commission (see Section 10.6)
- Evaluate and conduct programmatic adaptive management

#### Every 5 Years

- Complete a VSP producer survey cycle
- Evaluate indicators – quality of shrub-steppe habitat, long-term water quality trends, long term trends in crop yields/acre.
- 5-year status report (see Section 10.6)

### 10.4.2 Implementation Process

To implement the work plan, the work group will meet at least twice a year, once in the summer and once in the winter. A progress report will be made to the group and priorities for the next year set at the winter meeting. The summer meeting will consist of an implementation update and provide the work group the opportunity to give feedback. The work group may meet more frequently if there is a request, need, or interest.

As discussed in Section 10.3, there are many ways producers can participate in VSP. Figure 10-1 illustrates the VSP implementation process and was designed to be included as part of the VSP Producer Handbook.

## 10.5 Reporting

### 10.5.1 Timeline

The VSP statute identifies reporting requirements to be met by the watershed work group. Table 10-2 outlines Douglas County’s reporting requirements following the work plan approval.

<b>Statutory Requirement</b>	<b>Item</b>	<b>Due Date</b>
RCW 36.70A.720(1)(j)	Written report of status of plans and accomplishments to the county and the commission	August 29, ODD YEARS
RCW 36.70A.720(2)(b)	Report to the director and the county on whether the work plan's protection and enhancement goals and benchmarks have been met	January 22, 2021
RCW 36.70A.720(2)(c)	Report to the director and the county on whether the work plan's protection and enhancement goals and benchmarks have been met	January 22, 2026
RCW 36.70A.720(2)(c)	Report to the director and the county on whether the work plan's protection and enhancement goals and benchmarks have been met	January 22, Every five years

*Table 10-2: Douglas County VSP Reporting Timeline*

In addition to the dates identified above, the Douglas County VSP work group will adhere to all other reporting requirements of the program in accordance with RCW 36.70A.720(1)(l).

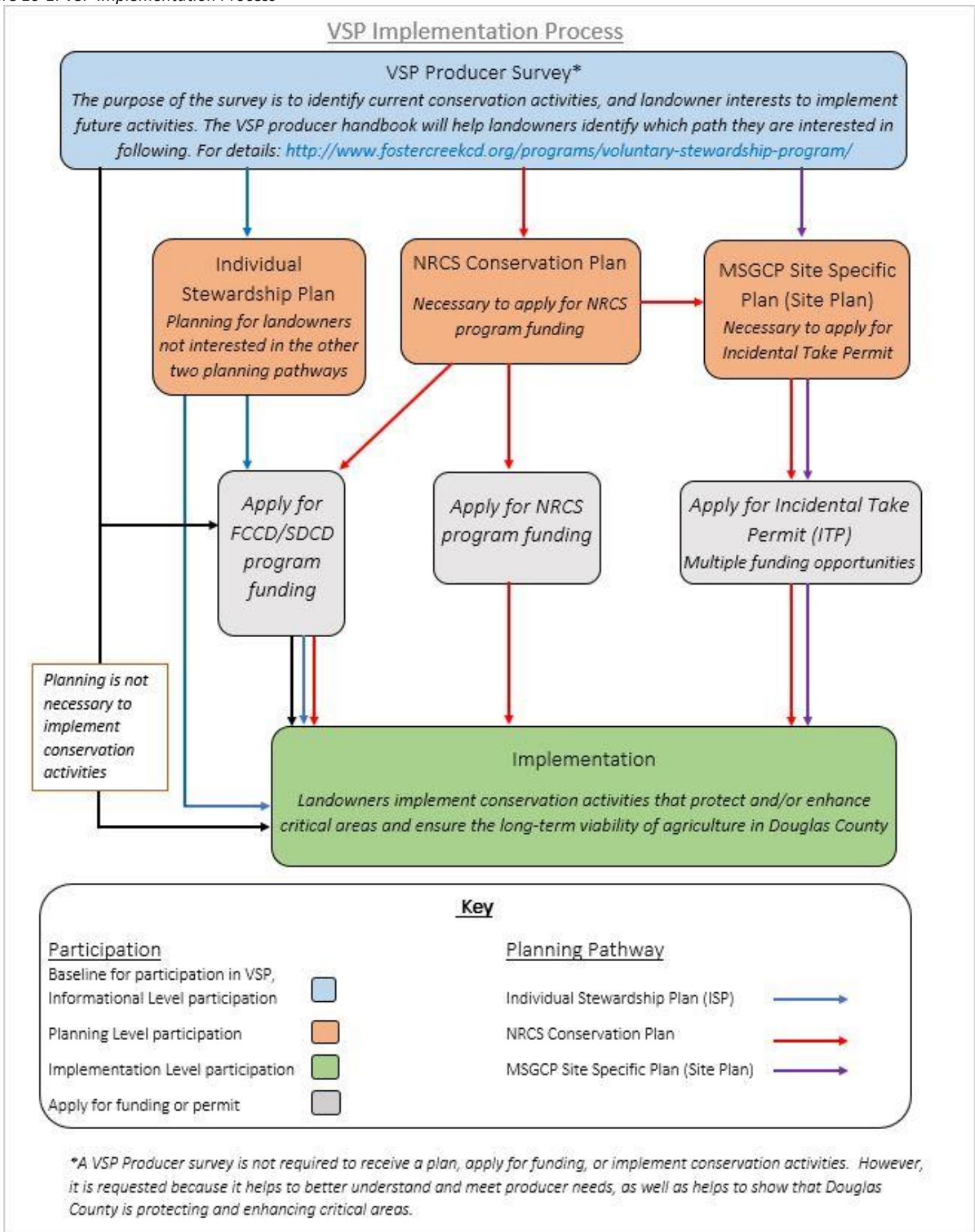
### 10.5.2 Deliverables

At a minimum, the reports referenced in Section 10.5.1 above will include information on the following items:

1. Progress made towards meeting the protection and enhancement benchmarks
2. Current status and monitoring results of indicators
3. Producer participation in all four levels of VSP



Figure 10-1: VSP Implementation Process



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# Appendix A:

## VSP Statute

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RCW 36.70A.700

PURPOSE—INTENT—2011 C 360.

(1) The purpose of chapter 360, Laws of 2011 is to establish the voluntary stewardship program as recommended in the report submitted by the William D. Ruckelshaus Center to the legislature as required by chapter 353, Laws of 2007 and chapter 203, Laws of 2010.

(2) It is the intent of chapter 360, Laws of 2011 to:

(a) Promote plans to protect and enhance critical areas within the area where agricultural activities are conducted, while maintaining and improving the long-term viability of agriculture in the state of Washington and reducing the conversion of farmland to other uses;

(b) Focus and maximize voluntary incentive programs to encourage good riparian and ecosystem stewardship as an alternative to historic approaches used to protect critical areas;

(c) Rely upon RCW [36.70A.060](#) for the protection of critical areas for those counties that do not choose to participate in this program;

(d) Leverage existing resources by relying upon existing work and plans in counties and local watersheds, as well as existing state and federal programs to the maximum extent practicable to achieve program goals;

(e) Encourage and foster a spirit of cooperation and partnership among county, tribal, environmental, and agricultural interests to better assure the program success;

(f) Improve compliance with other laws designed to protect water quality and fish habitat; and

(g) Rely upon voluntary stewardship practices as the primary method of protecting critical areas and not require the cessation of agricultural activities.

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RCW 36.70A.702

CONSTRUCTION.

Nothing in RCW [36.70A.700](#) through [36.70A.760](#) may be construed to:

(1) Interfere with or supplant the ability of any agricultural operator to work cooperatively with a conservation district or participate in state or federal conservation programs;

(2) Require an agricultural operator to discontinue agricultural activities legally existing before July 22, 2011;



(3) Prohibit the voluntary sale or leasing of land for conservation purposes, either in fee or as an easement;

(4) Grant counties or state agencies additional authority to regulate critical areas on lands used for agricultural activities; and

(5) Limit the authority of a state agency, local government, or landowner to carry out its obligations under any other federal, state, or local law.

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RCW 36.70A.703

DEFINITIONS.

The definitions in this section apply to RCW [36.70A.700](#) through [36.70A.760](#) and RCW [36.70A.130](#) and [36.70A.280](#) unless the context clearly requires otherwise.

(1) "Agricultural activities" means all agricultural uses and practices as defined in RCW [90.58.065](#).

(2) "Commission" means the state conservation commission as defined in RCW [89.08.030](#).

(3) "Director" means the executive director of the state conservation commission.

(4) "Enhance" or "enhancement" means to improve the processes, structure, and functions existing, as of July 22, 2011, of ecosystems and habitats associated with critical areas.

(5) "Participating watershed" means a watershed identified by a county under RCW [36.70A.710](#)(1) to participate in the program.

(6) "Priority watershed" means a geographic area nominated by the county and designated by the commission.

(7) "Program" means the voluntary stewardship program established in RCW [36.70A.705](#).

(8) "Protect" or "protecting" means to prevent the degradation of functions and values existing as of July 22, 2011.

(9) "Receipt of funding" means the date a county takes legislative action accepting any funds as required in RCW [36.70A.715](#)(1) to implement the program.

(10) "Statewide advisory committee" means the statewide advisory committee created in RCW [36.70A.745](#).

(11) "Technical panel" means the directors or director designees of the following agencies: The department of fish and wildlife; the department of agriculture; the department of ecology; and the commission.

(12) "Watershed" means a water resource inventory area, salmon recovery planning area, or a subbasin as determined by a county.

(13) "Watershed group" means an entity designated by a county under the provisions of RCW [36.70A.715](#).

(14) "Work plan" means a watershed work plan developed under the provisions of RCW [36.70A.720](#).

#### **RCW 36.70A.705**

##### **Voluntary stewardship program established—Administered by commission—Agency participation.**

(1) The voluntary stewardship program is established to be administered by the commission. The program shall be designed to protect and enhance critical areas on lands used for agricultural activities through voluntary actions by agricultural operators.

(2) In administering the program, the commission must:

(a) Establish policies and procedures for implementing the program;

(b) Administer funding for counties to implement the program including, but not limited to, funding to develop strategies and incentive programs and to establish local guidelines for watershed stewardship programs;

(c) Administer the program's technical assistance funds and coordinate among state agencies and other entities for the implementation of the program;

(d) Establish a technical panel;

(e) In conjunction with the technical panel, review and evaluate: (i) Work plans submitted for approval under RCW [36.70A.720](#)(2)(a); and (ii) reports submitted under RCW [36.70A.720](#)(2)(b);

(f) Review and evaluate the program's success and effectiveness and make appropriate changes to policies and procedures for implementing the program, in consultation with the statewide advisory committee and other affected agencies;

(g) Designate priority watersheds based upon the recommendation of the statewide advisory committee. The commission and the statewide advisory committee may only consider watersheds nominated by counties under RCW [36.70A.710](#). When designating priority watersheds, the commission and the statewide advisory committee shall consider the statewide significance of the criteria listed in RCW [36.70A.710](#)(3);

(h) Provide administrative support for the program's statewide advisory committee in its work. The administrative support must be in collaboration with the department of ecology and other agencies involved in the program;

(i) Maintain a web site about the program that includes times, locations, and agenda information for meetings of the statewide advisory committee;

(j) Report to the legislature on the general status of program implementation by December 1, 2013, and December 1, 2015;

(k) In conjunction with the statewide advisory committee, conduct a review of the program beginning in 2017 and every five years thereafter, and report its findings to the legislature by December 1st; and

(l) Report to the appropriate committees of the legislature in the format provided in RCW [43.01.036](#).

(3) The department shall assist counties participating in the program to develop plans and development regulations under RCW [36.70A.735](#)(1).

(4) The commission, department, department of agriculture, department of fish and wildlife, department of ecology, and other state agencies as directed by the governor shall:

- (a) Cooperate and collaborate to implement the program; and
- (b) Develop materials to assist local watershed groups in development of work plans.

(5) State agencies conducting new monitoring to implement the program in a watershed must focus on the goals and benchmarks of the work plan.

#### **RCW 36.70A.710**

##### **Critical areas protection—Alternative to RCW 36.70A.060—County's responsibilities—Procedures.**

(1)(a) As an alternative to protecting critical areas in areas used for agricultural activities through development regulations adopted under RCW [36.70A.060](#), the legislative authority of a county may elect to protect such critical areas through the program.

(b) In order to participate in the program, within six months after July 22, 2011, the legislative authority of a county must adopt an ordinance or resolution that:

- (i) Elects to have the county participate in the program;
- (ii) Identifies the watersheds that will participate in the program; and

(iii) Based on the criteria in subsection (4) of this section, nominates watersheds for consideration by the commission as state priority watersheds.

(2) Before adopting the ordinance or resolution under subsection (1) of this section, the county must (a) confer with tribes, and environmental and agricultural interests; and (b) provide notice following the public participation and notice provisions of RCW [36.70A.035](#) to property owners and other affected and interested individuals, tribes, government agencies, businesses, school districts, and organizations.

(3) In identifying watersheds to participate in the program, a county must consider:

- (a) The role of farming within the watershed, including the number and acreage of farms, the economic value of crops and livestock, and the risk of the conversion of farmland;
- (b) The overall likelihood of completing a successful program in the watershed; and
- (c) Existing watershed programs, including those of other jurisdictions in which the watershed has territory.

(4) In identifying priority watersheds, a county must consider the following:

- (a) The role of farming within the watershed, including the number and acreage of farms, the economic value of crops and livestock, and the risk of the conversion of farmland;
- (b) The importance of salmonid resources in the watershed;
- (c) An evaluation of the biological diversity of wildlife species and their habitats in the geographic region including their significance and vulnerability;
- (d) The presence of leadership within the watershed that is representative and inclusive of the interests in the watershed;
- (e) Integration of regional watershed strategies, including the availability of a data and scientific review structure related to all types of critical areas;

(f) The presence of a local watershed group that is willing and capable of overseeing a successful program, and that has the operational structures to administer the program effectively, including professional technical assistance staff, and monitoring and adaptive management structures; and

(g) The overall likelihood of completing a successful program in the watershed.

(5) Except as otherwise provided in subsection (9) of this section, beginning with the effective date of the ordinance or resolution adopted under subsection (1) of this section, the program applies to all unincorporated property upon which agricultural activities occur within a participating watershed.

(6)(a) Except as otherwise provided in (b) of this subsection, within two years after July 22, 2011, a county must review and, if necessary, revise development regulations adopted under this chapter to protect critical areas as they specifically apply to agricultural activities:

(i) If the county has not elected to participate in the program, for all unincorporated areas; or

(ii) If the county has elected to participate in the program, for any watershed not participating in the program.

(b) A county that between July 1, 2003, and June 30, 2007, in accordance with RCW [36.70A.130](#) completed the review of its development regulations as required by RCW [36.70A.130](#) to protect critical areas as they specifically apply to agricultural activities is not required to review and revise its development regulations until required by RCW [36.70A.130](#).

(c) After the review and amendment required under (a) of this subsection, RCW [36.70A.130](#) applies to the subsequent review and amendment of development regulations adopted under this chapter to protect critical areas as they specifically apply to agricultural activities.

(7)(a) A county that has made the election under subsection (1) of this section may withdraw a participating watershed from the program by adopting an ordinance or resolution withdrawing the watershed from the program. A county may withdraw a watershed from the program at the end of three years, five years, or eight years after receipt of funding, or any time after ten years from receipt of funding.

(b) Within eighteen months after withdrawing a participating watershed from the program, the county must review and, if necessary, revise its development regulations that protect critical areas in that watershed as they specifically apply to agricultural activities. The development regulations must protect the critical area functions and values as they existed on July 22, 2011. RCW [36.70A.130](#) applies to the subsequent review and amendment of development regulations adopted under this chapter to protect critical areas as they specifically apply to agricultural activities.

(8) A county that has made the election under subsection (1) of this section is eligible for a share of the funding made available to implement the program, subject to funding availability from the state.

(9) A county that has made the election under subsection (1) of this section is not required to implement the program in a participating watershed until adequate funding for the program in that watershed is provided to the county.

## **RCW 36.70A.715**

### **Funding by commission—County's duties—Watershed group established.**

(1) When the commission makes funds available to a county that has made the election provided in RCW [36.70A.710](#)(1), the county must within sixty days:

- (a) Acknowledge the receipt of funds; and
  - (b) Designate a watershed group and an entity to administer funds for each watershed for which funding has been provided.
- (2) A county must confer with tribes and interested stakeholders before designating or establishing a watershed group.
- (3) The watershed group must include broad representation of key watershed stakeholders and, at a minimum, representatives of agricultural and environmental groups and tribes that agree to participate. The county should encourage existing lead entities, watershed planning units, or other integrating organizations to serve as the watershed group.
- (4) The county may designate itself, a tribe, or another entity to coordinate the local watershed group.

**RCW 36.70A.720**

**Watershed group's duties—Work plan—Conditional priority funding.**

(1) A watershed group designated by a county under RCW [36.70A.715](#) must develop a work plan to protect critical areas while maintaining the viability of agriculture in the watershed. The work plan must include goals and benchmarks for the protection and enhancement of critical areas. In developing and implementing the work plan, the watershed group must:

- (a) Review and incorporate applicable water quality, watershed management, farmland protection, and species recovery data and plans;
- (b) Seek input from tribes, agencies, and stakeholders;
- (c) Develop goals for participation by agricultural operators conducting commercial and noncommercial agricultural activities in the watershed necessary to meet the protection and enhancement benchmarks of the work plan;
- (d) Ensure outreach and technical assistance is provided to agricultural operators in the watershed;
- (e) Create measurable benchmarks that, within ten years after the receipt of funding, are designed to result in (i) the protection of critical area functions and values and (ii) the enhancement of critical area functions and values through voluntary, incentive-based measures;
- (f) Designate the entity or entities that will provide technical assistance;
- (g) Work with the entity providing technical assistance to ensure that individual stewardship plans contribute to the goals and benchmarks of the work plan;
- (h) Incorporate into the work plan any existing development regulations relied upon to achieve the goals and benchmarks for protection;
- (i) Establish baseline monitoring for: (i) Participation activities and implementation of the voluntary stewardship plans and projects; (ii) stewardship activities; and (iii) the effects on critical areas and agriculture relevant to the protection and enhancement benchmarks developed for the watershed;
- (j) Conduct periodic evaluations, institute adaptive management, and provide a written report of the status of plans and accomplishments to the county and to the commission within sixty days after the end of each biennium;
- (k) Assist state agencies in their monitoring programs; and

(l) Satisfy any other reporting requirements of the program.

(2)(a) The watershed group shall develop and submit the work plan to the director for approval as provided in RCW [36.70A.725](#).

(b)(i) Not later than five years after the receipt of funding for a participating watershed, the watershed group must report to the director and the county on whether it has met the work plan's protection and enhancement goals and benchmarks.

(ii) If the watershed group determines the protection goals and benchmarks have been met, and the director concurs under RCW [36.70A.730](#), the watershed group shall continue to implement the work plan.

(iii) If the watershed group determines the protection goals and benchmarks have not been met, it must propose and submit to the director an adaptive management plan to achieve the goals and benchmarks that were not met. If the director does not approve the adaptive management plan under RCW [36.70A.730](#), the watershed is subject to RCW [36.70A.735](#).

(iv) If the watershed group determines the enhancement goals and benchmarks have not been met, the watershed group must determine what additional voluntary actions are needed to meet the benchmarks, identify the funding necessary to implement these actions, and implement these actions when funding is provided.

(c)(i) Not later than ten years after receipt of funding for a participating watershed, and every five years thereafter, the watershed group must report to the director and the county on whether it has met the protection and enhancement goals and benchmarks of the work plan.

(ii) If the watershed group determines the protection goals and benchmarks have been met, and the director concurs under RCW [36.70A.730](#), the watershed group shall continue to implement the work plan.

(iii) If the watershed group determines the protection goals and benchmarks have not been met, the watershed is subject to RCW [36.70A.735](#).

(iv) If the watershed group determines the enhancement goals and benchmarks have not been met, the watershed group must determine what additional voluntary actions are needed to meet the benchmarks, identify the funding necessary to implement these actions, and implement these actions when funding is provided.

(3) Following approval of a work plan, a county or watershed group may request a state or federal agency to focus existing enforcement authority in that participating watershed, if the action will facilitate progress toward achieving work plan protection goals and benchmarks.

(4) The commission may provide priority funding to any watershed designated under the provisions of RCW [36.70A.705](#)(2)(g). The director, in consultation with the statewide advisory committee, shall work with the watershed group to develop an accelerated implementation schedule for watersheds that receive priority funding.

(5) Commercial and noncommercial agricultural operators participating in the program are eligible to receive funding and assistance under watershed programs.

## **RCW 36.70A.725**

### **Technical review of work plan—Time frame for action by director.**

(1) Upon receipt of a work plan submitted to the director under RCW [36.70A.720](#)(2)(a), the director must submit the work plan to the technical panel for review.

(2) The technical panel shall review the work plan and report to the director within forty-five days after the director receives the work plan. The technical panel shall assess whether at the end of ten years after receipt of funding, the work plan, in conjunction with other existing plans and regulations, will protect critical areas while maintaining and enhancing the viability of agriculture in the watershed.

(3)(a) If the technical panel determines the proposed work plan will protect critical areas while maintaining and enhancing the viability of agriculture in the watershed:

(i) It must recommend approval of the work plan; and

(ii) The director must approve the work plan.

(b) If the technical panel determines the proposed work plan will not protect critical areas while maintaining and enhancing the viability of agriculture in the watershed:

(i) It must identify the reasons for its determination; and

(ii) The director must advise the watershed group of the reasons for disapproval.

(4) The watershed group may modify and resubmit its work plan for review and approval consistent with this section.

(5) If the director does not approve a work plan submitted under this section within two years and nine months after receipt of funding, the director shall submit the work plan to the statewide advisory committee for resolution. If the statewide advisory committee recommends approval, the director must approve the work plan.

(6) If the director does not approve a work plan for a watershed within three years after receipt of funding, the provisions of RCW [36.70A.735](#)(2) apply to the watershed.

### **RCW 36.70A.730**

#### **Report by watershed group—Director consults with statewide advisory committee.**

(1) Upon receipt of a report by a watershed group under RCW [36.70A.720](#)(2)(b) that the work plan goals and benchmarks have been met, the director must consult with the statewide advisory committee. If the director concurs with the watershed group report, the watershed group shall continue to implement the work plan. If the director does not concur with the watershed group report, the director shall consult with the statewide advisory committee following the procedures in subsection (2) of this section.

(2) If either the director, following receipt of a report under subsection (1) of this section, or the watershed group, in the report submitted to the director under RCW [36.70A.720](#)(2)(b), concludes that the work plan goals and benchmarks for protection have not been met, the director must consult with the statewide advisory committee for a recommendation on how to proceed. If the director, acting upon recommendation from the statewide advisory committee, determines that the watershed is likely to meet the goals and benchmarks with an additional six months of planning and implementation time, the director must grant an extension. If the director, acting upon a recommendation from the statewide advisory committee, determines that the watershed is unlikely to meet the goals and benchmarks within six months, the watershed is subject to RCW [36.70A.735](#).

(3) A watershed that fails to meet its goals and benchmarks for protection within the six-month time extension under subsection (2) of this section is subject to RCW [36.70A.735](#).

**When work plan is not approved, fails, or is unfunded—County's duties—Rules.**

(1) Within eighteen months after one of the events in subsection (2) of this section, a county must:

(a) Develop, adopt, and implement a watershed work plan approved by the department that protects critical areas in areas used for agricultural activities while maintaining the viability of agriculture in the watershed. The department shall consult with the departments of agriculture, ecology, and fish and wildlife and the commission, and other relevant state agencies before approving or disapproving the proposed work plan. The appeal of the department's decision under this subsection is subject to appeal under RCW [36.70A.280](#);

(b) Adopt development regulations previously adopted under this chapter by another local government for the purpose of protecting critical areas in areas used for agricultural activities. Regulations adopted under this subsection (1)(b) must be from a region with similar agricultural activities, geography, and geology and must: (i) Be from Clallam, Clark, King, or Whatcom counties; or (ii) have been upheld by a growth management hearings board or court after July 1, 2011, where the board or court determined that the provisions adequately protected critical areas functions and values in areas used for agricultural activities;

(c) Adopt development regulations certified by the department as protective of critical areas in areas used for agricultural activities as required by this chapter. The county may submit existing or amended regulations for certification. The department must make its decision on whether to certify the development regulations within ninety days after the county submits its request. If the department denies the certification, the county shall take an action under (a), (b), or (d) of this subsection. The department must consult with the departments of agriculture, ecology, and fish and wildlife and the commission before making a certification under this section. The appeal of the department's decision under this subsection (1)(c) is subject to appeal under RCW [36.70A.280](#); or

(d) Review and, if necessary, revise development regulations adopted under this chapter to protect critical areas as they relate to agricultural activities.

(2) A participating watershed is subject to this section if:

(a) The work plan is not approved by the director as provided in RCW [36.70A.725](#);

(b) The work plan's goals and benchmarks for protection have not been met as provided in RCW [36.70A.720](#);

(c) The commission has determined under RCW [36.70A.740](#) that the county, department, commission, or departments of agriculture, ecology, or fish and wildlife have not received adequate funding to implement a program in the watershed; or

(d) The commission has determined under RCW [36.70A.740](#) that the watershed has not received adequate funding to implement the program.

(3) The department shall adopt rules to implement subsection (1)(a) and (c) of this section.

**RCW 36.70A.740**

**Commission's duties—Timelines.**

(1) By July 31, 2015, the commission must:



(a) In consultation with each county that has elected under RCW [36.70A.710](#) to participate in the program, determine which participating watersheds received adequate funding to establish and implement the program in a participating watershed by July 1, 2015; and

(b) In consultation with other state agencies, for each participating watershed determine whether state agencies required to take action under the provisions of RCW [36.70A.700](#) through [36.70A.760](#) have received adequate funding to support the program by July 1, 2015.

(2) By July 31, 2017, and every two years thereafter, in consultation with each county that has elected under RCW [36.70A.710](#) to participate in the program and other state agencies, the commission shall determine for each participating watershed whether adequate funding to implement the program was provided during the preceding biennium as provided in subsection (1) of this section.

(3) If the commission determines under subsection (1) or (2) of this section that a participating watershed has not received adequate funding, the watershed is subject to the provisions of RCW [36.70A.735](#).

(4) In consultation with the statewide advisory committee and other state agencies, not later than August 31, 2015, and each August 31st every two years thereafter, the commission shall report to the legislature and each county that has elected under RCW [36.70A.710](#) to participate in the program on the participating watersheds that have received adequate funding to establish and implement the program.

#### **RCW 36.70A.745**

##### **Statewide advisory committee—Membership.**

(1)(a) From the nominations made under (b) of this subsection, the commission shall appoint a statewide advisory committee, consisting of: Two persons representing county government, two persons representing agricultural organizations, and two persons representing environmental organizations. The commission, in conjunction with the governor's office, shall also invite participation by two representatives of tribal governments.

(b) Organizations representing county, agricultural, and environmental organizations shall submit nominations of their representatives to the commission within ninety days of July 22, 2011. Members of the statewide advisory committee shall serve two-year terms except that for the first year, one representative from each of the sectors shall be appointed to the statewide advisory committee for a term of one year. Members may be reappointed by the commission for additional two-year terms and replacement members shall be appointed in accordance with the process for selection of the initial members of the statewide advisory committee.

(c) Upon notification of the commission by an appointed member, the appointed member may designate a person to serve as an alternate.

(d) The executive director of the commission shall serve as a nonvoting chair of the statewide advisory committee.

(e) Members of the statewide advisory committee shall serve without compensation and, unless serving as a state officer or employee, are not eligible for reimbursement for subsistence, lodging, and travel expenses under RCW [43.03.050](#) and [43.03.060](#).

(2) The role of the statewide advisory committee is to advise the commission and other agencies involved in development and operation of the program.

**RCW 36.70A.750**

**Agricultural operators—Individual stewardship plan.**

(1) Agricultural operators implementing an individual stewardship plan consistent with a work plan are presumed to be working toward the protection and enhancement of critical areas.

(2) If the watershed group determines that additional or different practices are needed to achieve the work plan's goals and benchmarks, the agricultural operator may not be required to implement those practices but may choose to implement the revised practices on a voluntary basis and is eligible for funding to revise the practices.

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**RCW 36.70A.755**

**Implementing the work plan.**

In developing stewardship practices to implement the work plan, to the maximum extent practical the watershed group should:

(1) Avoid management practices that may have unintended adverse consequences for other habitats, species, and critical areas functions and values; and

(2) Administer the program in a manner that allows participants to be eligible for public or private environmental protection and enhancement incentives while protecting and enhancing critical area functions and values.

**RCW 36.70A.760**

**Agricultural operators—Withdrawal from program.**

An agricultural operator participating in the program may withdraw from the program and is not required to continue voluntary measures after the expiration of an applicable contract. The watershed group must account for any loss of protection resulting from withdrawals when establishing goals and benchmarks for protection and a work plan under RCW [36.70A.720](#).

## Appendix B:

# Douglas County RCW 36.70A.710 Documentation

### BOARD OF COUNTY COMMISSIONERS DOUGLAS COUNTY, WASHINGTON

Resolution No. TLS 12-01

Voluntary Stewardship Program ) Notice

LAND SERVICES

of Hearing - Resolution No. TLS 11-43A

WHEREAS, the Washington State Legislature, through ESHB 1886, created a VSP ("VSP") for protection of critical areas in areas of agricultural activities; and

WHEREAS, ESHB 1886, as codified in RCW 36.70A.710, states that "As an alternative to protecting critical areas in areas used for agricultural activities through development regulations adopted under RCW 36.70A.060, the legislative authority of a county may elect to protect such critical areas through the program."; and

WHEREAS, in order to participate in the VSP, the legislative authority of a county must elect to participate by January 22, 2012; and

WHEREAS, prior to electing to participate in the VSP, a county is required to (a) confer with tribes, and environmental and agricultural interests; and (b) provide notice following the public participation and notice provisions of RCW 36.70A.035 to property owners and other affected and interested individuals, tribes, government agencies, businesses, school districts, and organizations; and

WHEREAS, Douglas County conducted a public meeting on December 13, 2011 to which parties named in RCW 36.70A.710(2) were notified and invited to participate as were other potentially interested individuals and organizations, notice of this conference meeting was also posted on the county's Internet web site as well as published in the legal newspaper of the county and the newspaper of general circulation; and

WHEREAS, the Douglas County Board of County Commissioners conducted a duly advertised public hearing on January 3, 2012 to accept testimony and consider which approach to elect to protect critical areas in areas of agricultural activities.

**NOW, THEREFORE BE IT RESOLVED** That the Douglas County Board of County Commissioners hereby:

1. Elects to have Douglas County participate in the "VSP" pursuant to RCW 36.70A710(1);
2. Identifies those portions of the Moses Coulee (WRIA 44) watershed and the Foster Creek (WRIA 50) watershed that are within Douglas County, together with all other portions of unincorporated Douglas County not included in these two watershed resource inventory areas, for participation in the "VSP;"

3. Nominates the Moses Coulee (WRIA 44) watershed and the Foster Creek (WRIA 50) watershed for consideration by the Washington Conservation Commission as state priority watersheds; and
4. Elects to have Douglas County proceed as required by ESHB 1886, as currently codified in RCW 36.70A, to implement the requirements of the "VSP" once the Washington State Legislature provides adequate funding for such activity.

This resolution shall be effective immediately upon adoption. Adopted at East Wenatchee, Washington this 3<sup>rd</sup> day of January 2012.

**BOARD OF COUNTY COMMISSIONERS DOUGLAS COUNTY, WASHINGTON**

████████████████████  
████████████████████

Ken Stair

*[Handwritten Signature]*  
\_\_\_\_\_



D. Jenkins, Vice-Chair Dale Snyder

████████████████████

ATTEST:

*[Handwritten Signature]*  
\_\_\_\_\_

Dayna Prewitt, Clerk of the Board

## Appendix C:

### Work Group Outreach Documentation

- 1) The initial call for participation which was sent out to 637 organizations, agencies, and individuals
- 2) Targeted invitation to participate sent out to select individuals and organizations



March 7, 2016

Foster Creek Conservation District  
203 S. Rainier St.  
PO Box 398  
Waterville, WA 98858  
509-888-6372



Foster Creek Conservation District  
P.O. Box 398  
Waterville, WA 98858-0398

NONPROFIT ORG  
U.S. POSTAGE PAID  
WENATCHEE, WA  
PERMIT NO 7

Re: Voluntary Stewardship Program

Dear [Redacted]

Foster Creek Conservation District has been assigned the responsibility of assembling a watershed group charged with the task of drafting a work plan for the implementation of the Voluntary Stewardship Program (RCW 36.70A.710). We are currently seeking stakeholder participation for the drafting of this important document with the aim of creating a process that allows for an alternative approach to protect critical areas on agricultural lands. Without the VSP, agricultural activity will proceed with updates to Growth Management Act Critical Areas regulations.

The work group will include participation from a broad representation of key stakeholders and representatives of agricultural and environmental groups, as well as tribes that agree to participate. If you would like to serve on the Voluntary Stewardship Program Watershed Work Group for Douglas County, please go to [www.fostercreekcd.org](http://www.fostercreekcd.org) to complete the contact form. You can also contact FCCD by emailing [jbrooks@fostercreekcd.org](mailto:jbrooks@fostercreekcd.org) or calling 509-423-5990.

The kickoff meeting will be held on March 30<sup>th</sup> at 6 pm at the NCW Fairground Community Hall at 601 N Monroe St, Waterville, Washington. At this meeting, we will discuss the background of the VSP, the goals for the work group, how the work group can be organized, and begin setting a schedule for future meetings. You can also find current information specific to the VSP planning process in Douglas County at <https://www.fostercreekcd.org/voluntary-stewardship-program/>. This website will be updated as new information becomes available. Please RSVP to Jason Brooks, FCCD Staff, at [jbrooks@fostercreekcd.org](mailto:jbrooks@fostercreekcd.org) or 509-423-5990 by March 28<sup>th</sup>.

We look forward to seeing you on the 30<sup>th</sup>. Your participation in the VSP planning process is important to make sure we create an implementation plan that meets the unique needs for critical areas protection and economically viable agriculture in Douglas County.

Sincerely,

*Jon Merz*

Jon Merz, District Manager  
Foster Creek Conservation District

Follow us on Facebook at [Facebook.com/fostercreekcd](https://www.facebook.com/fostercreekcd) and on Twitter @FosterCreekCD



*"This bill outlines a positive pathway for counties, farmers, environmental stakeholders, and federal, state, and tribal governments to collaborate on improving our state's sensitive ecosystems, while preserving our working agricultural lands."  
-Governor  
Christine Gregoire,  
June 2011*

Look inside for important information about the upcoming development of Douglas County's Voluntary Stewardship Program and opportunities to participate in the planning process.

### History of the Voluntary Stewardship Program

In 2006, Initiative 933 addressed regulatory taking of agricultural lands due to development regulations. It failed by 60 percent. The following year, the state Legislature commissioned the Ruckelshaus Center, a non-profit think tank based in Seattle, to examine the conflict between preserving agricultural lands and protecting critical areas in local ordinances adopted under the GMA. The process brought together stakeholders on this issue for discussion and development of a recommendation to the Legislature. A moratorium was placed on the requirement for local governments to update their critical area ordinances as they specifically applied to agricultural activities. The Voluntary Stewardship Program is the result of the hard work undertaken by the Ruckelshaus Center. In the spring of 2007, the state legislature adopted Substitute Senate Bill 5248 which included the following provisions:

- Required the Ruckelshaus Center to look into the conflicts between critical areas regulations and agricultural uses. The Ruckelshaus Center was tasked to conduct a fact finding mission, bring together stakeholders on this issue for discussion of the issues, and develop a recommendation to the legislature.
- Enacted a moratorium on new critical areas regulations on agricultural uses defined in the bill between May 1, 2007 and June 30, 2010. In 2010, the moratorium was extended until June 30, 2011 so the work could be completed.

In the spring of 2011, the state legislature enacted Engrossed Substitute House Bill (ESHB) 1886 which enacted the recommendations of the Ruckelshaus process. This bill amended the Growth Management Act (RCW 36.70A) to allow options for protecting critical areas:

- Permits the County to use a voluntary stewardship program in conjunction with stakeholders in lieu of enacting further critical areas regulations in regards to agricultural uses. At the state level, the voluntary stewardship program is to be administered by the Washington Conservation Commission.
- Continue under existing law and update critical areas regulations for agricultural uses by July 22, 2013.
- Limit the voluntary stewardship program to certain watersheds in the county, and update the critical areas regulations for other watersheds.

Chapter 19 of the Douglas County Code describes critical areas for the County. They include:

- Aquifer Recharge Areas
- Geologically Hazardous Areas
- Fish and Wildlife Habitat Conservation Areas
- Wetlands
- Agriculture, Forest, and Mining Lands

<http://www.codepublishing.com/WA/DouglasCounty/mobile/?tag=DouglasCounty19/DouglasCounty19.html>

### Major Elements of the Voluntary Stewardship Program

The stewardship program is a new approach for counties to participate in a watershed-based, collaborative stewardship planning process that uses incentives to promote agricultural and environmental stewardship. Counties participating in the program are eligible for funding for base stewardship program operations and may nominate specific watersheds as priority watersheds for additional incentives and project funding. Counties not participating in the program will proceed with the update requirements of the Growth Management Act.

The stewardship program builds on existing programs for preserving agriculture and protecting critical areas, including salmon recovery, watershed planning, and agricultural land conservation. It provides focus and direction for stewardship actions related to agriculture, and relies on local watershed groups to set the direction for making effective use of existing programs and resources. Local people know their watersheds best and are the ones who must commit to doing the work.

Watershed work plans will be developed to set goals and benchmarks for protection and enhancement of critical areas and will undergo a technical review and approval process. Watershed groups will seek input from farmers, tribes, local environmental groups, agencies and other involved parties, and will develop goals for participation of agricultural operators, as well as provide technical assistance to farmers.

Conservation districts or other qualified technical assistance organizations will provide technical assistance to agricultural landowners and operators in developing individual farm stewardship plans. Voluntary incentives for landowners are emphasized for all program phases. The stewardship program maximizes flexibility for individuals and watersheds to achieve their goals.

### Principles of the Voluntary Stewardship Program:

19. Build on existing work in local watersheds.
20. Emphasize voluntary stewardship first.
21. Protect critical areas from further degradation, and implement additional action where voluntary measures fall short.
22. Set priorities for voluntary actions to restore and enhance critical areas.
23. Enforce existing state laws for water quality and habitat.
24. Work together to find funding.

**Additional requests to participate sent to tribes, agricultural organizations, and environmental organizations:**

<b>CONTACT</b>	<b>TITLE</b>	<b>ORGANIZATION</b>	<b>DATE SENT</b>
Guy Moura	Program Manager, History/Archaeology	Confederated Tribes of the Colville Reservation	November 9, 2016
Johnson Meninick	Tribal Historic Preservation Officer	Confederated Tribes and Bands of the Yakama Nation	November 9, 2016
David Blodgett	Wildlife, Range & Vegetation Resources Management Program	Confederated Tribes and Bands of the Yakama Nation	November 9, 2016
Generic	Wildlife, Range & Vegetation Resources Management Program	Confederated Tribes and Bands of the Yakama Nation	November 9, 2016
Ben Adams	President	Washington Association of Wheat Growers	January 9, 2017
Paul Katovich	General Manager	Central Washington Grain Growers	January 9, 2017
Corinna Hanson	Moses Coulee Land Manager	The Nature Conservancy	January 9, 2017
Art Campbell	President	North Central Washington Audubon Society	January 9, 2017

*Table C-1: A list of contacts that were formally invited to participate in the Douglas County VSP process with the letter that follows.*



Foster Creek Conservation District  
P.O. Box 398  
Waterville, WA 98858



[Date]

[name]

[title]

[organization]

Dear [name]:

The purpose of this letter is to extend an official invitation to you and [organization] to participate in the Douglas County Voluntary Stewardship Program Work Group.

Washington State's Voluntary Stewardship Program (VSP) became law in the state of Washington in 2011 under RCW 36.70A.705 as an alternative to critical area management. Traditionally, critical areas were subjected to the regulations of Critical Area Ordinances under the Growth Management Act. These regulations have provided a great deal of difficulty in locations where critical areas and agricultural activities intersect. There are many reasons for this difficulty including, the financial and time costs associated with permitting, the potential for agricultural lands being removed from production, the uncertainty involved, and the idea of forced compliance. The aim of VSP is to provide an alternative approach to the requirements of the Growth Management Act by relying on voluntary, incentive-based stewardship activities.

The stated intent of VSP is to "Promote plans to protect and enhance critical areas within the area where agricultural activities are conducted, while maintaining and improving the long-term viability of agriculture in the state of Washington and reducing the conversion of farmland to other uses" (RCW 36.70A.700(2)(a)). It is the task of the work group to build and implement a plan that fulfills this intent. Specifically, the work group must:

- (a) Review and incorporate applicable water quality, watershed management, farmland protection, and species recovery data and plans;
- (b) Seek input from tribes, agencies, and stakeholders;
- (c) Develop goals for participation by agricultural operators conducting commercial and noncommercial agricultural activities in the watershed necessary to meet the protection and enhancement benchmarks of the work plan;
- (d) Ensure outreach and technical assistance is provided to agricultural operators in the watershed;
- (e) Create measurable benchmarks that, within ten years after the receipt of funding, are designed to result in (i) the protection of critical area functions and values and (ii) the enhancement of critical area functions and values through voluntary, incentive-based measures;
- (f) Designate the entity or entities that will provide technical assistance;
- (g) Work with the entity providing technical assistance to ensure that individual stewardship plans contribute to the goals and benchmarks of the work plan;
- (h) Incorporate into the work plan any existing development regulations relied upon to achieve the goals and benchmarks for protection;
- (i) Establish baseline monitoring for: (i) Participation activities and implementation of the voluntary stewardship plans and projects; (ii) stewardship activities; and (iii) the effects on critical areas and agriculture relevant to the protection and enhancement benchmarks developed for the watershed;

- (j) Conduct periodic evaluations, institute adaptive management, and provide a written report of the status of plans and accomplishments to the county and to the commission within sixty days after the end of each biennium;
- (k) Assist state agencies in their monitoring programs; and
- (l) Satisfy any other reporting requirements of the program.

RCW 36.70A.720

VSP provides a unique opportunity for diverse stakeholders to come together and write a resource management plan that works for them. You and [organization] would provide valuable insights and contributions to our work group. Please consider participating in this process.

Sincerely,

Aaron Rosenblum

VSP Coordinator

Foster Creek Conservation District

[arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)

509-423-5990



## Appendix D:

### Selected Materials from the Douglas County

### Multiple Species General Conservation Plan

1. SSP Checklist for information to include with permit application
2. Conservation activities that can be included in an SSP and permit application
3. Adaptive Management and Monitoring Plan for the MSGCP
4. MSGCP and VSP (I-5) habitat monitoring protocols and forms

## 1. SSP Checklist for information to include with permit application

### **GCP Site Plan Checklist for Information to Include with Permit Application for Douglas County Multiple Species General Conservation Plan**

The property described in the attached MSGCP GCP site plan, within the boundaries of Douglas County, Washington, is owned or leased by [*Landowner/lessee's name*] and is included within the scope of the Douglas County MSGCP.

The Applicant understands the attached GCP Site Plan and agrees to undertake and comply with agricultural BMPs and additional measures set forth in the MSGCP, the Incidental Take Permit, and the GCP site plan. As such, he/she agrees to permit representatives of the FCCD to enter specific properties at reasonable times with prior approval to ascertain compliance with the MSGCP and their individual agreements.

Nothing in this GCP site plan limits the Applicant/Permittee's right to acquire or lease additional lands. Any lands acquired after the date on this agreement will not be covered the GCP site plan is amended. Transfer of ownership or control of covered lands would also require amendment of the GCP site plan.

[*Landowner/lessee's name*] guarantees that he/she is the owner and/or lessee of the property and warrants, to the best of his/her knowledge, that there are no outstanding rights that will interfere with implementation of the GCP site plan.

### **GCP site plan Checklist**

At a minimum, each GCP site plan for enrolled lands must include the following:

#### Site Description

- Applicant's name, address, phone number, and/or other contact information.
- Legal description of property to be enrolled. Accurately identify the property to be enrolled under this Agreement by providing a legal description and map of property boundaries, listing total acreage, delineating existing habitat conditions, and documenting ownership, management, and lease authorities, as applicable.
- Vicinity map and directions to the property from a major highway or road.
- Site map(s) of the property, with portions of the property to be enrolled delineated.
- Representative photos of the enrolled property, with photo locations identified on sitemap.
- Description of current and recent land-use practices on the enrolled land, with descriptions of site and habitat conditions.
- Information about any Covered Species and their habitats that may occur on the enrolled property or in areas that may be affected by Covered Activities.

Implementation Plan

- Descriptions of the specific actions to be implemented on the enrolled property, with a timeline for implementation and the responsible party or parties for each action. This should be clearly spelled out in the Farm Plan and/or GCP site plan with measures as required per the MSGCP.
- Description of costs and funding sources for actions to be implemented on the enrolled property
- List of covered species affected or taken, and habitat quantities or quality affected or taken.
- Description of how/when site-specific monitoring or reporting will occur.

By

\_\_\_\_\_  
Foster Creek Conservation District  
Waterville, Washington

\_\_\_\_\_  
Date

By

\_\_\_\_\_  
Signature of Applicant

\_\_\_\_\_  
Date

By

\_\_\_\_\_  
[Additional parties, optional]

\_\_\_\_\_  
Date

## 2. Conservation activities that can be included in an SSP and permit application

### Best Management Practices

The term BMPs is a general term that includes CPs, additional land-use measures, and additional species-specific measures. The following CPs will be selected as appropriate for implementation during the Farm Plan development process.

#### NRCS Conservation Practice Standards

NRCS Conservation Practice Standards (CPs) are nationwide standards used as the basis for Resource Management System (RMS) best management practices to address various natural resource concerns and ensure they meet design criteria. Individual states may modify the CPs by making them more restrictive than the national standard. Additionally, counties may make CPs more restrictive than the state version. At this time, all counties in Washington State prescribe to the state practice standards.

A state or county may change the practice number, name, or description in order to retain consistency across the country. This list is a subset of all available NRCS CPs and was abridged to limit it to practices typically used in Douglas County. For a complete list, please contact a local NRCS field office or follow this link: <http://www.nrcs.usda.gov/technical/efotg/>.

*Table [D-1]: Conservation Practices Used in Douglas County*

CP #	CP Name	CP Description
314	Brush Management	Removal, reduction, or manipulation of non-herbaceous plants
324	Deep Tillage	Performing tillage operations below the normal tillage depth to modify the physical or chemical properties of the soil
315	Herbaceous Weed Control	The chemical [*see previous table], biological, or mechanical removal or control of herbaceous weeds including invasive, noxious and prohibited plants.
326	Clearing and Snagging	Remove snags, drifts, or other obstructions from a channel or drainage way
327	Conservation Cover	Establishing and maintaining permanent vegetative cover.
328	Conservation Crop Rotation	Growing crops in a planned sequence on the same field.
329	Residue Management	Managing the amount, orientation, and distribution of crop and other plant residue on the soil surface year round while limiting soil-disturbing activities to only those necessary to place nutrients, condition residue, and plant crops
331	Contour Orchard and Other Fruit Areas	Planting orchards, vineyards, or small fruits so that all cultural operations are done on the contour

<b>CP #</b>	<b>CP Name</b>	<b>CP Description</b>
332	Contour Buffer Strips	Narrow strips of permanent, herbaceous vegetative cover established around the hill slope, and alternated down the slope with wider cropped strips that are farmed on the contour
338	Prescribed Burning	Controlled fire applied to a predetermined area
340	Cover crop	Crops including grasses, legumes and forbs established for seasonal cover and other conservation purposes.
342	Critical Area Planting	Establishing permanent vegetation on sites that have or are expected to have high erosion rates and on sites that have physical, chemical, or biological conditions that prevent the establishment of vegetation with normal practices.
370	Atmospheric Resource Quality Management	A combination of treatments to manage resources that maintain or improve atmospheric quality
378	Pond	A water impoundment made by constructing an embankment or by excavating a pit or dugout
382	Fence	A constructed barrier to animals or people
386	Field Border	A strip of permanent vegetation established at the edge or around the perimeter of a field.
390	Riparian Herbaceous Cover	Grasses, sedges, rushes, ferns, legumes and forbs tolerant of intermittent flooding or saturated soils established or managed.
391	Riparian Forest Buffer	An area predominantly trees and/or shrubs located adjacent to and up-gradient from watercourses or water bodies.
393	Filter Strip	A strip or area of herbaceous vegetation situated between cropland, grazing land, or disturbed land (including forestland) and environmentally sensitive areas.
394	Firebreak	A permanent or temporary strip of bare or vegetated land planned to retard fire.
422	Hedgerow Planting	Establishment of dense vegetation in a linear design to achieve a natural resource conservation purpose.
428	Irrigation Water Conveyance Ditch or Canal Lining	A fixed lining of impervious material installed in an existing or newly constructed irrigation field ditch or irrigation canal or lateral.
430	Irrigation Water Conveyance—Pipeline	A pipeline and appurtenances installed in an irrigation system.
431	Above-ground multi-outlet pipeline	A water distribution tubing consisting of aluminum, PVC, or polyethylene pipeline with closely spaced orifices or gates.

<b>CP #</b>	<b>CP Name</b>	<b>CP Description</b>
441	Irrigation System, micro-irrigation	Drip irrigation system.
442	Irrigation System, Sprinkler	Sprinkler, not to include center pivot or wheel lines.
443	Irrigation System, surface and subsurface	A system in which all necessary water-control structures have been implemented for the efficient distribution of water.
449	Irrigation Water Management	The process of determining and controlling the volume, frequency, and application rate of irrigation water in a planned, efficient manner.
460	Land Clearing	Removing trees, stumps, and other vegetation to achieve a conservation objective
472	Access Control/Use Exclusion	The temporary or permanent exclusion of animals, people, or vehicles from an area.
500	Obstruction Removal	Removal and disposal of unwanted, unsightly, or hazardous buildings, structures, vegetation, landscape features, and other materials.
512	Pasture and Hayland Planting	Establishing native or introduced forage plant species.
516	Pipeline	Small pipeline having an inside diameter of 8 inches or less.
521	Pond Sealing or Lining	A manufactured hydraulic barrier consisting of a membrane liner or functionally continuous layer of compacted soil- dispersant material
528	Prescribed Grazing	Managing the harvest of vegetation with grazing and/or browsing animals.
533	Pumping Plant	A facility that delivers water including the pump, power, plumbing, etc.
550	Range Planting	Establishment of adapted perennial vegetation such as grasses, forbs, legumes, shrubs, and trees.
560	Access Road	A travel-way for equipment and vehicles constructed as part of a conservation plan.
561	Heavy Use Area Protection	The stabilization of areas frequently and intensively used by people, animals, or vehicles by establishing vegetative cover, by surfacing with suitable materials, and/or by installing needed structures.
574	Spring Development	Collection of water from springs or seeps to provide water for conservation needs.
575	Animal Trails and Walkways	Established lanes or travel ways that facilitate animal movement.



<b>CP #</b>	<b>CP Name</b>	<b>CP Description</b>
590	Nutrient Management	Managing the amount, source, placement, form, and timing of the application of plant nutrients and soil amendments
595	Pest Management	Utilizing environmentally sensitive prevention, avoidance, monitoring, and suppression strategies to manage weeds, insects, diseases, animals, and other organisms (including invasive and non-invasive species), that directly or indirectly cause damage or annoyance.
614	Watering Facility	A permanent or portable device to provide an adequate amount and quality of drinking water for livestock and or wildlife.
636	Water Harvesting Catchment	A facility for collecting and storing runoff from precipitation
642	Water Well	A hole drilled, dug, driven, bored, jetted, or otherwise constructed to an aquifer.
643	Restoration and Management of Rare and Declining Habitat	Restore and manage rare and declining habitats and their associated wildlife species to conserve biodiversity.
644	Wetland Wildlife Habitat Management	Retain, develop or manage wetland habitat for wildlife.
645	Upland Wildlife Habitat Management	Provide and manage upland habitats and connectivity within the landscape for wildlife.
734	Fish and Wildlife Structure	A structure designed and implemented specifically for fish or wildlife.
741	Grassed Buffer Strips	Establishing rows of narrow strips of herbaceous vegetation across cropland.

## Additional Measures

In addition to the CPs listed, these measures will be applied to certain land use categories and activities.

### All Agricultural Uses

#### *Riparian Areas*

1. Increase variety of native tree/shrub species and age classes within riparian areas. Develop riparian habitat with age class variety, plant species variety, and age diversity of shrub and tree canopy layers. Possible management practices:
  - a. Implement rotation and deferred grazing strategies within riparian areas that produce a diversity of age, species, and life forms within riparian habitat areas, resulting in a properly functioning condition. Deferred and rotation grazing systems that provide extended periods of rest are needed to produce appropriate vegetation age classes when they are missing.
  - b. Use fencing to control livestock use periods.
  - c. Monitor herbicide applications.
  - d. Avoid overspray of herbicides within riparian areas.
2. Manage existing riparian habitat to allow it to reach its full site potential and function.
3. Restore range riparian habitat to support Covered Species.
4. Protect springs, seeps, and wet meadows within and adjacent to sagebrush stands from over-grazing.
5. Manage lands to provide good water quality and riparian conditions in seeps, wetlands, springs, creeks, rivers, lakes.
6. Maintain snags or potential snags, including large old cottonwoods, in riparian areas.
7. Maintain riparian flood plain and associated shrub habitat.
8. Avoid cutting or removing willows or other species important for sharp-tailed grouse wintering, including water birch, hawthorn, serviceberry, chokecherry, etc.
9. Consider removing exotic white poplar (*Populus alba*) where it is crowding out water birch and other native riparian species (Stinson and Schroeder 2012, p. 53).

#### *Wildfire Management*

1. Develop fire management plans with local fire districts.
2. Manage mechanical firebreaks and backfires to minimize impacts to Covered Species and supporting habitats.
3. Along with local fire districts, identify habitats that need special consideration during wildfire control and discuss special control techniques. Identify areas where fire control is not a critical issue.

4. Use mechanical firebreaks and backfires to minimize the adverse effects of wildfire control on critical habitats.
5. Group land units into control, limited control, and minimal wildfire control areas.

#### *Recreational Use: Non-Agricultural Motorized Vehicle Use, Hunting, Fishing, Wildlife Viewing*

1. Restrict recreational use during critical mating, nesting, and brood-rearing periods, especially near sharp-tailed grouse leks (March 1 to June 30) and sage grouse leks (February 1 to June 30).
2. Ensure proper use of gates and other livestock management devices.
3. Minimize motorized access.
4. Consider potential impacts on wildlife, site habitat features, ranch operations and quality of life before permitting hunting and recreation. Educate visitors about limits, rules, and cautions needed to make sure their land use has minimum impact on habitat, wildlife resources, forage production, and ranch operation.
5. Minimize visitor vehicle traffic on ranch roads to prevent noxious weed introduction.
6. Develop educational information about Covered Species that Applicants/Permittees can share with hunters.
7. Washington ground squirrels are a protected species under state law and should not be subjected to recreational shooting by the landowner or the public. In situations where the landowner believes that the squirrels pose a threat to crops, the landowner should contact USFWS and/or WDFW to discuss non-lethal options for resolving the problem.

#### *Maintain Remnants*

1. Maintain, enhance, and protect from degradation remnant patches of shrub-steppe interspersed in CRP/SAFE and cropland. Rock piles that do not support shrub-steppe vegetation are not considered remnants.

#### *Pest Management and Weed Management*

1. Integrate pest management techniques. Design control methods to target pest species only.
2. Implement integrated weed management plans to ensure timely elimination of invasive plants to prevent their spread to adjacent habitats.
3. Encourage biological control of weeds.

#### *Dryland Agriculture*

##### *Conversion of Conservation Cover to Active Farming*

1. If CRP/SAFE or other conservation contracts cannot be maintained due to program changes, enroll these conservation lands into other Federal Farm Bill conservation program such as

Grassland Reserve Program (GRP), Agriculture Conservation Easement Program (ACEP), or other similar Federal, State, or other similar programs if available.

2. Maintain original remnant patches of shrub-steppe within CRP/SAFE fields when converting back to crops.
3. To minimize the disturbance to Covered Species using CRP/SAFE, ensure that conversion does not occur within species-specific timing restrictions in Table E-3.

#### *Erosion*

1. Farm plans/GCP Site Plans will include erosion control measures to reduce sheet, rill and gully erosion at field edges by trapping sediment and reducing surface runoff.

### Rangeland Agriculture

#### *Grazing Guidelines*

*Note: The standard grazing guidelines and species-specific measures below provide prescriptions with the goal of producing or maintaining habitat for covered species' life history needs, including providing for cover, forage, and reproduction habitat. Other alternative grazing rotations or prescriptions might be acceptable, as long as they met similar expectations, including utilization rates, stubble heights, and distribution and timing that encourages plant productivity and vigor, seed production, photosynthesis, recovery and re-growth. Alternative grazing prescriptions may need more stringent monitoring plans that are developed and implemented to ensure that expectations are being met. If expectations are not met, the grazing prescriptions may need to be modified as implementation proceeds.*

The following will promote better habitat and encourage plant productivity and vigor, seed production, photosynthesis, recovery and re-growth.

1. Develop a grazing management plan that accounts for the intensity of grazing and the timing of both grazing periods and recovery periods. The plan should include:
2. Graze a pasture no more than once every third year during the critical period for key bunchgrass species (boot stage through seed formation: typically, May 15 to July15).
3. Manage utilization to achieve:
  - a. No more than 50 percent utilization during the growing season
  - b. No more than 60 percent utilization during the dormant season.
4. Maintain a minimum stubble height of 5" at all times on desirable bunchgrasses on average in a pasture. Note that a stubble height of 8" is better than 5" in appropriate growing sites.
5. Manage livestock distribution to minimize overgrazing, especially during drought. Tools such as fencing, the placement of water & salt, and riding can be used.
6. During winter, use one smaller sacrifice area for feeding to minimize impacts to shrub- steppe

and other habitats.

7. Utilization of woody species will not exceed 50 percent of annual leaf and twig growth within reach of animals, unless a grazing system is implemented which has a high rest to grazing period ratio which allows for adequate recovery following heavier use.

#### *Riparian Use*

1. Allow early spring grazing only in existing riparian pasture and manage access.
2. Exclude use in undisturbed riparian areas.
3. Manage livestock to limit access on riparian areas by controlling length of grazing period and time of year or by utilizing exclusionary practices.
4. Use off-stream watering sites or selective herd management to promote livestock use of uplands.
5. Utilization of woody species will not exceed 50 percent of annual leaf and twig growth within reach of animals, unless a grazing system is implemented which has a high rest to grazing period ratio which allows for adequate recovery following heavier use.

#### *Watering Sites, Supplement Sites, Livestock Concentrations*

1. Locate watering facilities away from riparian zones as much as is practicable; ensure escape devices for small wildlife (such as a boards or ramps).
2. Ensure that any livestock watering diversions do not restrict fish passage nor impede water volume flow.
3. If riparian crossing location is the only option, harden crossing and manage access.
4. Locate salt licks away from riparian or wetland areas.
5. Avoid livestock concentrations or travel routes on sensitive areas.
6. Protect sensitive areas, such as riparian habitat, occupied Columbia Basin pygmy rabbit habitat, Washington ground squirrel colonies, greater sage-grouse/Columbian sharp-tail grouse leks, and rare plant populations from unnecessary impacts caused by livestock concentrations.

Possible management practices include:

- a. Locating mineral supplements, water troughs and supplemental feeding sites on shallow, gravelly, or rocky soils or rocky areas away from sensitive areas,
- b. Implementing exclusion fencing.
7. Manage livestock to maintain water quality goals by minimizing concentrated animal use near streams or in upland areas where surface water drains across these sites and carries excess nutrients downslope to surface water.
8. To minimize fertilizer loss to ground water or surface flow, use fertilizers in hay fields at an agronomic level that provides plant benefit but is not in excess of plant needs.
9. Maintain chemical use on livestock and rangelands at a level that is effective, but not in amounts or in areas that would cause contamination of soil, forage, water, wildlife or habitat.

## Irrigated Agriculture

### *Adjacent Habitat*

1. Maintain adjacent non-farmed lands in natural habitats to benefit of Covered Species.

### *Lead Soils*

1. Where lead is present in orchard soils due to past chemical applications, cover, tarp, or otherwise make soil inaccessible to wildlife when ~~and~~ significant ground disturbing activities occur (irrigation work, planting, etc.).

### *Food Attractant*

1. Within orchard or other irrigated crops, minimize the attractiveness of the food source to wildlife. As appropriate, use deterrent measures such as reflective materials, noise generators, and barrier netting.

## Voluntary Measures for Chemical Use

While pesticide and herbicide chemical use is not a Covered Activity, Permittees may wish to voluntarily implement measures such as the following to minimize non-target impacts:

1. Follow label directions.
2. Utilize Integrated Pest Management practices that consider the range of treatment options (e.g., herbicide, biological agents, mechanical, hand pulling, grazing practices) to meet requirements of State Noxious Weed Law.
3. When necessary, apply chemicals in ways that minimize impacts to Covered Species, including avoiding applications in key species locations and avoiding impacts to water systems.
4. If pastures or fields are to be fertilized, apply as far away as possible from riparian areas.
5. Utilize soil sampling to ensure agronomic rate of fertilizer is being applied.
6. Herbicide application is restricted near riparian and wetland areas or degraded areas that would allow excessive surface water transport into water bodies.
7. Where Covered Species occur, implement spot treatment with herbicide on no more than 10 percent of pasturelands per year.
8. Avoid broadcast treatment of entire pasture.
9. Isolate rodenticides so that Washington grounds squirrels or other Covered Species do not have access.
10. Do not use poison grain for rodent control.
11. Avoid spraying herbicides in riparian areas. If spraying is needed to control exotics, do so outside the covered species use season on a staggered rotation of small patches.
12. Avoid aerial application of herbicides on fields where habitat fragments are situated within the field unless assurance against overspray can be documented.

13. Avoid herbicide overspray of large shrub islands within and adjacent to cultivated fields.
14. Minimize spraying of herbicides on CRP/SAFE lands during the important spring nesting season.
15. Apply chemical sprays only under desirable wind conditions to minimize potential drift, per label directions.

#### Additional Measures Related to Covered Species

Table E-3 lists additional measures needed for Covered Species. During development of GCP Site Plans, FCCD and USFWS will determine which of the four covered species should be addressed with the measures below. These determinations will be based on occupancy, habitats types present, soil depths, and location in the County. For example, currently sharp-tailed grouse is more likely in the northern portion of the County.

Table [D-2]: Species Specific Measures

Covered Species	If This Situation	Then Apply This Species Measure
Columbia Basin Pygmy Rabbit (pygmy rabbit)	Not Already Covered by the SHA	<ul style="list-style-type: none"> <li>• Provide USFWS and WDFW access to enrolled properties through a mutually-agreeable notification process to survey for and monitor any pygmy rabbits present.</li> <li>• Notify USFWS at least 30 days prior to undertaking any habitat-altering activity (such as conversion of CRP or SAFE lands) that could result in authorized incidental take of pygmy rabbits. Provide the USFWS and WDFW the opportunity to translocate any affected pygmy rabbits to suitable alternate site(s) prior to implementation of those activities.</li> <li>• Immediately notify USFWS upon finding any dead or injured pygmy rabbits on enrolled property, or immediately contact an appropriate representative of USFWS or WDFW for assistance if identification of the specimen is uncertain.</li> </ul>
Columbia Basin Pygmy Rabbit and Washington Ground Squirrel	Known Occupied Habitat	<ul style="list-style-type: none"> <li>• Avoid constructing new structures that serve as perches or nest sites for avian predators (e.g., windmills).</li> <li>• Survey fence lines to locate active burrows. Limit clearing of fence line to 8' width by hand or mower. No mowing or brush removal within 30' of a burrow.</li> <li>• No in-ground posts (metal or wood) within 30' of a burrow. Use rock jacks or figure 4 braces within 30' of a burrow and no posts of any kind within 10' of burrow. Limit activities to late summer and fall (avoid breeding, rearing period, and winter high stress period).</li> <li>• Utilize Integrated Pest Management practices that consider the range of treatment options (including: biological agents, mechanical, hand pulling, grazing practices).</li> </ul>



Covered Species	If This Situation	Then Apply This Species Measure
Washington Ground Squirrel	Known Occupied Habitat	<ul style="list-style-type: none"> <li>• Avoid grazing during Washington ground squirrel active season (typically from April 1 until June 30 when Washington ground squirrels enter their extended period of dormancy, or when documented to enter summer dormancy).</li> <li>• Notify USFWS at least 30 days prior to undertaking any habitat-altering activity (such as conversion of CRP or SAFE lands) that could result in authorized incidental take of Washington Ground Squirrels. Provide the USFWS and WDFW the opportunity to translocate any affected Washington Ground Squirrels to suitable alternate site(s) prior to implementation of those activities. USFWS or WDFW staff are unlikely to undertake unplanned translocations of ground squirrels unless a significant population of squirrels is present on the conversion site or the species becomes federally listed.</li> <li>• Immediately notify USFWS upon finding any dead or injured Washington Ground Squirrels on enrolled property, or immediately contact an appropriate representative of USFWS or WDFW for assistance if identification of the specimen is uncertain.</li> <li>• Avoid cultivating lands that contain active ground squirrel colonies. If habitat conversion activities or CRP/SAFE takeout must be done, avoid January 21 to June 30.</li> <li>• Washington ground squirrels are a protected species under state law and should not be subjected to recreational shooting or poisoning by the landowner or the public. In situations where the landowner believes that the squirrels pose a threat to crops, the landowner should contact USFWS and/or WDFW to discuss non-lethal options for resolving the problem.</li> </ul>
Columbian Sharp-tailed Grouse	Areas with Leks or Adjacent to Leks or within Likely Occupied Habitat	<ul style="list-style-type: none"> <li>• CRP/SAFE takeout or other conversion activities shall not occur April 1 to July 31</li> </ul>
Columbian Sharp-tailed Grouse	Likely occupied Nesting Habitats with Grazing	<ul style="list-style-type: none"> <li>• Where appropriate retain a residual cover of perennial grasses and forbs of at least 20 cm (8 in) for cover during the nesting season (April 1 through June 30).</li> </ul>

Covered Species	If This Situation	Then Apply This Species Measure
Columbian Sharp-tailed Grouse and Greater Sage-grouse		<ul style="list-style-type: none"> <li>• Immediately notify USFWS upon finding any dead or injured sharp-tailed grouse or sage grouse on enrolled property, or immediately contact an appropriate representative of USFWS or WDFW for assistance if identification of the specimen is uncertain.</li> </ul>
Columbian Sharp-tailed Grouse and Greater Sage-grouse	Activities in or Near Leks	<ul style="list-style-type: none"> <li>• Minimize impacts to Greater sage-grouse and Columbian sharp-tail grouse leks and nesting habitats during the spring breeding season and nesting season (may vary by site but typically March through June for sharp-tailed grouse; and February 20 through June for sage grouse).</li> <li>• Avoid disturbance to occupied leks. Typical season is between March through June for sharp-tailed grouse, and February 20 through May 15 for sage grouse. Within 0.5 mile of known leks, schedule essential springtime agricultural activities to occur in the middle of the day (avoid activities from one hour before sunset to 3 hours after sunrise). At those times and locations, avoid physical, mechanical, and loud noise disturbances.</li> <li>• Plan and design placement of new fences away from occupied and historic leks. If this is not possible, adequately mark fences to increase visibility. Identify existing fences that are nearby to an occupied or historic lek and consider removing or relocating the fence to a site further from the lek. At a minimum, mark all existing fences within ¼ mile from an occupied or historic lek, or in high risk areas where collisions are likely or known to occur. Use NRCS, SGI, or other appropriate national or local fence collision tools to prioritize fence marking.</li> </ul>
Greater Sage-grouse	Areas with Leks or Adjacent to Leks or in Likely Occupied Habitats	<ul style="list-style-type: none"> <li>• CRP/SAFE takeout or other conversion activities not to occur between March 15 and July 14.</li> </ul>
Greater Sage-Grouse	Likely occupied Nesting Habitats with Grazing	<ul style="list-style-type: none"> <li>• In grazed pastures, implement measures to promote nesting cover (through appropriate rotations, stocking rates, rest, and/or deferment schedules).</li> </ul>

### 3. Adaptive Management and Monitoring Plan (AMMP)

Monitoring measures in the MSGCP include:

1. *Farm-level BMP Effectiveness Monitoring*: Evaluation of the on-site effects of the specific BMPs on habitat quality and quantity on individual agricultural operations to ensure they meet quality criteria.
2. *Farm-level BMP Implementation Monitoring*: Monitoring of the individual BMPs in Farm Plans and GCP Site Plans.
3. *Landscape-level BMP Effectiveness Monitoring*: Evaluation of the cumulative effects of the BMPs on the habitat conditions within the overall Plan Area (See Glossary Section for definition of cumulative effects).
4. *Covered Species Population Monitoring*: Monitoring Covered Species populations by estimating their habitats quantities or HSI-Acres over the Plan Area as well as coordinating with agencies conducting on-the-ground population monitoring.
5. *Changed Circumstances Monitoring*: Assess the impacts of changed circumstances on habitat quality and quantity over the Plan Area.

AMMP: Monitoring and Evaluation Measures

Specific AMMP measures, criteria, and potential responses are listed in Table 4-5. Following the table is a more detailed discussion of each measure.

*Table [D-3]: Summary of Implementation and Adaptive Management Monitoring and Evaluation Measures for the Douglas County MSGCP*

AMMP Measure Number	Measure Title	Monitoring Frequency	Monitoring Type/ Responsible Party	Reporting Process	Quality Criteria to Be Met	Management Response If Not Met
1	Farm Level BMP Implementation Monitoring	Annual	Self-reporting and record-keeping of compliance—Permittees  Conduct compliance spot checks annually or more frequently and audits for BMP implementation on dryland farm operations, non-farmland shrub-steppe and other rangelands, and on irrigated croplands—FCCD and/or USFWS	Annual Reports developed by FCCD and submitted to the USFWS by FCCD Plan Administrator.	Permittee is implementing farm plan/site plan as expected.	Provide written reminders to Permittees if needed to ensure compliance—FCCD and/or USFWS.  After review of situation, Service may revoke permit if Permittee not following expectations in farm plan/site plan and permit.
2	Farm-level BMP Effectiveness Monitoring: Soil Erosion	Annual	Dryland: photo monitoring—by Permittee  Residue monitoring after each crop rotation on each farm—FCCD and Permittee	Reports submitted to the FCCD by enrolled Permittees.  IM committee contributes.  FCCD Plan Administrator develops report.	Soil-protection measures for wind and water erosion on dryland croplands area meeting expectations.	Re-evaluate soil-protection measures and field operations to minimize soil-erosion hazards by next growing season.

AMMP Measure Number	Measure Title	Monitoring Frequency	Monitoring Type/ Responsible Party	Reporting Process	Quality Criteria to Be Met	Management Response If Not Met
2	Farm-level BMP Effectiveness Monitoring; Rangeland Vegetative Quantity and Quality	Annual—photo monitoring  Biennial—rangeland surveys	Photo monitoring—Permittees  Rangeland vegetation survey on enrolled lands and control areas—FCCD	Reports submitted to the FCCD by enrolled Permittees. IM Committee contributes. FCCD Plan Administrator develops report.	Range vegetation measurements indicate improved health and diversity vs. rangelands and pastures without applied BMPs.	Review prescribed grazing plan BMPs and adjust rotation and resting of pastures by next growing season.  Adjust farm plan/site plan BMPs as needed based on monitoring.
2	Farm-level BMP Effectiveness Monitoring; Irrigated Agriculture	Annual	Irrigation schedule monitoring—Permittees	Reports submitted to the FCCD by enrolled Permittees. IM Committee contributes. FCCD Plan Administrator develops report.	Irrigation efficiencies, decreased runoff, and excessive percolation vs. control.	Review irrigation scheduling and improve soil-moisture monitoring program by next growing season.  Adjust farm plan/site plan BMPs as needed based on monitoring.
2	Farm-level BMP Effectiveness Monitoring	5-year point	Collect data using NRCS certification protocols and compare to controls—FCCD and Permittee	FCCD will summarize previous annual and biennial reports to determine trends.	BMPs are meeting expectations and benefitting covered species.	Develop recommendations to modify BMPs to improve farm-level effectiveness as needed based on monitoring.

AMMP Measure Number	Measure Title	Monitoring Frequency	Monitoring Type/ Responsible Party	Reporting Process	Quality Criteria to Be Met	Management Response If Not Met
3	Landscape-level BMP Effectiveness Monitoring: Cumulative Effects of BMPs on Habitat Quality and Quantity Monitoring	Annual	Photo monitoring at a suite of control points across Plan Area CRP/SAFE and other dryland crop lands—FCCD	Reports submitted to the USFWS by FCCD Plan Administrator.	BMPs are contributing to positive cumulative effects on Covered Species habitat on CRP/SAFE and dryland croplands within the Plan Area.	FCCD and USFWS re-evaluate the BMPs.  Potentially implement alternative BMPs as needed based on monitoring.
3	Landscape-level BMP Effectiveness Monitoring: Cumulative Effects of BMPs on Habitat Quality and Quantity Monitoring	Biennial	Rangeland vegetation surveys on suite of control plots across non-cropland shrub-steppe—FCCD	IM committee submits reports to the FCCD.  FCCD Plan Administrator develops report.	BMPs are contributing to positive cumulative effects on Covered Species habitat on non-cropland shrub-steppe and other range communities within the Plan Area.	FCCD and USFWS re-evaluate the BMPs.  Potentially implement alternative BMPs as needed based on monitoring..
3	Landscape-level BMP Effectiveness Monitoring: Cumulative Effects of BMPs on Habitat Quality and Quantity Monitoring	Biennial	Monitoring of downstream non-crop vegetation response to irrigation practices on suite of control plots across non-cropland shrub-steppe—FCCD	IM committee submits reports to the FCCD.  FCCD Plan Administrator Develops report.	BMPs are contributing to positive cumulative effects on Covered Species habitat on irrigated cropland within the Plan Area.	FCCD and USFWS re-evaluate the BMPs.  Potentially implement alternative BMPs as needed based on monitoring.

AMMP Measure Number	Measure Title	Monitoring Frequency	Monitoring Type/ Responsible Party	Reporting Process	Quality Criteria to Be Met	Management Response If Not Met
3	Landscape-level BMP Effectiveness Monitoring: Cumulative Effects of BMPs on Habitat Quality and Quantity Monitoring	Annual	Evaluate status of Plan Area lands due to loss of habitat from development or conversion activities—FCCD	Reports to USFWS by FCCD Plan Administrator.	Compare total acres to trigger points in changed circumstances section.	Evaluate whether any changed circumstances are triggered, and refer to actions in changed circumstances section.
3	Landscape-level BMP Effectiveness Monitoring: Cumulative Effects of BMPs on Habitat Quality and Quantity Monitoring	At year 5 and then at 5-year increments	Evaluate whether BMPs should be revised.	FCCD Plan Administrator coordinates with IM Committee to develop report. Report is submitted to USFWS.	Over 5-year review period, BMPs are contributing to positive cumulative effects on Covered Species habitat.	Revise farm plans/site plans as appropriate.
4	Covered Species Monitoring	Annual	Monitor species present at selected control points in CRP/SAFE and dryland croplands— Permittees, FCCD, IM Committee  (FCCD will coordinate with local, State, and Federal agencies as well as non- governmental organizations to collate their monitoring results.)	Annual reports developed by FCCD and submitted to the USFWS and WDFW by FCCD Plan Administrator.	Habitats of Covered Species are decreasing, maintaining constancy, or increasing as projected in the MSGCP.	Evaluate whether any changed circumstances are triggered.  Where Covered Species populations are not within MSGCP predictions, evaluate potential reasons and evaluate whether BMPs need to be discontinued or modified.

AMMP Measure Number	Measure Title	Monitoring Frequency	Monitoring Type/Responsible Party	Reporting Process	Quality Criteria to Be Met	Management Response If Not Met
4	Covered Species Monitoring	Ongoing	During other monitoring efforts and farming activities, note covered species sightings locations and habitats used— Permittees and FCCD	Annual Reports developed by FCCD and submitted to the USFWS and WDFW by FCCD Plan Administrator.	Do covered species continue to occur in locations and at numbers expected?	Where Covered Species populations or distributions are not within MSGCP guidelines, re-evaluate BMPs and discontinue or modify as necessary.
5	Changed Circumstances Monitoring	Annual	Maintain and review annual records of normal and abnormal climatic or other natural process events, including crop or livestock pricing that may affect the habitat conditions on CRP, SAFE, and dry croplands. Maintain adequate historical records of climatic and natural processes occurring on CRP/SAFE and dryland cropland as well as crop or livestock market conditions to understand the possible effects of changed — FCCD	Reports submitted to the FCCD Board and USFWS by FCCD Plan Administrator.	Do natural processes meet or exceed any changed circumstances criteria?	Evaluate whether any changed circumstances are triggered. Should changed circumstances arise, modify BMPs and MSGCP as needed to continue to support project objectives.
5	Changed Circumstances Monitoring	Annual	Evaluate changes to acres of CRP, SAFE, or similar protected status lands— FCCD	Annual Reports developed by FCCD and submitted to the USFWS by FCCD Plan Administrator.	Change in conservation contract acres decreases by more than 10% of the starting point.	Evaluate whether any changed circumstances are triggered.



## 4. MSGCP and VSP (I-5) habitat monitoring protocols and forms

### **Fixed Photo Points for Trend**

The purpose is to detect species shifts and structural changes in the plant community visually.

#### Fixed Photo point protocol

1. Select a reference point on the horizon. A haystack rock, a farmstead or a distinctive hillside feature are example reference points.
2. Mark the photo point location with a rock cairn. Together, the rock cairn and reference point help ensure that photos are taken facing the same direction. Note that a solitary fence post is an attractant to livestock and may not be the best for marking photo point or transects.
3. Bring the previous year's photo to help align the photo.
4. Use the pasture and date card for future identification.
5. Take the photo from eye height and frame the shot so that 2/3 of the shot is below the horizon. Pasture and date card should be legible and be placed in the same frame location (bottom left, center, right) each time.
6. Fixed photos taken in the spring need to be taken within a few days of the same date.
7. Fixed photos taken in the dormant season need to be taken within 10 days of the same date.
8. Fixed photos are to be taken annually.

### **Step Point Transect**

The impact of raindrops on bare soil causes soil erosion. Step point transects provide data related to potential runoff, erosion, and moisture infiltration during precipitation events. Both ground cover and canopy cover intercept raindrops. The first question is: how much of the rain is intercepted by shrub, grass and flower canopy. And the second question is: how much of the soil surface is covered by live vegetation, plant litter, lichen, moss, or rock, and what percent is bare soil?

#### Step point protocol

Walk in a straight line between data points do not look down, but focus on the reference point. For consistency, two decisions need to be made before starting: (1) how many steps between data collection (every 3<sup>d</sup> step, every 5<sup>th</sup> step), and (2) the chosen spot on the boot from which data will be collected (tip: can notch your boot or use duct tape). Following these steps reduces bias in the data. Altering your stride length, walking around large sagebrush or stepping over bunch grasses, as we usually do walking through rangeland, must be avoided as much as possible to insure reliable data.

Every time the chosen foot hits the ground, reference what is under the chosen point on boot. Remember this is supposed to be a "point" and not an area. Record the data for this point on the monitoring sheet. Continue following this consistently until 100 data points have been collected.

### **Boot Gap Transect**

Boot gap transects provide data for detecting changes in the deep-rooted perennial bunchgrasses. This gives an indication of how the current grazing is influencing the health of rangeland. This same technique can also be used to detect changes in noxious/invasive species. The key is for the rancher and planner to work together to adapt the technique to fit the specific objectives for the ranch and conservation plan.

### Boot gap protocol

Once the step point is complete, turn around and conduct the boot gap monitoring back along the same transect line. It is important to follow the same general protocol as above (data is recorded at every 3<sup>d</sup> step, every 5<sup>th</sup> step). For boot gap the data collection area is the sole of the entire boot. Every time the chosen boot hits the ground record whether the crown of a key species, or key weed, is in contact with any part of the boot. Continue to do this until 100 data points have been recorded.

## **Belt Transect**

The purpose of a belt transect is to establish the density of a specific plant species or numerous species including shrub canopy, weed pressure, or key bunchgrass density. Belt transect data is helpful in determining the quality of wildlife habitat and livestock forage. Monitoring focused on seedling recruitment can be done for grasses, shrubs and/or weeds in an effort to predict trend, although it is good to note the percent of seedlings that make it to maturity varies greatly within and among species. Counts can be made for mature plants, for seedlings, or for both. Key plants counted in the belt area are converted to plants per square foot. In subsequent years, this transect is re-read, and the plants per square foot number can be compared to determine the amount of change.

### Belt transect protocol

Land owner's objectives will determine which species to monitor. Examples include: the density of bluebunch wheatgrass, level of weed pressure, abundance of shrubs, and recruitment of desirable and undesirable seedlings.

1. It is important to have both ends of belt transects marked and fixed, so as to consistently re-read the same area (tip: one end can be the same fixed point as your photos). Rebar and rock cairns tend to stay put and not wander off and are useful for this purpose.
2. Stretch out a 100' tape from the marked end points.
3. Use a 12" wide ruler or premeasured stick for the width of the belt transect.
4. Pick side of the tape to walk on. Data will be collected on the other side of the tape within the 1' belt width. Record which side the data will be collected on.
5. Count grasses and weeds with 50% or more of basal area that are rooted in the belt transect area. Grasses and weeds with less than 50% of basal area within the belt transect area are not to be counted.
6. Count shrubs that are rooted within the belt area.
7. A dot tally saves space and provides a quick summary for each counted species.
8. The belt area is 100 feet by 1 foot, so the number of recorded hits on each key species divided by 100 gives a plant per square foot number to be used for comparison.

## Photo Monitoring

Take picture at eye level with major landscape feature centered in frame.  
Remember to have about 2/3 of picture with landscape. More ground than sky.

Farm/Ranch: \_\_\_\_\_ Date: \_\_\_\_\_

Observer: \_\_\_\_\_ Pasture: \_\_\_\_\_

GPS Coordinates: N \_\_\_\_\_ W \_\_\_\_\_ Proj. \_\_\_\_\_

Location: T \_\_\_\_\_ R \_\_\_\_\_ Sec. \_\_\_\_\_

Reference Point: \_\_\_\_\_

### -----Step Point for Ground Cover-----

Remember: collect data from a point not an area. You may use the point of your boot.

	<b>Tally</b>	<b>Total</b>
Plant Canopy / Foliage		
Crown / Base		
Litter		
Other (rock. Cryptogram)		
Bare soil		
<b>TOTAL COVER -----</b>		
-		
<b>TOTAL BARE SOIL -----</b>		
-		

**-----Boot Gap-----**

Remember: For this transect you use the sole of the entire boot.

Length of Boot: \_\_\_\_\_ inches

Key Bunchgrasses Species: \_\_\_\_\_

Key Weed Species: \_\_\_\_\_

Gap Tally	Key Species Tally	Weed Species Tally
TOTAL GAP -----	TOTAL KEY SPECIES -----	TOTAL WEED SPECIES -----

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Belt Transect Data

Ranch \_\_\_\_\_ Pasture \_\_\_\_\_ Date \_\_\_\_\_

Reader \_\_\_\_\_ Recorder \_\_\_\_\_

Location of transect

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Transect Area: Length \_\_\_\_\_ feet x Width \_\_\_\_\_ feet = \_\_\_\_\_ sq. ft.  
 Density = number of individuals / sq. ft.

Species 1 \_\_\_\_\_ Size Class A \_\_\_\_\_ Size Class B \_\_\_\_\_ Size Class C \_\_\_\_\_

Species 2 \_\_\_\_\_ Size Class A \_\_\_\_\_ Size Class B \_\_\_\_\_ Size Class C \_\_\_\_\_

Species 3 \_\_\_\_\_ Size Class A \_\_\_\_\_ Size Class B \_\_\_\_\_ Size Class C \_\_\_\_\_

	Size Class A		Size Class B		Size Class C	
Species 1	Tally	Number	Tally	Number	Tally	Number
Density Species 1:		_____ / sq. ft.		_____ / sq. ft.		_____ / sq. ft.
	Size Class A		Size Class B		Size Class C	
Species 2	Tally	Number	Tally	Species 1	Tally	Number
Density Species 2:		_____ / sq. ft.		_____ / sq. ft.		_____ / sq. ft.

	Size Class A		Size Class B		Size Class C	
Species 3	Tally	Number	Tally	Species 1	Tally	Number
Density Species 3:		_____ / sq. ft.				_____ / sq. ft.

Notes:

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## Appendix E:

# Douglas County VSP Producer Survey

### *Volunteer or Voluntold, how do you like your agriculture?*

#### What is the VSP?

*The VSP (VSP) aims to protect critical areas (fish and wildlife habitat conservation areas, wetlands, geologically hazardous areas, frequently flooded areas, and areas with a critical recharging effect of aquifers used for potable water) where they intersect with agricultural activities, through **voluntary, incentive-based measures**, while at the same time improving the long term viability of agriculture.*

#### Why should you fill out this survey?

- **TO AVOID FURTHER REGULATIONS!** That's right, taking a few minutes to complete this survey will help you, and all agricultural operators in Douglas County, avoid further regulations. This survey is one of the primary ways the VSP accounts for all of the great voluntary conservation activities that you all are doing out there. Demonstrating to the state that Douglas County producers are protecting critical areas by implementing voluntary conservation activities is how the VSP succeeds. This means that your responses in this survey are necessary for the success of VSP. **If VSP were to fail, agricultural activities would be subject to regulation under the Growth Management Act. This approach would require the county planning department to regulate agricultural activities in critical areas (RCW 36.70A.060(2)).**
- **The information you provide in this survey will inform and direct future cost-share and educational opportunities.** This is your chance to tell us what cost-share and educational opportunities will benefit your operation. The conservation districts will use this information to apply for funding that benefits you.
- **It's Anonymous and Confidential.** VSP reporting is done on the watershed scale, so there is no need to match your answers to a spot on the map.

#### Who Should fill out this survey?

**All agricultural producers in Douglas County.** If you are an agricultural producer operating in Douglas County, VSP affects you!

#### Survey Objectives:

1. Identify and document implemented conservation activities that contribute to the critical area protection goals and benchmarks of the VSP work plan.
2. Identify conservation activities that Douglas County producers are interested in implementing to increase cost-share and technical service opportunities for those conservation activities.
3. Identify educational programs and materials that would benefit Douglas County producers.

4. Encourage high producer participation, through the implementation of voluntary conservation activities, to ensure the success of the VSP.

Directions: Please indicate the type of your operation (check all that apply)

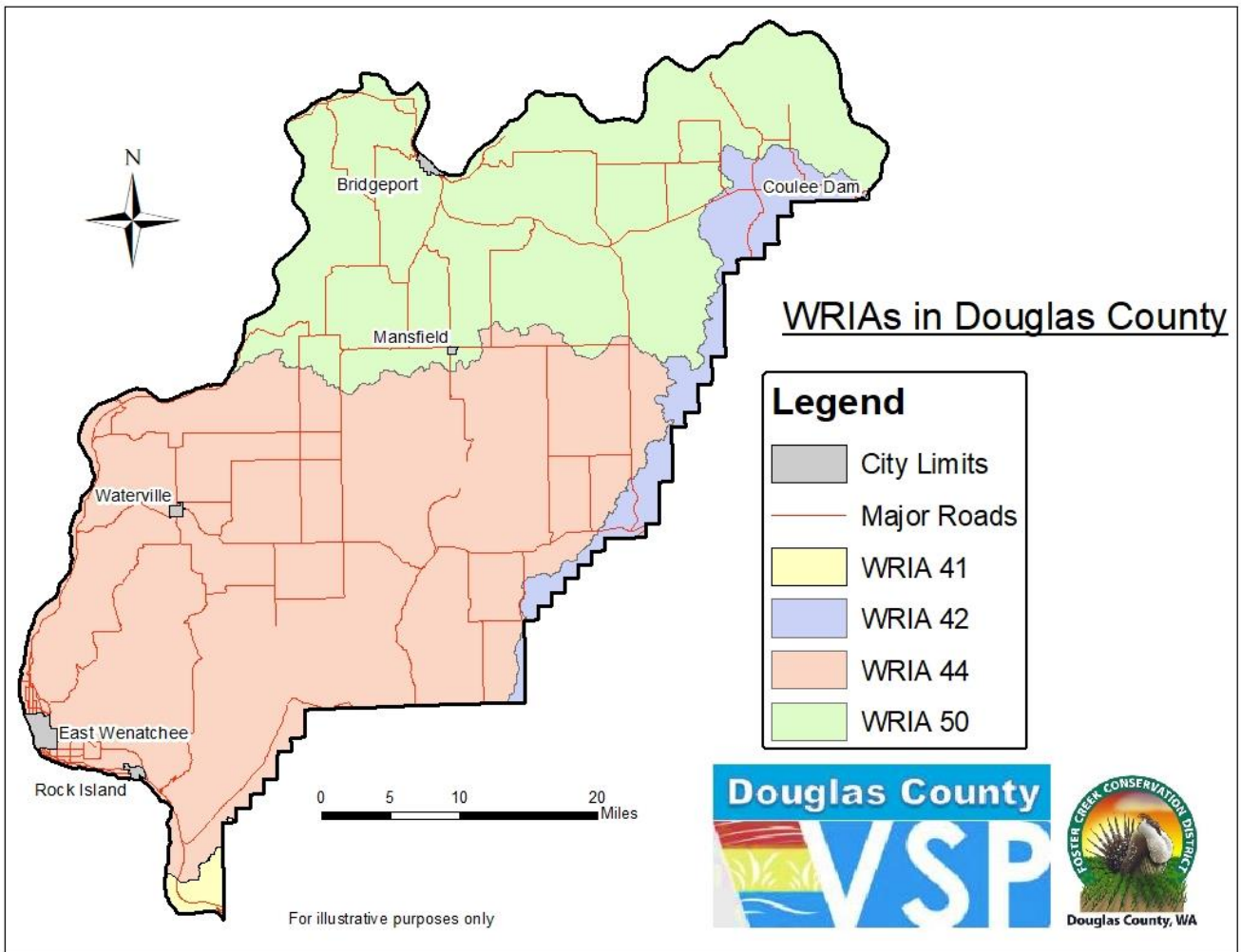
- Dryland     
  Irrigated     
  Range/grazing

If Irrigated:

- Orchard     
  Hay/animal feed

Directions: Please indicate which Watershed Resource Inventory Area (WRIA) the majority of your operation is in.

- WRIA 41       WRIA 44  
 WRIA 42       WRIA 50





What is a Conservation Activity?

Conservation activities are all stewardship actions being implemented by Douglas County producers that protect, preserve, and/or enhance natural resources. These include NRCS Conservation Practices, and all other stewardship actions.

Examples of conservation activities that should be noted on this survey include: Conservation Cover, Conservation Crop Rotation, Cover Crop, Fence, Field Border, Global G.A.P IFA Fruit & Vegetables Standard Certificate, Microirrigation, Irrigation Water Management, Livestock Pipeline, Nutrient Management, Integrated Pest Management, Organic Certification, Pollinator Habitat Creation/Management, Prescribed Grazing, Residue and Tillage Management (no-till, strip-till, direct seed, reduced till), Riparian Buffer, Sprinkler System, Structures for Wildlife, Upland Wildlife Habitat Management, Watering Facility.

Descriptions of these conservation activities can be found on the VSP webpage at: <http://www.fostercreekcd.org/programs/voluntary-stewardship-program/>. **This is not an exhaustive list. If you are doing something different, please include it on your list!** For questions on what to include on this list please contact the VSP Coordinator (info listed below).

Directions: Please list all conservation activities that you are implementing or have implemented in the past, when you started each activity, when you stopped (if applicable), if you are interested in implementing the activity in the future, what the funding source was (please indicate if the activity was initially funded, but now is self-funded/implemented), and the units/size of the implemented activity.

Conservation Activity	Estimated Start Date (Before/After 2011)	End Date (yyyy)	Interested in implementing in the future (X)	Funding Source (NRCS, Conservation Districts, Self-Funded, etc.)	Units implemented (acres/feet/etc.)

Directions: Please list any educational opportunities (workshops, trainings, field demonstrations, etc.) that you would like to see provided.

Directions: Please list any other technical assistance you would like to see provided (e.g. equipment rentals, marketing assistance, other miscellaneous)

**Please Return to:** The Douglas County VSP Coordinator in person, by mail, or by email. The survey can also be filled out online at: <http://www.fostercreekcd.org/programs/voluntary-stewardship-program/>

Aaron Rosenblum  
Douglas County VSP Coordinator  
Foster Creek Conservation District  
509-888-6376 office, 509-423-5990 cell  
[arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)

Mailing Address:	Physical Address:
PO Box 398	203 s Rainier St.
Waterville, WA 98858	3 <sup>rd</sup> floor of the Douglas County Courthouse
	Waterville, WA 98858

Questions? If you have a question about filling out this survey, please contact the VSP Coordinator

#### What's Next?

- If you haven't already, please pick up a ***Douglas County VSP Producer Handbook***. It contains everything you need to know about the VSP program, its implementation, and opportunities available to you. The handbook is available at technical service provider offices and online as a PDF on the VSP webpage listed below.
- Consult with the technical service providers listed below. There are many planning, cost-share, and technical advice opportunities available right now!

#### Douglas County Technical Service Providers:

Foster Creek Conservation District: 509-888-6372, [fostercreekcd.org](http://fostercreekcd.org)  
South Douglas Conservation District: 509-745-9160, [southdouglascd.com](http://southdouglascd.com)  
Natural Resource Conservation Service: 509-745-8362, [www.nrcs.usda.gov](http://www.nrcs.usda.gov)  
Farm Service Agency: 509-745-8561, [www.fsa.usda.gov](http://www.fsa.usda.gov)  
WSU Douglas County Extension Office: 509-745-8531, <http://extension.wsu.edu/chelan-douglas/>  
Washington Department of Fish and Wildlife: 509-662-0452, [wdfw.wa.gov](http://wdfw.wa.gov)

## Appendix F:

### Douglas County Species of Concern

The **Columbia Basin pygmy rabbit** is one of only two rabbit species in North America to dig its own burrow. Adults weigh from 375 to about 500 grams (0.8 to 1.1 pounds), and body length ranges from 23.5 to 29.5 centimeters (9.25 to 11.5 inches); females are slightly larger than males. The pygmy rabbit is distinguishable by its small size, short ears, gray color, small hind legs, and lack of white fur on the tail (WDFW 1995). The pygmy rabbit is considered a shrub-steppe obligate species. However, within the shrub-steppe ecosystem, populations are restricted to habitat characterized by deep soil and tall, dense stands of sagebrush. In Washington, an analysis of burrows showed 96 percent occurred in soils greater than 20 inches deep and derived from loess (windblown parent material) (ibid). Within Douglas County, the Columbia Basin pygmy rabbit historically could have occurred in deep soils throughout the southeast half of the county (Figure F-1). However, the current distribution of the pygmy rabbit in Douglas County is limited to the Sagebrush Flat Wildlife Area (USFWS 2012), but is likely to expand into surrounding areas. In 1990, the Columbia Basin pygmy rabbit was listed as a threatened species by the Washington Wildlife Commission. The Commission reclassified the species as endangered in 1993. In 2001, the USFWS listed the Columbia Basin pygmy rabbit as “Endangered” by emergency rule. In 2003, the USFWS listed the Columbia Basin distinct population segment of the pygmy rabbit as “Endangered” pursuant to the ESA of 1973 (USFWS 2012). (MSGCP 2015)

The **Washington ground squirrel** is a burrowing species that lives in sagebrush or grassland habitats in the Columbia River Basin of Washington and Oregon. It is grey in color with light speckling on the back and buffy underparts, ranges from about 7 inches to 10 inches, weighs from about 5 to 10 ounces, and the tail is short (32 to 65 mm) (Eder 2002). The Washington Ground Squirrel can be distinguished from other ground squirrels (*S. columbianus* and *S. beldingi*) in the same area because they are smaller, with smaller ears and a spotted pelage, which the other two species lack. The squirrels spend less than half the year active, normally between late winter and early summer, with the rest of the year spent in hibernation. The active period coincides with the availability of high quality forbs and grasses essential for reproduction and building fat reserves for the following hibernation period (Sato 2010). The Washington ground squirrel occurs in areas of the southern, central, and northern parts of Douglas County, including but not limited to Foster Coulee, Sagebrush Flat, Moses Coulee, Badger Mountain, and Jameson Lake (USFWS 2012; Fingers et al 2007). The Washington ground squirrel was listed as a State Candidate species in 1991 and reclassified as “Threatened” in 1998; it was designated a Federal Candidate species in 1999 (WDFW 2012). (MSGCP 2015)

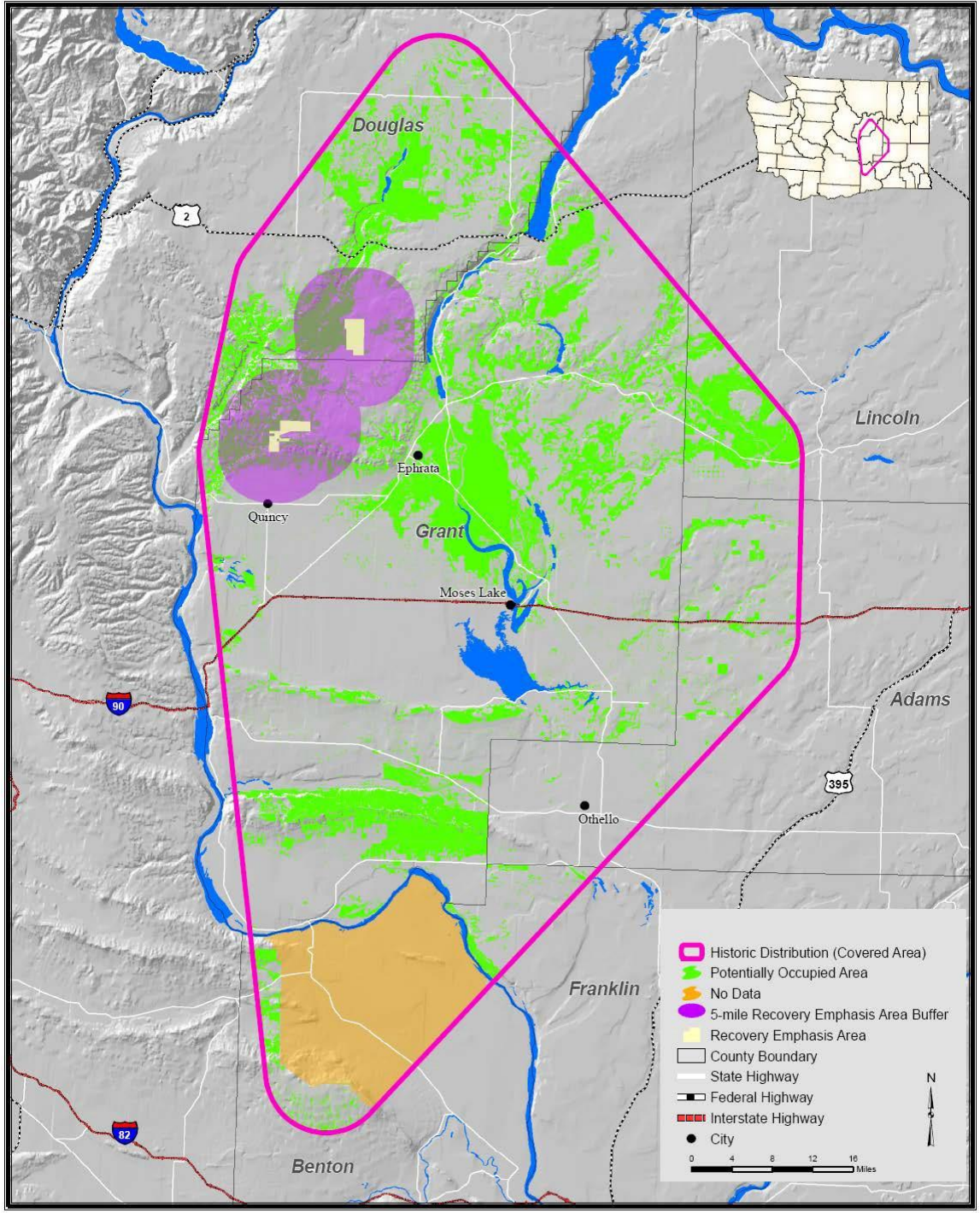


Figure F-1: Historic Ranges and Recovery Areas for Columbia Basin Pygmy Rabbit (Source: USFWS 2006)

The **Columbian sharp-tailed grouse** is a medium-sized prairie grouse that historically inhabited shrub-steppe, meadow steppe, mountain steppe, and riparian deciduous habitats in Western North America, mostly west of the Rocky Mountains, from northern New Mexico to Central British Columbia (Stinson and Schroeder 2012). Adult Columbian sharp-tailed grouse have a relatively short tail with the two central (deck) feathers being square-tipped and somewhat longer than their lighter, outer tail feathers giving the bird its distinctive name. Adults are 16 to 18.5 inches in length; males weight 1.5 to 2.0 pounds, while females weigh 1.3 to 1.7 pounds. A pink to pale violet air sac on each side of the neck distinguishes males from females. These air sacs are inflated during courtship displays that occur on “leks” during the early spring (ibid). In Washington, sharp-tailed grouse are associated with shrub-steppe, riparian, and mountain steppe habitats (Tirhi 1995). High quality habitat is typified by well-developed perennial bunchgrasses, forbs, and a diversity of shrub species (Hays et al. 1998). The current sharp-tailed grouse population is restricted to seven isolated locations in Lincoln, Okanogan, and Douglas counties. In Douglas County, they are found in the northeast corner from Bridgeport to Grand Coulee, and in the northwest corner in the Dyer area (Stinson and Schroeder 2012) (Figure F-2). (MSGCP 2015)

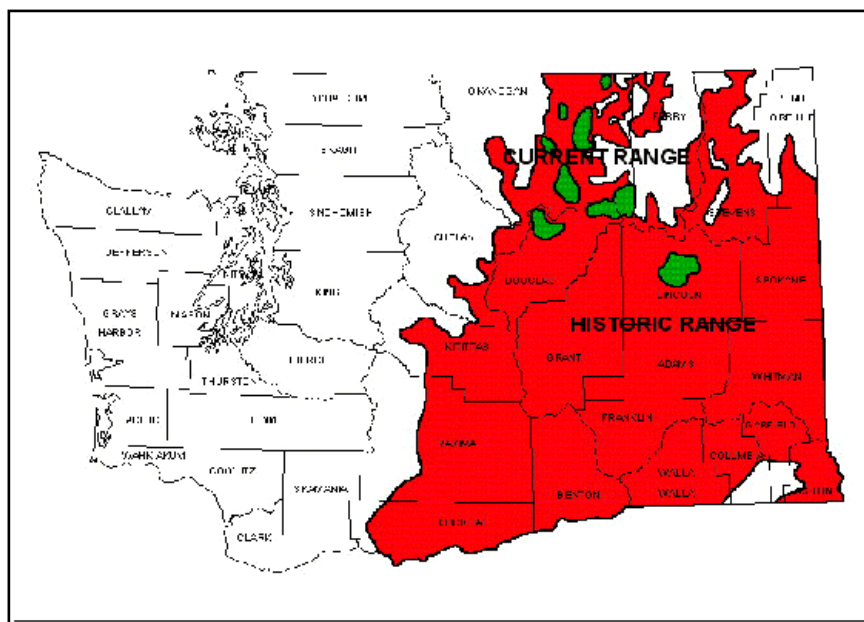


Figure F-2: Current and historic range of Columbian Sharpe-tailed Grouse (Source: Stinson and Schroeder 2012)

The **greater sage-grouse** is the largest species of grouse in North America with males ranging from 26 to 30 inches in length and weighing 5.5 to 7 pounds. Females are smaller, measuring from 19 to 23 inches and weighing from 2.9 to 3.7 pounds. The upperparts are a combination of buff, black and brownish grey, with a black belly and long, pointed tail feathers. In addition, males have a white breast and black throat. Males also have two large yellowish-green balloon-like gular sacs, which are inflated during courtship displays. Greater sage-grouse are noted for their elaborate courtship dance, which occur in the early spring in traditional areas called “leks”

(Stinson et al. 2004). At the landscape scale, suitable sage-grouse habitat is described as, “connected mosaics of sagebrush shrublands that allow for bird dispersal and migration movements within the population and subpopulation area. Anthropogenic disturbances that can disrupt dispersal or cause mortality are generally not widespread or are absent.” (Stiver, et al. 2015). At the small scale, site level, attributes of suitable sage-grouse habitat vary depending of the season, but include sagebrush cover, height and shape, perennial bunchgrass cover and height, forb cover and height, and preferred forb availability (ibid). The annual diet includes insects, forbs, grasses, and sagebrush. Insects are essential for growing chicks, while forbs are important to hens during the pre-laying period. The winter diet is almost exclusively sagebrush (WDFW 2012). Only about 8 percent of the sage-grouse’s historic range is currently occupied in the State of Washington, and populations within the occupied range are at greatly reduced levels (ibid). The 2011 estimated population of greater sage grouse in Washington was approximately 1,165 birds, with 926 estimated in Douglas County (ibid). WDFW has designated two greater sage-grouse management units in Douglas County: Mansfield Plateau and Moses Coulee. The number of males in the Moses Coulee population was estimated to be approximately 350 in 2012 (USFWS 2013). Based on these estimates, greater sage-grouse in Douglas County account for approximately 80 percent of the total greater sage-grouse population in the State. (MSGCP 2015)

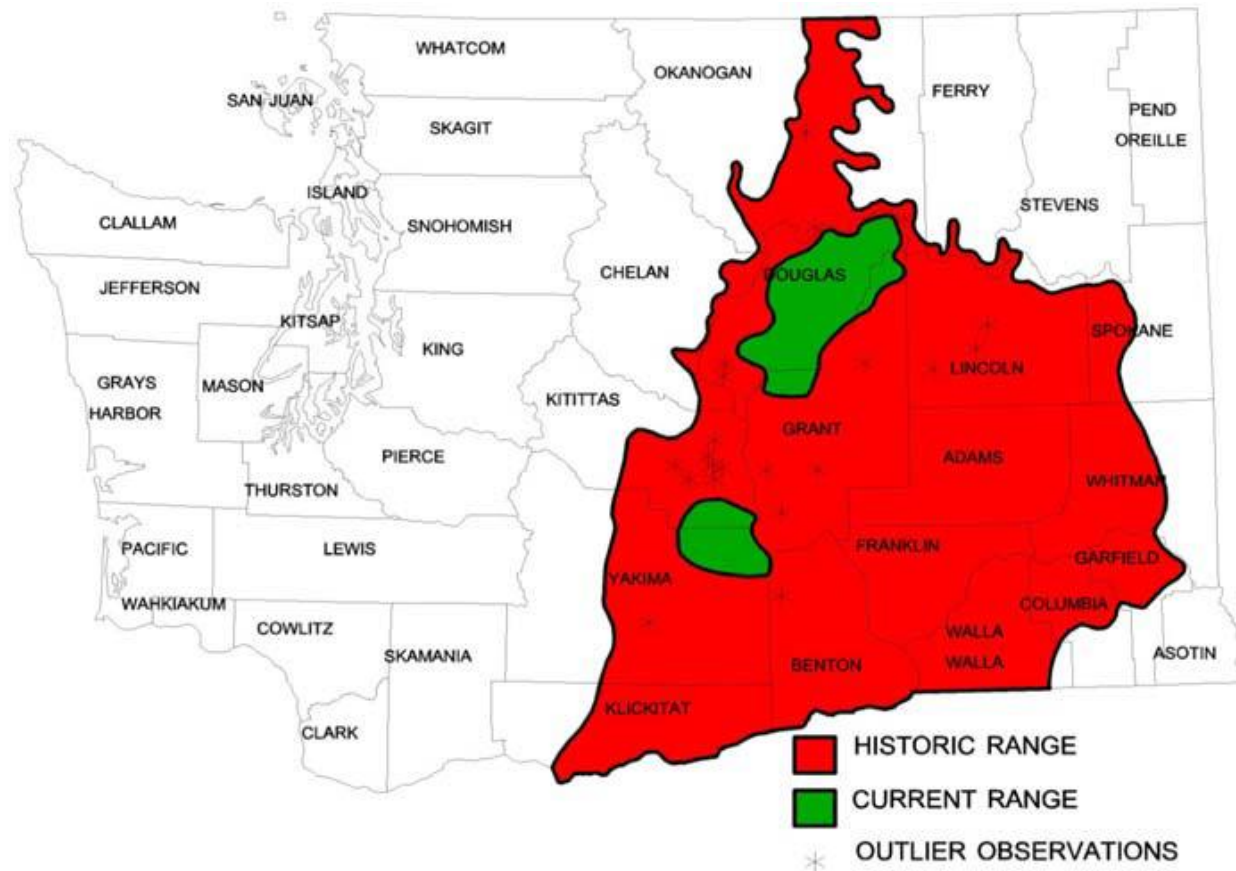


Figure F-3: Estimated historic and current range of greater sage-grouse (excludes translocation) (Schroeder et al. 2000).

**Chinook salmon** are an anadromous fish, meaning they migrate from the ocean into the freshwater environments of their birth to spawn. The Upper Columbia River Spring Chinook Ecologically Significant Unit is listed as Endangered by the Endangered Species Act. The Chinook typically spend between 3 months and 2 years in freshwater before migrating to the ocean where they commonly spend 2 to 4 years before returning. Chinook are the largest species of salmon, typically exceeding 40 pounds and 3 feet in length. In freshwater Chinook eat insects, amphipods and other crustaceans. After spawning, female Chinook will prepare a nest, called a redd, in a stream with suitable gravel composition, water depth and velocity (NOAA Fisheries, 2016). The mouth of Foster Creek provides suitable conditions for Spring Chinook spawning, as well as summer Chinook rearing, for 0.92 miles upstream from the confluence with the Columbia River (WDFW). Chinook (spring and summer run) also have documented presence in the lower 0.90 miles of Douglas Creek, the lower 1.19 miles of Rock Island Creek, and the lower 0.20 miles of sand canyon.

## Appendix G:

### CPPE Technical Reports and Supplemental Information

The information contained in this appendix was used to create the averaged CPPE scores for the generalized critical area functions for each Key Conservation Activity (Section 7.1.3). The CPPE Physical Effects Tool provides a scored value with regards to the effect of a conservation practice for each of the resource concerns identified below. The resources concerns can easily be categorized to align with each of the generalized critical area functions identified in this work plan. To get an averaged score, applicable CPPE scores from each generalized critical area functions category produced by the Physical Effects Tool were averaged. This appendix contains a list of resource concerns, their definitions, and the Physical Effects Tool for each key conservation activity.

<b>Resource Concerns and Definitions</b>	
<b>SOIL</b>	
<b>SOIL EROSION - Sheet, rill, &amp; wind erosion</b>	Detachment and transportation of soil particles caused by rainfall runoff/splash, irrigation runoff or wind that degrades soil quality
<b>SOIL EROSION – Concentrated flow erosion</b>	Untreated classic gullies may enlarge progressively by head cutting and/or lateral widening. Ephemeral gullies occur in the same flow area and are obscured by tillage. This includes concentrated flow erosion caused by runoff from rainfall, snowmelt or irrigation water.
<b>SOIL EROSION– Excessive bank erosion from streams shorelines or water conveyance channels</b>	Sediment from banks or shorelines threatens to degrade water quality and limit use for intended purposes
<b>SOIL QUALITY DEGRADATION - Subsidence</b>	Loss of volume and depth of organic soils due to oxidation caused by above normal microbial activity resulting from excessive water drainage, soil disturbance, or extended drought. This excludes karst / sinkholes issues or depressions caused by underground activities.
<b>SOIL QUALITY DEGRADATION – Compaction</b>	Management induced soil compaction resulting in decreased rooting depth that reduces plant growth, animal habitat and soil biological activity
<b>SOIL QUALITY DEGRADATION – Organic matter depletion</b>	Soil organic matter is not adequate to provide a suitable medium for plant growth, animal habitat, and soil biological activity



<b>SOIL QUALITY DEGRADATION – Concentration of salts or other chemicals</b>	Concentration of salts leading to salinity and/or sodicity reducing productivity or limiting desired use  Concentrations of other chemicals impacting productivity or limiting desired use
<b>WATER</b>	
<b>EXCESS WATER – Ponding, flooding, seasonal high water table, seeps, and drifted snow</b>	Surface water or poor subsurface drainage restricts land use and management goals. Wind-blown snow accumulates around and over surface structures, restricting access to humans and animals.
<b>INSUFFICIENT WATER – Inefficient moisture management</b>	Natural precipitation is not optimally managed to support desired land use goals or ecological processes
<b>INSUFFICIENT WATER – Inefficient use of irrigation water</b>	Irrigation water is not stored, delivered, scheduled and/or applied efficiently Aquifer or surface water withdrawals threaten sustained availability of ground or surface water Available irrigation water supplies have been reduced due to aquifer depletion, competition, regulation and/or drought
<b>WATER QUALITY DEGRADATION – Excess nutrients in surface and ground waters</b>	Nutrients - organic and inorganic - are transported to receiving waters through surface runoff and/or leaching into shallow ground waters in quantities that degrade water quality and limit use for intended purposes
<b>WATER QUALITY DEGRADATION – Excess nutrients in surface and ground waters</b>	Nutrients - organic and inorganic - are transported to receiving waters through surface runoff and/or leaching into shallow ground waters in quantities that degrade water quality and limit use for intended purposes
<b>WATER QUALITY DEGRADATION – Pesticides transported to surface and ground waters</b>	Pest control chemicals are transported to receiving waters in quantities that degrade water quality and limit use for intended purposes
<b>WATER QUALITY DEGRADATION – Excess pathogens and chemicals from manure, bio-solids or compost applications</b>	Pathogens, pharmaceuticals, and other chemicals carried by land applied soil amendments are transported to receiving waters in quantities that degrade water quality and limit use for intended purposes. This resource concern also includes the off-site transport of leachate and runoff from compost or other organic materials of animal origin.
<b>WATER QUALITY DEGRADATION – Excessive salts in surface and ground waters</b>	Irrigation or rainfall runoff transports salts to receiving water in quantities that degrade water quality and limit use for intended purposes

<b>WATER QUALITY DEGRADATION – Petroleum, heavy metals and other pollutants transported to receiving waters</b>	Heavy metals, petroleum and other pollutants are transported to receiving water sources in quantities that degrade water quality and limit use for intended purposes
<b>WATER QUALITY DEGRADATION – Excessive sediment in surface waters</b>	Off-site transport of sediment from sheet, rill, gully, and wind erosion into surface water that threatens to degrade surface water quality and limit use for intended purposes
<b>WATER QUALITY DEGRADATION – Elevated water temperature</b>	Surface water temperatures exceed State/Federal standards and/or limit use for intended purposes
<b>PLANT</b>	
<b>DEGRADED PLANT CONDITION – Undesirable plant productivity and health</b>	Plant productivity, vigor and/or quality negatively impacts other resources or does not meet yield potential due to improper fertility, management or plants not adapted to site This includes addressing pollinators and beneficial insects.
<b>DEGRADED PLANT CONDITION – Inadequate structure and composition</b>	Plant communities have insufficient composition and structure to achieve ecological functions and management objectives This includes degradation of wetland habitat, targeted ecosystems, or unique plant communities.
<b>DEGRADED PLANT CONDITION – Excessive plant pest pressure</b>	Excessive pest damage to plants including that from undesired plants, diseases, animals, soil borne pathogens, and nematodes This concern addresses invasive plant, animal and insect species
<b>DEGRADED PLANT CONDITION– Wildfire hazard, excessive biomass accumulation</b>	The kinds and amounts of fuel loadings - plant biomass - create wildfire hazards that pose risks to human safety, structures, plants, animals, and air resources
<b>ANIMAL</b>	
<b>INADEQUATE HABITAT FOR FISH AND WILDLIFE – Habitat degradation</b>	Quantity, quality or connectivity of food, cover, space, shelter and/or water is inadequate to meet requirements of identified fish, wildlife or invertebrate species
<b>LIVESTOCK PRODUCTION LIMITATION – Inadequate feed and forage</b>	Feed and forage quality or quantity is inadequate for nutritional needs and production goals of the kinds and classes of livestock
<b>LIVESTOCK PRODUCTION LIMITATION – Inadequate livestock shelter</b>	Livestock lack adequate shelter from climatic conditions to maintain health or production goals

<p><b>LIVESTOCK PRODUCTION LIMITATION – Inadequate livestock water</b></p>	<p>Quantity, quality and/or distribution of drinking water are insufficient to maintain health or production goals for the kinds and classes of livestock</p>
<p><b>ENERGY</b></p>	
<p><b>INEFFICIENT ENERGY USE – Equipment and facilities</b></p>	<p>Inefficient use of energy in the Farm Operation increases dependence on non-renewable energy sources that can be addressed through improved energy efficiency and the use of on-farm renewable energy sources. As an example, this concern addresses inefficient energy use in pumping plants, on-farm processing, drying and storage.</p>
<p><b>INEFFICIENT ENERGY USE – Farming/ranching practices and field operations</b></p>	<p>Inefficient use of energy in field operations increases dependence on non-renewable energy sources that can be addressed through improved efficiency and the use of on-farm renewable energy sources.</p>

# Effects of NRCS Conservation Practices - National

## Conservation Crop Rotation

Growing crops in a planned sequence on the same field.

Code: 328  
Units: ac.

AL-Asso Land  
 O-Other  
 W-Water  
 D-Developed  
 FS-Farmstead  
 P-Practical  
 R-Rangeland  
 F-Forest  
 C-Crop

Typical Landuse: c

<u>Soil Erosion</u>	<u>Effect</u>	<u>Rationale</u>
Soil Erosion - Sheet and Rill Erosion	4	Maintaining sufficient canopy and residue cover reduces soil detachment by water.
Soil Erosion - Wind Erosion	4	Maintaining sufficient canopy and residue cover reduces soil detachment by wind.
Soil Erosion - Ephemeral Gully Erosion	0	Not Applicable
Soil Erosion - Classic Gully Erosion	0	Not Applicable
Soil Erosion - Streambank, Shoreline, Water Conveyance	0	Not Applicable
<u>Soil Quality Degradation</u>		
Organic Matter Depletion	4	High residue crops can lead to increased root development and increased soil organic carbon.
Compaction	1	Deep rooted crops in the rotation may reduce compaction
Subsidence	0	Not Applicable
Concentration of Salts or Other Chemicals	2	Salt tolerant crops with high transpiration rates can increase salt uptake and reduce salt content in the root zone.
<u>Excess Water</u>		
Excess Water - Seeps	1	Improved plant uptake reduces excessive seepage.
Excess Water - Runoff, Flooding, or Ponding	2	Rotations with grass and legumes and high residue crops will reduce erosion and runoff.
Excess Water - Seasonal High Water Table	1	Rotations with grass and legumes and high residue crops will reduce erosion and runoff.
Excess Water - Drifted Snow	0	Not Applicable
<u>Insufficient Water</u>		
Insufficient Water - Inefficient Use of Irrigation Water	2	Crop rotation balances available water with crop needs.
Insufficient Water - Inefficient Moisture Management	2	Crop rotation balances available water with crop needs.
<u>Water Quality Degradation</u>		
Pesticides in Surface Water	2	The action reduces the need for pesticide use by breaking pest lifecycles.
Pesticides in Groundwater	2	The action reduces the need for pesticide use by breaking pest lifecycles.
Nutrients in Surface water	2	Nitrogen demanding or deep rooted crops can remove excess nitrogen. Legume in rotation will provide slow release nitrogen and reduce need for additional nitrogen.
Nutrients in Groundwater	2	Nitrogen demanding or deep rooted crops can remove excess nitrogen. Legume in rotation will provide slow release nitrogen and reduce need for additional nitrogen.
Salts in Surface Water	1	The action can reduce erosion and runoff which reduces transport of salts. Some crops may accumulate salts.
Salts in Groundwater	2	Suitable crops can take up salts, the amount depending on crop rotation and rooting pattern,
Excess Pathogens and Chemicals from Manure, Bio-sol	1	Depending on crop rotation, less erosion and runoff reduces delivery of pathogens.
Excess Pathogens and Chemicals from Manure, Bio-sol	0	Not Applicable
Excessive Sediment in Surface Water	2	Depending on crop rotation and biomass produced, crop rotation reduces erosion and runoff which reduces transport of sediment.
Elevated Water Temperature	0	Not Applicable
Petroleum, Heavy Metals and Other Pollutants Transpor	0	not applicable
Petroleum, Heavy Metals and Other Pollutants Transpor	0	Not Applicable
<u>Air Quality Impacts</u>		
Emissions of Particulate Matter (PM) and PM Precursors	1	The proper selection of crops in the rotation can reduce the generation of fugitive dust.
Emissions of Ozone Precursors	0	Not Applicable
Emissions of Greenhouse Gases (GHGs)	1	Vegetation removes CO2 from the air and stores it in the form of carbon in the plants and soil.
Objectionable Odors	0	Not Applicable
<u>Degraded Plant Condition</u>		
Undesirable Plant Productivity and Health	4	Plants are selected and managed to maintain optimal productivity and health.
Inadequate Structure and Composition	4	Crop selection will be modified to include species better suited to soils and climate.
Excessive Plant Pest Pressure	2	Depending on crop rotation, crop rotation creates diversity that may reduce weed pressures, break weed life cycles, and provide competition that would slow the spread of noxious plants.
Wildfire Hazard, Excessive Biomass Accumulation	0	Not Applicable
<u>Fish and Wildlife - Inadequate Habitat</u>		
Inadequate Habitat - Food	2	Selected crops and suitable rotations may provide more food for wildlife.
Inadequate Habitat - Cover/Shelter	2	Selected crops and suitable rotations may provide more food and cover for wildlife.
Inadequate Habitat - Water	4	Not Applicable
Inadequate Habitat - Habitat Continuity (Space)	2	Increased cover will increase space for wildlife. May be used to connect other cover areas.
<u>Livestock Production Limitation</u>		
Inadequate Feed and Forage	2	Crop rotation may be designed to add forage crops.
Inadequate Shelter	0	Not Applicable
Inadequate Water	0	Not Applicable
<u>Inefficient Energy Use</u>		
Equipment and Facilities	0	Not Applicable
Farming/Ranching Practices and Field Operations	1	The use of legume crops to supply nitrogen

# Effects of NRCS Conservation Practices - National

## Cover Crop

Crops including grasses, legumes, and forbs for seasonal cover and other conservation purposes.

Code: 340  
Units: ac.

AL-Aso Land  
 O-Other  
 W-Water  
 D-Developed  
 FS-Farmstead  
 P-Protected  
 R-Rangeland  
 F-Forest  
 C-Crop

Typical Landuse: C F R P Pr O AL

	<u>Effect</u>	<u>Rationale</u>
<b><u>Soil Erosion</u></b>		
Soil Erosion - Sheet and Rill Erosion	4	Increased cover during erosive periods will reduce soil detachment by water.
Soil Erosion - Wind Erosion	4	Increased cover during erosive periods will reduce soil detachment by wind.
Soil Erosion - Ephemeral Gully Erosion	3	Increased cover during erosive periods will reduce concentrated flow and associated soil detachment.
Soil Erosion - Classic Gully Erosion	0	Not Applicable
Soil Erosion - Streambank, Shoreline, Water Conveyance	0	Not Applicable
<b><u>Soil Quality Degradation</u></b>		
Organic Matter Depletion	2	More biomass produced will increase organic matter.
Compaction	2	Increased biomass and roots improve aggregation, which gives better resistance to compaction.
Subsidence	0	If it affects drainage the practice can have an impact on subsidence.
Concentration of Salts or Other Chemicals	1	Increased organic matter will buffer salts.
<b><u>Excess Water</u></b>		
Excess Water - Seeps	1	Growing plants will take up excess water. However, infiltration will increase, which may offset some of the benefits.
Excess Water - Runoff, Flooding, or Ponding	2	Growing plants will reduce runoff and increase infiltration.
Excess Water - Seasonal High Water Table	1	Growing plants will take up excess water. However, infiltration will increase, which may offset some of the benefits.
Excess Water - Drifted Snow	0	Not Applicable
<b><u>Insufficient Water</u></b>		
Insufficient Water - Inefficient Use of Irrigation Water	1	Improves infiltration
Insufficient Water - Inefficient Moisture Management	2	Improves infiltration, soil structure, and winter water use that may otherwise be lost. For dry climates (<20 inches/year); cover crops will compete for main crop's moisture.
<b><u>Water Quality Degradation</u></b>		
Pesticides in Surface Water	2	The action reduces runoff and erosion.
Pesticides in Groundwater	2	The action increases soil organic matter, biological activity, and pesticide uptake.
Nutrients in Surface water	2	The action reduces erosion and runoff and transport of nutrients. Cover crops can uptake excess nutrients.
Nutrients in Groundwater	2	The action utilizes excess nutrients and increases organic matter. The additional organic matter will increase cation exchange capacity which will hold nutrients.
Salts in Surface Water	0	Not Applicable
Salts in Groundwater	1	Cover crops can take up salts and water reducing the leaching potential of salts.
Excess Pathogens and Chemicals from Manure, Bio-sol	1	Less erosion and runoff reduces delivery of pathogens.
Excess Pathogens and Chemicals from Manure, Bio-sol	2	The action increases organic matter promoting microbial activity which competes with pathogens.
Excessive Sediment in Surface Water	2	Vegetation will reduce erosion and transport of sediment.
Elevated Water Temperature	0	Not Applicable
Petroleum, Heavy Metals and Other Pollutants Transport	0	Not Applicable
Petroleum, Heavy Metals and Other Pollutants Transport	0	Not Applicable
<b><u>Air Quality Impacts</u></b>		
Emissions of Particulate Matter (PM) and PM Precursors	3	Ground cover helps reduce wind erosion and generation of fugitive dust.
Emissions of Ozone Precursors	0	Not Applicable
Emissions of Greenhouse Gases (GHGs)	2	Vegetation removes CO2 from the air and stores it in the form of carbon in the plants and soil.
Objectionable Odors	0	Not Applicable
<b><u>Degraded Plant Condition</u></b>		
Undesirable Plant Productivity and Health	2	Plants are selected and managed to maintain optimal productivity and health and can contribute to subsequent crop health and productivity.
Inadequate Structure and Composition	5	Plants selected are adapted and suited.
Excessive Plant Pest Pressure	4	Vegetation is installed and managed to control undesired species.
Wildfire Hazard, Excessive Biomass Accumulation	0	Not Applicable
<b><u>Fish and Wildlife - Inadequate Habitat</u></b>		
Inadequate Habitat - Food	2	Increased quality and quantity of vegetation provides more food for wildlife.
Inadequate Habitat - Cover/Shelter	2	Increased quality and quantity of vegetation provides more cover for wildlife.
Inadequate Habitat - Water	4	Not Applicable
Inadequate Habitat - Habitat Continuity (Space)	2	Increased cover will increase space for wildlife. May be used to connect other cover areas.
<b><u>Livestock Production Limitation</u></b>		
Inadequate Feed and Forage	2	Cover crops will add supplemental forage.
Inadequate Shelter	0	Not Applicable
Inadequate Water	0	Not Applicable
<b><u>Inefficient Energy Use</u></b>		
Equipment and Facilities	0	Not Applicable
Farming/Ranching Practices and Field Operations	2	Cover crops can reduce nitrogen inputs.

# Effects of NRCS Conservation Practices - National

## Fence

A constructed barrier to animals or people.

**Code:** 382  
**Units:** ft.

**Typical Landuse:**

AL-Aso Land  
O-Other  
W-Water  
D-Developed  
FS-Farmstead  
Pr-Protected  
P-Pasture  
R-Rangeland  
F-Forest  
C-Crop

<u>Soil Erosion</u>	<u>Effect</u>	<u>Rationale</u>
Soil Erosion - Sheet and Rill Erosion	1	Barriers reduce the excessive disturbance of soil and vegetation by facilitating the effective control of timing, frequency, duration and intensity of use of an area by animals or people.
Soil Erosion - Wind Erosion	0	Barriers reduce the excessive disturbance of soil and vegetation by facilitating the effective control of timing, frequency, duration and intensity of use of an area by animals or people.
Soil Erosion - Ephemeral Gully Erosion	0	Barriers reduce the excessive disturbance of soil and vegetation by facilitating the effective control of timing, frequency, duration and intensity of use of an area by animals or people.
Soil Erosion - Classic Gully Erosion	0	Barriers reduce the excessive disturbance of soil and vegetation by facilitating the effective control of timing, frequency, duration and intensity of use of an area by animals or people.
Soil Erosion - Streambank, Shoreline, Water Conveyance	0	Barriers reduce the excessive disturbance of soil and vegetation by facilitating the effective control of timing, frequency, duration and intensity of use of an area by animals or people. This promotes vegetative growth and streambank stabilization.
<u>Soil Quality Degradation</u>		
Organic Matter Depletion	0	Not applicable.
Compaction	1	Not applicable.
Subsidence	0	Not applicable.
Concentration of Salts or Other Chemicals	0	Not applicable.
<u>Excess Water</u>		
Excess Water - Seeps	0	Not Applicable
Excess Water - Runoff, Flooding, or Ponding	0	Not applicable.
Excess Water - Seasonal High Water Table	0	Not Applicable
Excess Water - Drifted Snow	0	Not applicable.
<u>Insufficient Water</u>		
Insufficient Water - Inefficient Use of Irrigation Water	0	Not Applicable
Insufficient Water - Inefficient Moisture Management	0	Not applicable.
<u>Water Quality Degradation</u>		
Pesticides in Surface Water	0	Not Applicable
Pesticides in Groundwater	0	Not Applicable
Nutrients in Surface water	0	Not applicable.
Nutrients in Groundwater	0	Not applicable.
Salts in Surface Water	0	Not Applicable
Salts in Groundwater	0	Not applicable.
Excess Pathogens and Chemicals from Manure, Bio-soli	2	Control access of animals and/or people to stream areas.
Excess Pathogens and Chemicals from Manure, Bio-soli	0	Not Applicable
Excessive Sediment in Surface Water	0	Not applicable.
Elevated Water Temperature	0	Not Applicable
Petroleum, Heavy Metals and Other Pollutants Transpor	0	Not applicable.
Petroleum, Heavy Metals and Other Pollutants Transpor	0	Not Applicable
<u>Air Quality Impacts</u>		
Emissions of Particulate Matter (PM) and PM Precursors	0	Not Applicable
Emissions of Ozone Precursors	0	Not Applicable
Emissions of Greenhouse Gases (GHGs)	1	Fencing can be used to protect and/or improve vegetation.
Objectionable Odors	0	Not Applicable
<u>Degraded Plant Condition</u>		
Undesirable Plant Productivity and Health	2	Control of animals facilitates grazing management enhancing health and vigor of desired plant communities.
Inadequate Structure and Composition	0	Control of animals facilitates grazing management which encourages growth of plants that are adapted and suitable for the site.
Excessive Plant Pest Pressure	0	Not applicable.
Wildfire Hazard, Excessive Biomass Accumulation	0	Not Applicable
<u>Fish and Wildlife - Inadequate Habitat</u>		
Inadequate Habitat - Food	0	Not Applicable
Inadequate Habitat - Cover/Shelter	0	Not Applicable
Inadequate Habitat - Water	1	Not Applicable
Inadequate Habitat - Habitat Continuity (Space)	0	Species dependent.
<u>Livestock Production Limitation</u>		
Inadequate Feed and Forage	3	Control of animals influences vigor and health of vegetation.
Inadequate Shelter	0	Not applicable.
Inadequate Water	0	Not Applicable
<u>Inefficient Energy Use</u>		
Equipment and Facilities	0	Not Applicable
Farming/Ranching Practices and Field Operations	0	Not Applicable

# Effects of NRCS Conservation Practices - National

## Field Border

A stripe of permanent vegetation established at the edge or around the perimeter of a field.

Code: 386  
Units: ft.

Typical Landuse:

C P O  
 Al-Asi Land  
 O-Other  
 W-Water  
 D-Developed  
 FS-Farmstead  
 P-Forestland  
 P-Pasture  
 R-Rangeland  
 F-Forest  
 C-Crop

	<u>Effect</u>	<u>Rationale</u>
<u>Soil Erosion</u>		
Soil Erosion - Sheet and Rill Erosion	4	Permanent vegetation planted across the slope reduces erosive water energy.
Soil Erosion - Wind Erosion	4	Stiff-stemmed, permanent vegetation traps saltating particles. More roughened surface slows wind velocities.
Soil Erosion - Ephemeral Gully Erosion	1	Vegetation across the slope reduces erosive energy of concentrated flows where they exit the field.
Soil Erosion - Classic Gully Erosion	0	Not Applicable
Soil Erosion - Streambank, Shoreline, Water Conveyance	1	Increased vegetation can reduce concentrated runoff flowing over streambanks.
<u>Soil Quality Degradation</u>		
Organic Matter Depletion	4	Permanent cover and lack of soil disturbance reduces decomposition of soil organic materials such as roots and allows accumulation.
Compaction	2	Root penetration and organic matter helps restore soil structure.
Subsidence	0	Drainage has the predominant impact on subsidence.
Concentration of Salts or Other Chemicals	0	Not Applicable
<u>Excess Water</u>		
Excess Water - Seeps	0	Not Applicable
Excess Water - Runoff, Flooding, or Ponding	1	Permanent vegetation will reduce runoff and increase infiltration.
Excess Water - Seasonal High Water Table	0	Not Applicable
Excess Water - Drifted Snow	0	Not Applicable
<u>Insufficient Water</u>		
Insufficient Water - Inefficient Use of Irrigation Water	0	Not Applicable
Insufficient Water - Inefficient Moisture Management	0	Not Applicable
<u>Water Quality Degradation</u>		
Pesticides in Surface Water	2	The action reduces runoff and erosion. Also, the borders may attract beneficial insects or trap insect pests, reducing the need for pesticide applications.
Pesticides in Groundwater	2	The action may attract beneficial insects or trap insect pests, reducing the need for pesticide applications.
Nutrients in Surface water	1	Permanent vegetation will take up available nutrients and increase organic matter. The increased organic matter will increase cation exchange capacity which will hold nutrients.
Nutrients in Groundwater	1	Permanent vegetation will take up available nutrients and increase organic matter. The increased organic matter will increase cation exchange capacity which will hold nutrients.
Salts in Surface Water	0	Not Applicable
Salts in Groundwater	1	The action will result in increased uptake by plants.
Excess Pathogens and Chemicals from Manure, Bio-soli	1	Less erosion and runoff reduces delivery of pathogens. More moist environment in permanent vegetation may slow pathogen mortality, however.
Excess Pathogens and Chemicals from Manure, Bio-soli	0	Not Applicable
Excessive Sediment in Surface Water	2	Vegetation protects soil surface and traps sediment.
Elevated Water Temperature	0	Not Applicable
Petroleum, Heavy Metals and Other Pollutants Transpor	0	Not Applicable
Petroleum, Heavy Metals and Other Pollutants Transpor	0	Not Applicable
<u>Air Quality Impacts</u>		
Emissions of Particulate Matter (PM) and PM Precursors	1	Permanent vegetation around the field edge reduces particulate emissions from vehicle traffic and tillage in the border area.
Emissions of Ozone Precursors	0	Not Applicable
Emissions of Greenhouse Gases (GHGs)	1	Vegetation removes CO2 from the air and stores it in the form of carbon in the plants and soil.
Objectionable Odors	0	Not Applicable
<u>Degraded Plant Condition</u>		
Undesirable Plant Productivity and Health	5	Plants are selected and managed to maintain optimal productivity and health.
Inadequate Structure and Composition	5	Plants selected are adapted and suited.
Excessive Plant Pest Pressure	0	Not Applicable
Wildfire Hazard, Excessive Biomass Accumulation	0	Not Applicable
<u>Fish and Wildlife - Inadequate Habitat</u>		
Inadequate Habitat - Food	2	Increased quality and quantity of vegetation provides more food for wildlife.
Inadequate Habitat - Cover/Shelter	2	Plants may be chosen and managed to enhance value as cover/shelter.
Inadequate Habitat - Water	4	Not Applicable
Inadequate Habitat - Habitat Continuity (Space)	2	Permanent vegetation may provide added habitat and connectivity for selected wildlife species.
<u>Livestock Production Limitation</u>		
Inadequate Feed and Forage	0	Not Applicable
Inadequate Shelter	0	Not Applicable
Inadequate Water	0	Not Applicable
<u>Inefficient Energy Use</u>		
Equipment and Facilities	0	Not Applicable
Farming/Ranching Practices and Field Operations	0	Not Applicable

# Effects of NRCS Conservation Practices - National

## Integrated Pest Management

A site-specific combination of pest prevention, pest avoidance, pest monitoring, and pest suppression strategies.

Code: 595  
Units: ac

Typical Landuse:

C-00p  
F-Forest  
R-Range  
P-Pasture  
Pr-Protected  
FS-Farmstead  
D-Developed  
W-Water  
O-Other  
AL-Aso Land

	<u>Effect</u>	<u>Rationale</u>
<b><u>Soil Erosion</u></b>		
Soil Erosion - Sheet and Rill Erosion	2	IPM mitigation practices can reduce risks to solution and adsorbed runoff losses.
Soil Erosion - Wind Erosion	2	IPM mitigation practices can reduce risks to soil, air, drift and volatilization losses.
Soil Erosion - Ephemeral Gully Erosion	2	IPM mitigation practices can reduce the risks to solution and adsorbed runoff losses.
Soil Erosion - Classic Gully Erosion	2	IPM mitigation practices can reduce risks to solution and adsorbed runoff losses.
Soil Erosion - Streambank, Shoreline, Water Conveyance	0	Not Applicable
<b><u>Soil Quality Degradation</u></b>		
Organic Matter Depletion	2	Organic matter depletion can be decreased with IPM mitigation practices.
Compaction	2	Soil compaction can be decreased by optimizing the timing and application of IPM mitigation practices.
Subsidence	0	Not Applicable
Concentration of Salts or Other Chemicals	0	Not Applicable
<b><u>Excess Water</u></b>		
Excess Water - Seeps	0	Not Applicable
Excess Water - Runoff, Flooding, or Ponding	0	Not Applicable
Excess Water - Seasonal High Water Table	0	Not Applicable
Excess Water - Drifted Snow	0	Not Applicable
<b><u>Insufficient Water</u></b>		
Insufficient Water - Inefficient Use of Irrigation Water	0	Not Applicable
Insufficient Water - Inefficient Moisture Management	0	Not Applicable
<b><u>Water Quality Degradation</u></b>		
Pesticides in Surface Water	5	IPM mitigation practices can reduce the risks from solution and adsorbed runoff losses to improve surface water quality.
Pesticides in Groundwater	5	IPM mitigation practices can reduce the risks from leaching losses and improve groundwater quality.
Nutrients in Surface water	0	Not Applicable
Nutrients in Groundwater	0	Not Applicable
Salts in Surface Water	0	Not Applicable
Salts in Groundwater	0	Not Applicable
Excess Pathogens and Chemicals from Manure, Bio-soli	0	Not Applicable
Excess Pathogens and Chemicals from Manure, Bio-soli	0	Not Applicable
Excessive Sediment in Surface Water	2	IPM mitigation practices can reduce risks to solution and adsorbed runoff losses.
Elevated Water Temperature	0	Not Applicable
Petroleum, Heavy Metals and Other Pollutants Transport	0	Not Applicable
Petroleum, Heavy Metals and Other Pollutants Transport	0	Not Applicable
<b><u>Air Quality Impacts</u></b>		
Emissions of Particulate Matter (PM) and PM Precursors	2	IPM mitigation practices can reduce the effects of chemical drift of liquid particles.
Emissions of Ozone Precursors	2	IPM mitigation practices can reduce the effects of VOCs.
Emissions of Greenhouse Gases (GHGs)	0	Not Applicable
Objectionable Odors	1	IPM mitigation practices can reduce the the effects of VOCs.
<b><u>Degraded Plant Condition</u></b>		
Undesirable Plant Productivity and Health	0	Not Applicable
Inadequate Structure and Composition	0	Not Applicable
Excessive Plant Pest Pressure	0	Not Applicable
Wildfire Hazard, Excessive Biomass Accumulation	0	Not Applicable
<b><u>Fish and Wildlife - Inadequate Habitat</u></b>		
Inadequate Habitat - Food	2	IPM mitigation practices can reduce the negative impacts to fish and wildlife food quantity and quality.
Inadequate Habitat - Cover/Shelter	0	Not Applicable
Inadequate Habitat - Water	2	IPM mitigation practices can reduce negative impacts to fish and wildlife water quantity and quality.
Inadequate Habitat - Habitat Continuity (Space)	0	Not Applicable
<b><u>Livestock Production Limitation</u></b>		
Inadequate Feed and Forage	0	Not Applicable
Inadequate Shelter	0	Not Applicable
Inadequate Water	2	IPM mitigation practices can reduce the negative impacts to livestock water quality.
<b><u>Inefficient Energy Use</u></b>		
Equipment and Facilities	0	Not Applicable
Farming/Ranching Practices and Field Operations	2	IPM mitigation practices can result in a reduction of field operations.



# Effects of NRCS Conservation Practices - National

## Irrigation System, Microirrigation

An irrigation system for frequent application of small quantities of water on or below the soil surface: as drops, tiny streams or miniature spray through emitters or applicators placed along a water delivery line.

**Code:** 441  
**Units:** ac.

**Typical Landuse:**

AL-Aso Land	
O-Other	
W-Water	
D-Developed	
FS-Farmstead	
P-Protected	
R-Rangeland	
P-Pasture	
R-Rangeland	
F-Forest	
C-Cropland	

<u>Soil Erosion</u>	<u>Effect</u>	<u>Rationale</u>
Soil Erosion - Sheet and Rill Erosion	0	Not Applicable
Soil Erosion - Wind Erosion	0	Not Applicable
Soil Erosion - Ephemeral Gully Erosion	0	Not Applicable
Soil Erosion - Classic Gully Erosion	0	Not Applicable
Soil Erosion - Streambank, Shoreline, Water Conveyance	0	Not Applicable
<u>Soil Quality Degradation</u>		
Organic Matter Depletion	0	Not Applicable
Compaction	0	The action limits the wetted area in the soil profile as compared to other irrigation methods. The compaction during field operations should be limited.
Subsidence	0	Not Applicable
Concentration of Salts or Other Chemicals	1	Improved irrigation allows the limited leaching of salt below the root zone.
<u>Excess Water</u>		
Excess Water - Seeps	2	Small irrigation applications and improved uniformity reduces seepage.
Excess Water - Runoff, Flooding, or Ponding	2	More uniform applications reduces ponding and excessive tailwater runoff.
Excess Water - Seasonal High Water Table	2	A more uniform and efficient irrigation prevents losses to deep percolation.
Excess Water - Drifted Snow	0	Not Applicable
<u>Insufficient Water</u>		
Insufficient Water - Inefficient Use of Irrigation Water	2	Water is applied more efficiently and uniformly.
Insufficient Water - Inefficient Moisture Management	0	Not Applicable
<u>Water Quality Degradation</u>		
Pesticides in Surface Water	2	Efficient and uniform irrigation reduces runoff and erosion.
Pesticides in Groundwater	2	Efficient and uniform irrigation reduces deep percolation.
Nutrients in Surface water	2	Efficient and uniform irrigation reduces the potential for transport of dissolved nutrient to surface water.
Nutrients in Groundwater	2	The action improves water use efficiency resulting in decreased deep percolation.
Salts in Surface Water	0	The action reduces the potential for runoff from the field but concentrates salts around the wetted perimeter.
Salts in Groundwater	2	Efficient and uniform irrigation reduces soluble contaminant transport to ground water. Magnitude of effect depends on previous irrigation method.
Excess Pathogens and Chemicals from Manure, Bio-soli	2	Efficient and uniform irrigation reduces transport to surface water
Excess Pathogens and Chemicals from Manure, Bio-soli	1	Uniform water application reduces the potential for deep percolation.
Excessive Sediment in Surface Water	1	Installation of irrigation system limits or eliminates surface erosion and resulting sedimentation.
Elevated Water Temperature	0	Conservation irrigation systems minimize affects to surface water quality.
Petroleum, Heavy Metals and Other Pollutants Transpor	1	Efficient and uniform irrigation reduces transport to surface water.
Petroleum, Heavy Metals and Other Pollutants Transpor	1	Uniform water application reduces the potential for deep percolation.
<u>Air Quality Impacts</u>		
Emissions of Particulate Matter (PM) and PM Precursors	1	Increased production from irrigation lowers the soil wind erodibility group by one class.
Emissions of Ozone Precursors	0	Not Applicable
Emissions of Greenhouse Gases (GHGs)	1	Increased vegetative growth from irrigation can improve carbon sequestration in a reduced tillage system.
Objectionable Odors	0	Not Applicable
<u>Degraded Plant Condition</u>		
Undesirable Plant Productivity and Health	2	Increased water availability and managed application enhances plant growth, health and vigor.
Inadequate Structure and Composition	0	Not Applicable
Excessive Plant Pest Pressure	1	Improved irrigation efficiency improves crop health and vigor which decreases weed competition.
Wildfire Hazard, Excessive Biomass Accumulation	0	Not Applicable
<u>Fish and Wildlife - Inadequate Habitat</u>		
Inadequate Habitat - Food	0	Not Applicable
Inadequate Habitat - Cover/Shelter	0	Not Applicable
Inadequate Habitat - Water	0	Water is temporarily provided during the irrigation season.
Inadequate Habitat - Habitat Continuity (Space)	0	Not Applicable
<u>Livestock Production Limitation</u>		
Inadequate Feed and Forage	4	Production will be improved with uniform and consistent application of water.
Inadequate Shelter	0	Not Applicable
Inadequate Water	0	Not Applicable
<u>Inefficient Energy Use</u>		
Equipment and Facilities	2	Requires less water and lower pressure pumping. Substantially reduces water needs because being applied directly to plant roots.
Farming/Ranching Practices and Field Operations	2	Improvement of Distribution Uniformity can result in reduced energy use for pumping.

# Effects of NRCS Conservation Practices - National

## Irrigation Water Management

Irrigation water management is the process of determining and controlling the volume, frequency, and application rate of irrigation water in a planned, efficient manner.

**Code:** 449  
**Units:** ac.

**Typical Landuse:**

AL-Aso Land  
 O-Other  
 W-Water  
 D-Developed  
 FS-Farmstead  
 Pr-Protected  
 P-Pasture  
 R-Rangeland  
 F-Forest  
 C-Crop

<u>Soil Erosion</u>	<u>Effect</u>	<u>Rationale</u>
Soil Erosion - Sheet and Rill Erosion	0	Not Applicable
Soil Erosion - Wind Erosion	2	Managing water to maintain surface moisture reduces soil detachment by wind.
Soil Erosion - Ephemeral Gully Erosion	0	Not Applicable
Soil Erosion - Classic Gully Erosion	0	Not Applicable
Soil Erosion - Streambank, Shoreline, Water Conveyance	0	Not Applicable
<u>Soil Quality Degradation</u>		
Organic Matter Depletion	1	The action promotes optimum biomass production.
Compaction	0	Not Applicable
Subsidence	0	Not Applicable
Concentration of Salts or Other Chemicals	2	Water can be managed to leach salts and chemicals below the root zone
<u>Excess Water</u>		
Excess Water - Seeps	0	Not Applicable
Excess Water - Runoff, Flooding, or Ponding	0	Not Applicable
Excess Water - Seasonal High Water Table	1	Management of irrigation water will help reduce excess subsurface water.
Excess Water - Drifted Snow	0	Not Applicable
<u>Insufficient Water</u>		
Insufficient Water - Inefficient Use of Irrigation Water	2	Managed application of water for irrigation will increase the efficiency of use.
Insufficient Water - Inefficient Moisture Management	0	Not Applicable
<u>Water Quality Degradation</u>		
Pesticides in Surface Water	2	Controlling the volume, frequency, and application rate of irrigation water reduces runoff and erosion that may carry pesticides into surface water.
Pesticides in Groundwater	2	Controlling the volume, frequency, and application rate of irrigation water reduces deep percolation.
Nutrients in Surface water	2	Water is applied at rates that reduce the potential for erosion and detachment, and minimize nutrient transport to surface water.
Nutrients in Groundwater	2	Water is applied at rates and times that minimize nutrient transport to ground water.
Salts in Surface Water	2	Water is applied at rates that minimize salinity transport to surface water.
Salts in Groundwater	2	Water is applied at rates that minimize salinity transport to ground water.
Excess Pathogens and Chemicals from Manure, Bio-sol	2	Water is applied at rates that minimize pathogens transport to surface water
Excess Pathogens and Chemicals from Manure, Bio-sol	2	Water is applied at rates that minimize pathogen transport to ground water.
Excessive Sediment in Surface Water	2	Water is applied at rates that minimize soil erosion.
Elevated Water Temperature	0	Conservation irrigation systems minimize affects to surface water quality.
Petroleum, Heavy Metals and Other Pollutants Transport	2	Water is applied at rates that minimize heavy metals transport to surface water.
Petroleum, Heavy Metals and Other Pollutants Transport	2	Water is applied at rates that minimize heavy metal transport to ground water.
<u>Air Quality Impacts</u>		
Emissions of Particulate Matter (PM) and PM Precursors	2	Maintaining adequate soil moisture content reduces the potential soil erodibility and increases crop growth and residue production.
Emissions of Ozone Precursors	0	Not Applicable
Emissions of Greenhouse Gases (GHGs)	1	Increased vegetative growth from irrigation can improve carbon sequestration in a reduced tillage system.
Objectionable Odors	0	Not Applicable
<u>Degraded Plant Condition</u>		
Undesirable Plant Productivity and Health	2	Managed application of water enhances plant growth, health and vigor.
Inadequate Structure and Composition	0	Not Applicable
Excessive Plant Pest Pressure	1	Improved irrigation efficiency improves crop health and vigor which decreases weed competition.
Wildfire Hazard, Excessive Biomass Accumulation	0	Not Applicable
<u>Fish and Wildlife - Inadequate Habitat</u>		
Inadequate Habitat - Food	0	Not Applicable
Inadequate Habitat - Cover/Shelter	0	Not Applicable
Inadequate Habitat - Water	0	Not Applicable
Inadequate Habitat - Habitat Continuity (Space)	0	Not Applicable
<u>Livestock Production Limitation</u>		
Inadequate Feed and Forage	4	Production will be improved with uniform and consistent application of water.
Inadequate Shelter	0	Not Applicable
Inadequate Water	0	Not Applicable
<u>Inefficient Energy Use</u>		
Equipment and Facilities	0	Not Applicable
Farming/Ranching Practices and Field Operations	2	Improvement of Irrigation Efficiency can result in reduced energy use for pumping.

# Effects of NRCS Conservation Practices - National

## Livestock Pipeline

A pipeline and appurtenances installed to convey water for livestock or wildlife.

Code: 516  
Units: ft.

Typical Landuse:

AL-Aso Land  
O-Other  
W-Water  
D-Developed  
FS-Farmstead  
Pr-Protected  
P-Pasture  
R-Range  
F-Forest  
C-Crop

<u>Soil Erosion</u>	<u>Effect</u>	<u>Rationale</u>
Soil Erosion - Sheet and Rill Erosion	0	Not Applicable
Soil Erosion - Wind Erosion	0	Not Applicable
Soil Erosion - Ephemeral Gully Erosion	0	Not Applicable
Soil Erosion - Classic Gully Erosion	0	Not Applicable
Soil Erosion - Streambank, Shoreline, Water Conveyance	0	Not Applicable
<u>Soil Quality Degradation</u>		
Organic Matter Depletion	0	Not Applicable
Compaction	0	Not Applicable
Subsidence	0	Not Applicable
Concentration of Salts or Other Chemicals	0	Not Applicable
<u>Excess Water</u>		
Excess Water - Seeps	0	Not Applicable
Excess Water - Runoff, Flooding, or Ponding	0	Not Applicable
Excess Water - Seasonal High Water Table	0	Not Applicable
Excess Water - Drifted Snow	0	Not Applicable
<u>Insufficient Water</u>		
Insufficient Water - Inefficient Use of Irrigation Water	0	Not Applicable
Insufficient Water - Inefficient Moisture Management	0	Not Applicable
<u>Water Quality Degradation</u>		
Pesticides in Surface Water	0	Not Applicable
Pesticides in Groundwater	0	Not Applicable
Nutrients in Surface water	0	Not Applicable
Nutrients in Groundwater	0	Not Applicable
Salts in Surface Water	0	Not Applicable
Salts in Groundwater	0	Not Applicable
Excess Pathogens and Chemicals from Manure, Bio-sol	0	Not Applicable
Excess Pathogens and Chemicals from Manure, Bio-sol	0	Not Applicable
Excessive Sediment in Surface Water	0	Not Applicable
Elevated Water Temperature	0	Not Applicable
Petroleum, Heavy Metals and Other Pollutants Transpor	0	Not Applicable
Petroleum, Heavy Metals and Other Pollutants Transpor	0	Not Applicable
<u>Air Quality Impacts</u>		
Emissions of Particulate Matter (PM) and PM Precursors	0	Not Applicable
Emissions of Ozone Precursors	0	Not Applicable
Emissions of Greenhouse Gases (GHGs)	0	Not Applicable
Objectionable Odors	0	Not Applicable
<u>Degraded Plant Condition</u>		
Undesirable Plant Productivity and Health	2	Available water to facilitate grazing management improves growth and vigor of plants.
Inadequate Structure and Composition	0	Not Applicable
Excessive Plant Pest Pressure	0	Not Applicable
Wildfire Hazard, Excessive Biomass Accumulation	0	Not Applicable
<u>Fish and Wildlife - Inadequate Habitat</u>		
Inadequate Habitat - Food	0	Not Applicable
Inadequate Habitat - Cover/Shelter	0	Not Applicable
Inadequate Habitat - Water	0	Not Applicable
Inadequate Habitat - Habitat Continuity (Space)	0	Not Applicable
<u>Livestock Production Limitation</u>		
Inadequate Feed and Forage	0	Not Applicable
Inadequate Shelter	0	Not Applicable
Inadequate Water	5	Pipeline facilitates the distribution of water to livestock.
<u>Inefficient Energy Use</u>		
Equipment and Facilities	0	Not Applicable
Farming/Ranching Practices and Field Operations	2	Properly sizing pipe to reduce friction losses, will result in reduced energy use for pumping.

# Effects of NRCS Conservation Practices - National

## Nutrient Management

Managing the amount (rate), source, placement (method of application), and timing of plant nutrients and soil amendments.

Code: 590  
Units: ac.

Typical Landuse:

AL-Aso Land  
O-Other  
W-Water  
D-Developed  
FS-Farmstead  
P-Protected  
P-Pasture  
R-Rangeland  
F-Forest  
C-Cropland

<u>Soil Erosion</u>	<u>Effect</u>	<u>Rationale</u>
Soil Erosion - Sheet and Rill Erosion	0	Soil disturbance to incorporate fertilizer loosens the soil and buries surface residue which can increase erosion. Other application methods do not contribute to erosion.
Soil Erosion - Wind Erosion	0	Soil disturbance to incorporate fertilizer loosens the soil and buries surface residue which can increase erosion. Other application methods do not contribute to erosion.
Soil Erosion - Ephemeral Gully Erosion	0	Soil disturbance to incorporate fertilizer loosens the soil and buries surface residue which can increase erosion. Other application methods do not contribute to erosion.
Soil Erosion - Classic Gully Erosion	0	Not Applicable
Soil Erosion - Streambank, Shoreline, Water Conveyance	0	Not Applicable
<u>Soil Quality Degradation</u>		
Organic Matter Depletion	2	Management of pH and applying sufficient nutrients will maintain or enhance biomass production
Compaction	-1	Field operations on moist soils cause soil compaction.
Subsidence	0	Not Applicable
Concentration of Salts or Other Chemicals	4	Matching plant requirements with nutrient applications decreases excess nutrient conditions and reduces salts and other contaminants
<u>Excess Water</u>		
Excess Water - Seeps	0	Not Applicable
Excess Water - Runoff, Flooding, or Ponding	0	Not Applicable
Excess Water - Seasonal High Water Table	0	Not Applicable
Excess Water - Drifted Snow	0	Not Applicable
<u>Insufficient Water</u>		
Insufficient Water - Inefficient Use of Irrigation Water	0	Excess nitrogen promotes shoot growth in relation to root growth.
Insufficient Water - Inefficient Moisture Management	0	Excess nitrogen promotes shoot growth in relation to root growth.
<u>Water Quality Degradation</u>		
Pesticides in Surface Water	0	Not Applicable
Pesticides in Groundwater	0	Not Applicable
Nutrients in Surface water	5	Right: Amount, source, placement, and timing (4R) provides nutrients when plants need them most.
Nutrients in Groundwater	5	The amount and timing of nutrient application are balanced with plant needs.
Salts in Surface Water	3	Proper nutrient application should reduce salinity if nutrient source contains salts.
Salts in Groundwater	3	Proper nutrient application should reduce salinity if nutrient source contains salts.
Excess Pathogens and Chemicals from Manure, Bio-soli	4	Proper application of manure, compost, and bio-solids should reduce or eliminate pathogens and/or chemicals (if present in source material) from moving into surface water.
Excess Pathogens and Chemicals from Manure, Bio-soli	4	Proper application of manure, compost, and bio-solids should reduce or eliminate pathogens and/or chemicals (if present in source material) from moving into ground water.
Excessive Sediment in Surface Water	0	Proper nutrient application will minimize losses due to runoff.
Elevated Water Temperature	0	Not Applicable
Petroleum, Heavy Metals and Other Pollutants Transpor	2	Changing pH will alter the solubility of metals. The action will reduce the application rate of heavy metals if required.
Petroleum, Heavy Metals and Other Pollutants Transpor	2	Management of pH will alter the solubility of metals. The action will reduce the application rate of heavy metals, if required
<u>Air Quality Impacts</u>		
Emissions of Particulate Matter (PM) and PM Precursors	2	The proper application of nitrogen can greatly reduce ammonia emissions. Proper application techniques can also reduce particulate emissions from solid manure and fertilizers.
Emissions of Ozone Precursors	2	The proper application of nitrogen can reduce NOx emissions. Proper application techniques can also reduce VOC emissions from manure.
Emissions of Greenhouse Gases (GHGs)	4	Management of nutrients optimizes the storage of soil carbon. The propoer application of nitrogen can reduce emissions of nitrous oxide.
Objectionable Odors	2	The proper application of nitrogen can reduce ammonia emissions. Proper application techniques can also reduce emissions of VOCs and other odorous compounds from manure.
<u>Degraded Plant Condition</u>		
Undesirable Plant Productivity and Health	4	Nutrients and soil amendments are optimized to enhance health and vigor of desired species.
Inadequate Structure and Composition	2	Nutrients and soil amendments are optimized to enhance suited and desired species.
Excessive Plant Pest Pressure	0	Not Applicable
Wildfire Hazard, Excessive Biomass Accumulation	0	Not Applicable
<u>Fish and Wildlife - Inadequate Habitat</u>		
Inadequate Habitat - Food	0	Management enhances production of any food species planted.
Inadequate Habitat - Cover/Shelter	0	Management enhances cover/shelter conditions.
Inadequate Habitat - Water	0	Not Applicable
Inadequate Habitat - Habitat Continuity (Space)	0	Not Applicable
<u>Livestock Production Limitation</u>		
Inadequate Feed and Forage	4	Nutrients are managed to ensure optimal production and nutritive value of the forage used by livestock.
Inadequate Shelter	0	Not Applicable
Inadequate Water	0	Management may improve livestock water quality.
<u>Inefficient Energy Use</u>		
Equipment and Facilities	0	Not Applicable
Farming/Ranching Practices and Field Operations	0	Not Applicable

# Effects of NRCS Conservation Practices - National

## Prescribed Grazing

Managing the harvest of vegetation with grazing and/or browsing animals.

Code: 528  
Units: ac.

Typical Landuse:

AL-Aso Land  
O-Other  
W-Water  
D-Developed  
FS-Farmstead  
Pr-Practiced  
P-Pasture  
R-Range  
F-Forest  
C-Crop

<u>Soil Erosion</u>	<u>Effect</u>	<u>Rationale</u>
Soil Erosion - Sheet and Rill Erosion	4	Improving the health and vigor of plant communities will increase vegetative cover and/or water infiltration and decrease erosion by water.
Soil Erosion - Wind Erosion	4	Improving the health and vigor of plant communities will increase vegetative cover and decrease erosion by wind.
Soil Erosion - Ephemeral Gully Erosion	3	Improving the vigor of plant communities will speed vegetative recovery when episodic storms cause erosion.
Soil Erosion - Classic Gully Erosion	1	Enhanced vegetation cover limits the speed of concentrated flow.
Soil Erosion - Streambank, Shoreline, Water Conveyance	3	There will be enhancement of protective riparian vegetation.
<u>Soil Quality Degradation</u>		
Organic Matter Depletion	4	There will be an increase in vegetative cover, deeper root systems, increased soil organic material and biological activity, and improved nutrient cycling.
Compaction	2	Soil bulk density decreases on long-term basis because of an increase in vegetative cover, deeper root systems, and increased soil organic material. There may be a slight increase in bulk density in the short term on intensively managed grazing systems.
Subsidence	0	Not Applicable
Concentration of Salts or Other Chemicals	2	Bare Ground is covered by increased litter and plant bases. Cover reduces evaporative salt accumulation.
<u>Excess Water</u>		
Excess Water - Seeps	0	Springs and seeps can be utilized and maintained.
Excess Water - Runoff, Flooding, or Ponding	1	Runoff will be reduced and infiltration increased due to improved vegetative cover.
Excess Water - Seasonal High Water Table	0	Not applicable.
Excess Water - Drifted Snow	0	Not Applicable
<u>Insufficient Water</u>		
Insufficient Water - Inefficient Use of Irrigation Water	0	Not applicable.
Insufficient Water - Inefficient Moisture Management	2	There will be increased infiltration, increased available water, and extended interflow yield.
<u>Water Quality Degradation</u>		
Pesticides in Surface Water	2	Managing for desirable plant health and vigor reduces runoff, erosion, and the need for pesticide applications.
Pesticides in Groundwater	1	Managing for desirable plant health and vigor reduces the need for pesticide applications.
Nutrients in Surface water	1	The action increases plant vigor and uptake of nutrients.
Nutrients in Groundwater	1	The action increases plant vigor and uptake of nutrients.
Salts in Surface Water	2	The action reduces soil surface evaporation, increases infiltration and reduces runoff.
Salts in Groundwater	1	The action results in increased vigor of plant community which may increase contaminant uptake.
Excess Pathogens and Chemicals from Manure, Bio-soli	1	Reduced runoff, grazing management, and properly placed and designed watering facilities will reduce risk of movement of pathogens in surface waters.
Excess Pathogens and Chemicals from Manure, Bio-soli	1	The action may increase soil microbial activity enhancing competition with pathogens.
Excessive Sediment in Surface Water	2	Management will result in increased plant vigor and cover, decreasing sediment yields.
Elevated Water Temperature	1	The action protects soil and water quality.
Petroleum, Heavy Metals and Other Pollutants Transpor	0	Toxic substances not grazed.
Petroleum, Heavy Metals and Other Pollutants Transpor	0	Toxic substances not grazed.
<u>Air Quality Impacts</u>		
Emissions of Particulate Matter (PM) and PM Precursors	2	Improved vegetative cover reduces the generation of particulates.
Emissions of Ozone Precursors	0	Not Applicable
Emissions of Greenhouse Gases (GHGs)	1	Improved vegetative cover removes CO2 from the air and stores it in the form of carbon in the plants and soil.
Objectionable Odors	1	Proper management will spread livestock, reducing manure concentrations.
<u>Degraded Plant Condition</u>		
Undesirable Plant Productivity and Health	5	Improved plant and animal management enhances growing conditions of the desired plant community.
Inadequate Structure and Composition	4	Grazing management is implemented to create or maintain the desired plant community.
Excessive Plant Pest Pressure	1	Management will increased health and vigor and competition by desirable plants which will decrease noxious and invasive plants.
Wildfire Hazard, Excessive Biomass Accumulation	2	Management of plant communities reduces fuel loads.
<u>Fish and Wildlife - Inadequate Habitat</u>		
Inadequate Habitat - Food	2	Management enhances production and diversity of the plant community including food species.
Inadequate Habitat - Cover/Shelter	2	Management enhances production and diversity of cover/shelter conditions/
Inadequate Habitat - Water	4	Improved infiltration increases lag streamflow.
Inadequate Habitat - Habitat Continuity (Space)	4	Management can restore desired habitats/space.
<u>Livestock Production Limitation</u>		
Inadequate Feed and Forage	5	Livestock numbers are in balance with available feed and forage that meets nutritional and productive needs for the kinds and classes of livestock.
Inadequate Shelter	2	Grazing management considers location of animals and available shelter(s) throughout the year.
Inadequate Water	0	Not Applicable
<u>Inefficient Energy Use</u>		
Equipment and Facilities	0	Not Applicable
Farming/Ranching Practices and Field Operations	0	Not Applicable

# Effects of NRCS Conservation Practices - National

## Range Planting

Establishment of adapted perennial or self-sustaining vegetation such as grasses, forbs, legumes, shrubs and trees.

Code: 550  
Units: ac.

Typical Landuse:

AL-Aso Land  
O-Other  
W-Water  
D-Developed  
FS-Farmstead  
P-Protected  
R-Range  
F-Forest  
C-Crop

<u>Soil Erosion</u>	<u>Effect</u>	<u>Rationale</u>
Soil Erosion - Sheet and Rill Erosion	4	Establishment of adapted species increases vegetative cover and reduces erosion potential. During the establishment period, there may be a slight to moderate risk of erosion, depending on seedbed preparation, seeding method, and species planted.
Soil Erosion - Wind Erosion	4	Establishment of adapted species increases vegetative cover and reduces erosion potential. During the establishment period, there may be a slight to moderate risk of erosion, depending on seedbed preparation, seeding method, and species planted.
Soil Erosion - Ephemeral Gully Erosion	4	Establishment of adapted species increases vegetative cover and reduces erosion potential. During the establishment period, there may be a slight to moderate risk of erosion, depending on seedbed preparation, seeding method, and species planted.
Soil Erosion - Classic Gully Erosion	2	Establishment of adapted species increases vegetative cover and reduces erosion potential. During the establishment period, there may be a slight to moderate risk of erosion, depending on seedbed preparation, seeding method, and species planted.
Soil Erosion - Streambank, Shoreline, Water Conveyance	2	Establishment of adapted species increases vegetative cover and reduces erosion potential. During the establishment period, there may be a slight to moderate risk of erosion, depending on seedbed preparation, seeding method, and species planted.
<u>Soil Quality Degradation</u>		
Organic Matter Depletion	4	There will be enhanced root development, litter accumulation, and increased biological activity.
Compaction	4	Enhanced root development, litter accumulation, increased biological activity, and/or reduced tillage may improve soil structure.
Subsidence	0	Not Applicable since subsidence is water table function.
Concentration of Salts or Other Chemicals	1	Site planted to adapted species could contribute to the reduction of saline seep areas. There would be a negligible decrease of selenium, boron, and heavy metals because of very limited uptake by range plants.
<u>Excess Water</u>		
Excess Water - Seeps	0	There will be an increase in plant uptake and transpiration in the long-term. There may be a slight to moderate increase in seepage because of increased infiltration depending on the species selected.
Excess Water - Runoff, Flooding, or Ponding	0	There will be an increase in cover and infiltration, reducing runoff and overland flow.
Excess Water - Seasonal High Water Table	0	There will be an increase in plant uptake and transpiration in the long-term. There may be a slight to moderate increase in seepage because of increased infiltration depending on the species selected.
Excess Water - Drifted Snow	1	Warm Season grasses have a more rigid structure than cool season grasses and can maintain structural height under the weight of snow.
<u>Insufficient Water</u>		
Insufficient Water - Inefficient Use of Irrigation Water	0	Not Applicable
Insufficient Water - Inefficient Moisture Management	2	The plant species selected will be adapted to meet the seasonal distribution of moisture.
<u>Water Quality Degradation</u>		
Pesticides in Surface Water	2	Mitigated by low application requirements.
Pesticides in Groundwater	2	Species selected from the Ecological Site Description generally resist or are adapted to pest thereby eliminating the need for harmful pesticides.
Nutrients in Surface water	1	Improving vegetative cover will reduce runoff and erosion, and reduce the delivery of organics and nutrients to surface water.
Nutrients in Groundwater	1	Permanent vegetation will uptake excess nutrients.
Salts in Surface Water	1	Dense vegetation will increase infiltration and reduce runoff. Planting of range species in recharge areas may reduce movement of salts to seep areas and surface waters.
Salts in Groundwater	1	There will be an increase in plant uptake when adapted plant species are used. There is the slight potential for leaching of salt into ground water because of increased infiltration.
Excess Pathogens and Chemicals from Manure, Bio-soli	1	The improved vegetative cover and increased soil microbiological activity will reduce movement of pathogens, however a land use change to pasture may increase potential pathogen levels.
Excess Pathogens and Chemicals from Manure, Bio-soli	1	Increased soil microbial activity will enhance competition with pathogens.
Excessive Sediment in Surface Water	2	There will be improved vegetative cover with a reduction of runoff and sedimentation.
Elevated Water Temperature	1	The action improves infiltration, increases shade and provides for thermal regulation of gravitational water moving laterally to open water.
Petroleum, Heavy Metals and Other Pollutants Transpor	2	Live plant growth reduces runoff.
Petroleum, Heavy Metals and Other Pollutants Transpor	1	Certain plant species can take up heavy metals. Increased infiltration may increase the potential of heavy metal movement to groundwater.
<u>Air Quality Impacts</u>		
Emissions of Particulate Matter (PM) and PM Precursors	1	Establishing permanent vegetation reduces the potential for generation of particulates by wind erosion.
Emissions of Ozone Precursors	0	Not Applicable
Emissions of Greenhouse Gases (GHGs)	2	Vegetation removes CO2 from the air and stores it in the form of carbon in the plants and soil.
Objectionable Odors	0	Not Applicable
<u>Degraded Plant Condition</u>		
Undesirable Plant Productivity and Health	5	Plants are selected and managed to maintain optimal productivity, health and ecological function.
Inadequate Structure and Composition	5	Maladaptation will be avoided by a plant selection based on considerations of geographic region, precipitation, winter hardiness, soil type, genetic ploidy, field testing and Ecological Site Description information.
Excessive Plant Pest Pressure	4	Vegetation strategy is to control undesired species.
Wildfire Hazard, Excessive Biomass Accumulation	0	Not Applicable
<u>Fish and Wildlife - Inadequate Habitat</u>		
Inadequate Habitat - Food	2	Plant species are selected from the Ecological Site Description that are compatible for the site and provide wildlife food
Inadequate Habitat - Cover/Shelter	2	Plant species are selected from the Ecological Site Description that are compatible for the site and provide wildlife cover.
Inadequate Habitat - Water	4	Not Applicable
Inadequate Habitat - Habitat Continuity (Space)	4	Planting can restore desired habitats/space.
<u>Livestock Production Limitation</u>		
Inadequate Feed and Forage	5	Plant species will be selected that accommodate seasonal livestock production and nutritional needs.
Inadequate Shelter	0	Not Applicable
Inadequate Water	0	Not Applicable
<u>Inefficient Energy Use</u>		
Equipment and Facilities	0	Not Applicable
Farming/Ranching Practices and Field Operations	0	Not Applicable

## Effects of NRCS Conservation Practices - National

### Residue and Tillage Management, No Till

Managing the amount, orientation and distribution of crop and other plant residue on the soil surface year round, limiting soil-disturbing activities to those necessary to place nutrients, condition residue and plant crops.

Code: 329  
Units: ac.

Typical Landuse:

AL-Aso Land  
O-Other  
W-Water  
D-Developed  
FS-Farmstead  
P-Protected  
R-Range  
F-Forest  
C-Crop

<u>Soil Erosion</u>	<u>Effect</u>	<u>Rationale</u>
Soil Erosion - Sheet and Rill Erosion	4	Managing residue to reduce soil disturbance and increase residue cover reduces erosion by water.
Soil Erosion - Wind Erosion	4	Managing residue to reduce soil disturbance and increase residue cover reduces erosion by wind.
Soil Erosion - Ephemeral Gully Erosion	0	Not Applicable
Soil Erosion - Classic Gully Erosion	0	Not Applicable
Soil Erosion - Streambank, Shoreline, Water Conveyance	0	Not Applicable
<u>Soil Quality Degradation</u>		
Organic Matter Depletion	2	Decreased erosion and less oxidation from lack of soil disturbance will increase or maintain organic matter.
Compaction	2	Fewer field operations and less tillage reduce the potential for soil compaction.
Subsidence	0	Not Applicable
Concentration of Salts or Other Chemicals	0	Not Applicable
<u>Excess Water</u>		
Excess Water - Seeps	-1	No-till increases infiltration resulting in more water moving through the profile.
Excess Water - Runoff, Flooding, or Ponding	2	No-till increases infiltration, reducing runoff and ponding.
Excess Water - Seasonal High Water Table	-1	Can reduce evaporation and increase infiltration of water
Excess Water - Drifted Snow	0	Not Applicable
<u>Insufficient Water</u>		
Insufficient Water - Inefficient Use of Irrigation Water	2	No-till increases infiltration and decreases evaporation resulting in more available water. However, increased infiltration reduces the efficiency of flood and furrow irrigation.
Insufficient Water - Inefficient Moisture Management	2	No-till increases infiltration and decreases evaporation resulting in more available water.
<u>Water Quality Degradation</u>		
Pesticides in Surface Water	4	The action decreases runoff and erosion.
Pesticides in Groundwater	0	Not Applicable
Nutrients in Surface water	2	Less erosion and runoff reduces transport of nutrients.
Nutrients in Groundwater	-1	The action increases infiltration that contributes to nutrient leaching. Also, high organic carbon will cause microbes to immobilize nutrients.
Salts in Surface Water	0	Not Applicable
Salts in Groundwater	0	Not Applicable
Excess Pathogens and Chemicals from Manure, Bio-sol	1	Less erosion and runoff reduces delivery of pathogens.
Excess Pathogens and Chemicals from Manure, Bio-sol	0	Not Applicable
Excessive Sediment in Surface Water	4	Less erosion and runoff reduces transport of sediment.
Elevated Water Temperature	0	Not Applicable
Petroleum, Heavy Metals and Other Pollutants Transport	0	Not Applicable
Petroleum, Heavy Metals and Other Pollutants Transport	0	Not Applicable
<u>Air Quality Impacts</u>		
Emissions of Particulate Matter (PM) and PM Precursors	4	Less soil disturbance, increased residue on the surface and fewer field operations reduce the generation of particulate matter.
Emissions of Ozone Precursors	2	Reduced use of machinery reduces ozone precursor emissions.
Emissions of Greenhouse Gases (GHGs)	4	Reduced use of machinery reduces CO2 emissions and increases soil carbon storage.
Objectionable Odors	0	Not Applicable
<u>Degraded Plant Condition</u>		
Undesirable Plant Productivity and Health	2	Conserving moisture and improving soil conditions contribute to enhanced plant productivity and health. However, on cold and wet soils there may be a delay in emergence and early growth.
Inadequate Structure and Composition	0	Not Applicable
Excessive Plant Pest Pressure	0	Not Applicable
Wildfire Hazard, Excessive Biomass Accumulation	0	Not Applicable
<u>Fish and Wildlife - Inadequate Habitat</u>		
Inadequate Habitat - Food	2	Crop residue provides some food for wildlife.
Inadequate Habitat - Cover/Shelter	2	Crop residue provides some cover/shelter.
Inadequate Habitat - Water	4	Not Applicable
Inadequate Habitat - Habitat Continuity (Space)	1	Residue restores some habitat/space.
<u>Livestock Production Limitation</u>		
Inadequate Feed and Forage	0	Not Applicable
Inadequate Shelter	0	Not Applicable
Inadequate Water	0	Not Applicable
<u>Inefficient Energy Use</u>		
Equipment and Facilities	4	No tillage equipment needed
Farming/Ranching Practices and Field Operations	4	No tillage operations

## Effects of NRCS Conservation Practices - National

### Residue and Tillage Management, Reduced Till

Managing the amount, orientation and distribution of crop and other plant residue on the soil surface year round while limiting the soil-disturbing activities used to grow and harvest crops in systems where the field surface is tilled prior to planting.

Code: 345  
Units: ac.

AL-Also Land  
 O-Other  
 W-Water  
 D-Developed  
 FS-Farmland  
 P-Protected  
 R-Range  
 F-Forest  
 C-Crop

Typical Landuse:

	<u>Effect</u>	<u>Rationale</u>	C	P	O
<b>Soil Erosion</b>					
Soil Erosion - Sheet and Rill Erosion	4	Managing residue to reduce soil disturbance and increase residue cover reduces erosion by water.			
Soil Erosion - Wind Erosion	4	Managing residue to reduce soil disturbance and increase residue cover reduces erosion by wind.			
Soil Erosion - Ephemeral Gully Erosion	0	Not Applicable			
Soil Erosion - Classic Gully Erosion	0	Not Applicable			
Soil Erosion - Streambank, Shoreline, Water Conveyance	0	Not Applicable			
<b>Soil Quality Degradation</b>					
Organic Matter Depletion	2	Decreased erosion and less oxidation from less soil disturbance may increase or maintain organic matter.			
Compaction	1	Less intensive tillage reduces the potential for soil compaction.			
Subsidence	0	Not Applicable			
Concentration of Salts or Other Chemicals	0	Not Applicable			
<b>Excess Water</b>					
Excess Water - Seeps	0	Not Applicable			
Excess Water - Runoff, Flooding, or Ponding	1	Mulch till increases infiltration, reducing runoff and ponding.			
Excess Water - Seasonal High Water Table	0	Not Applicable			
Excess Water - Drifted Snow	0	Not Applicable			
<b>Insufficient Water</b>					
Insufficient Water - Inefficient Use of Irrigation Water	1	Mulch till increases infiltration and decreases evaporation resulting in more available water. However, increased infiltration reduces the efficiency of flood and furrow irrigation.			
Insufficient Water - Inefficient Moisture Management	2	Mulch till increases infiltration and decreases evaporation resulting in more available water.			
<b>Water Quality Degradation</b>					
Pesticides in Surface Water	4	The action decreases runoff and erosion.			
Pesticides in Groundwater	0	Not Applicable			
Nutrients in Surface water	2	Less erosion and runoff reduces transport of nutrients.			
Nutrients in Groundwater	0	Not Applicable			
Salts in Surface Water	1	Less runoff reduces transport of soluble salts. However increased infiltration results in more seepage which can carry soluble salts to the surface.			
Salts in Groundwater	0	Not Applicable			
Excess Pathogens and Chemicals from Manure, Bio-soli	1	Less erosion and runoff reduces delivery of pathogens.			
Excess Pathogens and Chemicals from Manure, Bio-soli	0	Not Applicable			
Excessive Sediment in Surface Water	3	Less erosion and runoff reduces transport of sediment.			
Elevated Water Temperature	0	Not Applicable			
Petroleum, Heavy Metals and Other Pollutants Transpor	0	Not Applicable			
Petroleum, Heavy Metals and Other Pollutants Transpor	0	Not Applicable			
<b>Air Quality Impacts</b>					
Emissions of Particulate Matter (PM) and PM Precursors	4	Less soil disturbance, increased residue on the surface and fewer field operations reduce the generation of particulate matter.			
Emissions of Ozone Precursors	1	Reduced use of machinery reduces ozone precursor emissions.			
Emissions of Greenhouse Gases (GHGs)	3	Reduced use of machinery reduces CO2 emissions and increases soil carbon storage.			
Objectionable Odors	0	Not Applicable			
<b>Degraded Plant Condition</b>					
Undesirable Plant Productivity and Health	2	Conserving moisture and improving soil conditions contribute to enhanced plant productivity and health.			
Inadequate Structure and Composition	0	Not Applicable			
Excessive Plant Pest Pressure	0	Not Applicable			
Wildfire Hazard, Excessive Biomass Accumulation	0	Not Applicable			
<b>Fish and Wildlife - Inadequate Habitat</b>					
Inadequate Habitat - Food	2	Crop residue provides some food for wildlife.			
Inadequate Habitat - Cover/Shelter	2	Crop residue provides some cover/shelter.			
Inadequate Habitat - Water	4	Not Applicable			
Inadequate Habitat - Habitat Continuity (Space)	1	Residue restores some habitat/space.			
<b>Livestock Production Limitation</b>					
Inadequate Feed and Forage	0	Not Applicable			
Inadequate Shelter	0	Not Applicable			
Inadequate Water	0	Not Applicable			
<b>Inefficient Energy Use</b>					
Equipment and Facilities	2	Few tillage trips across the field and less horsepower requirements.			
Farming/Ranching Practices and Field Operations	2	Few tillage trips across the field and less horsepower requirements.			



# Effects of NRCS Conservation Practices - National

## Sprinkler System

An irrigation system in which all necessary equipment and facilities are installed for efficiently applying water by means of nozzles operated under pressure.

**Code:** 442  
**Units:** ac.

**Typical Landuse:**

AL-Asp Land  
O-Other  
W-Water  
D-Developed  
FS-Farmstead  
P-Protected  
R-Range  
F-Forest  
C-Crop

<u>Soil Erosion</u>	<u>Effect</u>	<u>Rationale</u>
Soil Erosion - Sheet and Rill Erosion	0	Not Applicable
Soil Erosion - Wind Erosion	2	Wetting the surface reduces soil detachment by wind.
Soil Erosion - Ephemeral Gully Erosion	0	Not Applicable
Soil Erosion - Classic Gully Erosion	0	Not Applicable
Soil Erosion - Streambank, Shoreline, Water Conveyance	0	Not Applicable
<u>Soil Quality Degradation</u>		
Organic Matter Depletion	0	Not Applicable
Compaction	-1	There will be crusting of soil surface during seed germination and wheel compaction due to movement of the irrigation system.
Subsidence	0	Not Applicable
Concentration of Salts or Other Chemicals	2	Improved irrigation allows the leaching of salt below the root zone.
<u>Excess Water</u>		
Excess Water - Seeps	0	Properly applied sprinkler irrigation will not increase groundwater.
Excess Water - Runoff, Flooding, or Ponding	2	Conversion from surface to sprinkler will reduce surface runoff.
Excess Water - Seasonal High Water Table	1	More uniform applications reduces subsurface flows.
Excess Water - Drifted Snow	0	Not Applicable
<u>Insufficient Water</u>		
Insufficient Water - Inefficient Use of Irrigation Water	5	More uniform application of water.
Insufficient Water - Inefficient Moisture Management	0	Not Applicable
<u>Water Quality Degradation</u>		
Pesticides in Surface Water	2	Efficient and uniform irrigation reduces runoff and erosion.
Pesticides in Groundwater	2	Efficient and uniform irrigation reduces deep percolation.
Nutrients in Surface water	2	Erosion and runoff are reduced by the efficient application of irrigation water.
Nutrients in Groundwater	1	The action improves water use efficiency resulting in decreased deep percolation.
Salts in Surface Water	2	The action allows more efficient application of irrigation water, which reduces the potential for runoff from the field.
Salts in Groundwater	2	Efficient and uniform irrigation reduces transport to ground water.
Excess Pathogens and Chemicals from Manure, Bio-soli	2	Reduced runoff because of more efficient application
Excess Pathogens and Chemicals from Manure, Bio-soli	1	Uniform water application reduces the potential for deep percolation.
Excessive Sediment in Surface Water	1	Installation of irrigation system limits or eliminates surface erosion and resulting sedimentation.
Elevated Water Temperature	0	Reduced runoff of higher temperature water is likely.
Petroleum, Heavy Metals and Other Pollutants Transpor	1	More efficient application reduces potential runoff.
Petroleum, Heavy Metals and Other Pollutants Transpor	1	Uniform water application reduces the potential for deep percolation.
<u>Air Quality Impacts</u>		
Emissions of Particulate Matter (PM) and PM Precursors	2	An irrigation application moistens the soil surface and reduces the erodibility of the soil. Increased production from irrigation lowers the soil wind erodibility group by one class.
Emissions of Ozone Precursors	0	Not Applicable
Emissions of Greenhouse Gases (GHGs)	1	Increased vegetative growth from irrigation can improve carbon sequestration in a reduced tillage system.
Objectionable Odors	0	Not Applicable
<u>Degraded Plant Condition</u>		
Undesirable Plant Productivity and Health	2	Increased water availability and managed application enhances plant growth, health and vigor.
Inadequate Structure and Composition	0	Not Applicable
Excessive Plant Pest Pressure	1	Improved irrigation efficiency improves crop health and vigor which decrease weed competition.
Wildfire Hazard, Excessive Biomass Accumulation	0	Not Applicable
<u>Fish and Wildlife - Inadequate Habitat</u>		
Inadequate Habitat - Food	0	Not Applicable
Inadequate Habitat - Cover/Shelter	0	Not Applicable
Inadequate Habitat - Water	0	Water is temporarily provided during the irrigation season.
Inadequate Habitat - Habitat Continuity (Space)	0	Not Applicable
<u>Livestock Production Limitation</u>		
Inadequate Feed and Forage	4	Production will be improved with uniform and consistent application of water.
Inadequate Shelter	0	Not Applicable
Inadequate Water	0	Not Applicable
<u>Inefficient Energy Use</u>		
Equipment and Facilities	2	Requires less water and lower pressure pumping. Reduces water applied due to an increase in application uniformity.
Farming/Ranching Practices and Field Operations	2	Improvement of Distribution Uniformity can result in reduced energy use for pumping.

## Effects of NRCS Conservation Practices - National

### Structures for Wildlife

#N/A

Code: 649  
Units: no.

Typical Landuse: #N/A

AL-Asp Land  
 O-Other  
 W-Water  
 D-Developed  
 FS-Farmstead  
 P-Processed  
 P-Pasture  
 R-Rangeland  
 F-Forest  
 C-Crop

<u>Soil Erosion</u>	<u>Effect</u>	<u>Rationale</u>
Soil Erosion - Sheet and Rill Erosion	0	Not Applicable
Soil Erosion - Wind Erosion	0	Not Applicable
Soil Erosion - Ephemeral Gully Erosion	0	Not Applicable
Soil Erosion - Classic Gully Erosion	0	Not Applicable
Soil Erosion - Streambank, Shoreline, Water Conveyance	0	Not Applicable
<u>Soil Quality Degradation</u>		
Organic Matter Depletion	0	Not Applicable
Compaction	0	Not Applicable
Subsidence	0	Not Applicable
Concentration of Salts or Other Chemicals	0	Not Applicable
<u>Excess Water</u>		
Excess Water - Seeps	0	Not Applicable
Excess Water - Runoff, Flooding, or Ponding	0	Not Applicable
Excess Water - Seasonal High Water Table	0	Not Applicable
Excess Water - Drifted Snow	0	Not Applicable
<u>Insufficient Water</u>		
Insufficient Water - Inefficient Use of Irrigation Water	0	Not Applicable
Insufficient Water - Inefficient Moisture Management	0	Not Applicable
<u>Water Quality Degradation</u>		
Pesticides in Surface Water	0	Not Applicable
Pesticides in Groundwater	0	Not Applicable
Nutrients in Surface water	0	Not Applicable
Nutrients in Groundwater	0	Not Applicable
Salts in Surface Water	0	Not Applicable
Salts in Groundwater	0	Not Applicable
Excess Pathogens and Chemicals from Manure, Bio-soli	0	Not Applicable
Excess Pathogens and Chemicals from Manure, Bio-soli	0	Not Applicable
Excessive Sediment in Surface Water	0	Not Applicable
Elevated Water Temperature	0	Not Applicable
Petroleum, Heavy Metals and Other Pollutants Transpor	0	Not Applicable
Petroleum, Heavy Metals and Other Pollutants Transpor	0	Not Applicable
<u>Air Quality Impacts</u>		
Emissions of Particulate Matter (PM) and PM Precursors	0	Not Applicable
Emissions of Ozone Precursors	0	Not Applicable
Emissions of Greenhouse Gases (GHGs)	0	Not Applicable
Objectionable Odors	0	Not Applicable
<u>Degraded Plant Condition</u>		
Undesirable Plant Productivity and Health	0	Not Applicable
Inadequate Structure and Composition	0	Not Applicable
Excessive Plant Pest Pressure	0	Not Applicable
Wildfire Hazard, Excessive Biomass Accumulation	0	Not Applicable
<u>Fish and Wildlife - Inadequate Habitat</u>		
Inadequate Habitat - Food	0	Not Applicable
Inadequate Habitat - Cover/Shelter	4	Areas for cover/shelter are created
Inadequate Habitat - Water	0	Not Applicable
Inadequate Habitat - Habitat Continuity (Space)	0	Not Applicable
<u>Livestock Production Limitation</u>		
Inadequate Feed and Forage	0	Not Applicable
Inadequate Shelter	0	Not Applicable
Inadequate Water	0	Not Applicable
<u>Inefficient Energy Use</u>		
Equipment and Facilities	0	Not Applicable
Farming/Ranching Practices and Field Operations	0	Not Applicable

# Effects of NRCS Conservation Practices - National

## Upland Wildlife Habitat Management

Provide and manage upland habitats and connectivity within the landscape for wildlife.

Code: 645  
Units: ac.

Typical Landuse:

AL-Aso Land  
 C-Other  
 W-Water  
 D-Developed  
 FS-Farmstead  
 Pr-Protected  
 P-Pasture  
 R-Rangeland  
 F-Forest  
 C-Crop  
 G F R P Pr FS D W O AL

<u>Soil Erosion</u>	<u>Effect</u>	<u>Rationale</u>
Soil Erosion - Sheet and Rill Erosion	3	Establishment of permanent vegetation reduces erosion by water.
Soil Erosion - Wind Erosion	3	Establishment of permanent vegetation reduces erosion by wind.
Soil Erosion - Ephemeral Gully Erosion	3	Establishment of permanent vegetation reduces erosion by water.
Soil Erosion - Classic Gully Erosion	2	There will be decreased overland flow, enhanced vegetation cover.
Soil Erosion - Streambank, Shoreline, Water Conveyance	1	There will be decreased overland flow, enhanced vegetation cover.
<u>Soil Quality Degradation</u>		
Organic Matter Depletion	0	New vegetation may be established.
Compaction	0	Not Applicable
Subsidence	0	Not Applicable
Concentration of Salts or Other Chemicals	0	Not Applicable
<u>Excess Water</u>		
Excess Water - Seeps	0	Not Applicable
Excess Water - Runoff, Flooding, or Ponding	-3	Vegetation causes flooding and ponding.
Excess Water - Seasonal High Water Table	2	Deep rooted plants uptake excess water.
Excess Water - Drifted Snow	0	Not Applicable
<u>Insufficient Water</u>		
Insufficient Water - Inefficient Use of Irrigation Water	0	Not Applicable
Insufficient Water - Inefficient Moisture Management	0	Not Applicable
<u>Water Quality Degradation</u>		
Pesticides in Surface Water	0	Not Applicable
Pesticides in Groundwater	0	Not Applicable
Nutrients in Surface water	0	Not Applicable
Nutrients in Groundwater	0	Not Applicable
Salts in Surface Water	0	Not Applicable
Salts in Groundwater	0	Not Applicable
Excess Pathogens and Chemicals from Manure, Bio-soli	0	Not Applicable
Excess Pathogens and Chemicals from Manure, Bio-soli	0	Not Applicable
Excessive Sediment in Surface Water	2	There will be improved vegetative cover with a reduction of runoff and sedimentation.
Elevated Water Temperature	0	Sound management of upland vegetation tends to improve watershed conditions.
Petroleum, Heavy Metals and Other Pollutants Transport	0	Not Applicable
Petroleum, Heavy Metals and Other Pollutants Transport	0	Not Applicable
<u>Air Quality Impacts</u>		
Emissions of Particulate Matter (PM) and PM Precursors	2	Vegetative cover reduces wind erosion and fugitive dust generation.
Emissions of Ozone Precursors	0	Not Applicable
Emissions of Greenhouse Gases (GHGs)	2	Vegetation removes CO2 from the air and stores it in the form of carbon in the plants and soil.
Objectionable Odors	0	Not Applicable
<u>Degraded Plant Condition</u>		
Undesirable Plant Productivity and Health	4	Plants are selected and managed to maintain optimal productivity and health.
Inadequate Structure and Composition	4	Management and improvement measures create or maintain the desired plant communities.
Excessive Plant Pest Pressure	4	Vegetation is installed and managed to control undesired species.
Wildfire Hazard, Excessive Biomass Accumulation	0	Not Applicable
<u>Fish and Wildlife - Inadequate Habitat</u>		
Inadequate Habitat - Food	5	Areas for food are created, restored, or enhanced.
Inadequate Habitat - Cover/Shelter	5	Areas for cover are created, restored, or enhanced.
Inadequate Habitat - Water	3	Not Applicable
Inadequate Habitat - Habitat Continuity (Space)	5	Improved plant diversity and quantity and quality of vegetation provides habitat/space for wildlife.
<u>Livestock Production Limitation</u>		
Inadequate Feed and Forage	2	These sites may be used as feed and forage by livestock if the intended purpose is maintained.
Inadequate Shelter	0	Not Applicable
Inadequate Water	0	Not Applicable
<u>Inefficient Energy Use</u>		
Equipment and Facilities	0	Not Applicable
Farming/Ranching Practices and Field Operations	0	Not Applicable

# Effects of NRCS Conservation Practices - National

## Watering Facility

A permanent or portable device to provide an adequate amount and quality of drinking water for livestock and or wildlife.

Code: 614  
Units: no.

AL-Asso Land  
 O-Other  
 W-Water  
 D-Developed  
 FS-Farmstead  
 Pr-Protected  
 P-Pasture  
 R-Rangeland  
 F-Forest  
 C-Cropland

Typical Landuse: C F R P Pr FS D W O AL

<u>Soil Erosion</u>	<u>Effect</u>	<u>Rationale</u>
Soil Erosion - Sheet and Rill Erosion	2	Increased vegetated cover due to better distribution of water reduces soil erosion.
Soil Erosion - Wind Erosion	2	Increased vegetated cover due to better distribution of water reduces soil erosion.
Soil Erosion - Ephemeral Gully Erosion	2	Increased vegetated cover due to better distribution of water reduces soil erosion.
Soil Erosion - Classic Gully Erosion	1	Increased grass cover due to better distribution of water will retard flows decreasing opportunity for classic erosion.
Soil Erosion - Streambank, Shoreline, Water Conveyance	4	By providing an alternate water source animal traffic on streambanks is removed reducing erosion.
<u>Soil Quality Degradation</u>		
Organic Matter Depletion	0	Not Applicable
Compaction	0	Traffic may increase around the practice, but the practice will help reduce excess moisture where traffic occurs.
Subsidence	0	Not Applicable
Concentration of Salts or Other Chemicals	0	Not Applicable
<u>Excess Water</u>		
Excess Water - Seeps	0	The action may result in minor amounts of increased infiltration due to retarding flows with better vegetative cover.
Excess Water - Runoff, Flooding, or Ponding	0	The action may result in minor amounts of increased infiltration (less surface flows) due to retarding flows with better vegetative cover.
Excess Water - Seasonal High Water Table	0	The action may result in minor amounts of increased infiltration due to retarding flows with better vegetative cover.
Excess Water - Drifted Snow	0	Not Applicable
<u>Insufficient Water</u>		
Insufficient Water - Inefficient Use of Irrigation Water	0	Not Applicable
Insufficient Water - Inefficient Moisture Management	0	Not Applicable
<u>Water Quality Degradation</u>		
Pesticides in Surface Water	0	Not Applicable
Pesticides in Groundwater	0	Not Applicable
Nutrients in Surface water	4	When used in place of a in-stream water source, this action decreases manure deposition in stream.
Nutrients in Groundwater	0	Not Applicable
Salts in Surface Water	1	Better distribution of animals away from surface water reduces the risk of salt contamination from manures.
Salts in Groundwater	0	Not Applicable
Excess Pathogens and Chemicals from Manure, Bio-soli	2	Improved vegetation due to better distribution of animals will filter and reduce water borne contaminants. In addition, better distribution of animals results in less concentration of contaminants.
Excess Pathogens and Chemicals from Manure, Bio-soli	1	The action tends to concentrate animals, however, getting animals out of the stream will keep them cleaner and reduce contact with manure-borne pathogens.
Excessive Sediment in Surface Water	2	Water development will decrease livestock trampling in wet areas and nearby streams.
Elevated Water Temperature	1	Purpose of practice is to protect vegetation along water courses, which in turn moderates stream temperatures.
Petroleum, Heavy Metals and Other Pollutants Transport	1	Improved vegetation due to better distribution of water will filter and reduce water borne contaminants. In addition, better distribution of animals results in less concentration of contaminants.
Petroleum, Heavy Metals and Other Pollutants Transport	0	Not Applicable
<u>Air Quality Impacts</u>		
Emissions of Particulate Matter (PM) and PM Precursors	0	Not Applicable
Emissions of Ozone Precursors	0	Not Applicable
Emissions of Greenhouse Gases (GHGs)	0	Not Applicable
Objectionable Odors	0	Not Applicable
<u>Degraded Plant Condition</u>		
Undesirable Plant Productivity and Health	2	Available water to facilitate grazing management improves growth and vigor of plants.
Inadequate Structure and Composition	0	Not Applicable
Excessive Plant Pest Pressure	0	Not Applicable
Wildfire Hazard, Excessive Biomass Accumulation	0	Not Applicable
<u>Fish and Wildlife - Inadequate Habitat</u>		
Inadequate Habitat - Food	0	Not Applicable
Inadequate Habitat - Cover/Shelter	0	Not Applicable
Inadequate Habitat - Water	2	The action supplies water to alternative locations hence protecting stream and riparian areas.
Inadequate Habitat - Habitat Continuity (Space)	3	Additional habitat/space is available once water is available.
<u>Livestock Production Limitation</u>		
Inadequate Feed and Forage	2	Improved distribution of animals makes forage more readily available to livestock.
Inadequate Shelter	0	Not Applicable
Inadequate Water	5	Facilities supply water at remote locations.
<u>Inefficient Energy Use</u>		
Equipment and Facilities	0	Not Applicable
Farming/Ranching Practices and Field Operations	0	Not Applicable

# Appendix H:

## Methodology for Remote Vegetation Monitoring and Change Detection

### for the Douglas County MSGCP and VSP

Software: ESRI ArcGIS v10.0 or higher

- Sampling Design Tool ad-in, free download at:  
<https://www.arcgis.com/home/item.html?id=ecbe1fc44f35465f9dea42ef9b63e785>

Shapefiles: (in FCCD database)

- Perennial Creeks
- Moskal et al. Mapped Wetlands (2013)
- Washington Department of Agriculture (WSDA) Cropland (2011)
- Douglas County and WRIA boundaries
- Douglas County Roads

Data Preparation

- 1) Download Landsat and NAIP imagery for year of interest (and 2011 first time). NAIP imagery is provided by WSDA and Landsat from USGS Earth Explorer.
- 2) Clip Landsat rasters to Douglas County.
- 3) Merge rasters using Mosaic to New Raster Tool to create one Landsat raster for all of Douglas County.
- 4) Ensure all rasters are spatially aligned using the Register Raster Tool. First co-register the two NAIP rasters, then register the Landsat rasters to the NAIP rasters.
- 5) Use bands 3 (red) and 4 (near IR) from the Landsat imagery to create a NDVI raster using the image analysis tool.
- 6) Calculate a new NDVI change raster by subtracting the 2011 NDVI raster from the year of interest NDVI raster (YOI NDVI – 2011 NDVI). Positive pixel values indicate an increase in green vegetation, negative values indicate a decrease in green vegetation, and values close to 0 indicate little change in green vegetation.
- 7) Normalize the NDVI change raster based on known unchanged areas, i.e. rooftops. These areas should have a pixel value near zero.

Riparian Vegetation Change Analysis

- 1) Buffer perennial creeks by 10 meters and the Columbia River by 25 meters to create an Area of Interest (AOI).
- 2) Clip the normalized NDVI change raster (step 7 data preparation) to the AOI.

- 3) Classify the clipped change raster to show areas of significant positive and negative change. The classification will be unsupervised and significance determined statically. Pixel values that are greater than 1 standard deviation from the mean will be considered to have significant change.
- 4) Overlay with NAIP imagery from 2011 and year of interest to verify change and, if possible, determine cause of change, especially as it relates to indicator I-2 (VSP) and AMMP measure #3 (MSGCP), e.g. conversion to agriculture.

#### Wetland Vegetation Change Analysis

- 1) Clip normalized NDVI change raster (step 7 data preparation) to wetlands mapped by Moskal et al. (2013). Buffer the wetlands shapefile by 15 meters to create an AOI.
- 2) Classify the clipped change raster to show areas of significant positive and negative change. The classification will be unsupervised and significance determined statically. Pixel values that are greater than 1 standard deviation from the mean will be considered to have significant change.
- 3) Overlay with NAIP imagery from 2011 and year of interest to verify change and, if possible, determine cause of change, especially as it relates to indicator I-3 (VSP) and AMMP measure #3 (MSGCP), e.g. conversion to agriculture.
- 4) Examine the normalized NDVI change raster (step 7 in data preparation) masked by mapped wetlands and cropland in 2011 looking for areas with a large increase in NDVI compared to 2011, indicating potential wetland formation. Overlay with NAIP and verify.

#### Shrub-Steppe Vegetation Change Analysis

- 1) Create an AOI by masking the NDVI change raster (step 7 data preparation) with the 2011 WA Department of Agriculture cropland shapefile, the buffered perennial creek shapefile, and the Moskal et al. wetland shapefile.
- 2) Classify the clipped change raster to show areas of significant positive and negative change. The classification will be unsupervised and significance determined statically. Pixel values that are greater than 1 standard deviation from the mean will be considered to have significant change.
- 3) Use NAIP overlay to examine and determine the cause of habitat loss, especially as it relates to indicator I-1 for (VSP) and AMMP measure #3 (MSGCP), e.g. conversion to agriculture.

#### Verification

- 1) Use the Sampling Design Tool to randomly select 25 points in Douglas County to conduct verification monitoring. The points can be located close to roads (set parameter within the tool) to avoid privacy issues and reduce monitoring costs. Each sampling point corresponds to a single pixel in the Classified NDVI Change Raster. Note: 25 points is a sufficient sample size assuming an expected percent accuracy of 95% and an allowable error of 8.5%.
- 2) Visit each point and make a determination using professional judgement whether the point is significantly more green, less green, or not significantly changed since 2011.
- 3) Compute overall classification accuracy, producer's accuracy and user accuracy using an error matrix. Overall accuracy is the percentage of reference sample locations correctly classified.

User's accuracy is the probability a pixel on the map represents the correct category.

Producer's accuracy measures the probability of a reference pixel being properly classified.

More information about verification and error matrices can be found at:

[https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&ved=0ahUKEwjYkOLG9ebXAhXJLmMKHepRCu8QFgg-MAM&url=https%3A%2F%2Fwww.fws.gov%2Fgisdownloads%2FR8%2Findividual%2FJustin%2FRS\\_presentations%2F11%2520Accuracy%2520assessment.pptx&usg=AOvVaw3qlaU4IE5TyV4D2ZYev0F0](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&ved=0ahUKEwjYkOLG9ebXAhXJLmMKHepRCu8QFgg-MAM&url=https%3A%2F%2Fwww.fws.gov%2Fgisdownloads%2FR8%2Findividual%2FJustin%2FRS_presentations%2F11%2520Accuracy%2520assessment.pptx&usg=AOvVaw3qlaU4IE5TyV4D2ZYev0F0)

Assumptions:

- 1) A significant change of vegetation on the ground, such as conversion to agriculture, will relate into a significant change in reflectance captured by Landsat imagery.
- 2) The majority of pixels will be relatively unchanged in their NDVI values from year to year. This means that the histogram of pixel values created from the NDVI change raster should have a normal distribution around 0, or no change in reflectance. This allows for pixels greater than 1 standard deviation from the mean to be classified as significant changers.

# Appendix I

## Work Group Meeting Materials

- 1) Workgroup Ground Rules
- 2) Meeting Agendas and Summaries in Chronological Order

### Douglas County

### Voluntary Stewardship Program (VSP) Workgroup

#### GROUND RULES

1. **Decision-making** - All members are expected to participate in all phases of discussions and decisions. The Voluntary Stewardship Program (VSP) Workgroup (the Workgroup) will work together to achieve consensus on VSP work plan elements. The Workgroup will operate by consensus. Consensus is defined as a decision that falls within the “endorsement” to “formal disagreement but will go with majority” continuum (see attached exhibit).
  - a. A simple majority is required for a quorum per the Washington Open Public Meetings Act; informational meetings can still be held without a full quorum present
  - b. A simple majority quorum must be present for decisions to be made. A quorum exists for a meeting if there is a simple majority of the Workgroup present for the meeting. If a quorum does not exist, the members present shall decide whether to continue with an informal discussion of the agenda for the meeting.
  - c. Agendas will be distributed in advance, and all items where a decision or vote is needed must be officially added to the agenda.
  - d. When possible, the Workgroup will discuss any issue in at least two meetings, to allow time for members to discuss issues.
  - e. If the Workgroup is unable to reach consensus on any issue, it will consider other options:
    - Table the issue temporarily, and revisit it during a subsequent meeting.
    - Take an advisory or “straw” vote to help the committee decide what action to take next
    - Leave the issue unresolved and note it as such. The option of providing a minority report is available as an option.
  - f. If consensus cannot be reached, a voting process may also be used to resolve issues. Voting will occur by a hand-count. Each member will be identified in meeting notes by name with their vote. An affirmative vote will be based on simple majority plus one approval of the voting members present.



- i. The Chair of the Workgroup will have the tie-breaking vote
  - ii. WDFW, WSDA, State Farm Bureau and other government agency representatives may be active participants in the Workgroup, but are not voting members.
2. **Respect for Interests** - The Workgroup members represent a full range of interests related to protecting critical areas and sustainable agriculture in Douglas County.
  - Every idea has merit.
  - Suspend assumptions, listen carefully, and speak to educate.
3. **Creativity** - The members commit to search for opportunities, options, and alternatives.
4. **Open Dialogue** - The members agree that they have a responsibility to discuss the issues and plan development, and to use open and candid communication with each other.
5. **Open Meetings** - All Workgroup meetings will be open to the public. Observers are welcome to attend the Workgroup meetings and provide public comment at specified opportunities during each meeting. Written comments are also welcome. Summaries of each meeting will be shared with an Interested Parties email distribution list.
6. **Speaking** - One person will speak at a time, and Facilitators will make every effort to assure that everyone will have an opportunity to speak. The facilitator will recognize each speaker.
7. **Attendance** - Attendance is critical to the success of this planning process. Each member will take the responsibility to get the information they missed due to an absence. Members may waive the opportunity to participate in decisions due to lack of attendance.
8. **Responsibility to meet needs** - Each member will take the responsibility for getting their needs met, for getting the needs of those they represent met, and for getting the needs of the other members met. Additionally, Workgroup members are responsible for the statements that they make to the other Workgroup members as well as to the public regarding the work of the Workgroup.
9. **Start on time** - Workgroup members agree to start the meetings on time and end them on time.
10. **Humor & Miscellaneous** - We agree that humor is appreciated and welcome. We commit to having fun and encouraging it in others.
11. **Use of cell phones** - Unless there's an emergency, responding to pagers, cell phones, telephone messages, etc. will wait until the members are on a break, or the meeting is over.

**Definition of Consensus**  
**Voluntary Stewardship Program**

Consensus is defined in terms of agreement along a continuum. VSP Workgroup members may register their degree of agreement with the language in any of the six columns:

1	2	3	4	5	6
<b>Endorse</b>	<b>Endorse with a minor point of contention</b>	<b>Agree with reservation</b>	<b>Abstain</b>	<b>Stand Aside</b>	<b>Formal disagreement but will go with the majority</b>
“I like it”	“Basically I like it”	“I can live with it”	“I have no opinion”	“I don’t like it but I don’t want to hold up the group”	“I want my disagreement to be noted in writing but I’ll support the decision”

(Adapted from: “Facilitator’s Guide to Participatory Decision-Making,” 1996)

Notes: 1) Agreements with scores ranging from 1 to 6 is considered “agreement by consensus.” 2) Blocking (disagreeing and not supporting the decision) is not consensus.

# AGENDA

**Voluntary Stewardship Program**

**March 30, 2016**

**NCW Fairgrounds Community Center**

**6:00pm – 7:30pm**

**Meeting called by** Foster Creek CD

<b>6:00 – 6:10</b>	<b>Sign-in and Welcome</b>	<b>Jon Merz</b>
<b>6:10 – 6:40</b>	<b>VSP Overview and Questions</b>	<b>Bill Eller</b>
<b>6:40 – 7:20</b>	<b>Work Group Organization Discussion</b> Discuss work group goals and deliverables Discuss role of FCCD Discuss how work group will be organized Plan next meeting date, time, location	<b>Jon Merz</b>
<b>7:20 - 7:30</b>	<b>Meeting Wrap-Up &amp; Adjournment</b>	<b>Jon Merz</b>

## **SUMMARY OF MEETING OF AUGUST 17, 2016**

- ❖ Welcome and Introductions.
- ❖ Brigham provided an overview of the Voluntary Stewardship Program (VSP), including a comparison of the differences between VSP and what we have now with the Critical Areas Ordinance under the Growth Mgt Act. The dual goals of VSP are to protect and voluntarily enhance Critical Areas in areas with agricultural activities and to protect and improve the long-term viability of agriculture in Douglas County.
- ❖ Brigham and Floyd explained about the five Critical Areas with regards to Douglas County. Of particular interest here is that the entire county is covered by priority habitats for critters such as pygmy rabbits and sage grouse. Other Critical Areas, such as geologically hazardous areas are viewed as unlikely to overlap or intersect with agricultural activities. It was noted that there are few wetlands. There were questions concerning what constitutes a critical aquifer recharge area and where they may be in Douglas County. The main areas of concern may involve wellhead zones for potable water. Four maps of Critical Areas in Douglas County (provided by the Conservation District) were presented. It was agreed that greater detail will be necessary on these maps.
- ❖ The requirements of the Work Plan were presented, although somewhat briefly in the interest of time. The Work Plan will be the charge of the Watershed Work Group. It includes the development of goals for the protection and enhancement benchmarks. Merz stated that the preference is to have the Work Plan ready to submit to the State Task Force by June of 2017.
- ❖ Floyd shared the applications for appointment by the County Commissioners to the Work Group. It is the desire to have a broad cross-section of volunteers representing the agricultural community and the geographic areas of Douglas County. Everyone in attendance was encouraged to submit an application.
- ❖ Floyd presented a brief overview of the ground rules for the Work Group. He asked folks to review this before the next meeting and come prepared to adopt the ground rules.
- ❖ Meeting dates/times/locations were discussed. Consensus was that the best day is the first Wednesday of the month. We will be meeting at 7 p.m. for September and October, then switching to a mid-afternoon for the winter months. Merz explained that the intent is to move the meeting locations around to various areas of the county. We will also set it up so that folks can participate via the Internet.
- ❖ The next meeting will be 7 p.m. on September 7 at \_\_\_\_\_ (*fill in location*)

Note: The entirety of this meeting was open to public comment and participation

## Douglas County Voluntary Stewardship Project

### Workgroup Meeting #2, October 5, 2016

#### Agenda

- Welcome and Introductions
- Finalize members of the workgroup and agree to ground rules of the work group
- Present maps of critical areas
- Detail the duties of the watershed group
- Discussion of Agriculture viability
- Develop goal statements
- Plan out work schedule
- Questions

## SUMMARY OF MEETING OF October 5, 2016

- ❖ Welcome and Introductions. The following people were in attendance: *Alex McLean, Amanda Barg, Jessica Gonzales, Robert Ramm, Tim Behne, April Clayton, Evan Sheffels, Aaron Rosenblum, Jon Merz and Don Brigham.*
- ❖ Jon said that a number of folks had submitted applications for the Work Group, but they are still seeking additional members. These will be officially appointed by the Board of County Commissioners in the near future. There is also a list of persons who wish to be kept informed of progress by the Work Group.
- ❖ Brigham said that the primary task for the Work Group is to draft the Work Plan which will be submitted to the State. The Work Group sets the goals, the policies and the philosophy of VSP plan. The role of the Conservation District will be to do the leg work, mapping, drafting of VSP plan. The two primary “tests” of the Work Plan are to “Protect Critical Areas” and to “Maintain and Enhance Agriculture Viability.” The third component of the Work Plan is to create benchmarks for protection and enhancement.
- ❖ Aaron unveiled the latest and greatest in critical area maps for the county. These included the wetlands, which are few and scattered. There was some discussion on the watersheds of the county and Jon explained that there are mainly two watersheds (WRIAs). The other large map was of geologically hazardous areas, which were mainly basalt cliffs and talus slopes. It was observed that none of these intersected with ag practices. The frequently flooded areas are also minimal. It was noted that the entire county is priority habitat, primarily for the sage grouse. Aaron said that he can produce maps at any scale or level of detail for the Work Group’s purposes.
- ❖ The Work Group discussed a number of goal/objective statements pertaining to enhancing ag viability. These are presented below with commentary. Don suggested that we concentrate on areas over which we have some degree of local control as opposed to ‘big picture’ items which definitely impact ag viability, but over which we have no influence. (Note: numbers below are simply for labeling, they are no indication of priority)

**Activity A-1.** - Ensure that landowners have the rights and are allowed to place agricultural land into conservation easements, land trusts and similar holdings. *(OK as is. It was noted that over 25% of land in Douglas County is in CRP and is considered habitat)*

**Activity A-2.** - Encourage and promote the continued operation of viable agricultural land (where appropriate) even when land is placed into conservation easements, land trusts and similar holdings. *(The group struggled with a definition of What is Ag Viability? Evan promised a framework document that will be forth-coming. Group was OK with A-2)*

**Activity B.** - Promote Comprehensive Plan Policies and zoning regulations that support agricultural operators to keep land in farming and diminish its conversion to non-agricultural uses. Evaluate allowances for agricultural accessory uses or second homes for agricultural operators; for example, consider where the County code can be made more flexible or accommodating. *(April suggested that we put more teeth into this one. The question arose as to whether or not Douglas County has a Right to Farm resolution. Jessica did some instant research and found that the County has adopted a Code of the West, which is similar)*

**Activity C.** - Support County regulations that set appropriate densities and site planning for rural residential or urban residential uses that abut designated agricultural lands to minimize interface, protect necessary agricultural practices, and reduce pressure for agricultural conversion. *(Group was OK with this one)*

**Activity D.** - Promote local education on the value of ag lands, on the Right to Farm and on necessary ag practices, especially among residents whose homes abut designated ag lands, to minimize conflicts among neighbors. *(Group was OK with this one)*

**Activity E.** - Establish an Agricultural Viability Committee to promote awareness of the value of agriculture to the local economy and cultural lifestyle of the County. *(Group was OK with this one and it was noted that the Conservation District already does much of this. More money would be helpful for the effort. There exists a county-wide educational outreach through the district)*

**Activity F.** - Promote recognition of local ag products through field signage, farmers markets and marketing efforts. *(Group was OK with this one)*

**Activity G.** - Ensure that capital investments and county/state transportation plans and telecommunication systems provide strong support for agricultural infrastructure. *(Group was OK with this one)*

**Activity H.** - Promote awareness with the public, with local and state officials and other decision-makers that the sale of private, productive ag land to state agencies diminishes the viability of ag in the region. (Also impacts property tax revenue) *(Amanda had several concerns about the wording of this. She said that state agencies only do willing seller deals where the landowner desires the sale. There are numerous interwoven factors on this issue and different sides of the coin, so to speak. We agreed that we need to add language to this that state there are two sides to the issue, that balance is valuable. The sale to an agency can add value by bringing in hunters/fishers, etc. We need to educate the public AND officials. Perhaps we simply need to do an assessment – how much acreage in public ownership? Jon said roughly 15%. We need to monitor any trends – that could be the statement or put forward 2 or 3 alternative statements for the Work Group to evaluate.)*

**Activity J.** - Promote awareness with the public, with local and state officials and other decision-makers to ensure that hunting and wildlife management coexists with land in ag production in order to maintain the viability of ag in the region. *(Amanda will ask her colleague to re-word this one. Add “Continue to...” at start.)*

**Activity K.** - Maintain or increase participation and conservation practices to enhance agricultural activities. Promote economical and effective water, soil, pest and nutrient management that maximizes production quality. *(Group was OK with this one – this is what District does)*

**Activity L.** – Promote County policies and regulations that don't inhibit agricultural operations and that maintain and improve the long - term viability of agriculture. Review relevant codes to determine alternative strategies. Evaluate fees applied to agricultural activities and identify ones that should be eliminated or modified. *(Group was OK with this one)*

**Activity 1** - Priority funding made available by federal, state, and local sources to support VSP participation by agricultural operators. Applications for conservation practices could score higher for VSP participants. *(Group was OK with this one)*

**Activity 2** - Provide information to agricultural operators about available tax incentives, financial assistance programs, and other information related to agriculture (i.e. an online clearinghouse for resources and info). Seek new tax incentives by the state legislature that recognize VSP participation. *(Group was OK with this one)*

**Activity 3** - Increased marketing opportunities for VSP participation through recognition, branding/certification, and individual farm signs. *(Group was OK with this one)*

**Activity 7** - Implement an Agricultural Liaison position to provide Ag resources and information on federal, state, and local laws that affect Ag activities. *(this one needs to be revised to say “Utilize existing entities such as the Conservation District and Farm Bureau to serve as a liaison to ...)*

**Activity 8** - Evaluate ways to streamline the application and permitting process for Ag operators. *(this one needs to clarify whether for state or local. Need to add that we should hold workshops to educate on streamlining)*

**Incentive 5** Ensure carbon taxes and cap and trade systems for greenhouse gas emissions do not apply to agricultural activities like tree fruits that are a permaculture. *(this one needs to be turn this into a positive statement; promote positive incentives for producers who reduce vehicle emissions; Farm Smart certification – tax incentives)*

**Incentive 11** Explore a “farmbudsman” program where farmers and ranchers can obtain objective and comprehensive advice on federal, state, and local laws that affect agricultural activities, e.g. water rights. *(this one needs to be merged with other similar statements about workshops; need to include water rights)*

**Objectives:** *(Group was OK with these:)*

1. Maintain or improve a vibrant agricultural economy.
2. Develop process for regulatory and tax reform (i.e. Ag Viability Committee)
3. Maintain or increase agricultural production.
4. Maintain or increase land used for agricultural production.
5. Maintain or increase participation and conservation practices to enhance agricultural activities.
6. Assess adequate agricultural infrastructure.
7. Provide adequate technical assistance and information.

❖ For the next meeting, the above statements will be revised and brought back for review by the Work Group. Also at the November meeting, the necessary tasks which the Work Group needs to tackle will be presented. Jon will present the various programs with which the District is involved, notably concerning habitat protection. Consensus was that a central location for Work Group meetings would be best. When the Work Plan is developed in draft form, then we can hold meetings at various locations around the county to reach the local citizens. It was felt that it would be best to have a location that allows us to set up Skype or WebEx for the meetings.

❖ The next meeting will be 1 p.m. on November 2nd in Waterville. Exact location TBD.

# Douglas County Voluntary Stewardship Program

## Workgroup Meeting #3, November 2, 2016

1:00pm at the North Central Washington Fairgrounds

601 N Monroe St, Waterville, WA, 98858

### Agenda

- Welcome and Introductions
- A presentation on the Douglas County Multiple Species General Conservation Plan
- A presentation on other existing plans including The Watershed Management Plan for Moses Coulee and Foster Creek Watersheds
- Initiate discussion on how we will deal with Critical Areas in our VSP Workplan
- Review the revised “suggested activities for agricultural viability” from last meeting
- Review Workplan outline and discuss project schedule
- Discuss a Douglas County VSP logo/brand
- Next meetings date/time/location

This meeting will be available to attend remotely with web conferencing. If interested, please inquire for more details.

**Aaron Rosenblum**

**VSP Coordinator**

**Foster Creek Conservation District**

**[arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)**

**509-423-5990**

*Reasonable accommodations for persons with disabilities will be made to ensure access to this meeting in accordance with the Americans with Disabilities Amendments Act of 2008.*



## **SUMMARY OF MEETING OF November 2, 2016**

- ❖ Welcome and Introductions. The following people were in attendance: *Alex McLean, Tara Zeigler, Amanda Barg, Jessica Gonzales, Robert Ramm, Tim Behne, April Clayton, Mike Clayton, Mike Cushman, Dave Billingsley, Paul Malone, Jeff Rock, Aaron Rosenblum, Jon Merz.*
- ❖ Jon gave a detailed presentation on the Multiple Species General Conservation Plan (see attached PowerPoint).
- ❖ During Jon's presentation, the group paused multiple times to discuss how changes in land use would affect the MSGCP. Jon said that the MSGCP needed to be re-examined if the total CRP acreage drops 10%. The group was concerned how agricultural land would be converted into habitat if decreases in habitat occurred elsewhere (and who would be making the determination). This is certainly an issue that will surface again.
- ❖ Amanda introduced the WA Dept. of Fish and Wildlife's Priority Habitats and Species (PHS) to the group and proposed it as a way to cover the species that are not covered in the MSGCP. "PHS is a source of best available science that can inform local planning activities, development projects, conservation strategies, incentive programs, and numerous other land use applications." More information on PHS can be found here: <http://wdfw.wa.gov/mapping/phs/>
- ❖ Aaron introduced the Watershed Management Plan to the group and suggested that many issues and actions identified in the plan also fit very well into VSP (see slides for more detail). During this time, a discussion broke out about what constitutes a wetland, and how we as a workgroup will identify wetlands. It was suggested that we use the wetland mapping data done by the University of Washington for FCCD specific to Douglas County instead of the National Wetlands Inventory.
- ❖ The group ranked the critical areas in order from what we believed to be the easiest through hardest to tackle. The following order was determined 1. Frequently Flooded areas 2. Geologically hazardous areas 3. Critical aquifer recharge areas 4/5. Wetlands and Habitat. It was agreed that the group will begin with the easier critical areas and proceed to the more difficult ones.
- ❖ The group discussed the revised agricultural viability actions and further edits were agreed upon. A document reflecting the discussions and edits will be coming soon.
- ❖ The group discussed a logo/brand for Douglas County VSP and decided to use the one shown on the header of this page.
- ❖ For the next meeting, the group will do a SWOT analysis to determine what the current state of agriculture is in Douglas County, and how this plays into agricultural viability. The group will also discuss how Frequently Flooded areas will be addressed in our work plan.

❖ The next three meetings will be:

- 1 p.m. on Wednesday, December 7 in Waterville. Exact location TBD.
- 1 p.m. on Monday, January 9 in Waterville. Exact location TBD.
- 1 p.m. on Wednesday, February 1 in Waterville. Exact location TBD.

Note: The entirety of this meeting was open to public comment

Questions or Comments, contact Aaron Rosenblum 509-423-5990 or  
arosenblum@fostercreekcd.org

# Douglas County Voluntary Stewardship Program

## Workgroup Meeting #4, December 7, 2016

1:00pm in the Hearing Room at the Superior Court of Douglas County Building

203 S Rainier St, Waterville, WA 98858

### Agenda

- Welcome and Introductions
- Finalize work group ground rules
- Identify agricultural activities in Douglas County
- Do a SWOT analysis for Douglas County
- Define Agricultural Viability for the Douglas County VSP
- Revisit our Agricultural Viability Objectives
- Review and revisit the Suggested Activities for Agricultural Viability
- Next meetings date/time/location

This meeting will be available to attend remotely with web conferencing. If interested, please inquire for more details.

**Aaron Rosenblum**

**VSP Coordinator**

**Foster Creek Conservation District**

**[arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)**

**509-423-5990**

*Reasonable accommodations for persons with disabilities will be made to ensure access to this meeting in accordance with the Americans with Disabilities Amendments Act of 2008.*

## ***SUMMARY OF MEETING OF December 7, 2016***

- In attendance: Kelly McLain, Curt Soper, Alex McLean, Joe Sprauer, Amanda Barg, Tim Behne, Julie Unfried, Sarah Troutman, Jeffrey Rock, Don Brigham, Jake Finlinson, April Clayton, Aaron Rosenblum
- The group approved and ratified the draft work group ground rules that were discussed at a prior meeting and were emailed to all prior to this meeting. These ground rules will govern the work group going forward.
- The work group discussed what agricultural activities occur in Douglas County. Aaron presented a list of activities that was taken from the MSGCP. A comment was made that spraying for weed and pest control needed to be added to the list. It was also discussed whether there was a need to include such a list in our work plan document with the biggest fear being that an activity would get let out. The group decided that it would be good to include the list but make it clear that it is just a general list that illustrates what agriculture looks like in Douglas County, and that it is NOT an all-inclusive list that in some way limits activities covered by the work plan.
- The group did a SWOT analysis for Douglas County. The summary of this follows:

### **STRENGTHS**

- WSU Extension is a huge asset and its support is valued
- Dams and hydropower are major assets for this region
- Ag-Industrial infrastructure is strong which helps to make us competitive
- Farm-to-market roads are good
- A sage grouse protection plan (MSGCP) is already protecting functions and values of this critical area and will provide regulatory certainty for participants
- The remoteness from population centers tends to reduce pressure of converting ag land to residential and/or commercial
- A large percentage of land in Douglas County is privately owned
- The CRP program helps to keep land from being sold, converted and developed.
- Douglas County has a long history of small family owned agriculture operations. This means that operators have a connection with their land and know how to run their operations in a sustainable way.
- The SGI program has a lot of money available in incentive programs and easements for Douglas County operators

### **WEAKNESSES**

- Average age of farmer is 60 / there is no influx of young farmers
- Loss of laborers and the potential of a greater loss
- Lack of available housing for laborers
- Telecom is spotty throughout the county

- Most ag is dependent upon water from the sky
- We don't have much crop diversity (less than a dozen crops are commercially grown in the county)
- No rail service
- Land necessary for grouse habitat preservation

## OPPORTUNITIES

- Option to put land into conservation programs (like CRP) exists if so desired
- PUD can develop fiber optics and delivery network just as they did for electricity
- Aerial spraying company could develop here – the need exists. Airports are already in place.
- Sage grouse preservation efforts have led to other opportunities including bird watching and hunting
- Potential to greater develop hunting and fishing on private lands

## THREATS

- Possible buy-out of small family farms by outside corporations
  - Government is a threat – specifically when buying farmland for a game reserve
  - Small communities like Mannsfield are dying – tied directly to CRP
  - Burden of government regulations upon small operators (large corporate ag-business can afford personnel to do the regs)
  - Agencies pushing toward no-till operations can be a threat because the practice requires very expensive new equipment
  - Regulations can dissuade the next generation from wanting to be farmers – why put up with the hassle?
  - Regulations can be inconsistent between government agencies
  - Inconsistencies of government programs and associated funding leads to uncertainties
  - If funding is cut off to CRP, then the impact upon acreages and finances could be harmful
  - The lack of control over government regulations, programs, funding, etc. i.e. the 2018 Farm Bill
  - Labor shortages could occur if borders are walled off or immigration policy changed
  - Potential endangered listing of sage grouse
  - Dam removal
  - Water availability and water rights. We have the water, but it isn't accessible
- The following definition of Agricultural viability provided by the VSP technical panel was presented to the group: *“Agricultural viability can be defined as the ability of a farmer or group of farmers to: -productively farm on a given piece of land or in a specific area, - maintain an economically viable farm business, - keep the land in agriculture long-term – steward the land so it will remain productive into the future.”* It was suggested that Ag viability should be considered from a larger scale county wide standpoint not just from the individual or the group. The workgroup will discuss a definition that works for our work plan at the next meeting.

- The group began to discuss the Ag viability objectives and activities that had been revised from last time. It became evident that some language needed to be changed so that activities are made to be things that the workgroup has the ability to accomplish. It was suggested that this topic be curbed until the SWOT analysis was completed and the group agreed. Therefore, this topic will be discussed at the next meeting after the SWOT discussion.

NOTE: The entirety of this meeting was open to public comment

Questions or Comments, contact Aaron Rosenblum 509-423-5990 or [arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)

# Douglas County Voluntary Stewardship Program

## Workgroup Meeting #5, February 1, 2017

1:00pm in the Hearing Room at the Superior Court of Douglas County Building

203 S Rainier St, Waterville, WA 98858

### Agenda

- Welcome and Introductions
- Review work plan completion timeline
- Review requirements needing to be addressed for each critical area:
  - Identify the critical area
  - Intersection with Agricultural activities
  - Key Functions Provided
  - Protection and Enhancement Strategies
  - How do these activities support Agricultural Viability?
  - Goals
  - Baseline values and protection/enhancement benchmarks
  - Monitoring
  - Adaptive management
- Discuss Frequently Flooded Areas
- Discuss Critical Aquifer Recharge Zones (if time allows)
- Next Meeting/Dates/Times

This meeting will be available to attend remotely with web conferencing. If interested, please inquire for more details.

**Aaron Rosenblum**

**VSP Coordinator**

**Foster Creek Conservation District**

**[arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)**

**509-423-5990**

*Reasonable accommodations for persons with disabilities will be made to ensure access to this meeting in accordance with the Americans with Disabilities Amendments Act of 2008.*

## ***SUMMARY OF MEETING OF February 1, 2017***

- In attendance: Zach Meyer, Curt Soper, Alex McLean, Tim Behne, April Clayton, Liz Hanwacker, Robert Ramm, Dave Billingsley, Jessi Gonzales, Aaron Rosenblum
- The group discussed the work plan timeline for completion, and set the goal of having a completed draft by the end of the calendar year.
- Aaron presented a PowerPoint covering the important items that need to be addressed for each critical area (see attachment). The important items are: Identify the critical area, identify the intersection with agricultural activities, identify the key functions provided by the critical area, identify the protection and enhancement strategies that will be used to protect the key functions, state how the protection and enhancement strategies support agricultural viability, define baseline values and protection/enhancement benchmarks, monitoring of the critical area and benchmarks, and adaptive management.
- Aaron presented maps illustrating “agricultural activities” in Douglas County, frequently flooded areas (FFA), and the intersection of the two. The group discussed that much of the county is not mapped, and that many locations across the county would still meet the definition of an FFA as provided by the county code, even though they are not mapped. The example of properties at the bottom of a draw in a cloud burst was discussed.
- The group identified the following key functions provided by frequently flooded areas: - water storage which can help reduce peak flood water volumes and provided water for crops. – Provide riparian habitat used by a wide variety of critters. – Provide erosion control by dissipating water energy. – Provides productive land for producers.
- The group identified the following protection and enhancement strategies: - rely on the regulatory backstop of the Flood Damage Protection Ordinance which sets development regulations for Frequently Flooded Areas and meets the National Flood Insurance requirements. – Promote use of conservation actions that enhance soil water holding capacity and infiltration both inside of FFAs and across the county. The group noted that a big part of protecting FFA occurs through actions that take place outside of FFA boundaries. – Promote use and assist in the acquisition of funding and in the installation of terraces and retention ponds in applicable locations. – For interested producers, develop a flood water management plan as part of the individual stewardship plan and assist with funding for implementation. – Promote conservation activities that help to reduce erosion and flood water energy in FFAs such as cover crops and planting of riparian vegetation. – Maintain and increase floodplain connectivity throughout the county thereby increasing water storage potential. NOT discussed: The regulatory backstop of the Shoreline Management Act is also applicable in some cases.
- The group then had a discussion about benchmarks and monitoring. The conversation meandered back and forth between benchmarks for FFAs and more philosophical



discussion on how benchmarks should be handed throughout the work plan. Pros and cons of using ecological parameters versus surrogates was discussed as well as setting benchmarks for each critical area versus setting benchmarks for functions that are provided by all critical areas. Aaron showed a few examples of benchmarks from Whitman county. The group requested to see more examples (see below).

- The group also discussed the difference between benchmarks and indicators and noted that indicators can be monitored and used to inform adaptive management.

The following is an example from Grant County where benchmarks are based on key functions:

### Critical Areas Functions

Critical Areas	Key Functions			
	Water Quality	Hydrology	Soil Health	Habitat
Wetlands	•	•		•
Fish and Wildlife Habitat Conservation Areas	•	•	•	•
Critical Aquifer Recharge Areas	•	•		
Geologically Hazardous Areas (Erosion)	•	•	•	•
Frequently Flooded Areas	•	•	•	•

**Wetlands:** Wetlands can help reduce erosion and siltation; provide filtration and produce cleaner 499 water; retain water to reduce flooding and support base flows; and provide wildlife, plant, and 500 fisheries habitats. 501

#### Key Functions Water Quality

#### Wetland Functions

- Reduces siltation and erosion
- Provides water filtration
- Moderates water temperature

#### Hydrology

- Stores water to reduce flooding and contributes to base flows

#### Habitat

- Provides aquatic and woody vegetated habitat for fish and wildlife

**FFA:** FFAs protect public health and safety by providing temporary flood water storage and 523 conveyance. They also provide riparian habitat and other wildlife benefits, and can

improve water 524 quality and recharge groundwater. FFAs can affect surface and groundwater quality and hydrology 525 (timing and magnitude of flows, and alluvial aquifer recharge), improve or degrade soil health based 526 on vegetative conditions, and contribute to riparian habitat diversity. 527

## **Key Functions**

### **Water Quality**

### **Hydrology**

### **Soil Health**

### **Habitat**

## **FFA Functions**

- Vegetation in FFAs holds underlying soil in place and also provides area for new sediment depositions to settle out
- Moderates water temperature by shallow groundwater infiltration and releases from unconfined aquifers of cooler groundwater back to streams, and by vegetation that can provide shade

- Stores and retains surface water surface in floodplain, reducing velocities and modifying discharge rates
- Recharges groundwater that can later be returned to the stream to help maintain base flow

- Supports moisture content in soils, reduces rate of erosion, and supports plant growth that can increase organic inputs to soil

- Provides aquatic and riparian habitats for wildlife, plants, and fish

## Water Quality

Goal	Participation Benchmarks			Key Conservation Practices in Grant County
	Objective	2021	2026	
<p><b>Maintain or improve surface water quality through implementation of key conservation practices that reduce inputs to waterbodies, including sediment, nutrients and other contaminants.</b></p> <p>Special emphasis on water courses that do not currently meet the state's water standards (e.g., Columbia River, Moses Lake, Lower Crab Creek, Crab Creek, and others).</p> <p>The surface water quality goal will be achieved while sustaining agriculture viability through:</p> <ul style="list-style-type: none"> <li>• Ancillary agriculture soil health benefits from implemented practices that improve soil moisture, weed management, pollinator/beneficial organism, and increased fertility)</li> <li>• Reducing input costs associated with nutrient, pest and irrigation water management</li> <li>• Financial incentives to offset start-up costs for new practices and infrastructure</li> </ul>	No net loss of acres managed using techniques that limit water or wind erosion of soil, or erosion due to unrestricted access of livestock			<ul style="list-style-type: none"> <li>• Prescribed grazing</li> <li>• Mulch till/reduced till</li> <li>• Access control</li> </ul>
	No net loss of acres managed under water, nutrient and pesticide management systems			<ul style="list-style-type: none"> <li>• Irrigation water management</li> <li>• Integrated pest management</li> <li>• Nutrient management</li> </ul>
	No net loss of stream protected by riparian management			<ul style="list-style-type: none"> <li>• Access control</li> <li>• Prescribed grazing</li> <li>• Fencing</li> </ul>
	Increase of acres managed using techniques that limit water or wind erosion of soil, or erosion due to unrestricted access of livestock			<ul style="list-style-type: none"> <li>• Prescribed grazing</li> <li>• No till/direct seed</li> <li>• Access control</li> </ul>
	Increase of acres managed under water, nutrient and pesticide management systems			<ul style="list-style-type: none"> <li>• Irrigation water management</li> <li>• Integrated pest management</li> <li>• Nutrient management</li> </ul>
	Increase of streams protected by riparian management and/ or filter strips			<ul style="list-style-type: none"> <li>• Access control</li> <li>• Prescribed grazing</li> <li>• Fencing</li> <li>• Filter Strips</li> </ul>

Hydrology

Goal	Participation Benchmarks			Key Conservation Practices in Grant County
	Objective	2021	2026	
<p><b>Protect or enhance natural hydrologic storage capacity.</b></p> <p>Special emphasis on areas supporting wetlands or within frequently flooded areas.</p> <p>The hydrology goal will be achieved while sustaining agriculture viability through:</p> <ul style="list-style-type: none"> <li>Ancillary agriculture benefits from implemented practices (maximize availability of surface withdrawals for irrigation, flood control benefits/soil preservation, increased soil moisture, weed management, and pollinator/beneficial organism)</li> <li>Reducing costs associated with flood management and flood cleanup</li> <li>Financial incentives to offset start-up costs for new practices and infrastructure</li> </ul>	No net loss of acres managed using techniques that limit soil compaction and degradation			<ul style="list-style-type: none"> <li>No till/direct seed</li> <li>Cover Crop</li> <li>Access Control</li> <li>Conservation Crop Rotation</li> </ul>
	No net loss of acres managed using techniques that promote soil's water-holding capacity			<ul style="list-style-type: none"> <li>Residue and Tillage Management, No-till/Direct Seed</li> <li>Mulch till/reduced till</li> <li>Access control</li> <li>Mulching</li> <li>Cover Crop</li> </ul>
	No net loss of wetland and floodplain protection			<ul style="list-style-type: none"> <li>Access control (adjacent to wetland or floodplain)</li> <li>Prescribed grazing</li> </ul>
	Increase of acres managed using techniques that limit soil compaction			<ul style="list-style-type: none"> <li>No till/direct seed</li> <li>Conservation Crop Rotation</li> <li>Access control</li> <li>Cover crop</li> </ul>
	Increase of acres managed using techniques that promote soil's water-holding capacity			<ul style="list-style-type: none"> <li>Residue and tillage management, no-till/direct seed</li> <li>Mulch till/reduced till</li> <li>Access control</li> <li>Mulching</li> </ul>

NOTE: The entirety of this meeting was open to public comment

Questions or Comments, contact Aaron Rosenblum 509-423-5990 or [arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)

# **Douglas County Voluntary Stewardship Program**

## **Workgroup Meeting #6, February 13, 2017**

1:00pm in the Hearing Room at the Superior Court of Douglas County Building

203 S Rainier St, Waterville, WA 98858

### Agenda

- Welcome and Introductions
- Continue discussing SWOT analysis for Douglas County
- Review and revisit our Agricultural Viability Objectives
- Review and revisit the Suggested Activities for Agricultural Viability
- Define Agricultural Viability for the Douglas County VSP
- Next meetings date/time/location

This meeting will be available to attend remotely with web conferencing. If interested, please inquire for more details.

**Aaron Rosenblum**

**VSP Coordinator**

**Foster Creek Conservation District**

**[arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)**

**509-423-5990**

*Reasonable accommodations for persons with disabilities will be made to ensure access to this meeting in accordance with the Americans with Disabilities Amendments Act of 2008.*

# ***SUMMARY OF MEETING OF February 13, 2017***

In attendance: Amanda Barg\*, Olivia Schilling, Robert Ramm\*, Jessica Gonzales\*, Dave Billingsley\*, Tim Behne\*, Paul Malone, Lisa Dowling, Bill Eller, Jeff Rock, Alex McLean\*, Bryce Kruger, Dale Whaley, April Clayton\*, Aaron Rosenblum\*

\*Work group member

The remainder of the document shows changes that were discussed during the meeting.

## **STRENGTHS**

- WSU Extension is a huge asset and its support is valued
- Dams and hydropower are major assets for this region
- Ag-Industrial infrastructure is strong which helps to make us competitive
- Farm-to-market roads are good
- A sage grouse protection plan (MSGCP) is already protecting functions and values of this critical area and will provide regulatory certainty for participants
- The remoteness from population centers tends to reduce pressure of converting ag land to residential and/or commercial
- A large percentage of land in Douglas County is privately owned
- The CRP program helps to keep land from being sold, converted and developed.
- Douglas County has a long history of small family owned agriculture operations. This means that operators have a connection with their land and know how to run their operations in a sustainable way.
- The SGI program has a lot of money available in incentive programs and easements for Douglas County operators
- A Community Wildfire Protection Plan has been recently developed
- Conservation Districts

## **WEAKNESSES**

- Average age of farmer is 60 / there is no influx of young farmers
- Loss of laborers and the potential of a greater loss
- Lack of available housing for labors
- Telecom is spotty throughout the county
- Most ag is dependent upon water from the sky
- We don't have much crop diversity (less than a dozen crops are commercially grown in the county)
- No rail service
- Land necessary for grouse habitat preservation
- Lack of wildfire management infrastructure/people
- **Lack of control of market value of crops**

## OPPORTUNITIES

- Option to put land into conservation programs (like CRP) exists if so desired
- PUD can develop fiber optics and delivery network just as they did for electricity
- Aerial spraying company could develop here – the need exists. Airports are already in place.
- Sage grouse preservation efforts have led to other opportunities including bird watching and hunting
- Potential to greater develop hunting and fishing on private lands
- Potential to take advantage of close major markets, such as Seattle and Portland, that are looking for environmentally friendly farmed products >>> Farmed Smart Certification
- Use VSP as a way to coordinate and streamline government interaction with producers

## THREATS

- Possible buy-out of small family farms by outside corporations
- Government is a threat – specifically when buying farmland for a game reserve
- Small communities like Mannsfield are dying –
- Burden of government regulations upon small operators (large corporate ag-business can afford personnel to do the regs)
- Agencies pushing toward no-till operations can be a threat because the practice requires very expensive new equipment
- Regulations can dissuade the next generation from wanting to be farmers – why put up with the hassle?
- Regulations can be inconsistent between government agencies
- Inconsistencies of government programs and associated funding leads to uncertainties
- If funding is cut off to CRP, then the impact upon acreages and finances could be harmful
- The lack of control over government regulations, programs, funding, etc. i.e. the 2018 Farm Bill
- Labor shortages could occur if borders are walled off or immigration policy changed
- Potential endangered listing of sage grouse
- Dam removal on snake river can affect wheat market here. Water availability and water rights. We have the water, but it isn't accessible
- Weeds
- Erosion
- Decreased soil health
- Fire
- Herbicide and Pesticide resistance

## Objectives

The work plan identifies the following agricultural viability objectives:

1. Maintain or improve a vibrant agricultural economy
2. Work with the local, state and federal agencies to develop processes for regulatory and tax reform
3. Maintain or increase agricultural production
4. Maintain or enhance land used for agricultural production
5. Maintain or increase participation and conservation practices activities to enhance

agricultural activities

6. Assess adequate agricultural infrastructure.

7. Provide adequate technical assistance and information.

## Suggested Activities to Promote Agricultural Viability

~~Activity 1: Have priority funding made available by federal, state and local sources~~ Seek additional funding to supplement VSP baseline implementation funding ~~to support VSP participation by~~ allowing agricultural operators to implement a greater number of conservation activities . VSP participants will help in the planning and implementation of conservation activities

Activity 2: Use existing entities such as the Technical Service Provider (TSP), other conservation districts, NRCS, FSA, and the Farm Bureau to conduct education and outreach activities to agricultural operators providing information about available tax incentives, financial assistance programs and other information related to agriculture. Potential activities include workshops, PSAs, an online clearinghouse for resources and information.

Activity 3: Seek new ~~tax~~ incentives by the state legislature that recognize VSP participation.

Activity 4: Maintain or increase participation and conservation practices to enhance agricultural activities. Promote economical and effective water, soil, pest and nutrient management that maximizes production quality.

Activity 5: Promote County policies and regulations that don't inhibit agricultural operations and that maintain and improve the long - term viability of agriculture. Work with the County Planning Department to review relevant codes to determine alternative strategies. Evaluate fees applied to agricultural activities and identify ones that should be eliminated or modified.

Activity 6: Continue to utilize existing entities, such as the Technical Service Provideer, other Conservation Districts and the Farm Bureau, to provide information on federal, state and local laws that affect agricultural activities.

Activity 7: Evaluate ways to streamline the application and permitting process at the local, state and federal levels for agricultural activities.

Activity 8: Use existing entities, such as the TSP, to conduct education and outreach activities, such as workshops, to encourage an influx of younger people into the agricultural community. Such activities will include successional planning and educational events at local school on the importance of agriculture. ~~on the application and permitting process for agricultural operators.~~

Activity 9: Work with local and state governments to ensure that capital investments and county/state transportation plans and telecommunication systems provide strong support for agricultural infrastructure.

~~Activity 10: Acknowledge landowner rights, and that the sale of agricultural land to local, state and federal agencies can be a more economically viable option in Douglas County. In addition, the transfer of land can help meet conservation goals to critical areas set forth in this document.~~



Activity 11: Work with all necessary parties to ensure that landowners have the rights and are allowed to place agricultural land into conservation easements, land trusts and similar holdings.

Activity 12: Encourage and promote compatible agricultural practices when land is placed into conservation easements, land trusts and similar holdings.

Activity 13: Promote Comprehensive Plan Policies and zoning regulations that support agricultural operators to keep land in farming and diminish its conversion to non-agricultural uses. Evaluate allowances for agricultural accessory uses or second homes for agricultural operators as allowed by RCW 36.70A.177; for example, work with the County Planning Department and state department of commerce to consider where the County code can be made more flexible or accommodating.

Activity 14: Support County, state and federal regulations that set appropriate densities and site planning for rural residential or urban residential uses that abut designated agricultural lands to minimize interface, protect necessary agricultural practices, and reduce pressure for agricultural conversion. For example, cluster zoning of new development as described by RCW 36.70A.177(2)(b).

Activity 15: Use existing entities, such as the TSP and the Farm Bureau, to conduct education and outreach activities in regards to the State of Washington Right to Farm Act (RCW 7.48.300-320). Activities directed toward agricultural operators will address approaches to minimize conflict with neighboring landowners. Activities directed toward landowners and the general public will promote awareness of the Right to Farm Act.

Activity 16: Use existing entities, such as the TSP and the Farm Bureau, to assist agricultural operators with Right to Farm Act complaints.

~~Activity 17: Monitor the sale of agricultural land to local, state, and federal agencies.~~

Activity 18: Use existing entities, such as the TSP, to conduct activities to promote VSP participation. Potential activities include branding, individual farm signs, and public service announcements.

Activity 19: Use existing entities, such as the TSP, to promote and incentivize programs, such as the Farm Smart Certification, ~~that reduce greenhouse gas emissions resulting from agricultural activities.~~

Activity 20: Use existing entities, such as the TSP, and the Farm Bureau, to conduct activities to promote the recognition of local agricultural products. Potential activities include field signage, farmer's markets, and marketing efforts.

Activity 21: Continue to use, such as the TSP, and the Farm Bureau, existing programs to promote awareness of the value of agriculture to the local economy and cultural lifestyle of Douglas County.

Activity 22: Use existing entities, such as Washington Department of Fish and Wildlife, to maintain the viability of agriculture in the region through the promotion of hunting and wildlife management techniques, which coexist with agricultural activities. Recognize that hunting, wildlife viewing and farming are part of the rich cultural history of the region, which provides immense social and economic value.

Activity 23: Work with existing entities, such as the Washington Association of Conservation Districts, and the Washington Association of Wheat Growers, to ask Washington members of the US Congress and the

US Legislative Committees on Agriculture to keep funding for incentive based programs in future farm bills.

Activity 24: Work with existing entities, such as the Washington Association of Conservation Districts, and the Washington Association of Wheat Growers, to ask Washington members of the US Congress and the US Legislative Committees on Agriculture to keep funding for the Conservation Reserve Program in future farm bills.

Activity 25: Work with existing entities, Washington Association of Conservation Districts, and the Washington Association of Wheat Growers, to ask Washington members of the US Congress and the US Legislative Committees on Agriculture to keep language in future farm bills that allows Continuous Conservation Reserve Program acres, such as State Acres for Wildlife Enhancement (SAFE), to be counted separate from the Conservation Reserve Program acre's cap of 25%.

Activity 26: Work with existing entities, such as the TSP, South Douglas Conservation District, and local fire districts, to continue to implement and revise the Community Wildfire Protection Plan.

Activity 27: Work with existing entities, such as the TSP, South Douglas Conservation District, and local fire districts to find funding for and develop the infrastructure and personnel necessary to fight wildland fires.

Activity 28: Work with existing entities, such as the TSP, other conservation districts, and NRCS, to promote incentive programs that are compatible with VSP's goals.

Activity 29: Work with existing entities, such as the TSP, and South Douglas Conservation District, to secure additional funding to increase cost share dollars available to producers wishing to implement incentive programs and or purchase costly equipment necessary to implement the programs.

Activity 30: Continue to Work with and support existing entities such as Washington State University or other agricultural research entities develop new varieties adapted to Douglas County.

Activity 31: Continue to Work with and support existing entities such as Washington State University or other agricultural research entities develop new varieties resistant to insects and pathogens.

Activity 32: Work with the Douglas County Weed Management Task Force to assist in the implementation of weed management, and weed education and outreach in Douglas County.

Activity 34: Work with existing entities, such as the TSP and the Douglas County Weed Management Task Force, to seek additional funding for weed management in Douglas County.

Activity 35: Use Foster Creek Conservation District to convene an inter-agency committee aimed at coordinating, streamlining and simplifying all government interactions and contact with Douglas County producers.

Activity 36: Hold an annual inter-agency meeting in which each agency will describe their anticipated incentive based funding opportunities for Douglas County Producers for the coming year.

Activity 37: Use existing entities to work with Douglas County producers to implement Integrated Pest Management Strategies helping to reduce reliance on herbicides and pesticides and reduce herbicide and pesticide resilience.

<b>Objective</b>	<b>Activities That Address</b>
1. Maintain or improve a vibrant agricultural economy	1, 3, 4, 5, 6, 7, 8, 9, 12, 13, 14, 16, 20, 21, 22, 23, 24, 25, 26, 27, 29, 30, 31, 32, 34, 36, 37
2. Work with the county planning department to Develop process for regulatory and tax reform	3, 5, 7
3. Maintain or increase agricultural production	4, 19, 26, 27, 30, 31, 32, 34, 37
4. Maintain or enhance land used for agricultural production	1, 4, 11, 12, 13, 16, 19, 22, 23, 34, 25, 26, 27, 28, 29, 32, 34, 37
5. Maintain or increase participation and conservation practices activities to enhance agricultural activities	1, 4, 18, 19, 20, 23, 28, 29, 36
6. Assess adequate agricultural infrastructure.	9, 13, 14, 27, 29
7. Provide adequate technical assistance and information.	2, 6, 8, 15, 16, 21, 22, 33, 35, 36, 37

A definition of Ag viability:

Agricultural viability can be defined as the ability of a farmer or group of farmers to:

- productively farm on a given piece of land or in a specific area,
- maintain an economically viable farm business,
- keep the land in agriculture long-term, and
- steward the land so it will remain productive into the future.

Next Meeting Dates and Times:

**Monday, March 6, 2017 at 1pm**

**Wednesday, April 5 2017 at 1pm**

**Wednesday, May 3 2017 at 7pm**

NOTE: The entirety of this meeting was open to public comment

Questions or Comments,

contact Aaron Rosenblum 509-423-5990 or arosenblum@fostercreekcd.org

# Douglas County Voluntary Stewardship Program

## Workgroup Meeting #7, March 6, 2017

1:00pm in the Hearing Room at the Superior Court of Douglas County Building

203 S Rainier St, Waterville, WA 98858

### Agenda

1. Welcome, Updates, and Meeting Purpose
2. Overview of Goals & Measurable Benchmarks
3. Tracking Approach
4. Adaptive Management
5. Next steps

This meeting will be available to attend remotely with web conferencing. To join, use the following URL:

[https://www.gotomeet.me/VSP\\_DouglasCO](https://www.gotomeet.me/VSP_DouglasCO)

**You can also dial in using your phone:** + (571) 317-3122    Access Code: 721-453-133

**Aaron Rosenblum**

**VSP Coordinator**

**Foster Creek Conservation District**

**[arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)**

**509-423-5990**

*Reasonable accommodations for persons with disabilities will be made to ensure access to this meeting in accordance with the Americans with Disabilities Amendments Act of 2008.*



## ***SUMMARY OF MEETING OF March 6, 2017***

In attendance: Ben Floyd, Amanda Barg\*, Robert Ramm\*, Jessica Gonzales\*, Dave Billingsley\*, Tim Behne\*, Lisa Dowling, Jeffrey Rock, April Clayton\*, Aaron Rosenblum\*, Britt Dudek\* (remotely)

\*Work group member

- Please refer to the meeting's PowerPoint for reference and further details.
- To start the meeting Aaron discussed changes that had been made to the Douglas County VSP webpage. The webpage now contains updated information, all past meeting materials, future meeting dates and agendas, and other VSP documents.
- The focus of the meeting then switched to the main topic of the day, which was using the measurement of conservation practices (CPs) as benchmarks in the work plan. Ben noted that if this approach is used, the technical panel has given the feedback that, "the work plan must provide a nexus between the goal, the practices, and the expected protections of critical areas functions and values." Indicators can then be used to help verify that the conservation practices are having the desired effect.
- Prior to discussing this method in detail, the group had a discussion on different physical parameters that could be measured in the county. Stream flow was brought up, but it was decided that this was too expensive and is not something that we would want to measure due to the major linkage to precipitation. Measuring flood level flows was posed as an alternative. The change detection based on remote sensed data provided by WDFW was also discussed. The data is accurate and reliable, but there was some resistance to using "no net loss" as a benchmark for VSP.
- The question of why should we use conservation practices as benchmarks was then posed to the group with the following responses: Douglas County has a long history of implementing CPs, the information and data is readily accessible, there is a direct correlation between CPs and protection of critical area functions. It was also mentioned that this method directly measures Agriculture's contribution to Critical Areas' functions and values. Two questions arose from the discussion. 1. Can we only count NRCS practices or activities that meet NRCS criteria. Ben stated that it is possible to give partial credit to self-funded conservation activities. 2. Will producers be willing to self-report the conservation activities that they are implementing? The response was that there may be some difficulty in getting producers to buy in. Aaron responded that producers could report anonymously and would only be reporting to FCCD which would then collate the results into county wide report that would be needed for VSP reporting to the agencies and the public. Aaron also stated that "participating" in VSP could be as simple as self-reporting.

- Ben then launched into his presentation of using Conservation Practice Physical Effect (CPPE) as the link between conservation practices and critical area protection. CPPE describes in detail how each practice affects agricultural viability and natural resource critical functions. Please see PowerPoint for details.
- The group had a discussion about where CRP fit into the work plan. This is a tricky topic as CRP lands are really both agricultural lands and wildlife habitat. The issue is that if CRP is classified as habitat and then a lot of it comes off the books, we “lose” habitat through no fault of our own. Amanda suggested that CRP be classified as agricultural lands in the work plan, and then land currently in CRP would count as wildlife habitat “enhancement”. The group liked this suggested and agreed to it for now.
- Ben and Aaron then discussed Indicators and how they can be used to validate benchmarks. Aaron then presented the types of data that are available in Douglas County to incorporate into the VSP work plan. The MSGCP contains the following types of monitoring: Farm-level BMP implementation, Farm-level BMP effectiveness monitoring, landscape-level BMP effectiveness monitoring, covered species population monitoring, and changed circumstance monitoring. Water quality monitoring in Douglas County includes the state’s 303d list, the Watershed Health Monitoring Program, and FCCD riparian restoration monitoring sites. Adaptive management was also discussed and two examples from the MSGCP were provided.
- The group overall agreed that this was a good model for setting benchmarks for the work plan. There were still some lingering questions about the details of how it all worked and examples were requested. Examples pertaining to Douglas County will be presented next meeting.

Next Meeting Dates and Times:

**Wednesday, April 5 2017 at 1pm**

**Wednesday, May 3 2017 at 7pm**

NOTE: The entirety of this meeting was open to public comment

Questions or Comments,

contact Aaron Rosenblum 509-423-5990 or [arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)

# Douglas County Voluntary Stewardship Program

## Workgroup Meeting #8, April 5, 2017

1:00pm in the Hearing Room at the Superior Court of Douglas County Building

203 S Rainier St, Waterville, WA 98858

### Agenda

- Welcome, Updates, and Meeting Purpose
- Quick Recap of last meeting
- CPPE Tool
- Example goals and objectives and discuss their use in the work plan
- Example of setting a benchmark for Douglas County
- Discuss discontinuation and how to deal with in our work plan
- Future meetings' dates, times, and topics

This meeting will be available to attend remotely with web conferencing. To join, use the following URL:

[https://www.gotomeet.me/VSP\\_DouglasCO](https://www.gotomeet.me/VSP_DouglasCO)

**You can also dial in using your phone:** + (571) 317-3122    Access Code: 721-453-133

**Aaron Rosenblum**

**VSP Coordinator**

**Foster Creek Conservation District**

**[arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)**

**509-423-5990**

*Reasonable accommodations for persons with disabilities will be made to ensure access to this meeting in accordance with the Americans with Disabilities Amendments Act of 2008.*



# ***SUMMARY OF MEETING OF April 5, 2017***

In attendance: Don Brigham, Tim Behne\*, April Clayton\*, Curt Soper\*, Jake Finlinson, Julie Unfried, Aaron Rosenblum\*, Britt Dudek\* (remotely), Evan Sheffels (remotely).

\*Work group member

- Please refer to the meeting's PowerPoint for reference and further details.
- To start the meeting Aaron discussed VSP program updates. These include the submittal of Thurston and Chelan's work plan and the tech panel's decision to accept multiple submissions of a work plan as long as it is before the two years nine month's deadline. Aaron stated that this should not change our strategy, as we are on track to be ready for submission well before the deadline.
- To begin the meeting, a quick review of the last meeting was presented, which was the philosophy of using the measurement of conservation practices (CPs) as benchmarks in the work plan. The following are reasons why this approach should be used: Douglas County has a long history of implementing CPs, the information and data is readily accessible, there is a direct correlation between CPs and protection of critical area functions. It was also mentioned that this method directly measures Agriculture's contribution to Critical Areas' functions and values. The technical panel has given the feedback that, "the work plan must provide a nexus between the goal, the practices, and the expected protections of critical areas functions and values." Indicators can then be used to help verify that the conservation practices are having the desired effect.
- Using the Conservation Practice Physical Effect (CPPE) as the link between conservation practices and critical area protection was then proposed. CPPE describes in detail how each practice affects agricultural viability and natural resource critical functions. The tool was shown to the group. Please see PowerPoint for details.
- Aaron presented a set of initial goals and benchmarks for use in the Douglas County VSP workplan. As the group went through each, discussion was held and minor wordsmithing occurred. After wordsmithing, the following are the initial proposed benchmarks:

## **Hydrology**

- Goal: Protect or enhance natural hydraulic storage capacity through the implementation of conservation activities
  - Objective: Maintain (increase) conservation activities that promote soil-water holding capacity
  - Objective: Maintain (increase) conservation activities that limit soil compaction



- Objective: Maintain (increase) conservation activities that protect wetland and riparian areas
- Objective: Maintain (increase) conservation activities that decrease evapotranspiration
- Goal: Promote the efficient and beneficial use of water in Agriculture
  - Objective: Maintain (increase) conservation activities that promote the efficient use of irrigation water
  - Objective: Maintain (increase) conservation activities that promote the beneficial use of water in ranching

### **Water Quality**

- Goal: Protect and enhance surface water quality by implementing conservation activities that manage the amount of inputs to waterbodies
  - Objective: Maintain (increase) conservation activities that reduce wind or water soil erosion
  - Objective: Maintain (increase) conservation activities that manage inputs
  - Objective: Maintain (increase) conservation activities that filter contaminants
  - Objective: Maintain (increase) conservation activities that protect riparian and wetland systems
- Goal: Protect and enhance surface water quality by implementing conservation activities that reduce water temperatures
  - Objective: Maintain (increase) conservation activities that protect riparian and wetland systems
  - Objective: Maintain (increase) conservation activities that promote soil-water holding capacity
  - Objective: Maintain (increase) conservation activities that enhance and restore riparian and wetland habitat
- Goal: Protect and enhance groundwater quality by implementing conservation activities that manage the amount of inputs to groundwater.
  - Objective: Maintain or increase conservation activities that manage inputs
  - Objective: Maintain or increase conservation activities that filter contaminants

### **Soil Health**

- Goal: Protect and enhance soil health by implementing conservation activities that preserve the physical structure and amount of soil
  - Objective: Objective: Maintain or increase conservation activities that limit soil compaction

- Objective: Maintain or increase conservation activities that reduce wind or water soil erosion
- Objective: Maintain or increase conservation activities that decrease soil bulk density and increase heterogeneity
- Goal: Protect and enhance soil health by implementing conservation activities that benefit soil fertility
  - Objective: Maintain or increase conservation activities that add organic matter to soil
  - Objective: Maintain or increase conservation activities that manage inputs

## **Habitat**

- Goal: Protect and enhance terrestrial habitat through implementation of conservation activities
  - Objective: Maintain or increase conservation activities that manage or enhance upland habitat for wildlife
  - Objective: Maintain or increase conservation activities that manage livestock compatibly with wildlife
- Goal: Protect and enhance riparian and wetland habitat through implementation of conservation activities
  - Objective: Maintain or increase conservation activities that protect riparian and wetland habitat
  - Objective: Maintain or increase conservation activities that enhance and restore riparian and wetland habitat
- Goal: Protect and enhance aquatic habitat through implementation of conservation activities
  - Objective: Maintain or increase conservation activities that reduce wind or water soil erosion
  - Objective: Maintain or increase conservation activities that manage nutrient and pesticide inputs
  - Objective: Maintain or increase conservation activities that filter contaminants
  - Objective: Maintain or increase conservation activities that protect riparian and wetland systems
  - Objective: Maintain or increase conservation activities that promote soil-water holding capacity

It was suggested that permanent conservation easements with agricultural activities be used as a benchmark.

- Aaron then presented an example of how a benchmark of this type can be made quantifiable and measurable. Please see PowerPoint for more information and detail.

- This conversation led to a discussion of which conservation activities should be used in setting a benchmark. There were three different approaches presented: select “key CPs”, include all CPs with a benefit, or create a unit-less benchmark (CPPE score\*acres). Additional questions the group had were: how do we set a score for self-funded and non- NRCS standard activities? Do negative scores need to be accounted for? The group generally thought that a simpler approach is best as long as the technical panel is buying it.
- The group discussed calculating for discontinuation of CPs and decided that the best way to approach would be to assess each CP individually and place it into a none, low, or high category of discontinuation.
- The group decided that before going further into benchmark setting that it would be good to wait and see what happens with Thurston and Chelan County workplans to see what level of detail and feedback the TP provides. For this reason, the group decided to push back the May meeting.

**Please respond to the doodle poll for setting a May meeting date and time:**

<https://doodle.com/poll/xpgvu3e8qfrwecbq>

NOTE: The entirety of this meeting was open to public comment

Questions or Comments,

contact Aaron Rosenblum 509-423-5990 or [arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)

# Douglas County Voluntary Stewardship Program

## Workgroup Meeting #9, May 15, 2017

6:00pm in the Hearing Room at the Superior Court of Douglas County Building

203 S Rainier St, Waterville, WA 98858

### Agenda

- Welcome, Updates, and Meeting Purpose
- Quick Recap of last meeting
- CRP and VSP
- Lessons learned from Thurston and Chelan
- Revisit Douglas County Proposed Benchmarks
- Outreach strategy/plan and message
- Review of Draft Introduction Chapter (if time allows)
- Future meetings' dates, times, and topics

This meeting will be available to attend remotely with web conferencing. To join, use the following URL:

[https://www.gotomeet.me/VSP\\_DouglasCO](https://www.gotomeet.me/VSP_DouglasCO)

You can also dial in using your phone: + (571) 317-3122      Access Code: 721-453-133

**Aaron Rosenblum**

**VSP Coordinator**

**Foster Creek Conservation District**

**[arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)**

**509-423-5990**

*Reasonable accommodations for persons with disabilities will be made to ensure access to this meeting in accordance with the Americans with Disabilities Amendments Act of 2008.*



# **SUMMARY OF MEETING OF**

## **May 15, 2017**

In attendance: Don Brigham, Tim Behne\*, Robert Ramm\*, Alex McLean\*, Amanda Barg\*, Dave Billingsley\*, Jessica Gonzales\*, April Clayton\*, Curt Soper\*, Olivia Schilling, Aaron Rosenblum\*, Evan Sheffels (remotely).

\*Work group member

- Please refer to the meeting's PowerPoint for reference and further details.
- To start the meeting Aaron discussed VSP program updates. The updates this month are that both Thurston and Chelan's work plans were approved by Technical Panel.
- To begin the meeting, a quick review of the last meeting was presented. No questions or additional feedback were provided.
- A potential solution for dealing with CRP in the work plan was discussed. The plan is that CRP is agricultural land that is considered *enhancement* to fish and wildlife habitat areas. This way, if funding for the CRP program were to diminish resulting in a loss of acres, the Douglas County VSP work plan would not fail. Aaron stated that CRP levels in the county would still be kept track of and used as an indicator in the work plan. Adaptive management would also be built around CRP levels, for example improving other rangeland and shrub-steppe habitat around the county. The group had lots of discussion over this topic, but it was agreed that we would wait and see what the technical panel thinks of Whitman and Grant County's plans that also use this approach to CRP.
- Don gave a presentation on Thurston and Chelan's work plans and what lessons we can learn from them and their approval. It was noted that language for Thurston's benchmarks look very similar to language for our benchmarks in development. It was also noted that Chelan did not create benchmarks for Critical Aquifer Recharge areas or Frequently Flooded areas, instead relying on the regulatory backstop.
- Aaron presented the proposed benchmarks for use in the Douglas County VSP workplan. As the group went through each, discussion was held and edits and wordsmithing occurred. The following are the updated goals and benchmarks following discussion:

### **Goal: Protect and/or enhance Hydraulic Functions and Values in Douglas County**

Objective: Protect and/or enhance natural hydraulic storage capacity through the implementation of conservation activities

- Benchmark: Maintain (increase) conservation activities that promote soil-water holding capacity
- Benchmark: Maintain (increase) conservation activities that limit soil compaction

- Benchmark: Maintain (increase) conservation activities that protect wetland and riparian areas
- Benchmark: Maintain (increase) conservation activities that decrease evapotranspiration

Objective: Promote the efficient and beneficial use of water in Agriculture

- Benchmark: Maintain (increase) conservation activities that promote the efficient use of irrigation water
- Benchmark: Maintain (increase) conservation activities that promote the beneficial use of water in ranching

**Goal: Protect and/or enhance water quality and associated functions and values in Douglas County**

Objective: Protect and/or enhance surface water quality by implementing conservation activities that manage the amount of chemicals and sediments delivered to waterbodies

- Benchmark: Maintain (increase) conservation activities that reduce wind or water soil erosion
- Benchmark: Maintain (increase) conservation activities that manage chemicals
- Benchmark: Maintain (increase) conservation activities that filter chemicals and sediment
- Benchmark: Maintain (increase) conservation activities that protect riparian and wetland systems

Objective: Protect and/or enhance surface water quality by implementing conservation activities that reduce water temperatures

- Benchmark: Maintain (increase) conservation activities that protect riparian and wetland systems
- Benchmark: Maintain (increase) conservation activities that promote soil-water holding capacity
- Benchmark: Maintain (increase) conservation activities that enhance and restore riparian and wetland habitat

Objective: Protect and/or enhance groundwater quality by implementing conservation activities that manage the amount of chemicals to groundwater.

- Benchmark: Maintain (increase) conservation activities that manage chemicals
- Benchmark: Maintain (increase) conservation activities that filter chemicals

**Goal: Protect and/or enhance soil health and associated functions and values in Douglas County**

Objective: Protect and/or enhance soil health by implementing conservation activities that preserve the physical structure and amount of soil.

- Benchmark: Objective: Maintain (increase) conservation activities that limit soil compaction
- Benchmark: Maintain (increase) conservation activities that reduce wind or water soil erosion
- Benchmark: Maintain (increase) conservation activities that decrease soil bulk density and increase heterogeneity

Objective: Protect and/or enhance soil health by implementing conservation activities that benefit soil fertility.

- Benchmark: Maintain (increase) conservation activities that add organic matter to soil
- Benchmark: Maintain (increase) conservation activities that manage inputs

**Goal: Protect and/or enhance fish and wildlife habitat and associated functions and values in Douglas County**

Objective: Protect and/or enhance terrestrial habitat through implementation of conservation activities

- Benchmark: Maintain (increase) conservation activities that manage or enhance upland habitat for wildlife
- Benchmark: Maintain (increase) conservation activities that manage livestock compatibly with wildlife

Objective: Protect and/or enhance riparian and wetland habitat through implementation of conservation activities

- Benchmark: Maintain (increase) conservation activities that protect riparian and wetland habitat
- Benchmark: Maintain (increase) conservation activities that enhance and restore riparian and wetland habitat

Objective: Protect and/or enhance aquatic habitat through implementation of conservation activities

- Benchmark: Maintain (increase) conservation activities that reduce wind or water soil erosion
- Benchmark: Maintain (increase) conservation activities that manage nutrient and pesticide inputs
- Benchmark: Maintain (increase) conservation activities that filter contaminants
- Benchmark: Maintain (increase) conservation activities that protect riparian and wetland systems
- Benchmark: Maintain (increase) conservation activities that promote soil-water holding capacity

**Goal: Protect and/or enhance critical area functions and values throughout Douglas County**

Objective: Protect and/or enhance critical areas by securing conservation easements that allow compatible agricultural activities

- Benchmark: Maintain (increase) the number of acres in conservation easements that have active, compatible agricultural activities occurring

- The group began a discussion on messaging for VSP outreach. Aaron mentioned two outreach opportunities are upcoming, an article for the Empire Press and the NCW Fair. The following is a list that resulted from discussion of important items to tailor VSP messages to producers: Everyone is affected; the alternative is regulations and it should be clearly spelled out what that means; what you already do and have been doing counts; what are the incentives?; and what do they need to do/know?

Next Meeting Dates and Times:

- Wednesday, June 21<sup>st</sup>, 2017 at 6pm
- Wednesday, July 19<sup>th</sup>, 2017 at 6pm
- August 16<sup>th</sup>, 2017 at 6 pm

NOTE: The entirety of this meeting was open to public comment

Questions or Comments,

contact Aaron Rosenblum 509-423-5990 or [arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)



# Douglas County Voluntary Stewardship Program

## Workgroup Meeting #10, June 21, 2017

6:00pm in the Hearing Room at the Superior Court of Douglas County Building

203 S Rainier St, Waterville, WA 98858

### Agenda

- Welcome, Updates, and Meeting Purpose
- Communication methods/tools brainstorm
- Education and Outreach methods/materials brainstorm
- Initial discussion of the VSP producer checklist
- Comments of Empire Press article
- Review of Draft Introduction Chapter
- Comments on Douglas County Proposed Benchmarks (if time allows)
- Future meetings' dates, times, and topics

This meeting will be available to attend remotely with web conferencing. To join, use the following URL:

[https://www.gotomeet.me/VSP\\_DouglasCO](https://www.gotomeet.me/VSP_DouglasCO)

You can also dial in using your phone: + (571) 317-3122    Access Code: 721-453-133

**Aaron Rosenblum**

**VSP Coordinator**

**Foster Creek Conservation District**

**[arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)**

**509-423-5990**

*Reasonable accommodations for persons with disabilities will be made to ensure access to this meeting in accordance with the Americans with Disabilities Amendments Act of 2008.*



# ***SUMMARY OF MEETING OF June 21, 2017***

In attendance: Don Brigham, Jessica Gonzales\*, Mark Teske, Tim Behne\*, Robert Ramm\*, Dustin Sikstrom, Alex McLean\*, April Clayton\*, Curt Soper\*, Olivia Schilling, Aaron Rosenblum\*, Evan Sheffels (remotely).

\*Work group member

- To start the meeting Aaron discussed two VSP program updates. The first was that a state operating budget has yet to be signed, and due to this VSP funds will not be able to be spent during July. Therefore, the July meeting will be cancelled. The second update is that Grant and Skagit counties submitted work plans to the Technical Panel in the month of June. Grant's plan was conditionally approved, pending minor edits, and Skagit will make edits and resubmit their plan.
- The next topic was a brainstorm for communications and outreach for the Douglas County VSP program. The results of the brainstorm follow:

## **Communication and Outreach Brainstorm**

### **What information needs to be communicated?**

- Work group meeting notices and minutes
- VSP-what it is and why important- audience specific
- VSP related news
- Agricultural related news? – Response luke-warm, maybe not worth the effort?
- County-commissioners, regular communication, TLS
- Others?
  
- Surveys - What conservation activities are you doing? What are you interested in doing? What workshops/tours are you interested in?

### **What is the method of communication?**

- Newspapers- Empire press, Wenatchee world, Quad-City Harold
- Radio – KOZI, KOHO, KPQ
- VSP Contact lists – How to best obtain? – Newspaper articles, newsletters, WSU mailing list, postcard mailers
- Email blasts – General, Producer
- VSP webpage – FCCD, provide link on others?
- Newsletters – FCCD, SDCCD, Others? Cattlemans, Wheat growers, Central Washington Grain Growers, FSA/NRCS?
- Postcard mailers-farm bureau can send to members
- NCW fair – FCCD booth

- FCCD/SDCC annual meeting
- Other events
- Local grower meetings, wheatgrowers, cattlemans
- Farmers' market- pybus
- Event/flier boards around the county
- Facebook
- FSA/NRCS/WSU/WDFW? Offices-trifold/fact sheet
- Local ag. Supply stores- S&W,
- Legislative Days
- Others?

### Physical communication tools

- VSP Fact Sheet/ FAQ
- VSP Trifold? – maybe boring
- MSGCP trifold (two exist)
- Posters/fliers – make flashy, attract attention
- Targeted presentations- very effective, face to face time important
- VSP farm signs – strategic placement (hwy 2)
- Others?
- Slogan? Thought provoking pictures and questions

### **Make an impression! Messaging is important!**

#### Who targeted

- Producers: orchards, wheat, cattle
- Agencies
- NPOs
- County Commissioners
- General public
  
- The next meeting topic covered was the VSP Producer Survey. The tool was introduced by Aaron as a producer checklist, but it was noted that calling it a survey would be more accurate and descriptive. Aaron stated that the main objectives of the survey were to: 1) collect information on what stewardship activities are on the ground in Douglas County, where these activities are occurring, and if they are funded by NRCS, self-funded, or some other funding source; 2) collect information on what stewardship activities producers in the county are interested in doing, the idea here being that Foster Creek CD, as the technical service provider, would then connect the producers with cost-share dollars and technical advice to help implement the activities that they are interested in doing; 3) collect information on educational workshops, field tours, etc. that would benefit producers, several different ideas were proposed when the group discussed agricultural viability, this would be a way to prioritize these ideas and generate new ones. - A copy of Grant County's survey tool was then shown to the group and changes that we would like to make were discussed. Dustin suggested that we allow the ability to prioritize resource concerns. April noted that drip irrigation would be important to include for Douglas County. It was noted that it should be clearly stated why filling out the survey is important, i.e. avoid regulations. We discussed possible adding more columns to collect additional information such as "I am still doing

this activity” and “NRCS funded or self-funded”. The group also noted that including a privacy notice is important to address producer fears of self-reporting. How all of this information would be collected and compiled was discussed and it was noted that electronically is preferred. The group also noted that simpler, and shorter is better.

- Aaron asked for any additional comments on the Empire press article. None were given. The article should be published in the July 6<sup>th</sup>, edition of the Empire Press.
- Aaron asked for comments on the Introduction chapter of the work plan. The group felt more time was needed to provide feedback. Aaron gave the deadline of the end of July to provide feedback. Evan noted that the Ruckelshaus Center is affiliated with both UW and WSU and that adding graphics and photos to the final product would be good.
- Aaron asked for any new comments to the proposed benchmarks. No new comments were made. The current proposed benchmarks are as follows:

**Goal: Protect and/or enhance Hydraulic Functions and Values in Douglas County**

Objective: Protect and/or enhance natural hydraulic storage capacity through the implementation of conservation activities

- Benchmark: Maintain (increase) conservation activities that promote soil-water holding capacity
- Benchmark: Maintain (increase) conservation activities that limit soil compaction
- Benchmark: Maintain (increase) conservation activities that protect wetland and riparian areas
- Benchmark: Maintain (increase) conservation activities that decrease evapotranspiration

Objective: Promote the efficient and beneficial use of water in Agriculture

- Benchmark: Maintain (increase) conservation activities that promote the efficient use of irrigation water
- Benchmark: Maintain (increase) conservation activities that promote the beneficial use of water in ranching

**Goal: Protect and/or enhance water quality and associated functions and values in Douglas County**

Objective: Protect and/or enhance surface water quality by implementing conservation activities that manage the amount of chemicals and sediments delivered to waterbodies

- Benchmark: Maintain (increase) conservation activities that reduce wind or water soil erosion
- Benchmark: Maintain (increase) conservation activities that manage chemicals
- Benchmark: Maintain (increase) conservation activities that filter chemicals and sediment
- Benchmark: Maintain (increase) conservation activities that protect riparian and wetland systems

Objective: Protect and/or enhance surface water quality by implementing conservation activities that reduce water temperatures

- Benchmark: Maintain (increase) conservation activities that protect riparian and wetland systems

- Benchmark: Maintain (increase) conservation activities that promote soil-water holding capacity
- Benchmark: Maintain (increase) conservation activities that enhance and restore riparian and wetland habitat

Objective: Protect and/or enhance groundwater quality by implementing conservation activities that manage the amount of chemicals to groundwater.

- Benchmark: Maintain (increase) conservation activities that manage chemicals
- Benchmark: Maintain (increase) conservation activities that filter chemicals

**Goal: Protect and/or enhance soil health and associated functions and values in Douglas County**

Objective: Protect and/or enhance soil health by implementing conservation activities that preserve the physical structure and amount of soil.

- Benchmark: Objective: Maintain (increase) conservation activities that limit soil compaction
- Benchmark: Maintain (increase) conservation activities that reduce wind or water soil erosion
- Benchmark: Maintain (increase) conservation activities that decrease soil bulk density and increase heterogeneity

Objective: Protect and/or enhance soil health by implementing conservation activities that benefit soil fertility.

- Benchmark: Maintain (increase) conservation activities that add organic matter to soil
- Benchmark: Maintain (increase) conservation activities that manage inputs

**Goal: Protect and/or enhance fish and wildlife habitat and associated functions and values in Douglas County**

Objective: Protect and/or enhance terrestrial habitat through implementation of conservation activities

- Benchmark: Maintain (increase) conservation activities that manage or enhance upland habitat for wildlife
- Benchmark: Maintain (increase) conservation activities that manage livestock compatibly with wildlife

Objective: Protect and/or enhance riparian and wetland habitat through implementation of conservation activities

- Benchmark: Maintain (increase) conservation activities that protect riparian and wetland habitat
- Benchmark: Maintain (increase) conservation activities that enhance and restore riparian and wetland habitat

Objective: Protect and/or enhance aquatic habitat through implementation of conservation activities

- Benchmark: Maintain (increase) conservation activities that reduce wind or water soil erosion
- Benchmark: Maintain (increase) conservation activities that manage nutrient and pesticide inputs

- Benchmark: Maintain (increase) conservation activities that filter contaminants
- Benchmark: Maintain (increase) conservation activities that protect riparian and wetland systems
- Benchmark: Maintain (increase) conservation activities that promote soil-water holding capacity

**Goal: Protect and/or enhance critical area functions and values throughout Douglas County**

Objective: Protect and/or enhance critical areas by securing conservation easements that allow compatible agricultural activities

- Benchmark: Maintain (increase) the number of acres in conservation easements that have active, compatible agricultural activities occurring
- The group discussed the technical panel review process. Notable comments were that it is important to monitor environmental indicators when using this approach to benchmark setting, that the technical panel will be looking for supporting documentation for all requirements of the statute, and that the review period may be increased from 45 days to 90 days in the next biennium.

Future meeting topics requested by the group:

- Indicators
- Identify and discuss key practices used for setting and tracking benchmarks

Next Meeting Dates and Times:

- Wednesday, July 19<sup>th</sup>, 2017 **CANCELLED**
- August 16<sup>th</sup>, 2017 at 6 pm
- September 20, 2017 at 6 pm

NOTE: The entirety of this meeting was open to public comment

Questions or Comments,

contact Aaron Rosenblum 509-423-5990 or [arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)

# Douglas County Voluntary Stewardship Program

## Workgroup Meeting #12, August 16, 2017

6:00pm in the Hearing Room at the Superior Court of Douglas County Building

203 S Rainier St, Waterville, WA 98858

### Agenda

- Welcome, Updates, and Meeting Purpose
- Updated work plan development schedule
- Review of Draft chapters 1-3
- Key practices for Douglas County Proposed Benchmarks
- Discontinuation of key practices
- Indicators of critical area protection
- VSP outreach materials and slogan
- Future meetings' dates, times, and topics

This meeting will be available to attend remotely with web conferencing. To join, use the following URL:

[https://www.gotomeet.me/VSP\\_DouglasCO](https://www.gotomeet.me/VSP_DouglasCO)

You can also dial in using your phone: + (571) 317-3122      Access Code: 721-453-133

**Aaron Rosenblum**

**VSP Coordinator**

**Foster Creek Conservation District**

**[arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)**

**509-423-5990**

*Reasonable accommodations for persons with disabilities will be made to ensure access to this meeting in accordance with the Americans with Disabilities Amendments Act of 2008.*



# ***SUMMARY OF MEETING OF August 16, 2017***

In attendance: Vanessa Brinkhuis, Jessica Gonzales\*, Tim Behne\*, Dave Billingsley \*, Alex McLean\*, April Clayton\*, Curt Soper\*, Aaron Rosenblum\*, Britt Dudek\* (remotely), Amanda Barg\* (remotely).

\*Work group member

- To start the meeting Aaron discussed two VSP program updates. The first was that a state operating budget was signed, and VSP was funded for the next biennium. The amount of funding for individual counties will be \$50,000 less than what was funded the previous biennium. The second update is that Whitman and Pacific counties submitted work plans and had them reviewed by the Technical Panel in the month of July. Both plans were approved.
- Aaron presented to the group an updated work plan outline and proposed schedule for completion. If the schedule is followed, Douglas County will be ready for an informal review from the Technical Panel in December or January. A brief discussion ensued concerning what the merits of finishing the plan ahead of schedule are.
- The group reviewed the first three chapters of the work plan. Aaron presented significant edits that resulted from comments received prior to the meeting. A few more edits were suggested during the meeting. Updated versions of all three chapters can be found on the Douglas County VSP webpage (see address below).
- A question arose on what the deadline was for Douglas County. The deadline for work plan approval by the Technical Panel is October 22, 2016, and the Deadline for submission to the Tech Panel is July 22, 2016.
- The remainder of the meeting consisted of a discussion about the Douglas County benchmarks. Aaron showed an example of a quantified benchmark based on certain key practices for Douglas County. The group began to go through each benchmark and ascribe key practices to each. As we went, many discussion points came up:
  - o The question of the merit of using participatory benchmarks vs. environmental criteria benchmarks was raised. Aaron stated that the group had decided to use participatory benchmarks because they better measure agriculture's contribution to critical area functions and values. Environmental criteria can change due to extraneous things outside of local agriculture's control and they can take a very long time to change and see any effects. The plan will measure environmental criteria and include them as indicators.
  - o A discussion arose as to whether we would want to make individual conservation activities benchmarks as opposed to the current method which groups conservation activities into specific benchmarks that address goals and objectives. The group generally seemed to agree that they didn't want to get too specific with the benchmarks, but would like to see further examples.



- A question was raised as to what are the specific threats to critical areas, and do our benchmarks address them. Aaron stated that he thought they did, but everyone agreed that that step was not presented in enough detail during a workgroup meeting.
  - A question was raised as to if irrigated agriculture, and tree fruit specifically, were underrepresented in the benchmarks. In Douglas County, NRCS doesn't do much work with tree fruit. However, it was stated that many of the same practices will still apply, but they will need to be accounted for through self-reporting. Aaron stated that he would like to build a tree fruit program within the conservation district.
  - A concern was raised about setting an explicit quantified number for a benchmark vs. being more general (ex. Chelan). This topic will be addressed at the next meeting.
- The work group requested the following items based on the above discussions: A completed benchmark table with all key practices and everything quantified. A table showing the benefit of conservation activities to critical area protection, as well as which sectors of agriculture are relevant to each. Information showing what the threats to critical areas are and what the protection and enhancement strategies for Douglas County are and which benchmarks are applicable.
  - Aaron passed out a new VSP informational trifold and asked for any comments. The trifold is targeted for the general public. The trifold also contains a Douglas County VSP slogan, which the creation of was discussed at the June, 2017 meeting. The slogan currently is, "volunteer or voluntold, how do you like your agriculture?"

Next Meeting Dates and Times:

- September 20, 2017 at 6 pm
- October 23, 2017 at 6 pm (Monday)
- November 20, 2017 at 1 pm (Monday)

NOTE: The entirety of this meeting was open to public comment

Questions or Comments,

contact Aaron Rosenblum 509-423-5990 or arosenblum@fostercreekcd.org

<http://www.fostercreekcd.org/programs/voluntary-stewardship-program/>

# Douglas County Voluntary Stewardship Program

## Workgroup Meeting #12, September 20, 2017

6:00pm in the Hearing Room at the Superior Court of Douglas County Building

203 S Rainier St, Waterville, WA 98858

### Agenda

- Welcome, Updates, and Meeting Purpose
- Review of Draft chapter 4
- Threats to Critical Areas – Fire
- Threats to Critical Areas – Weeds
- Updated and quantified Benchmarks and relation to critical area protection
- Indicators of critical area protection
- Future meetings' dates, times, and topics

This meeting will be available to attend remotely with web conferencing. To join, use the following URL:

[https://www.gotomeet.me/VSP\\_DouglasCO](https://www.gotomeet.me/VSP_DouglasCO)

You can also dial in using your phone: + (571) 317-3122    Access Code: 721-453-133

**Aaron Rosenblum**

**VSP Coordinator**

**Foster Creek Conservation District**

**[arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)**

**509-423-5990**

*Reasonable accommodations for persons with disabilities will be made to ensure access to this meeting in accordance with the Americans with Disabilities Amendments Act of 2008.*



# **SUMMARY OF MEETING OF**

## **September 20, 2017**

In attendance: Jessica Gonzales\*, Dave Billingsley \*, Alex McLean\*, April Clayton\*, Corinna Hanson, Jeff Rock, Aaron Rosenblum\*, Evan Scheffals (remotely), Norm Tupling (remotely).

\*Work group member

- To start the meeting Aaron discussed VSP program updates. 1) The Conservation Commission came out with a policy advisory stating that the review period for work plans has been changed from 45 days to 90 days. The new deadline for Douglas County to submit a work plan is July 22, 2018. 2) The Conservation Commission came out with a policy advisory stating that Individual Stewardship Plans made under as part of the VSP work plan will be exempt from the Freedom of Information Act, i.e. they will be confidential. 3) Aaron had a meeting with the Douglas County commissioners in July. The commissioners like what we have done and are being kept updated on work plan development.
- The group reviewed chapter 4 of the work plan. A request was made that the source of irrigation water (ground v. surface) be included in the irrigated agriculture section. A discussion over whether marijuana should be included in the work plan occurred. It was stated that marijuana is not currently considered a crop by the department of agriculture, but if this changes in the future, the work plan can be updated. Several other minor edits were suggested. An updated version of chapter 4 can be found on the Douglas County VSP webpage (see address below).
- The group then had a long discussion about fire and what VSP's role can be to help address this threat to critical areas and agricultural viability. Jeff discussed South Douglas' effort that is just getting underway to update the Community Wildfire Protection Plan. Aaron mentioned that this is a good first step in that it gets everyone back in the same room and discussing what issues there are with fighting fire in Douglas County. Everyone agreed that any VSP effort should not duplicate this effort, but support and build upon it. A discussion of Rural Fire Protection Areas occurred. Douglas County has a significant portion of land that is not covered by any fire district. The group agreed that getting fire coverage where there currently isn't any would certainly be an improvement and would meet the goals of VSP to protect critical areas and agricultural viability. How the VSP work group can support this effort is still unclear. Other ideas for how VSP could be involved with fire were to establish a fuels management program (perhaps one specifically aimed at cheatgrass), and to provide technical assistance for fire recovery actions including restoration. It was suggested that a good thing to include in Individual Stewardship Plans would be an emergency grazing plan for ranchers who have their pastures burnt up.
- Aaron Briefly discussed a grant that he had just applied for that would be folded into the VSP program as part of the effort to protect fish and wildlife habitat (and also ag. Viability). The grant is to establish a Collaborative Weed Management Area (CWMA) in Douglas County. The CWMA would include all agencies, organizations, and interested landowners in Douglas County, and all would agree to collaboratively fight invasive weeds across jurisdictional boundaries. A strategic plan would be developed and specific projects identified and implemented with pooled resources. The group liked the idea.

- The remainder of the meeting consisted of a discussion about the Douglas County benchmarks. Since the last meeting, Aaron quantified all of the benchmarks based on certain key conservation activities for Douglas County. Also discussed were two additional tables Aaron created dealing with threats to critical areas and quantifying critical area protections per each conservation activity. The updated spreadsheets can be found on the VSP webpage (see address below). Important comments, additions, and/or changes are noted here:
  - o Douglas County is well above their protection benchmarks, in some cases by orders of magnitude
  - o The technical panel wants to see specific quantified benchmarks. Having our benchmarks quantified will help to meet their request, but also shows how great Douglas County is doing at meeting those benchmarks.
  - o Three new benchmarks were added. They are BM-15 Maintain and/or increase voluntary conservation activities that manage or enhance orchard compatibility with wildlife; BM-16 Maintain and/or increase voluntary conservation activities that manage or enhance dryland farming compatibility with wildlife; and BM-17 Maintain and/or increase voluntary conservation activities that manage fuel loads to decrease the risk of fire.
  - o “nutrients” was added to BM-8.
  - o Irrigation water management was added as a key conservation activity to BM-7

Next Meeting Dates and Times:

- October 23, 2017 at 1 pm **Location Change: NRCS/FSA conference room** at 203 E Locust St, Waterville, WA 98858.
- Monday November 20, 2017 at 1 pm or alternative TBD
- Monday December 18, 2017 1 pm

NOTE: The entirety of this meeting was open to public comment

Questions or Comments,

contact Aaron Rosenblum 509-423-5990 or arosenblum@fostercreekcd.org

<http://www.fostercreekcd.org/programs/voluntary-stewardship-program/>

# Douglas County Voluntary Stewardship Program

## Workgroup Meeting #13, October 23, 2017

1:00pm in the NRCS/FSA conference room at  
103 N. Baker Street, Waterville, WA 98858

### Agenda

- Welcome, Updates, and Meeting Purpose
- Review of Draft chapter 5 – Agricultural Viability
- Review Benchmarks and discuss setting of enhancement benchmarks
- Indicators of critical area protection
  - What are they/why important?
  - What is available for us to include in the work plan?
  - Wish list, should funding become available
- Adaptive Management in the work plan
- Future meetings' dates, times, and topics

This meeting will be available to attend remotely with web conferencing. To join, use the following URL:

[https://www.gotomeet.me/VSP\\_DouglasCO](https://www.gotomeet.me/VSP_DouglasCO)

You can also dial in using your phone: + (571) 317-3122    Access Code: 721-453-133

**Aaron Rosenblum**

**VSP Coordinator**

**Foster Creek Conservation District**

**[arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)**

**509-423-5990**

*Reasonable accommodations for persons with disabilities will be made to ensure access to this meeting in accordance with the Americans with Disabilities Amendments Act of 2008.*



## ***SUMMARY OF MEETING OF October 23, 2017***

In attendance: Jessica Gonzales\*, Dave Billingsley \*, Heather Kosaka, Alex McLean\*, April Clayton\*, Aaron Rosenblum\*, Norm Tupling, Tim Behne\*, Robert Ramm\*, Amanda Barg\*.

\*Work group member

- To start the meeting Aaron discussed VSP program updates. 1) The Conservation Commission will be hosting a regional VSP workshop covering the topic “transitioning from planning to implementation”. Aaron will be attending the meeting in Spokane held on Wednesday December 13, 2017. Aaron invited all interested work group members to attend and contact him for more information.
- The group reviewed chapter 5 of the work plan. Tweaks were made to the definition of ag. Viability including the suggestion that the definition be broadened from an economic standpoint to include hobby farms. The group had a discussion on Objective #7, specifically on what exactly “ag infrastructure” and “assess” meant, and asked who would be doing the assessing. A discussion occurred involving whether or not all lobbying organizations should be listed in activities 29-31. It was decided that there are too many to list them all. Several other minor edits were suggested. An updated version of chapter 5 can be found on the Douglas County VSP webpage (see address below).
- The group reviewed the protection benchmarks. No changes were made to the benchmarks.
- The group discussed setting enhancement benchmarks. Two options were discussed for setting enhancement benchmarks: 1) Setting the enhancement benchmark at the rate of enrollment between 2011-2017 and 2) setting the enhancement benchmark at the rate of enrollment 2004-2011. After discussion, the group chose the second option.
- The group had a discussion about how programs like CRP and SAFE fit into VSP, and how at times the goals may seem contradictory. Amanda explained a bit about how the SAFE program is administered, and that when administering SAFE, WDFW needs to look at the long term picture, not just the short term. Aaron explained that when acres come out of CRP/SAFE, the VSP response is to try and enroll them into conservation activities that meet the goals and benchmarks of the VSP work plan.
- Aaron gave a brief PowerPoint presentation (available online) on the types of monitoring that are currently occurring in Douglas County and are available to include in the work plan. Amanda discussed all the types of wildlife monitoring that WDFW does in Douglas County. Aaron then presented the group with indicators that are based on monitoring being done in the county.
- Aaron introduced the topic of adaptive management and briefly gave a couple of examples from the indicators section. The group will pick up discussion of adaptive management next time.

Next Meeting Dates and Times:

- Monday November 13, 2017 at 1 pm **in the Hearing Room at the Superior Court of Douglas County Building 203 S Rainier St, Waterville, WA 98858.**
- Monday December 18, 2017 1 pm
- Monday January 22, 2018 1pm

NOTE: The entirety of this meeting was open to public comment

Questions or Comments,

contact Aaron Rosenblum 509-423-5990 or [arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)

<http://www.fostercreekcd.org/programs/voluntary-stewardship-program/>

# Douglas County Voluntary Stewardship Program

## Workgroup Meeting #14, November 13, 2017

1:00pm in the Hearing Room at the Superior Court of Douglas County  
Building

203 S Rainier St, Waterville, WA 98858

### Agenda

- Welcome, Updates, and Meeting Purpose
- Updates to Benchmarks
- Adaptive Management in the work plan
  - For Benchmarks
  - For indicators
  - Programmatic
- Revisit items from Agricultural Viability chapter 5
- Begin implementation discussion
- Future meetings' dates, times, and topics

This meeting will be available to attend remotely with web conferencing. To join, use the following URL:

[https://www.gotomeet.me/VSP\\_DouglasCO](https://www.gotomeet.me/VSP_DouglasCO)

You can also dial in using your phone: + (571) 317-3122    Access Code: 721-453-133

**Aaron  
Rosenblum  
VSPCoordinat  
or  
Foster Creek Conservation  
District  
arosenblum@fostercreekcd.  
org 509-423-5990**

*Reasonable accommodations for persons with disabilities will be made to ensure access to this meeting in accordance with the Americans with Disabilities Amendments Act of 2008.*





# **SUMMARY OF MEETING OF November 13, 2017**

In attendance: Curt Soper\* Chelan-Douglas Land Trust; Jessica Gonzales\* USFWS; Dave Billingsley\* rancher; Alex McLean\* dryland farmer; Jeff Rock South Douglas CD/farmer; Tim Behne\* dryland farmer; Robert Ramm\* dryland farmer; Norm Tupling Chelan/Douglas Farm Bureau; Aaron Rosenblum\* VSP Coordinator; Amanda Barg\* WDFW (remotely).

\*Work group member

- To start the meeting Aaron discussed VSP program updates. 1) The tec panel's schedule is filling fast for the winter, January is the time to do an informal review if we want one (see next bullet). 2) Yakima-work plan approved; Walla-Walla – vote this Friday; Stevens and San Juan-submitted work plan to tec panel. 3) The Conservation Commission will be hosting a regional VSP workshop covering the topic “transitioning from planning to implementation”. Aaron will be attending the meeting in Spokane held on Wednesday December 13, 2017. Aaron invited all interested work group members to attend and contact him for more information.
- Aaron discussed what an informal review entails and fielded questions. The main point is that this is the group's only opportunity to get significant time and feedback from the tec panel prior to formal submission of the work plan. After discussion, **the group agreed to move forward with an informal review which is now scheduled for January 12<sup>th</sup>, 2018.**
- Aaron presented additions/changes made to the benchmarks from the last meeting. These included:
  - o The enhancement benchmarks are now quantified and were set at maintaining the 2004-2011 enrollment average as discussed in the October meeting.
  - o Some corrections have been made to the actual numbers in the benchmarks table. This is due to some duplication of enrollment data that was provided by NRCS. In some of NRCS' practices, data was recorded just once for the three-year contract, while for others the same enrollment data was duplicated for years two and three. Aaron went through and removed all duplicate data and adjusted all numbers in the benchmarks table accordingly. Overall, both benchmarks and VSP implementation numbers decreased as the duplication occurred before and after 2011. As before, BM-8 is the only one where Douglas County implementation numbers are at all close to the protection benchmark.
  - o “Organic Certification” was added as a key Conservation Activity to BM-8. This is because organic certification fits well into that benchmark which is “Maintain and/or increase voluntary conservation activities that manage chemicals and nutrients” and should be represented as an important conservation activity in the work plan.
  - o BM-5 was added to the objective: “Protect and/or enhance surface water quality by implementing voluntary conservation activities that manage the amount of chemicals and

sediments delivered to waterbodies”. This addition was made based on a suggestion from a reviewer at the WA Dept. of Ecology.

- The group discussed adaptive management for benchmarks. Much discussion centered around the Action Threshold needing to be more of a trend based item, rather than a firm number every year. For example, instead of the threshold being “less than X number of acres added each year” it should be “if new enrollment numbers are trending toward not meeting the five-year benchmark”. The group agreed to make the threshold trend based no action should take place following the first year of a five-year period. The group also wanted to add that the first action to take place should be to check the numbers through verification of data and survey results.
- The group discussed adaptive management for indicators. A few topics were discussed: 1) The advice of local WDFW is that individual species population numbers not be included as indicators for the VSP work plan. The work group agreed and those indicators will be removed. 2) Is the loss of 200 acres of shrub-steppe too low to set as a trigger for adaptive management? Over the past 3 years an orchard company in the county has converted over 1,000 acres of shrub-steppe to orchard land. There was concern that we would start off in the negative so to speak. Aaron reminded everyone that the success of the VSP in Douglas County does not lie upon the indicators. They are there to inform benchmarks and what is happening to critical areas in the county. Even if the threshold was set at 1,000 acres loss, which feels very high, we would still be in adaptive management mode when the plan started. Aaron also stated that entities in Douglas County are already doing all of the adaptive management actions listed and will continue to. 3) There was also brief discussion as to whether thresholds should be based on comparisons to 2011 conditions or if they should be based on the previous cycle of NAIP (satellite imagery) information. The conversation changed gears and the topic was not resolved. The topic will be discussed at the next meeting.
- The group discussed programmatic adaptive management for the VSP work plan. The major addition the group wanted was to include a way to adjust discontinuation rates prior to the 5-year reporting deadline if they were shown through survey results to be way off base. This has been added.
- Throughout the meeting, the topic of the need for targeted, effective outreach as we move into implementation was stressed. The producer survey will be a very important tool. It will be very important to get the message out of why VSP is important and why it is important to participate.
- The group reviewed changes to chapter 5 of the work plan from last time. Tweaks were made to the definition of ag. Viability including the suggestion that the definition be broadened from an economic standpoint to include hobby farms. Objective #7, was changed to specify what exactly “ag infrastructure” and “assess” meant. The group accepted these changes and other minor edits were made.
- The most recent versions, including edits made after this meeting, of all materials discussed are available on the Douglas County VSP webpage here:  
<http://www.fostercreekcd.org/programs/voluntary-stewardship-program/>

Next Meeting Dates and Times:

- Monday December 18, 2017 1-4pm **in the Hearing Room at the Superior Court of Douglas County Building 203 S Rainier St, Waterville, WA 98858.**
- Monday January 22, 2018 1pm
- Monday February 12, 2018 1pm

NOTE: The entirety of this meeting was open to public comment

Questions or Comments,

contact Aaron Rosenblum 509-423-5990 or [arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)

<http://www.fostercreekcd.org/programs/voluntary-stewardship-program/>

# Douglas County Voluntary Stewardship Program

## Workgroup Meeting #15, December 18, 2017

in the Hearing Room at the Superior Court of Douglas County Building

203 S Rainier St, Waterville, WA 98858

1:00pm – 4:00pm (break from 2:30-2:45)

### Agenda

- Welcome, Updates, and Meeting Purpose
- Revisit adaptive management for Benchmarks and Indicators
- Share information presented at the VSP regional meeting
- The four types of VSP participation and three types of farm-scale plans
- VSP Producer Survey
- Implementation Schedule
- Outreach Plan and materials
- Initial budget plan for implementation
- Review of draft chapters 6 & 7
- Future meetings' dates, times, and topics

This meeting will be available to attend remotely with web conferencing. To join, use the following URL:

[https://www.gotomeet.me/VSP\\_DouglasCO](https://www.gotomeet.me/VSP_DouglasCO)

**You can also dial in using your phone:** + (571) 317-3122    Access Code: 721-453-133

**Aaron Rosenblum**  
**VSP Coordinator**  
**Foster Creek Conservation District**  
**[arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)**  
**509-423-5990**

*Reasonable accommodations for persons with disabilities will be made to ensure access to this meeting in accordance with the Americans with Disabilities Amendments Act of 2008.*



## ***SUMMARY OF MEETING OF December 18, 2017***

In attendance: Dave Billingsley\* rancher; Alex McLean\* dryland farmer; Jeff Rock South Douglas CD/farmer; Tim Behne\* dryland farmer; Robert Ramm\* dryland farmer; Norm Tupling Chelan-Douglas Farm Bureau; Aaron Rosenblum\* VSP Coordinator; Amanda Barg\* WDFW, April Clayton apples/cherries/Chelan-Douglas Farm Bureau

\*Work group member

- No program updates provided at this meeting
- The group discussed adaptive management for benchmarks and indicators. Aaron presented and asked for discussion on a minor change he made to the indicators/monitoring. The change was that for I-9 and I-10, a \* was added with a note saying: Monitoring not currently funded/implemented. VSP implementation will seek to fund monitoring effort. The reasoning for this was to not spend too much VSP implementation funding on monitoring. It is okay to say as a group that we want to do this monitoring and will seek funding to do so. April suggested that the Greater Wenatchee Irrigation District may have data to incorporate into indicator I-9. Aaron stated that they do have real time data, but no historic (2011) data. However, this information could still be used going forward.
- Aaron briefly discussed some of the information presented at the VSP regional meeting the previous week. Major topics presented included the work plan review process and creating a successful implementation plan. Details were discussed at relevant points during the rest of the meeting.

Aaron presented and summarized the 4 types of VSP participation and 3 types of farm-scale planning. They are as follows:

### **VSP Producer Survey**

The VSP Producer Survey is the base level for participation in the VSP program. Producer participation in the survey is quick and simple, but provides highly valuable information about conservation activity implementation in Douglas County. Additionally, the survey provides direction for future VSP implementation. The stated objectives of the producer survey are:

5. Identify and document implemented conservation activities that contribute to the critical area protection goals and benchmarks of the VSP work plan.
6. Identify conservation activities that Douglas County producers are interested in implementing to increase cost-share and technical service opportunities for those conservation activities.
7. Identify educational programs and materials would benefit Douglas County producers.
8. Encourage high producer participation, through the implementation of voluntary conservation activities, to ensure the success of the VSP.

The VSP Producer Survey can be found in Appendix E of this work plan.

### Farm-Scale Planning

There are three different types of farm scale planning activities available to Douglas County Producers that will ultimately help producers implement conservation activities consistent with the goals and benchmarks of this work plan. Each of the three plans fulfills a slightly different purpose, so the plan a producer chooses to receive will depend largely on their own operational goals and concerns. The three types of farm-scale planning activities and their goals are:

- **NRCS Conservation Plan:** Identify resource concerns and the appropriate conservation activities to address them.
- **MSGCP Site-Specific Plan (SSP):** Identify conservation activities and create a plan necessary to protect the habitat of the four covered species. The SSP is necessary to apply for a Section-10 Incidental Take Permit.
- **Individual Stewardship Plan (ISP):** Identify critical area and agricultural viability concerns and develop a plan to address them.

More information on farm-scale planning can be found in Section 7.8. Table 7-2 provides an overview and comparison of the three plans. An SSP checklist can be found in Appendix D.

### Implementation of Conservation Activities

The implementation of conservation activities is the ultimate goal of all other levels of VSP participation. It is the implementation of conservation activities that the protection and enhancement goals and benchmarks of this work plan are built around. Ultimately, the success of the Douglas County VSP depends on the implementation of conservation activities. Goals for the implementation of conservation activities can be found in Section 8.4.

### Education

Attending educational events and/or activities is a key way in which Douglas County Producers can participate in VSP. Educational events provide useful and demonstrated information to producers, allowing them to make more informed decisions, and ultimately, lead to the implementation of more conservation activities. Educational activities include all workshops, field tours, demonstrations, meetings, etc. in which methods and/or activities that protect and enhance critical areas while improving the long-term viability of agriculture are discussed.

- The group discussed setting participation goals for each one of the participation levels above. One suggestion was to use the voter turnout percentage as the goal for participation in the survey. Aaron paraphrased this section in the VSP statute to the group and stated that because our benchmarks are participatory in nature, we likely already meet this requirement. Aaron said that he can raise this question during the informal review in January.
- The group discussed the VSP Producer Survey. Several different suggestions for improvement were made during the discussion. One main suggestion made by April was to make the survey, as much as possible, a box check or one-word answer, rather than appearing like a paragraph response is required. Amanda suggested that Survey Monkey be used to administer the survey online. Several other small changes were made. The survey can be found in Appendix E of the draft work plan.

- The group then discussed the outreach plan. The main feedback provided by the group here was that trust needs to be developed with producers and they need to understand the importance of VSP. The best ways to do this are at one on one discussions and at grower/commodity group meetings. A suggestion was made that once the plan is complete there should be a meeting, or a series of meetings, to get the word out and build enthusiasm for VSP. A number of other small additions and suggestions were made. The Outreach Plan can be found in section 10.1 of the draft work plan. Aaron also presented his thoughts on a VSP Producer Handbook, and said he will work to try and have a draft ready for review by the next meeting.
- Aaron then laid out a schedule for implementation. The schedule lays out tasks to be completed on an annual, biennial, and every 5-year basis. No major comments were made on the implementation schedule. The schedule for implementation can be found in section 10.4 of the work plan draft.
- Aaron then presented the group with a draft budget for implementation. Aaron expressed that he is presenting the budget for each task as a percentage of the total amount of state funding allocated to Douglas County for any particular biennium. This is opposed to setting a specific dollar and cents amount needed for implementation. Aaron explained a particular clause in the VSP statute that says VSP can go away if the Commission decided that adequate funding has not been received. Aaron stated that by setting a specific number needed for implementation, the group could be setting itself up to fall victim to this clause. One comment made on the budget was to reduce monitoring and reporting by 5%. Aaron noted that monitoring costs will be higher in the first biennium of implementation to get the Remote Vegetation Monitoring and Change Detection Protocol off the ground. Another comment was to increase the portion of dedicated to securing additional funding by 5%. Aaron noted that he sees this as a starting point for the group when each year they determine the annual implementation budget and priorities, and that the actual distribution of funds is likely to fluctuate annually. The group decided to leave the budget as is for now and revisit it at a later meeting. The current budget is as follows:

<b>Task</b>	<b>% of Biennial Funding</b>
Outreach and Survey	15
Monitoring/Assessing/Reporting	15
Technical Assistance (planning, permits, etc.)	45
Education/Workshops/Field Fours/etc.	5
Funding/Cost-Share Acquisition	10
Administration	10

- The group briefly discussed any edits to chapters 6 and 7.
- The most recent versions, including edits made after this meeting, of all materials discussed are available on the Douglas County VSP webpage here:

<http://www.fostercreekcd.org/programs/voluntary-stewardship-program/>

- A draft version of the Douglas County VSP work plan will be available shortly.

Next Meeting Dates and Times:

- Monday January 22, 2018 1pm
- Monday February 12, 2018 1pm
- Monday March 12, 2018 1 pm

NOTE: The entirety of this meeting was open to public comment

Questions or Comments,

contact Aaron Rosenblum 509-423-5990 or [arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)

<http://www.fostercreekcd.org/programs/voluntary-stewardship-program/>



# Douglas County Voluntary Stewardship Program

## Workgroup Meeting #16, January 22, 2018

the in the NRCS/FSA conference room at

103 N. Baker Street, Waterville, WA 98858

1:00pm – 3:00pm

### Agenda

- Welcome, Updates, and Meeting Purpose
- Review and discuss feedback from the informal review
- Review and discuss the Producer's Handbook
- Review and discuss draft chapters 8, 9, and 10
- Future meetings' dates, times, and topics

Unfortunately, web-conferencing is unavailable at this location.

**Aaron Rosenblum**  
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**Foster Creek Conservation District**  
**[arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)**  
**509-423-5990**

*Reasonable accommodations for persons with disabilities will be made to ensure access to this meeting in accordance with the Americans with Disabilities Amendments Act of 2008.*



# **SUMMARY OF MEETING OF**

## **January 22, 2018**

In attendance: Dave Billingsley\* rancher; Alex McLean\* dryland farmer; Jeff Rock\* South Douglas CD/farmer; Norm Tupling\* Chelan-Douglas Farm Bureau; Amanda Barg\* WDFW, April Clayton\* apples/cherries/Chelan-Douglas Farm Bureau; Britt Dudek\* Orchardist/Chelan-Douglas Farm Bureau; Aaron Rosenblum\* VSP Coordinator

\*Work group member

- Program updates provided at this meeting: 1) Douglas County VSP informal review (details provided during the rest of the meeting). 2) Aaron had a booth at the Wenatchee Tree Fruit Conference the prior week promoting Douglas County VSP. He reported that results were mixed, he spoke with many people from other counties, but did speak to a few from Douglas County. Several Tri-folds were passed out.
- The group began discussing the informal review, starting with what Aaron called “minor edits” these were mostly items that required a sentence here or there, or some formatting change they are as follows:
  - Organize WG members/and others participating into which group they represent
  - More discussion about what tribe was kept updated on, in appendix C- one letter, in WP list contacts and their positions w/tribe
  - More detail in CPPE averaged score development description??
  - Explain/discuss how/why Watershed Plan Actions still relevant, if some have been completed which ones?
  - Reformat all tables to better fit on each page: 11\*17
  - On BMs: need page numbers and headers on each page/table
  - Provided reasoning why used an average vs. just 2011 enrollment (3:30 for comments)
  - For CPPE scores for nonNRCS: could compare to comparable NRCS: organic=pest/nutrient management
  - BM-15: In table say how data will be collected. Tree fruit research in Wenatchee (Michael??) – Talk to Kelly WADA may be able to help. Orchard suppliers for structures?? Packers/warehouses may have data as well
    - The group thought that the packers might consider this information proprietary. Same with the Global GAP folks. The thought was that the primary data collection method would likely be the producer survey.
  - Indicator-10: Water resources not eligible w/ECY instead use Husseman’s or Centennial. List additional options for funding of I-9 and I-10. Kelly can help with how to set up flow monitoring for cheap and may have funding to do so. Can also collect data during site visits. Retitle I-10: instream flow monitoring.
  - 720(1)(i)(i) add keeping track of outreach events p.124
  - Add a note on I-8: if groundwater management or advisory area established that would be another source of data.

- For I-11: Track yield/acre of each crop rather than total yield. Use Dept. of AG NAIP to track total acres in each crop. Packing houses will have data for yield for orchards
    - The group thought that this was not a great metric for soil health, but that there are not a lot of great options to monitor this on a watershed scale. All agreed that a paragraph should be added to the plan describing the shortcomings of this method. All also agreed that measuring the total product/acre that makes it to grain elevators or packing houses may be a good way to track agricultural viability.
  - Remote Sensing/Vegetation monitoring: Do random checks to verify the classification, do NOT need to target specific change sites-not trying to catch you doing something wrong, just random, should be minimal effort to do. Was the analysis accurate?
    - Britt mentioned that other counties are incorporating Lidar into their work plans provided by DNR. In the future this may be available to Douglas County. Aaron mentioned that programmatic adaptive management allows for this monitoring to be included when it becomes available.
  - Assistance to state agencies: add: habitat data collected as part of MSGCP is available to WDFW.
  - In BM adaptive management table add language to clarify to account for estimated discontinuation rather than enhancement.
  - I-5 match language of trigger more closely to monitoring description
  - 3 farm plans table: ISP's not necessary to apply for funding/cost-share instead of n/a
  - Add to Section 10.5: "all other reporting requirements"
  - Budget not necessary in wp, can be moved to appendix
- The group then discussed the setting participation goals for the work plan. Aaron described the discussion that occurred during the informal review and noted that the tec panel wanted to see a quantified number, not just a statement. Two options were discussed, one for setting a goal for each individual level of participation, the other for setting an overall goal for participation combined across all levels. The group ultimately decided to set an overall goal using voter turn % in the previous general election as a guideline. The thinking being that from a sociological standpoint, the number of people that vote in a non-presidential election would likely be similar to the rate of people willing to participate in a voluntary conservation program. The participation goal will be 30% of producers in the county to be achieved and then maintained after 5 years.
  - The group discussed the action threshold for adaptive management for benchmarks in the work plan. Aaron noted that the tec panel advised a more concrete and clear threshold. Two options proposed were to keep them trend based, but set a more clearly quantified metric, or use a % with a built in insurance bubble. The group chose to set the action threshold at < or = 120% enrollment rates of the protection benchmark.
  - The group discussed changing the timeline for programmatic adaptive management. The tec panel recommended 2 year cycles to make changes to the work plan before reporting period if needed. The group agreed to the 2-year cycle for adaptive management.

- The group discussed the VSP Producer Handbook. The main feedback from the group was that this was too long to hand out to folks at meetings, etc. Instead a 1-page info sheet/ or trifold should be used that directs folks to the producer handbook which should be posted online (and hardcopy by request). Other minor edits were made to the document.
- The group briefly discussed edits to chapters 8, 9, and 10 in the work plan. Dave made the comment that it should be made clear that planning level is not required to implement conservation activities. Confidentiality of plans was also discussed: a paragraph will be added to section 10.3.2 clearly stating the Commission's policy advisory concerning the issue, also will add that when possible, producer will hold planning documents, not TSPs.
- The group discussed the timeline and the submittal process for formal review. It was agreed that at the next meeting the group would decide whether to formally submit the work plan. Aaron will have a final draft of the plan sent out to the group for review one week prior to the next meeting which is scheduled for February 12, 2018 at 3-5 pm.
- The most recent versions, of all materials discussed are available on the Douglas County VSP webpage here:  
<http://www.fostercreekcd.org/programs/voluntary-stewardship-program/>
- The final draft of the Douglas County VSP work plan will be posted online when it becomes available and public comments will be taken.

Next Meeting Dates and Times:

- Monday February 12, 2018 **3pm**
- Friday March 16, 2018 – Potential first Formal Review of the work plan with the tec panel.

NOTE: The entirety of this meeting was open to public comment

Questions or Comments,

contact Aaron Rosenblum 509-423-5990 or arosenblum@fostercreekcd.org

<http://www.fostercreekcd.org/programs/voluntary-stewardship-program/>

# Douglas County Voluntary Stewardship Program

## Workgroup Meeting #17, February 12, 2018

in the Hearing Room at the Superior Court of Douglas County Building

203 S Rainier St, Waterville, WA 98858

3:00pm – 5:00pm

### Agenda

- Welcome, Updates, and Meeting Purpose
- Review and discuss final draft of the work plan
- Decide whether to formally submit the work plan for review
- Review and discuss the Producer Trifold
- Review and discuss the updated Producer's Handbook
- Future meetings' dates, times, and topics

This meeting will be available to attend remotely with web conferencing. To join, use the following URL:

[https://www.gotomeet.me/VSP\\_DouglasCO](https://www.gotomeet.me/VSP_DouglasCO)

**You can also dial in using your phone:** + (571) 317-3122    Access Code: 721-453-133

**Aaron Rosenblum**  
**VSP Coordinator**  
**Foster Creek Conservation District**  
**[arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)**  
**509-423-5990**

*Reasonable accommodations for persons with disabilities will be made to ensure access to this meeting in accordance with the Americans with Disabilities Amendments Act of 2008.*





## ***SUMMARY OF MEETING OF February 12, 2018***

In attendance: Dave Billingsley\* rancher; Alex McLean\* dryland farmer; Jeff Rock\* South Douglas CD/farmer; Amanda Barg\* WDFW, April Clayton\* apples/cherries/Chelan-Douglas Farm Bureau; Tim Behne\* dryland farmer; Curt Soper\* CDLT; Britt Dudek\* (remotely) Orchardist/Chelan-Douglas Farm Bureau; Evan Sheffels (remotely) WA Farm Bureau; Aaron Rosenblum\* VSP Coordinator

\*Work group member

- Program updates provided at this meeting: No program updates provided at this meeting.
- Aaron began by discussing the difficulty with trying to track down accurate and meaningful production data for orchardists in the county. There are many issues associated with tracking production at the county level currently and there is no organization that does it. The group agreed to include it on the “wish list” and re-evaluate the feasibility of it through adaptive management.
- A discussion then began about the designation of FWHCAs. Some work group members, as well as Evan from WAFB, are concerned about the county’s broad definition and associated mapping/designation of what FWHCAs are. The issue is that large swaths of cropland are included in the current designation, which doesn’t fit with WAC 365-190-130, and that if VSP were to go away, a more regulatory CAO would be enforced on a huge portion of landowners in the county. Amanda Barg noted that cropland may be important for migration routes, but also noted that current mapping is broad, but WDFW funding doesn’t exist to refine it at this time. It was suggested that the work group could narrow the scope of critical areas. Aaron noted that this may be beyond the scope of what is allowed under VSP and he will follow up with Bill Eller. The work group seemed to be at an impasse at this point until more clarity was brought to the subject. Evan said he would provide FB comments on the work plan to Brit, April and Norm, who could then share the comments with the work group. The group agreed to move on and reconvene in two weeks to discuss edits.

- The group discussed the VSP Producer Handbook and the producer trifold. Aaron mentioned that he would like to hand out tri-folds at upcoming outreach events. The comment received was that acreage of critical areas be removed from the documents given the lack of clarity discussed earlier in the meeting.
- The most recent versions, of all materials discussed are available on the Douglas County VSP webpage here:  
<http://www.fostercreekcd.org/programs/voluntary-stewardship-program/>
- The updated draft of the Douglas County VSP work plan will be posted online when it becomes available and public comments will be taken.

Next Meeting Dates and Times:

- Monday February 26, 2018 **3:30pm** in the hearing room
- Friday March 16, 2018 – Potential first Formal Review of the work plan with the tec panel.

NOTE: The entirety of this meeting was open to public comment

Questions or Comments,

contact Aaron Rosenblum 509-423-5990 or [arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)

<http://www.fostercreekcd.org/programs/voluntary-stewardship-program/>

# Douglas County Voluntary Stewardship Program

## Workgroup Meeting #18, February 26, 2018

in the Hearing Room at the Superior Court of Douglas County Building

203 S Rainier St, Waterville, WA 98858

3:30pm – 5:30pm

### Agenda

- Welcome, Updates, and Meeting Purpose
- Review and discuss comments/edits to draft of the work plan
- Discuss/vote on formal submission of the work plan to the technical panel
- Next steps and future meetings' dates, times, and topics

This meeting will be available to attend remotely with web conferencing. To join, use the following URL:

[https://www.gotomeet.me/VSP\\_DouglasCO](https://www.gotomeet.me/VSP_DouglasCO)

**You can also dial in using your phone:** + (571) 317-3122    Access Code: 721-453-133

**Aaron Rosenblum**  
**VSP Coordinator**  
**Foster Creek Conservation District**  
**[arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)**  
**509-423-5990**

*Reasonable accommodations for persons with disabilities will be made to ensure access to this meeting in accordance with the Americans with Disabilities Amendments Act of 2008.*







## ***SUMMARY OF MEETING OF February 26, 2018***

In attendance: Jeff Rock\* South Douglas CD/farmer; Carolyn Rely public, Amanda Barg\* WDFW; Tim Behne\* dryland farmer; Robert Ramm\* dryland farmer; Norman Tupling dryland farmer/Chelan-Douglas Farm Bureau; Jessica Gonzales\* USFWS; Curt Soper\* CDLT; Britt Dudek\* (remotely) Orchardist/Chelan-Douglas Farm Bureau; Aaron Rosenblum\* VSP Coordinator

\*Work group member

- Program updates provided at this meeting: 1) Franklin County's work plan was approved on Friday 2/23/18. Aaron noted that this is the 4<sup>th</sup> plan approved that follows the same benchmark setting philosophy as our plan does. 2) FCCD employee Olivia Schilling has taken a new job. She will remain with FCCD through mid-March. Aaron stressed that VSP remains a priority for the district.
- Aaron began by discussing the comments received from the Farm Bureau and his responses to them. It was noted that in the document, FB comments are in yellow and the VSP coordinator comments/responses are in blue. Aaron noted that there were several FB comments that related to the scope of VSP. Aaron took these comments that were scattered throughout the work plan, and made a new Section in the work plan draft called "Scope". It is now Section 1.3.
- The discussion then turned to the designation of FWHCAs and associated FB comments and VSP coordinator responses. Overall, the work group like the FB comments, but the majority of the discussion revolved around Aaron's striking of one sentence in particular. The sentence is as follows: Therefore, only cropland interfaces with identified areas will be considered an intersection between agricultural activities and critical areas in Douglas County to give priority for protection and enhancement. Aaron explained that based on his conversations with local WDFW, a work plan with this language in it would be red flagged during the formal review process. As the WDFW technical panel member is based on the west side, they generally defer to local expertise regarding specifics of the work plan. Carolyn proposed that local WDFW could provide a formal comment/response explaining this. Britt stated that he is in favor of keeping the stricken language in the work plan, thus making the technical panel request the

change during the formal review process. It is his goal to come up with the best work plan for farmers in the county. Britt put forth the argument that FWHCAs have to be managed for wildlife to be FWHCAs per the WAC definition. Aaron noted that many NRCS conservation practices include enhancements to wildlife habitat as part of the stated objective. Does that make these lands critical, and if so, there would seem now to be incentive for producers to not enroll in conservation programs, opposite the intent of VSP. The discussion then turned to ask the question: what is truly critical for protection? The consensus was that the entire FWHCA polygon is not necessarily critical, but that certain sensitive locations within the polygon were. A proposal was made to change the word “interfaces” with “intersections” in the stricken sentence. The work group decided that that is accurate, but redundant to language that already exists in the Section.

- Ultimately, the work group settled upon and agreed to a compromise. The compromise was to keep all language proposed by the FB discussing the broadness and vagueness of the FWHCA, and to request further clarity from the county, but keep the one sentence that Aaron removed out of the work plan. Instead, the work plan acknowledges that FWHCA designation is based on broad PHS polygon mapping, a WDFW product. These polygons are broad to protect the exact location of sensitive wildlife information and it is these exact locations that are most “critical” and important to protect. WDFW, USFWS, and FCCD have access to these exact locations and can use this information to help guide VSP implementation efforts. The work group also wanted to reiterate even if a parcel of cropland intersects with the broad reaching FWHCA designation, there is nothing in VSP that precludes the farming of that ground (RCW 36.70A.702(2)). See latest version of the work plan draft for exact phrasing and edits.
- The group discussed changes made to the CRP section. All agreed that they liked the changes and would keep the current changes that were made.
- The group briefly discussed small changes made elsewhere in the document. Discussions occurred on the correlation (or lack thereof) between CRP and wetlands drying, and on the definition of a BMP. Other small changes were made, see red-line edited version of the work plan for exact changes.
- The work group agreed that they are ready to vote on submitting the work plan to the technical panel for review following the incorporation of the changes discussed at this meeting. It was agreed that Aaron would make the changes and then send the new document out to the group. Aaron will also set up an electronic vote for work plan submission. The group would then have until Thursday to review and vote on submission. The work group agreed that a quorum would be reached if over half of the voting members participate in the electronic vote. Decision making will follow the agreed upon ground rules and will be made by consensus.
- The most recent versions, of all materials discussed are available on the Douglas County VSP webpage here:  
<http://www.fostercreekcd.org/programs/voluntary-stewardship-program/>

Next Meeting Dates and Times:

- TBD based on voting results and (potentially) tec panel scheduling

NOTE: The entirety of this meeting was open to public comment

Questions or Comments,

contact Aaron Rosenblum 509-423-5990 or [arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)

# Appendix J

## Outreach Materials

Appendix J shows four separate items developed for outreach as part of implementation of this work plan.

- 1) Producer Trifold
- 2) Producer Handbook
- 3) Poster Presentation
- 4) General Public Trifold



### Critical Areas in Douglas County:

Critical Area
Fish and Wildlife Habitat Conservation Areas
Wetlands
Geologically Hazardous Areas
Frequently Flooded Areas
Critical Aquifer Recharge Areas

#### Are there critical areas on my land?

Critical areas are designated by the county, and each critical area has unique characteristics that are used for identification. Maps are a useful tool to help identify where critical areas occur, however, presence of critical areas is determined on an individual site basis. If you are interested in learning more about critical areas on your land, contact Aaron Rosenblum, Douglas County VSP Coordinator.

Given the large acreage of land in Douglas County that is considered a critical area, most operations will have **at least** one critical area occurring.

## Get Involved

Check out the VSP webpage at:  
<http://www.fostercreekcd.org/programs/voluntary-stewardship-program/>

On the webpage you will find a **VSP Producer Handbook**, which provides everything you need to know about VSP.

To participate, get more information, or get on a VSP contact list for regular updates, please send a message to:

**Aaron Rosenblum**  
 VSP Coordinator  
 Office: 509-888-6376  
 Cell: 509-423-5990  
 Email: [arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)



"Serving the community through quality technical assistance for natural resource stewardship"

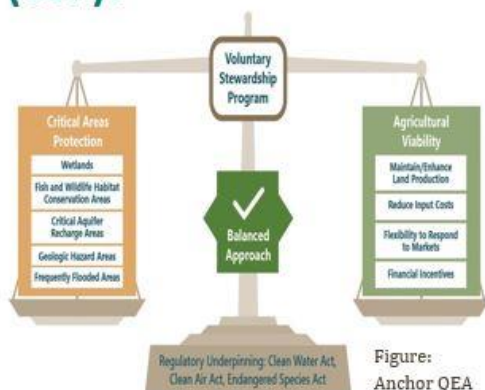
## DOUGLAS COUNTY VOLUNTARY STEWARDSHIP PROGRAM



*Volunteer or voluntold, how do you like your agriculture?*



## What is the Voluntary Stewardship Program (VSP)?



VSP aims to balance the protection of critical areas with ensuring the long term viability of agriculture.

### The Tagline:

*The Voluntary Stewardship Program aims to protect critical areas (wetlands, fish and wildlife habitat conservation areas, geologically hazardous areas, frequently flooded areas, and areas with critical recharging effect of aquifers used for potable water) where they intersect with agricultural activities, through voluntary, incentive-based measures, while at the same time improving the long term viability of agriculture.*

*The success of VSP depends entirely on the participation of Douglas County agricultural operators. If the Voluntary Stewardship Program should fail to protect critical areas in Douglas County, agricultural operators would be subject to a regulatory approach to critical area protection.*

### The Alternative to VSP: Critical Area Ordinances

Critical Area Ordinances, which would replace VSP if it fails, protect critical areas through a **regulatory pathway**. For agricultural operations this could include:

- A permit whenever changes are made to an operation
- Damage to a critical area would have to be offset at the operator's expense
- Mandatory no-touch buffers
- It requires protection at the parcel level, meaning regulators stopping by to check on the operation
- **Bottom line:** it means time, money, hassle, and uncertainty

## Who can Participate?

All agricultural operators can, and are encouraged to, participate.

## How to Participate

A VSP producer survey will be used to collect information about what current conservation activities are being implemented, and what activities producers are interested in receiving cost-share and/or technical assistance to implement.

Multiple types of **farm-scale planning** are available to aid producers in implementing conservation activities. Technical assistance to plan for conservation activities is available for **FREE** from Foster Creek CD, South Douglas CD, and NRCS.

The **implementation** of voluntary conservation activities in agricultural operations will ultimately be how critical area protection is achieved.

VSP will sponsor many **educational events, workshops, and field demonstrations** targeted to agricultural operators. There will also be many opportunities to **volunteer** in activities that will protect and enhance critical areas.

Douglas County Voluntary  
Stewardship Program

PRODUCER'S  
HANDBOOK



A quick guide to everything you  
need to know about the  
Voluntary Stewardship Program in  
Douglas County

*“Volunteer or Voluntold,  
how do you like your  
Agriculture?”*

# Contents

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Educational Opportunities.....p.8  
Technical Service Providers.....p.10

*The Voluntary Stewardship Program aims to protect critical areas where they intersect with agricultural activities, **through voluntary, incentive-based measures**, while at the same time improving the long term viability of agriculture.*

Prepared by:  
Aaron Rosenblum  
VSP Coordinator  
Foster Creek Conservation District





# Voluntary Stewardship Program Overview

The Voluntary Stewardship Program (VSP) provides a **non-regulatory, incentive-based** method of critical area protection on lands that intersect agricultural activities. VSP is an alternative to the traditional method to protect critical areas, which is to enforce regulations adopted under Critical Area Ordinances of the Growth Management Act. The primary goals of the VSP in Douglas County are:

- Promote conservation activities that protect and enhance critical areas, while maintaining and improving the long-term viability of agriculture;
- Focus and maximize voluntary incentive programs to encourage good land stewardship;
- Rely on voluntary conservation activities as the primary method of protecting critical areas. VSP will not require the cessation of agricultural activities or the use of regulations.



Figure: Anchor QEA

# Frequently Asked Questions

## **What are critical areas?**

Critical areas are specifically defined by the Growth Management Act. The five critical areas the GMA identifies are: (1) fish and wildlife habitat conservation areas, (2) wetlands, (3) geologically hazardous areas, (4) frequently flooded areas, and (5) areas with a critical recharging effect on aquifers used for potable water.

## **Are there critical areas on my land?**

Critical areas are designated by the county, and each critical area has unique characteristics that are used for identification. Maps are a useful tool to help identify where critical areas occur, however, presence of critical areas is determined on an individual site basis. If you are interested learning more about critical areas on your land contact Aaron Rosenblum, Douglas County VSP Coordinator (see back page for contact information).

Given the large acreage of land in Douglas County that is considered a critical area, most operations will have *at least* one critical area occurring.

## **Who is eligible to participate?**

All Douglas County producers can participate in VSP, regardless of whether or not critical areas occur directly on the land.

## What is the difference between VSP and Critical Area Ordinances?

Critical Area Ordinances	Voluntary Stewardship Program
· Protection achieved through a <b>regulatory pathway</b> know as Critical Area Ordinances	· Protection achieved through <b>voluntary, incentive-based measures</b>
· Protection of critical areas must be demonstrated and enforced on the <b>individual parcel</b> scale	· Protection of critical areas must be demonstrated on the <b>watershed scale</b>
· Changes to your operation would <b>require</b> a critical area <b>permit</b>	· <b>No additional permits or regulations</b>
· Damage to critical areas <b>must</b> be offset at the <b>landowner's expense</b>	· Critical area functions and values monitored at the watershed scale, and all producers in the watershed contribute to their protection
· Protection typically achieved through measures such as <b>mandatory no-touch buffers</b>	· A wide variety of <b>conservation activities</b> are available to protect and/or enhance critical areas, <b>including many that you are already doing!</b>

### What happens if VSP fails in Douglas County?

Failure of the VSP work plan will trigger the regulatory approach described above to ensure critical area protection for areas with agricultural activities occurring. This would subject Douglas County producers to new regulations!

### How could VSP fail in Douglas County?

The VSP work plan for Douglas County bases critical area protection on the amount of conservation activities that are implemented across the county. VSP in Douglas County could fail if producers do not continue to implement conservation activities that protect and/or enhance critical areas, or the implementation of activities is not communicated and accounted for. This means that all that is needed to make VSP succeed is the implementation of conservation activities that also enhance your agricultural viability!

## **What is a conservation activity?**

Conservation activities are all stewardship actions being implemented by Douglas County producers that protect, preserve, and/or enhance natural resources. These include NRCs Conservation Practices, and all other stewardship actions.

Examples of conservation activities include, *but are not limited to*: conservation cover, conservation tillage (reduced till and no till), Global G.A.P IFA Fruit and Vegetables Standard Certificate, wildlife habitat management, irrigation water management, nutrient management, prescribed grazing, riparian buffers, integrated pest management, and organic certification.

Descriptions of these and other conservation activities can be found on the VSP webpage (see back page for web address).

## **How does VSP protect my privacy?**

All VSP reporting is done at the watershed scale, not the individual parcel scale. This means that no personally identifying information is necessary to implement VSP.

## **How do I benefit from participating in VSP?**

- Participating in VSP contributes to its success, which means less regulatory burden on you and most Douglas County producers.
- FREE technical assistance is available to you to help plan and implement conservation activities
- Cost-share funding is available to help offset any potential risk of implementing conservation activities.
- VSP only encourages the implementation of conservation activities that also are intended to benefit your agricultural viability.

## **How can I participate in VSP?**

The rest of this handbook outlines the ways producers can participate in VSP. Participation in VSP is 100% voluntary.

# VSP Producer Survey

Once every five years, a VSP producer survey will be administered. This is the simplest and easiest way to participate in VSP, as filling out a survey should take no more than five minutes. **Every producer in Douglas County should fill out a survey each time it is administered (once every five years).**

Here are 3 important reasons to take the producer survey:

- **TO AVOID FURTHER REGULATIONS!** The survey is one of the primary ways the VSP accounts for all of the great voluntary conservation activities that you all are doing out there. Demonstrating to the state that Douglas County producers are protecting critical areas by implementing voluntary conservation activities is how the VSP succeeds. This means that your responses in this survey are necessary for the success of VSP.
- **The information you provide in the survey will inform and direct future cost-share and educational opportunities.** This is your chance to tell us what cost-share and educational opportunities will benefit your operation. The conservation districts will use this information to apply for funding that benefits you.
- **It's anonymous and confidential.** VSP reporting is done on the watershed scale, so there is no need to match your answers to a spot on the map.

The survey will be available at all technical service provider offices if it is currently being administered. The survey can also be completed online (see the VSP webpage for details).

## Farm-Scale Plans

There are three different types of farm-scale planning activities available to Douglas County producers **at no cost**. Farm-scale plans are used to help identify and implement conservation activities that address natural resource and agricultural viability concerns. The process provides you a one-on-one opportunity to discuss your operation with technical service providers, receive feedback, and ultimately develop a stewardship plan that meets your needs. **There is no requirement in VSP to receive any type of farm level planning to implement conservation activities.**

Each of the three plans fulfills a slightly different purpose, so the plan(s) you choose will depend largely on your own operational goals and concerns. The table on the following page will help you choose the plan that is right for you.

The three types of farm-scale planning activities and their goals are:

- **NRCS Conservation Plan:** Identify resource concerns and the appropriate conservation activities to address them.
- **Multiple Species General Conservation Plan Site-Specific Plan (SSP):** Identify conservation activities and create a plan necessary to protect shrub-steppe habitat for four species of conservation concern. **The SSP is necessary to apply for a Section-10 Incidental Take Permit.**
- **Individual Stewardship Plan (ISP):** Identify critical area and agricultural viability concerns and develop a plan to address them

### 3 Types of Farm-Scale Plans Available to Douglas County Producers

	Individual Stewardship Plan (ISP)	NRCS Conservation Plan	Multiple Species General Conservation Site Specific Plan (Site Plan)
<b>Purpose</b>	Identify critical area and agricultural viability concerns, and develop strategy to address the concerns	Identify resource concerns and conservation practices to address them	Identify resource concerns; identify conservation activities to conserve and enhance shrub-steppe habitat. The Site Plan will be used to apply for an Incidental Take Permit, which provides regulatory assurances to continue the course of lawful agricultural activities without imposing additional future regulatory restrictions.
<b>Necessary to apply for...</b>	ISP not necessary to apply for funding/cost-share or implement conservation activities	NRCS program funding/cost share	Incidental Take Permit (ITP)
<b>Applicable Programs</b>	VSP, other FCCD and SDCD programs	EQIP, SGI, CSP, VSP, MSGCP	MSGCP, VSP
<b>Entities Responsible for technical assistance</b>	FCCD, SDCD	NRCS (FCCD and SDCD may do work under an agreement with NRCS)	FCCD, USFWS
<b>Field inventory required</b>	No	Yes	Yes
<b>Monitoring required</b>	No	NRCS certifies that practice has been completed	Yes, per conditions of the permit
<b>Plan intensity level</b>	Varies, depends on landowner needs and concerns, but generally low-moderate	High	Moderate
<b>Products</b>	Narrative describing plan, including conservation activities to address critical area and agricultural viability concerns	Field inventory; narrative of resource concerns; suggested conservation practices to address resource concerns	Description and map of covered agricultural activities; map of habitat maintained with acres for each; description of voluntary conservation activities benefitting covered species' habitat; a monitoring plan
<b>Fee</b>	No	No	None to receive the Site Plan, but the Incidental Take Permit application fee for USFWS is \$100
<b>Relationship to other plans (no plan is mutually exclusive)</b>	Planning used if operator is not interested in Incidental Take Permit or NRCS programs. Applicable information from this plan will transfer to either of the other plans as long as the operation and circumstances remain consistent.	Will commonly be used as a first step towards applying for an Incidental Take Permit. Information from the NRCS Conservation Plan is used to develop the Site Plan.	Can be acquired without any other plan, although a common route will be to receive a NRCS Conservation Plan prior to a Site Plan. Information from the NRCS Conservation Plan is used to develop the Site Plan.
<b>Point of Contact</b>	Aaron Rosenblum (FCCD) 509-423-5990 Cell 509-888-6376 Office	NRCS Waterville Office 509-745-8561	Elizabeth Hanwacker (FCCD) 509-630-2369 Cell 509-888-6372 Office

## Implementing Conservation Activities

The implementation of conservation activities is the ultimate goal of all other levels of VSP participation. **Ultimately, the success of the Douglas County VSP depends on the implementation of conservation activities.**

There are many ways you can receive cost-share or technical assistance to implement conservation activities. NRCS offers funding and cost-share through a wide variety of conservation activities through various Farm Bill programs. Foster Creek Conservation District and South Douglas Conservation District offer several technical assistance and cost-share opportunities including programs for riparian restoration, biocontrols, fuels reductions, direct seed, and construction.

Even if you are not participating in one of the above programs, free technical assistance is available to you through VSP to help plan for future conservation activity implementation.

## Educational Opportunities

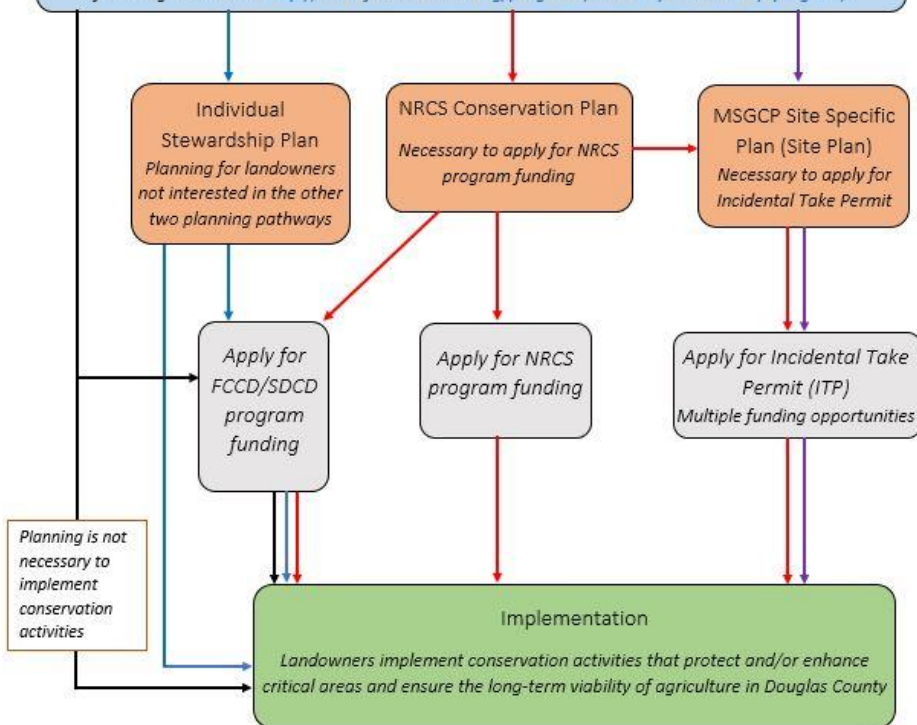
Attending educational events and/or activities is a key way you can participate in VSP. Educational events provide useful and demonstrated information, allowing you to make more informed decisions. Educational opportunities to be offered will include workshops, field tours, demonstrations, meetings. If you are interested in a particular educational activity or topic, please let one of the Technical Service Providers know and be sure to include your request on the VSP Producer Survey!



## VSP Implementation Process

### VSP Producer Survey\*

The purpose of the survey is to identify current conservation activities, and landowner interests to implement future activities. The VSP producer handbook will help landowners identify which path they are interested in following. For details: <http://www.fostercreekcd.org/programs/voluntary-stewardship-program/>



### Key

#### Participation

Baseline for participation in VSP, Informational Level participation	<span style="color: blue;">■</span>
Planning Level participation	<span style="color: orange;">■</span>
Implementation Level participation	<span style="color: green;">■</span>
Apply for funding or permit	<span style="color: gray;">■</span>

#### Planning Pathway

Individual Stewardship Plan (ISP)	<span style="color: blue;">→</span>
NRCS Conservation Plan	<span style="color: red;">→</span>
MSGCP Site Specific Plan (Site Plan)	<span style="color: purple;">→</span>

\*A VSP Producer survey is not required to receive a plan, apply for funding, or implement conservation activities. However, it is requested because it helps to better understand and meet producer needs, as well as helps to show that Douglas County is protecting and enhancing critical areas.

# Technical Service Providers

## **Foster Creek Conservation District**

203 s Rainier St. Waterville, WA 98858

509-888-6372

fostercreekcd.org

Contact for: General VSP inquires, Section 10 Incidental Take Permits, riparian restoration, biocontrols, direct seed cost-share, Farmed Smart Program, all other cost-share projects within district boundaries.

## **South Douglas Conservation District**

206 N Chelan Ave. Waterville, WA 98858

509-745-9160

southdouglascd.com

Contact for: Firewise, fuel control projects, Vets on the Farm, tree and shrub plant sale, all other cost-share projects within district boundaries.

## **Natural Resource Conservation Service – Waterville Office**

203 E Locust St. Waterville, WA 98858

509-745-8362

nrcs.usda.gov

Contact for: All Farm Bill program funding including EQIP, CSP, and SGI.

## **Douglas County VSP Webpage:**

<http://www.fostercreekcd.org/programs/voluntary-stewardship-program/>

## **Questions?**

Aaron Rosenblum

Douglas County VSP Coordinator

O: 509-888-6376 C: 509-423-5990

arosenblum@fostercreekcd.org

# Douglas County

## Voluntary Stewardship Program

*“Volunteer or voluntold, how do you like your agriculture?”*

The Voluntary Stewardship Program aims to protect critical areas where they intersect with agricultural activities through **voluntary, incentive-based measures**, while at the same time improving the long term viability of agriculture.

DOUGLAS COUNTY PRODUCERS:  
THIS PROGRAM BENEFITS YOU!



# Two Options for Agriculture to Protect Critical Areas

Growth Management Act	Voluntary Stewardship Program
Protection achieved through a <b>regulatory pathway</b> known as Critical Area Ordinances	Protection achieved through <b>voluntary, incentive based measures</b>
Protection of critical areas must be demonstrated and enforced on the <b>individual parcel scale</b>	Protection of critical areas must be demonstrated on the <b>watershed scale</b>
Changes to your operation would <b>require a critical area permit</b>	<b>No additional permits or regulations</b>
Damage to critical areas <b>must be offset at the landowner's expense</b>	Critical area functions and values monitored at the watershed scale, and all conservation activities implemented in the watershed contribute to their protection
Protection typically achieved through measures such as <b>mandatory no-touch buffers</b>	A wide variety of conservation activities are available to protect and/or enhance critical areas, <b>including many that you are already doing!</b>

*The Success of VSP in Douglas County depends entirely on the participation of agricultural producers. If the program should fail to protect critical areas, agricultural operators would be subject to a regulatory approach to critical area protection.*

# How to Participate

**Every producer in Douglas County can participate!**

- Sign up to receive VSP information and materials
- Take the VSP Producer Survey (coming in 2018)
  - Ensures the success of VSP because it helps account for all the great conservation activities producers are doing
  - Allows producers to tell Technical Service Providers which conservation activities they are interested in receiving cost-share or technical assistance for in the future
- Receive free technical assistance to plan for future conservation activity implementation
- Implement conservation activities that protect and/or enhance critical areas and ensure your long-term agricultural viability



## The Next Steps:

- The county-wide work plan is on track to be completed and approved by the state in the spring of 2018
- A VSP producer handbook that contains everything you need to know will be available shortly



Questions?

Contact:

Aaron Rosenblum

Douglas County VSP Coordinator

[arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)

509-888-6376 office

509-423-5990 cell



Douglas County, WA

### What are the 5 Critical Areas?

- *Fish and Wildlife Habitat Conservation Areas* are lands and waters that provide habitat to support fish and wildlife species throughout their life stages.
- *Wetlands* are areas inundated or saturated by surface water or groundwater for at least part of the growing season and which support vegetation adapted for life in saturated soil conditions.
- *Geologically Hazardous Areas* are areas susceptible to erosion, sliding, and other geological events.
- *Frequently Flooded Areas* are 100-year floodplains and floodways.
- *Critical Aquifer Recharge Areas* are areas that have a critical recharging effect on aquifers used for drinking water.

### What is meant by protection?

The functions and values of critical areas must be maintained as of the effective date of VSP, July 22, 2011. The Douglas County VSP work plan sets quantifiable benchmarks to measure agriculture's contribution to critical area protection.

## Get Involved

To participate, get more information, or get on a VSP contact list for regular updates, please send a message to:

### Aaron Rosenblum

VSP Coordinator

Office: 509-888-6372

Cell: 509-423-5990

Email: [arosenblum@fostercreekcd.org](mailto:arosenblum@fostercreekcd.org)

Website:

<http://www.fostercreekcd.org/programs/voluntary-stewardship-program/>



*Calochortus macrocarpus*  
sagebrush mariposa lily



"Serving the community through quality technical assistance for natural resource stewardship"

## DOUGLAS COUNTY VOLUNTARY STEWARDSHIP PROGRAM



*Volunteer or voluntold,  
how do you like your  
agriculture?*



## What is the Voluntary Stewardship Program (VSP)?



VSP aims to balance the protection of critical areas with ensuring the long term viability of agriculture.

### The Tagline:

*The Voluntary Stewardship Program aims to protect critical areas (wetlands, fish and wildlife habitat conservation areas, geologically hazardous areas, frequently flooded areas, and areas with critical recharging effect of aquifers used for potable water) where they intersect with agricultural activities, through voluntary, incentive-based measures, while at the same time improving the long term viability of agriculture.*

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*The success of VSP depends entirely on the participation of Douglas County agricultural operators. If the Voluntary Stewardship Program should fail to protect critical areas in Douglas County, agricultural operators would be subject to a regulatory approach to critical area protection.*

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### The Alternative to VSP: Critical Area Ordinances

Critical Area Ordinances, which would replace VSP if it fails, protect critical areas through a **regulatory pathway**. For agricultural operations this could include:

- A permit whenever changes are made to an operation
- Damage to a critical area would have to be offset at the operator's expense
- Mandatory no-touch buffers
- It requires protection at the parcel level, meaning regulators stopping by to check on the operation
- **Bottom line:** it means time, money, hassle, and uncertainty

## Who can Participate?

All agricultural operators can, and are encouraged to, participate. There will also be plenty of opportunities for the **general public** to participate.

## How to Participate

A **VSP producer survey** will be used to collect information about what current conservation activities are being implemented, and what activities producers are interested in receiving cost-share and/or technical assistance to implement.

Multiple types of **farm-scale planning** are available to aid producers in implementing conservation activities.

The **implementation** of voluntary conservation activities in agricultural operations will ultimately be how critical area protection is achieved.

VSP is for everyone! The program will sponsor many **educational events** for both children and adults. There will also be many opportunities to **volunteer** in activities that will protect and enhance critical areas.

□

# Appendix K

## Initial Budget for Implementation

The work group has developed and discussed the following budget as starting point for developing an annual budget. The actual annual budget will reflect the current year's priorities and implementation needs. This percentage breakdown will be used for as a guideline for implementation during the first biennium.

<b>Task</b>	<b>% of Biennial Funding</b>
Outreach and Survey	15
Monitoring/Assessing/Reporting	15
Technical Assistance (planning, permits, etc.)	45
Education/Workshops/Field Fours/etc.	5
Funding/Cost-Share Acquisition	10
Administration	10

*Table K-1: VSP Initial Implementation Budget*



## Appendix L



### Individual Stewardship Plan Checklist

- Identify and discuss critical area concerns with landowner/operator.
- Discuss agricultural viability concerns with landowner/operator.
- Develop a plan in conjunction with the landowner/operator that will address critical area and agricultural viability concerns through the implementation of voluntary conservation activities.
- Discuss potential funding sources and cost share available to assist the landowner/operator in implementing the plan.

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Prepared for (landowner/operator)

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Prepared by (Technical Service Provider)

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Date