

U.S. Fish & Wildlife Service

Willamette Valley Conservation Area

Land Protection Plan



This page intentionally left blank

Land Protection Plan
for the
**Proposed Willamette Valley
Conservation Area**

**Portions of
Benton, Lane, Linn, Marion, Polk, and Yamhill
Counties, Oregon**

November 2022

Prepared By:

U.S. Fish and Wildlife Service

Willamette Valley National Wildlife Refuge Complex

26208 Finley Refuge Road

Corvallis Oregon, 97333

and

Pacific Region 1

National Wildlife Refuge System

911 NE 11th Avenue

Portland, OR 97232

This page intentionally left blank

TABLE OF CONTENTS

1.0 INTRODUCTION AND PURPOSE	1
2.0 WILLAMETTE VALLEY NATIONAL WILDLIFE REFUGE COMPLEX.....	4
3.0 PROPOSED ACTION: ESTABLISH THE WILLAMETTE VALLEY CONSERVATION AREA	4
4.0 LAWS PROVIDING AUTHORITY TO EXPAND THE NATIONAL WILDLIFE REFUGE SYSTEM	6
4.1 NATIONAL WILDLIFE REFUGE SYSTEM IMPROVEMENT ACT OF 1997	6
4.2 ENDANGERED SPECIES ACT OF 1973.....	7
4.3 LAND AND WATER CONSERVATION ACT OF 1965.....	7
4.4 FISH AND WILDLIFE ACT OF 1956	7
4.5 MIGRATORY BIRD CONSERVATION ACT OF 1929.....	7
5.0 CONSERVATION EASEMENTS.....	7
6.0 FULFILLING NATIONAL WILDLIFE REFUGE SYSTEM MISSION AND GOALS	8
7.0 FULFILLING THE CONSERVATION GOALS AND OBJECTIVES OF THE WILLAMETTE VALLEY CONSERVATION STUDY	9
8.0 ADDRESSING THE SERVICE’S STRATEGIC GROWTH POLICY	9
8.1 PRIORITY CONSERVATION SPECIES	10
8.2 SUMMARIZE THE SCIENCE-BASED CRITERIA IDENTIFIED IN THE STRATEGIC GROWTH POLICY USED TO DEMONSTRATE SUPPORT FOR PRIORITY CONSERVATION TARGETS	10
8.2.1 <i>Recovery of Threatened and Endangered Species</i>	10
8.2.2 <i>Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington</i>	10
8.2.3 <i>Draft Recovery Plan for the Streaked Horned Lark</i>	12
8.3 CONSERVING MIGRATORY BIRDS OF CONSERVATION CONCERN.....	12
8.4 IMPLEMENTING THE NORTH AMERICAN WATERFOWL MANAGEMENT PLAN	13
9.0 IDENTIFYING PRIORITY AREAS FOR CONSERVATION ACTIONS.....	13
9.1 CONSERVATION STUDY GAP ANALYSIS.....	14
10.0 VULNERABILITY TO CLIMATE CHANGE AND OTHER NON-CLIMATE STRESSORS AND HOW THE REFUGE SYSTEM WILL MITIGATE STRESSORS TO ENSURE THE PROJECT’S RESILIENCY	16
11.0 SUMMARIZE NON-BIOLOGICAL CONSIDERATIONS SUCH AS POTENTIAL FUNDING, SUPPORT OF LANDOWNERS, AND PARTICIPATION OF CONSERVATION PARTNERS THAT AFFECT PLAN FEASIBILITY	20

FIGURES

FIGURE 1 WILLAMETTE VALLEY LAND PROTECTION PLAN VICINITY	3
FIGURE 2 30-YEAR CONSERVATION CONCEPT MAP: WILLAMETTE VALLEY OAK AND PRAIRIE COOPERATIVE.....	5
FIGURE 3 WILLAMETTE VALLEY LAND PROTECTION PLAN PRIORITY CONSERVATION AREAS	15
FIGURE 4 WILLAMETTE VALLEY LAND PROTECTION PLAN CURRENT CONNECTIVITY AND CLIMATE FLOW	18
FIGURE 5 WILLAMETTE VALLEY LAND PROTECTION PLAN CLIMATE RESILIENT LANDSCAPE.....	19
FIGURE 6. TRACT DECISION TREE PRIORITIZATION, SOURCE: USFWS 2014.....	21

TABLES

TABLE 1. GAP ANALYSIS OF WILLAMETTE VALLEY CONSERVATION STUDY HABITAT OBJECTIVES.....	16
TABLE 2. PRELIMINARY FISCAL YEAR 2023 TRACT ASSESSMENTS – WILLAMETTE VALLEY REFUGES AND CONSERVATION AREA (CA).....	21

APPENDICES

APPENDIX A LITERATURE CITED.....	A-1
APPENDIX B LIST OF ACRONYMS	B-1
APPENDIX C CONCEPTUAL MANAGEMENT PLAN PROPOSED WILLAMETTE VALLEY CONSERVATION AREA OREGON	C-1
APPENDIX D ENVIRONMENTAL ASSESSMENT OF THE PROPOSED WILLAMETTE VALLEY CONSERVATION AREA LAND PROTECTION PLAN.....	D-1

1.0 Introduction and Purpose

The U.S. Fish and Wildlife Service (Service, We) proposes a partnership with the Willamette Valley Oak and Prairie Cooperative (Cooperative) to help support their mission to permanently protect and maintain a functional, resilient network of oak and prairie habitats in Oregon's Willamette Valley. This draft Land Protection Plan (LPP) proposes two alternatives to deliver perpetual protection, in the form of conservation easements and fee title acquisition.

The first alternative would protect up to 22,650 acres of prairies, oak savannas, and oak woodlands contributing to efforts by the Department of the Interior and other federal agencies to support locally led efforts to restore the lands and waters we all depend on (DOI 2021). Protecting 22,650 acres would allow the Service to achieve one-half of the oak and grassland habitat objectives of the Service's [Willamette Valley Conservation Study](#) (USFWS 2017) (Conservation Study) that are not yet protected, relying on the diverse group of conservation partners that came together to form the Cooperative to continue with their land protection efforts to complete their vision. Members of the Cooperative engaged in land protection efforts in the valley include the Confederated Tribes of the Grand Ronde Community of Oregon, the Confederated Tribes of the Siletz Indians, several Soil and Water Conservation Districts, and members of the Coalition of Oregon Land Trusts.

Under the second alternative, the Service would work to protect 45,300 acres of prairies, oak savannas, and oak woodlands, which would allow the Service to achieve all the Conservation Study's habitat objectives for grasslands and oak woodlands that are not yet protected.

Under both alternatives, the Service would be authorized to work with willing private landowners wishing to permanently protect populations of species listed under the federal Endangered Species Act that occur on their property anywhere within the Conservation Area. Protecting a population would have to contribute to achieving published recovery criteria (USFWS 2010, USFWS 2019).

The Oregon Department of Fish and Wildlife (ODFW) is also a member of the Cooperative and maintains an active conservation presence in the valley. ODFW manages the Willamette Wildlife Mitigation Program, which mitigates impacts to wildlife caused by the federal Willamette River basin flood control and hydroelectric project, through a land protection program funded by the Bonneville Power Administration. ODFW also manages two wildlife areas in the valley: E.E. Wilson and Fern Ridge. The E.E. Wilson Wildlife Area covers approximately 1,788 acres and is located about 10 miles north of Corvallis on the Willamette Valley floor. The Fern Ridge Wildlife Area is located west of Eugene and totals 5,794 acres of land and water within the Fern Ridge Project.

The Cooperative is a partnership with a long-term vision to conserve and maintain prairie and oak habitats within the Willamette Valley ecoregion through a regionally focused, collaborative, and sustainable program. This proposal would implement the Cooperative's vision within the framework of the Study's population and habitat objectives.

The Willamette Valley constitutes the southern extent of a larger inland ecosystem flanked by the Cascade Mountains to the east and the coastal mountains of Oregon, Washington, and British Columbia to the west (Figure 1). Its prairie and oak components create a stark contrast to the surrounding landscape dominated by conifer forests. This uniqueness represents a vital part of Oregon's biodiversity and the valley's natural heritage, featuring a high degree of species and habitat specialization that is far different from that found in the surrounding matrix of coniferous forests (Altman and Stephens 2012).

However, oak and prairie habitats in the valley now occupy less than 10 percent of their historic range. What remains is generally found in highly fragmented patches that are impacted by invasive species and colonizing woody vegetation. The Willamette Valley Upland Prairie and Savanna is recognized as one of the most critically endangered ecosystems of the United States (Noss et al. 1995). Native species and ecosystems may be at an ecological tipping point due to the diminished and fragmented native habitats in the Valley, as evidenced by the declining populations and range contractions of many native fish, wildlife, and plant species. Eleven species native to the valley have been listed under the federal Endangered Species Act (ESA). Many other species have been extirpated and many more are threatened with extirpation, including western meadowlark, the Oregon State Bird (ODFW 2021). Extirpation refers to a species of plant or animal that ceases to exist in a given geographic area (e.g., the Willamette Valley), though it still exists elsewhere. A focus on grasslands (prairies and oak savannas) and oak woodlands is justified by the fact that very little of these habitats remain, and what does remain now occurs as remnant patches scattered across the valley (ODFW 2016).

To address these issues, a diverse consortium of; federal, state, and local agencies; tribes; Soil and Water Conservation Districts, and non-governmental organizations including watershed councils and land trusts organized to form the Cooperative. The Cooperative developed the [Willamette Valley Oak and Prairie Cooperative Strategic Action Plan](#) in 2020 (WVOPC 2020). A twelve-person Steering Committee and a Working Group of over forty technical experts, including several from the Service and ODFW, participated in the planning process and provided guidance during development of the Strategic Action Plan. The Cooperative fills a critical role as a coordinating body of key oak and prairie interest groups to oversee implementation of the Strategic Action Plan.

The Cooperative embodies the principles of a locally led effort to conserve and restore important habitats and species. It is a locally led and locally designed conservation effort that lays out an inclusive approach to conservation for all people. One of the Cooperative's goals is to *"increase community capacity to support healthy ecosystems and promote environmental justice"* by promoting *"community awareness of the cultural, economic, and ecological importance of oak and prairie habitat, engage and involve underrepresented populations and perspectives, and build broad support for expanded conservation and restoration efforts that includes meaningful participation by a broad and inclusive coalition of interests diverse in race, ethnicity, gender, and ability"* (WVOPC 2020).

This proposal also embraces two recommendations for early focus and progress for restoring such habitats: to expand conservation efforts already identified through partnerships with external stakeholders and to work with states, local communities, and others to explore where there is support to enhance the National Wildlife Refuge System (Refuge System) (DOI 2021).

Despite years of habitat loss and fragmentation in the Willamette Valley, significant conservation opportunities still exist. These opportunities, if acted upon, will have essential and lasting benefits to Oregon's natural and human communities. Not only would habitat for declining wildlife populations be provided, but safe and welcoming open spaces to access and enjoy wildlife-dependent recreation would also be provided. These activities include, where appropriate, hunting, fishing, wildlife observation, photography, environmental education, and interpretation. These areas would purify and safeguard drinking water, clean the air, and would increase resilience in the face of climate change while supporting the recovery of endangered and threatened species in the valley.

FIGURE 1 Willamette Valley Land Protection Plan Vicinity

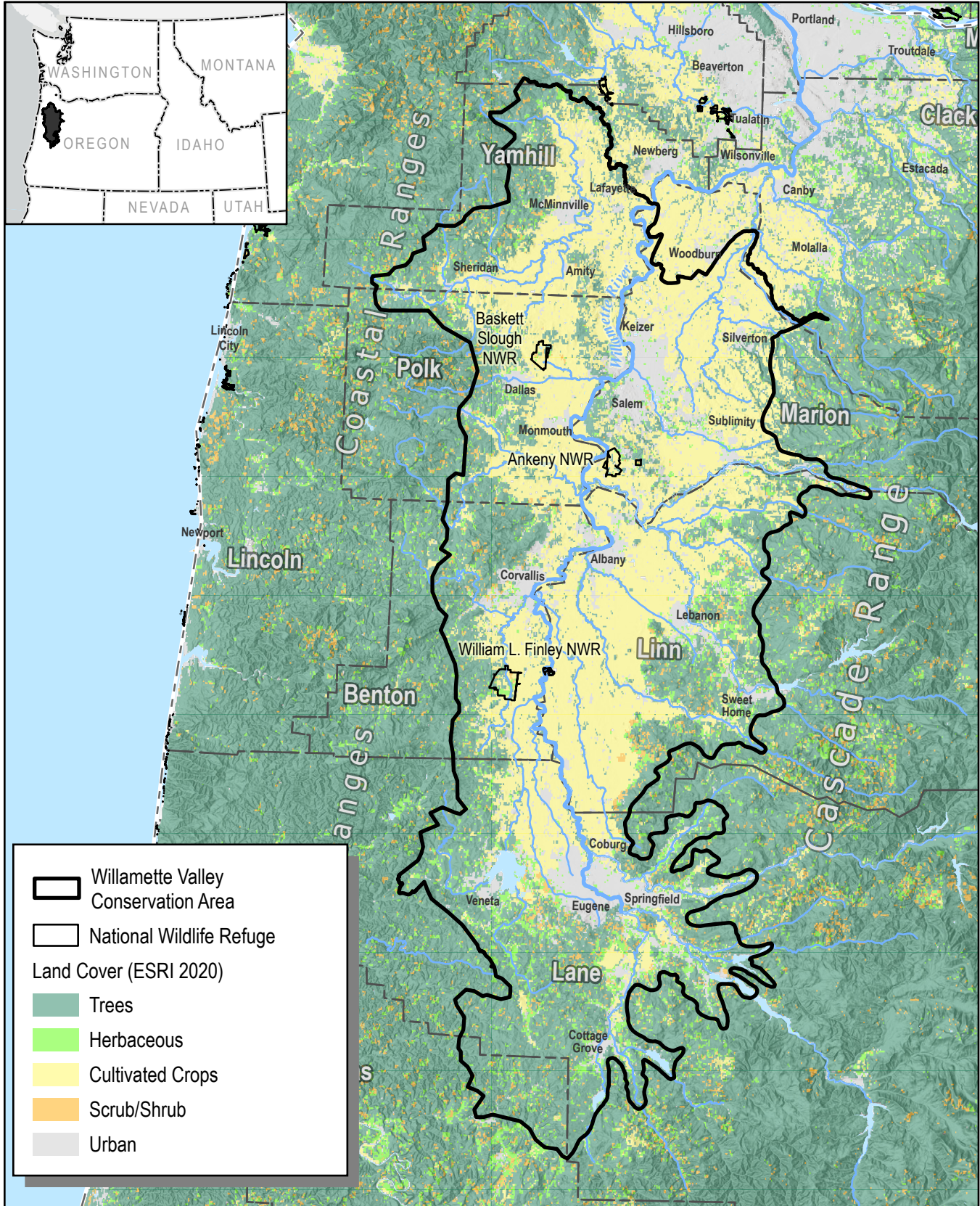


U.S. Fish & Wildlife Service

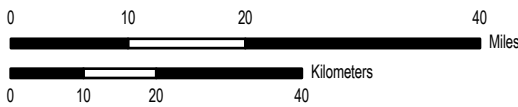
Willamette Valley Land Protection Plan

Oregon

Figure 1. Vicinity



USFWS, NWRS
 PORTLAND, OREGON
 MAP DATE: 8/15/2022
 BASE DATA: ESRI Land Cover 2020
 FILE: R1_NWRS_FY22_459



In this Land Protection Plan the Service

- describes its rationale for proposed land protection actions in Oregon’s Willamette Valley;
- identifies areas of the valley of conservation interest and describes how they were identified; and
- describes the habitat protection methods that could be employed.

A list of acronyms is found in Appendix B. The Conceptual Management Plan for the Proposed Willamette Valley Conservation Area (Appendix C) describes initial management actions the Service may take to maintain a site’s biological integrity, diversity, and environmental health until a Comprehensive Conservation Plan is developed. An Environmental Assessment of this Land Protection Plan (Appendix D) analyzes the reasonably foreseeable environmental and socio-economic consequences of implementing the two action alternatives against a no action alternative.

2.0 Willamette Valley National Wildlife Refuge Complex

Protected lands would become part of the Willamette Valley National Wildlife Refuge Complex (Complex). At 11,145 acres, the Complex is comprised of Baskett Slough, Ankeny, and William L. Finley National Wildlife Refuges. The locations of these three Refuges are shown on Figure 1. These Refuges were created in the mid-1960s to protect historic habitats, including wetlands, oak, prairie, and riverbank habitats, and the species that depend on them.

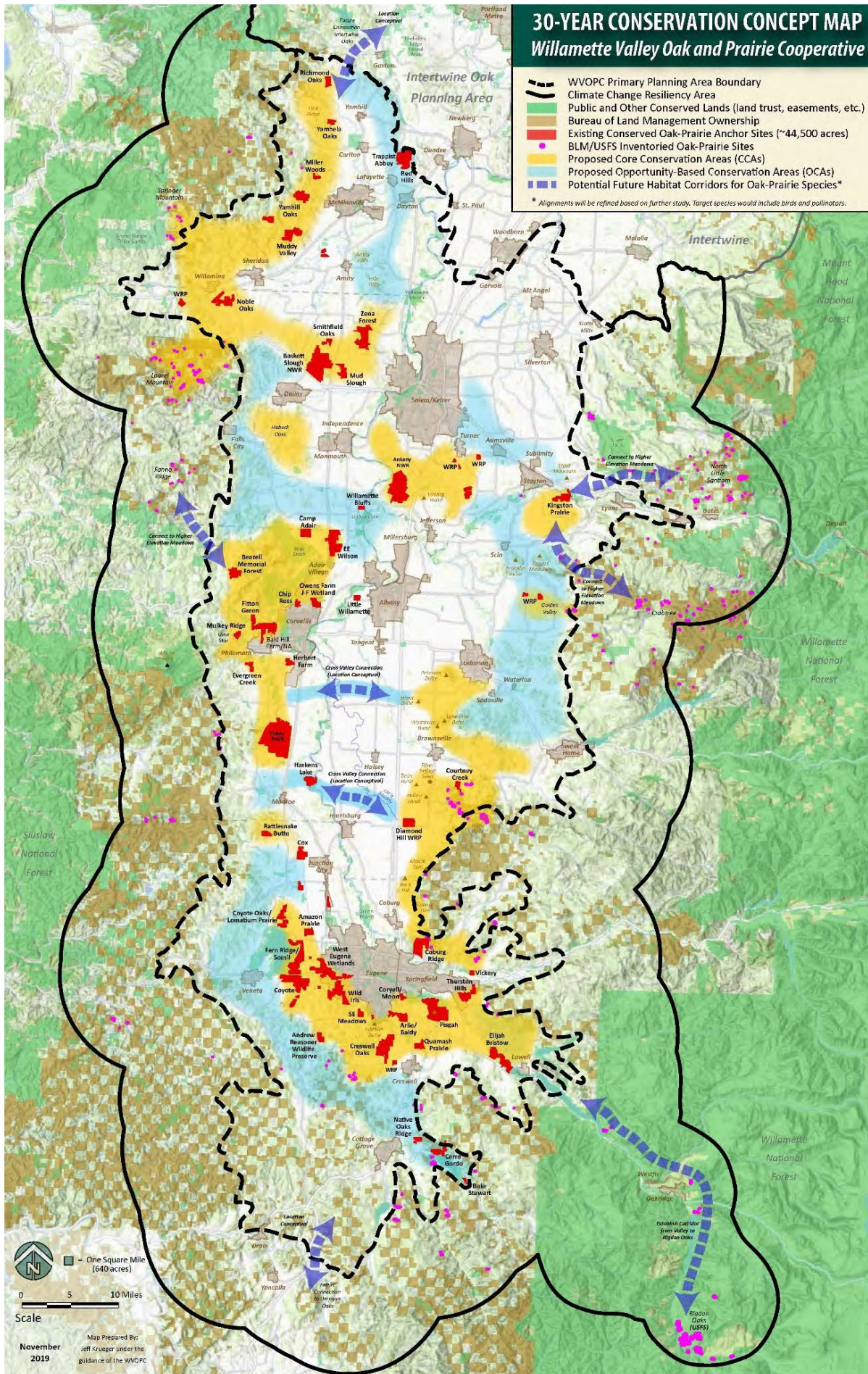
These habitats have been severely reduced on the landscape and many of the associated species are in decline. The Complex currently supports seven species listed under the federal Endangered Species Act (ESA), six of which are associated with imperiled prairie habitats, as well as the array of at-risk species identified by partners in various ecoregional strategic plans. This Land Protection Plan will further the mission of the Complex by expanding its land protection tools to address the landscape-scale challenges facing the valley’s native species and the Service’s partners in the valley.

The Complex maintains a refuge-based Partners for Fish and Wildlife Program, with a Focus Area in the Willamette Valley that has been actively working with private landowners and conservation partners in the valley for the past 25 years. Through this collaborative approach, thousands of acres of wildlife habitat have been restored, but the Partners program cannot offer permanent protection of these habitats.

3.0 Proposed Action: Establish the Willamette Valley Conservation Area

The proposed action reflects the core mission of the Service: to work with others to conserve, protect, and enhance, fish, wildlife, plants, and their habitats for the continuing benefit of the American people. Under both action alternatives, the Service would create the Willamette Valley Conservation Area (Conservation Area) within the Cooperative’s primary planning area for their 30-year Conservation Concept Map (Figure 2). The Conservation Area includes all lands within the Willamette Valley Level III Ecoregion as defined by Omernik (1987), excluding the portion of the ecoregion in Washington State and the Portland Metropolitan Area. It includes two of the three largest cities in Oregon (Salem and Eugene), and six of the largest 15 cities in the state. Those six cities have a combined population of over 550,000 people.

FIGURE 2 30-Year Conservation Concept Map: Willamette Valley Oak and Prairie Cooperative



In total, the Conservation Area encompasses approximately 2.4 million acres, almost all of which is in private ownership. It is estimated that less than four percent of the area is currently managed by public or non-profit organizations for habitat conservation purposes or is otherwise in a permanent conservation status (e.g., private lands protected by conservation easements) (WVOPC 2020).

Within the Conservation Area, the Service would strategically acquire conservation easements and fee title on land from willing landowners wishing to sell an interest in their land to the Service. Conservation easements enable landowners to protect resources they value on their land for their children and future generations while maintaining private ownership of the land. The decision to sell rests completely with the landowner who decides to sell an interest in their land to the Service. It is the policy of the Service to acquire land or interests in land only from willing sellers when establishing or expanding a refuge. Condemnation of private land will not be considered. Service policy is to acquire the minimum interest necessary to reach management objectives (USFWS 1996).

A Conservation Area is the area inside an approved boundary within which the Service has the authority to acquire property from willing landowners wishing to sell their land or a conservation easement to the Service in order to establish new units of the Refuge System. A Conservation Area is established upon approval by the Director of the Service. Land acquisition within a Conservation Area is limited by an acreage cap that is much smaller than the acreage of the Conservation Area itself. A Conservation Area larger than the acquisition acreage cap is required for the overall acreage objective to be achieved. All properties with suitable habitat will not be for sale in the Conservation Area, and properties with complex infrastructure or incompatible land uses would not be considered. Once the acquisition cap is achieved, land acquisition efforts would cease, and the Conservation Area would no longer be in effect. Any future refuge expansion would require additional Service approval in accordance with Service's expansion policies.

4.0 Laws Providing Authority to Expand the National Wildlife Refuge System

Refuge System lands are acquired under various legislative and administrative authorities for specified purposes. Several laws provide the authority to add lands to the Refuge System including the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997, the Endangered Species Act of 1973, the Land and Water Conservation Act of 1965, and the Migratory Bird Treaty Act of 1963.

4.1 National Wildlife Refuge System Improvement Act of 1997

The National Wildlife Refuge System Improvement Act of 1997 (Improvement Act) amended the National Wildlife Refuge System Administration Act of 1966, which continues to serve as the parent legislation for the Refuge System. The Improvement Act guides the development and operation of the Refuge System. It identifies the mission of the Refuge System; requires the Secretary of the Interior to maintain the biological integrity, diversity, and environmental health of refuge lands; mandates a "wildlife first" policy on refuges; and requires comprehensive conservation planning.

The Improvement Act stipulates that in administering the Refuge System, the Secretary shall

"plan and direct the continued growth of the System in a manner that is best designed to accomplish the mission of the System, to contribute to the conservation of the ecosystems of the United States, to complement efforts of States and other Federal agencies to conserve fish and

wildlife and their habitats, and to increase support for the System and participation from conservation partners and the public.”

4.2 Endangered Species Act of 1973

The Endangered Species Act (ESA) directs all federal agencies to participate in endangered species conservation by protecting endangered and threatened species and restoring them to a secure status in the wild. Section 7 of the ESA charges federal agencies to aid in the conservation of species listed as threatened or endangered and requires federal agencies to ensure that their activities will not jeopardize the continued existence of ESA-listed species or adversely modify designated, critical habitats. Section 5 of the ESA authorizes the Secretary of the Interior to acquire by purchase, donation, or otherwise, lands, waters, or interests therein to conserve endangered or threatened species.

4.3 Land and Water Conservation Act of 1965

The Land and Water Conservation Act authorizes the use of monies from certain user fees, the proceeds from the disposal of surplus federal property, the federal tax on motorboat fuels, and oil and gas lease revenues (primarily Outer Continental Shelf oil monies) to fund land acquisition for various federal agencies. The Great American Outdoors Act, which was signed into law in 2020, uses royalties from offshore oil and natural gas to permanently add \$900 million per year to the Land and Water Conservation Fund to invest in conservation and recreation opportunities across the country.

4.4 Fish and Wildlife Act of 1956

The Fish and Wildlife Act of 1956 established a comprehensive national fish and wildlife policy and authorized the Secretary of the Interior to take steps required for the development, management, advancement, conservation, and protection of fisheries resources and wildlife resources through research, acquisition of refuge lands, development of existing facilities, and other means.

4.5 Migratory Bird Conservation Act of 1929

The Migratory Bird Conservation Act provides for the acquisition of suitable habitats for use as migratory bird refuges, and the administration, maintenance, and development of these areas, under the administration of the Secretary of the Interior.

5.0 Conservation Easements

The Service is proposing to protect 22,650 acres through fee title acquisitions or through conservation easements. Fee title acquisitions are voluntary transactions between a landowner and the Service in which the landowner retains no ownership of the property and gives up all rights to the property.

A conservation easement is a legal agreement that a property owner voluntarily enters into with the Service to permanently limit certain uses of the land in order to protect or restore ecologically significant conservation values. A conservation easement may restrict landowner use of the property by prohibiting specified activities such as development for housing or specified agricultural practices such as haying or grazing.

Development for residential and commercial or industrial purposes would not be permitted on properties under a conservation easement. Alteration of the natural topography and conversion of

native grasslands and oak woodlands to cropland would be prohibited. Conservation easements may also prohibit such activities as draining, filling, or leveling lands.

The Service would seek to buy perpetual conservation easements from willing sellers for fair market value as determined by an appraisal, on privately owned lands that would provide valuable wildlife habitat. The easement contract language would clearly specify any restricted rights or land use activities to minimize confusion, facilitate enforcement, and specify the necessary level of protection and limits to land use. A conservation easement and associated restrictions are tied to the parcel of land in perpetuity and would apply to any future owner of the parcel.

All land protected by a conservation easement would remain in private ownership and on local property tax rolls. Paying property taxes would remain the responsibility of the landowner. Service management of lands protected by a conservation easement would be spelled out in the easement. Certain land management activities such as invasive species control would typically remain with the landowner. The Service may seek to provide participating landowners with help for invasive weed control and minor habitat restoration through the Partners for Fish and Wildlife Program. Control of public access to the land would remain under the control of the landowner, unless the landowner requests otherwise.

For properties that contain endangered species or requires extensive restoration, an easement that both prohibits landowner actions and provides authority for affirmative acts by the Service (e.g., habitat restoration, etc.) may be more appropriate for such circumstances and would be negotiated with the landowner wishing to conserve their land through a conservation easement. Affirmative acts the Service may take depending on the condition of the land being protected are described in the CMP.

6.0 Fulfilling National Wildlife Refuge System Mission and Goals

The mission of the National Wildlife Refuge System (Refuge System) is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife and plant resources and their habitats within the United States for the benefit of present and future generations of Americans. The Refuge System is the world's largest network of public lands and waters set aside specifically for conserving wildlife and protecting ecosystems. From its inception in 1903, the Refuge System now encompasses lands, waters (including marine national monuments), and interests therein administered by the Service as wildlife refuges, wildlife ranges, wildlife management areas, game preserves, and conservation areas (as proposed here). Located in all 50 states, the Refuge System is visited annually by more than 40 million people to observe and photograph wildlife, fish, hunt, or participate in environmental education and interpretive activities.

The goals of the National Wildlife Refuge System are:

- To fulfill our statutory duty to achieve refuge purpose(s) and further the System mission.
- Conserve, restore where appropriate, and enhance all species of fish, wildlife, and plants that are endangered or threatened with becoming endangered.
- Perpetuate migratory bird, interjurisdictional fish, and marine mammal populations.
- Conserve a diversity of fish, wildlife, and plants.
- Conserve and restore, where appropriate, representative ecosystems of the United States, including the ecological processes characteristic of those ecosystems.
- To foster understanding and instill appreciation of fish, wildlife, and plants, and their conservation, by providing the public with safe, high-quality, and compatible wildlife-dependent

public use. Such use includes hunting, fishing, wildlife observation and photography, and environmental education and interpretation.

Lands protected within the Conservation Area would help fulfill the Refuge System mission and goals through their contribution to achieving the Refuge purpose of protecting native wildlife habitat.

7.0 Fulfilling the Conservation Goals and Objectives of the Willamette Valley Conservation Study

The Conservation Study (USFWS 2017) is a multi-partner landscape conservation design that identified priority conservation areas within the valley. If protected, these areas would assist in meeting population objectives for species chosen to represent the valley's native oak and grassland habitats. By implementing management strategies that support the ecological conditions favored by the selected species, the conditions for a larger set of species characteristic of that habitat would also be supported (USFWS 2008).

The Conservation Study concluded that the amount and distribution of lands currently managed for sensitive, native wildlife species is inadequate for depressed populations to recover to a healthy and viable condition across their range in the valley. The study recommended that networks of grasslands, oak woodlands, and riverbank habitats in specific areas of the valley—subsets of Conservation Opportunity Areas identified by the Oregon Department of Fish and Wildlife, be protected as safe and secure habitat to allow populations of sensitive native wildlife and plants space and time to recover. Establishing these habitat networks provides an opportunity to reclaim a portion of the valley's natural heritage for current and future generations of Oregonians to experience and enjoy.

The Cooperative's mission is

“to protect, restore, and maintain a functional, resilient network of oak and prairie habitats in the Willamette Valley through a coordinated and strategic approach that leverages resources, focuses on priority geographies and species, and produces substantial ecological returns” (WVOPC 2020).

The Cooperative's mission addresses the issues raised and solutions proposed by the Conservation Study: to create networks of safe and secure habitat, within which populations of sensitive native wildlife and plants would have the space and time to recover.

The 22,650-acre alternative would allow the Service to protect one-half of the Conservation Study's grassland and oak woodland habitat objectives that are not currently protected. The 45,300-acre alternative would allow the Service to meet all the currently unprotected grassland and oak woodland habitat objectives in the Study.

The extensive loss of native grasslands and oak woodlands has resulted in small and disjunct (separated and distinct from one another) populations that are at increased risk of genetic isolation and extirpation. The fragmented nature of the remaining patches creates barriers to dispersal especially for some amphibians, reptiles, invertebrates (e.g., Fender's blue butterfly) and small mammals.

8.0 Addressing the Service's Strategic Growth Policy

In 2014, The Service implemented a Strategic Growth Policy ([602 FW 5](#)), which guides the growth of the Refuge System. The policy established science-based criteria that require:

- Identification of a priority conservation species;
- An explanation of how the project would contribute to achieving stated population objectives;
- Identification of priority areas using the best available science; and
- An explanation of vulnerability to climate change and other non-climate stressors (e.g., habitat fragmentation, invasive species, etc.) and how the Refuge System will mitigate stressors to ensure the project’s resiliency.

Each component of the policy is discussed below.

8.1 Priority Conservation Species

The Strategic Growth Policy focuses growth of the Refuge System on:

- The recovery of threatened and endangered species;
- Conserving migratory birds of conservation concern; and
- Implementing the North American Waterfowl Management Plan.

8.2 Summarize the Science-based Criteria Identified in the Strategic Growth Policy Used to Demonstrate Support for Priority Conservation Targets

Permanently protecting prairies, oak savannas, and oak woodlands will contribute to meeting the population objectives in published recovery plans for the valley’s listed prairie species (USFWS 2010), the Draft Recovery Plan for The Streaked Horned Lark (USFWS 2019), and the Study’s landbird population objectives (USFWS 2017).

8.2.1 Recovery of Threatened and Endangered Species

Eleven species of fish, wildlife, and plants native to the valley have been listed as threatened or endangered under the federal Endangered Species Act (USFWS 1993, 1997, 1998, 2000, 2013). Three other federally listed species, the Columbian white-tailed deer (*Odocoileus virginianus leucurus*), Oregon spotted frog (*Rana pretiosa*), and yellow-billed cuckoo (*Coccyzus americanus*) historically bred in the valley but are now extirpated.

According to the Strategic Growth Policy, the Service may acquire lands and waters where land acquisition is prescribed in recovery plans or subsequent revisions. There are two recovery plans pertinent to this effort: the Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington (USFWS 2010) and the Draft Recovery Plan for the Streaked Horned Lark (USFWS 2019). Both plans include the Service in their recovery actions, including land protection.

8.2.2 Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington

The prairie species recovery plan was developed for the following five prairie species native to the Willamette Valley:

- Fender’s blue butterfly (*Icaricia icarioides fenderi*) Endangered
- Willamette daisy (*Erigeron decumbens*) Endangered
- Bradshaw’s lomatium (*Lomatium bradshawii*) Endangered
- Kincaid’s lupine (*Lupinus sulphureus* ssp. *kincaidii*) Threatened
- Nelson’s checker-mallow (*Sidalcea nelsoniana*) Threatened

The Recovery Plan for the Prairie Species of Western Oregon and Southwest Washington provides a strategy to achieve recovery of these species:

“To restore and maintain multiple viable populations of the species by protecting, restoring, maintaining, and connecting the remaining fragments of prairie habitats or areas with potential for restoration to prairie habitats within their historical range. . . The first step in the recovery of these species is to identify and protect the remaining populations with the greatest potential for restoration. Recovery for all of these species will depend upon the successful establishment of a network of protected populations in managed, suitable prairie habitats distributed across their historical range.” (USFWS 2010)

The recovery plan established population objectives for the listed prairie species that were expressed in terms of population abundance, trend, and distribution across recovery zones that are located in the Willamette Valley. The number one priority recovery action is *“to preserve, restore, and manage populations and habitat for the listed prairie species.”* Priority one actions are those that must be taken to prevent extinction or prevent the species from declining irreversibly in the foreseeable future. The Service is identified in the recovery plan as one of the responsible parties for implementing this crucial recovery action.

An additional goal of the recovery plan is to focus on the restoration of both native upland and wet prairie ecosystems in the valley. This ecosystem approach takes into consideration the needs of non-listed species that are endemic to prairie habitats. Consequently, many of the recovery actions proposed in the plan may help to stabilize and enhance populations of species such as pale larkspur (*Delphinium leucophaeum*), Willamette Valley larkspur (*Delphinium oregonum*), peacock larkspur (*Delphinium pavonaceum*), shaggy horkelia (*Horkelia congesta* ssp. *congesta*), white-topped aster (*Sericocarpus rigidus*), and Hitchcock’s blue-eyed grass (*Sisyrinchium hitchcockii*). Implementing management actions toward these species of conservation concern may preclude the need to extend the protections of the Endangered Species Act to other prairie species in the future (USFWS 2010).

The Service and conservation partners have been implementing the plan since it was published, and the results achieved prove the strategy of protecting, restoring, and managing habitat for these species can lead to successful recovery. Through their actions, Bradshaw’s lomatium achieved recovery objectives in terms of protected populations of sufficient size and distribution across the valley’s recovery zones to allow the species to be delisted. Golden paintbrush, once extirpated in Oregon, has met recovery objectives and the Service is proposing to delist the species. The same can be said for Nelson’s checker-mallow – recovery objectives have been met and the Service proposes to delist the species. Fender’s blue butterfly is also on the path to recovery. While the Service is proposing to reclassify the species from endangered status to threatened status, additional actions, including protecting its habitat, are still needed to fully recover this species.

Additional evidence of protecting, restoring, and managing land to recover endangered species in the valley comes from the Oregon chub. The listing of Oregon chub as an endangered species in 1993 triggered a multi-agency effort, including ODFW and the Service through its Partners for Fish and Wildlife Program among others, to protect its existing habitat, create new habitat, and transplant fish to more than 20 new locations in order to meet recovery objectives. The Service reclassified Oregon chub from endangered status to threatened status in 2010. In 2015, based upon a review of the species which indicated that the Oregon chub had recovered and no longer met the definition of a threatened species,

the Service removed the species from the federal list of endangered or threatened species (USFWS 2015). The Oregon chub is the first fish species ever recovered under the ESA.

8.2.3 Draft Recovery Plan for the Streaked Horned Lark

The Service published a draft streaked horned lark recovery plan in August 2019 (USFWS 2019). Recovery objectives are twofold: (a) develop self-sustaining regional populations, and (b) protect and manage sufficient habitat to support well-distributed regional populations. The plan describes “core sites” and “matrix lands.” Core sites are locations that are intentionally managed for the long-term benefit of streaked horned larks and provide for population growth. Matrix lands are temporary habitats with multiple or non-conservation management objectives that are needed to allow the lark to adapt to changing environments (USFWS 2019).

The plan created three recovery zones in the Willamette Valley that intersect with the Conservation Area and established population objectives for each zone. Priority 1a actions for the Willamette Valley region are to implement conservation actions on core sites; identify and conserve current and potentially suitable sites; and “where feasible, incorporate potential core sites into the [Refuge] System for management.” Priority 1a actions are those actions that must be taken to prevent extinction or to prevent the species from declining irreversibly (USFWS 2019).

The plan calls for three core sites in the north recovery zone, nine in the west zone, and nine in the southeast zone. The Service would evaluate each property being offered for its suitability as a new core site using the core site criteria described in the plan (open and largely treeless expanse of land dominated by grasses, flowering plants, and bare ground, within a contiguous open landscape over 150 acres). The Service expects to contribute several new protected core sites to aide in the recovery of streaked horn lark. The Service would evaluate potential acquisitions for their ability to serve as new core sites for the streaked horned lark.

8.3 Conserving Migratory Birds of Conservation Concern

Grassland-dependent birds of the valley have suffered steep population declines over the past 40 years (Altman 1999, ODFW 2010). Surveys conducted in 1997 and 1998 and repeated in 2008 and 2009 documented steep declines across the valley for western meadowlark, Oregon vesper sparrow, grasshopper sparrow, and streaked horned lark. Twenty-one of 49 other species highly associated with the prairie-oak system face a similar situation, experiencing extirpations, range contractions, and/or regional population declines (Altman 2011). Due to such declines, the Oregon vesper sparrow was petitioned for listing under the ESA. The Service determined that listing may be warranted and initiated a 12-month status review.

The Conservation Study followed a Strategic Habitat Conservation approach by first establishing conservation goals for the valley; then selecting species to represent the valley’s dominant native habitat types; setting measurable population objectives for them; analyzing limiting factors; establishing habitat objectives to support the population objectives and address limiting factors; and identifying priority areas of the valley for conservation delivery.

In concert with ODFW and other conservation partners involved with the Conservation Study, three native landbird species were selected to represent the valley’s oak and prairie habitats under the assumption that by implementing management strategies that support the ecological conditions favored

by the selected species, the needs of the larger set of species characteristic of that habitat would also be met (USFWS 2012). The species selected for the dominant oak and prairie habitats were:

- Prairies: Western meadowlark (*Sturnella neglecta*)
- Oak Savanna: Western bluebird (*Sialia mexicana*)
- Oak Woodlands: Slender-billed white-breasted nuthatch (*Sitta carolinensis aculeata*)

Western meadowlark is Oregon's state bird and is now threatened with extirpation from the valley (ODFW 2016). Each of these species is identified in the Oregon Conservation Strategy (ODFW 2016) as Strategy Species. Strategy Species are those that have small or declining populations, are at-risk, or are of management concern.

The Service lists the Oregon vesper sparrow, the slender-billed white-breasted nuthatch, and the olive-sided flycatcher as Birds of Conservation Concern in Bird Conservation Region 5, the region that includes the Conservation Area (USFWS 2021). Each of these species would benefit from additional conservation actions, directed at grassland and oak woodlands including protecting their habitat (Rockwell et al. 2022). Birds of Conservation Concern are species, subspecies and populations of all migratory nongame birds that, without additional conservation action, are likely to become candidates for listing under the Endangered Species Act.

8.4 Implementing the North American Waterfowl Management Plan

Implementing the North American Waterfowl Management Plan (NAWMP 2018) is one of the three priority conservation targets that guide the growth of the Refuge System. The North American Waterfowl Management Plan (NAWMP) assigned continental priorities to waterfowl based on Waterfowl Conservation Regions (WCR). The Willamette Valley is located within WCR 5. The 2004 Implementation Framework for the NAWMP (NAWMP 2004) assessed the breeding and non-breeding conservation need of each species in each WCR based on the combination of the species' continental priority and the WCR's geographic importance to the population. In implementing the NAWMP, the Service focuses on species the NAWMP listed as having "high" or "highest" breeding or non-breeding conservation needs. The Service considers non-breeding to represent both wintering and migration periods of the annual life cycle. The plan's habitat goal is to "protect, restore, and manage sufficient high-quality habitat and key sites for waterbirds throughout the year to meet species and population goals."

The species with "highest" breeding needs in WCR 5 that could benefit from wet prairies brought into the Refuge System is the dusky Canada goose (*Branta canadensis occidentalis*). The dusky Canada goose (known as duskies) is also rated as having the "highest" non-breeding conservation needs in this region. Duskies are a Resource of Concern for the Complex (USFWS 2011). They winter and forage on fields managed for them at each refuge. Approximately 2,000 to 2,500 dusky Canada geese are typically present at the Complex during the fall, winter, and early spring, and more stop over while migrating (USFWS unpublished data).

9.0 Identifying Priority Areas for Conservation Actions

The Service used the conservation network design optimization algorithm, Marxan (Ball and Possingham 2000) as part of the Conservation Study to identify priority areas for conservation actions in the valley. Marxan has been used for terrestrial and marine conservation assessments around the world. The

analysis was designed to identify priority sites in an integrated and efficient manner by building upon the existing conservation estate. Marxan identified 49 key areas of the valley within which networks of anchor habitat patches could be established and threatened and endangered species recovered. The Conservation Study named these Priority Conservation Areas (Figure 3).

Thirty-eight members of the Cooperative participated in a design charrette to map high priority oak and prairie geographies, which were then used to develop the Cooperative's 30-year Conservation Concept Map (Figure 2). Members were provided with base maps that included vegetation types and spatially explicit conservation priority areas of the valley previously identified by ODFW (Conservation Opportunity Areas), the Service (Priority Conservation Areas), and The Nature Conservancy (Key Oak Parcels), resulting in a high degree of intersection of priority conservation areas.

The Cooperative mapped Core Conservation Areas and Opportunity Conservation Areas. Core Conservation Areas (Core Areas) are the Cooperative's highest priority geographies for immediate and focused investment for habitat acquisition, increased management, and restoration. The areas were selected based on their proximity to existing anchor habitat patches; known concentrations of particularly high-quality oak and prairie habitat on larger parcels; or because areas of high-value oak or prairie habitat are under a high level of threat (e.g., agricultural conversion and urban development) (WVOPC 2020). Core Areas include all current Refuge System lands in the valley. The Service proposes to focus land acquisitions within Core Areas in support of the Cooperative's goal of conserving blocks of high-value oak and prairie habitat in prioritized areas of the valley.

Opportunity Conservation Areas (Opportunity Areas) are areas that contain dispersed oak and prairie habitats, critical for providing connectivity between Core Areas. The Cooperative's long-term land acquisition goals in these areas would focus on aligning with local restoration and management efforts and would be designed to build new anchor habitat patches where high-quality conservation opportunities are developed. While focusing on Core Areas, the Service would carefully evaluate properties offered to the Service in Opportunity Areas as well, in line with the Cooperative's conservation strategy.

9.1 Conservation Study Gap Analysis

The Conservation Study habitat objectives were based on the largest and densest known subpopulation of each species selected to represent the valley's grassland and oak habitats as the reference from which to establish area requirements. These typically occurred on large, single ownership parcels with generally high-quality habitat. As most of the landscape outside these ownerships is fragmented and of lower quality, the Service assumes that 50 percent more area would be required compared to the reference to support an equal number of breeding pairs (USFWS 2017).

Since publication of the Conservation Study, additional conservation-based land protection efforts have been ongoing in the valley primarily through the ODFW's Willamette Wildlife Mitigation Program (WWMP), which is set to expire in 2026. Under the WWMP, ODFW through the Bonneville Power Administration, funds the acquisition of land to mitigate for past wildlife impacts related to dam construction in the Willamette River watershed. The WWMP funds the acquisition of land and provides some operations and maintenance funding but does not fund any needed restoration.

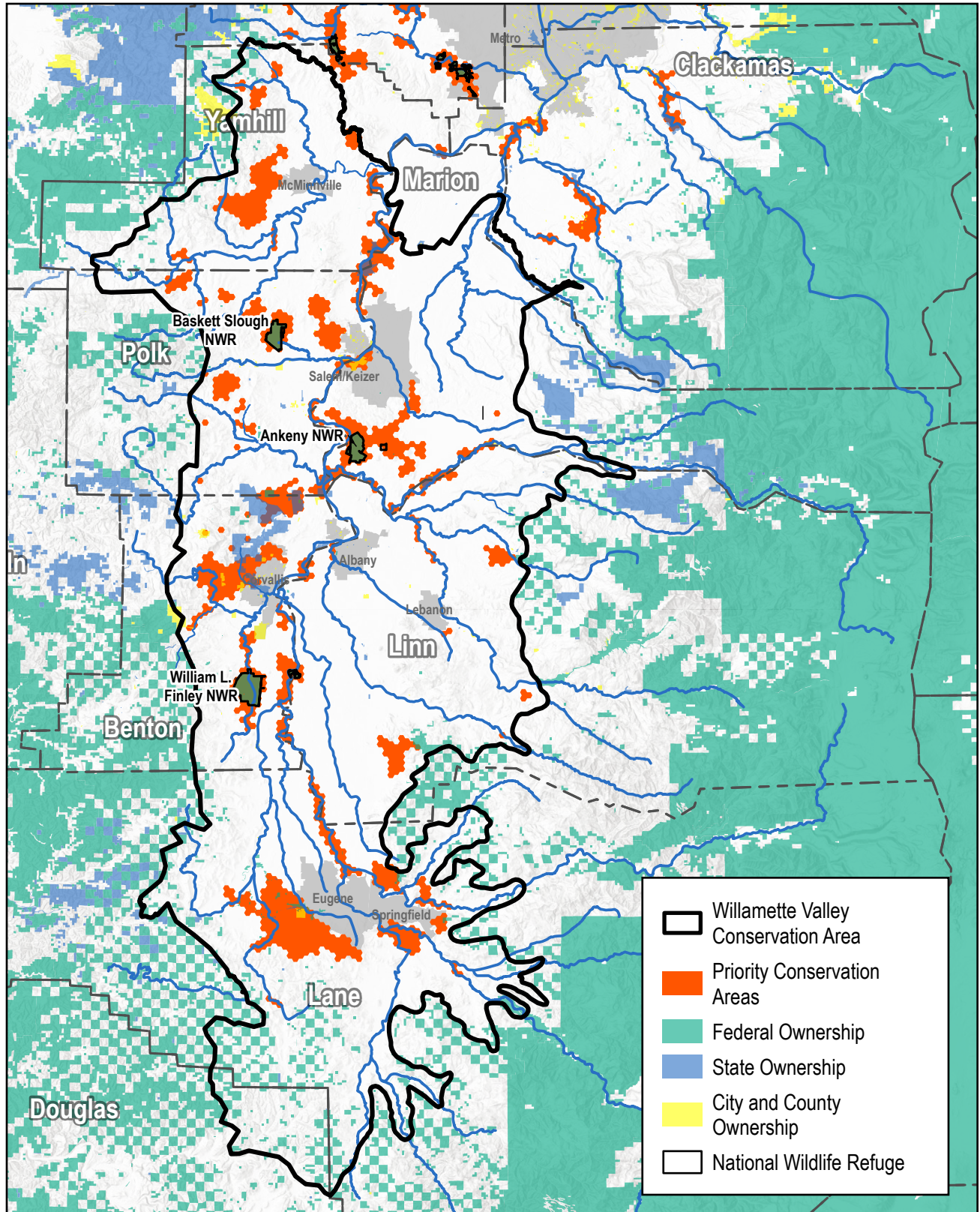
FIGURE 3 Willamette Valley Land Protection Plan Priority Conservation Areas



U.S. Fish and Wildlife Service

Willamette Valley Land Protection Plan

Figure 3. Priority Conservation Areas



The Service conducted a gap analysis to see how the existing habitats on WWMP projects are currently meeting Conservation Study habitat objectives and what remains to be protected (Table 1). The Conservation Study’s gap analysis was based on all protected sites at that time. The Service based the updated analysis on all WWMP projects within the Conservation Area’s boundary financed through the WWMP since the time of the original gap analysis. The Service used the existing habitat types reported by the project proponents on their application to the WWMP. For example, if an applicant reports that there are currently 120 acres of oak savanna present, then that acreage counted as one small oak savanna patch protected.

Table 1. Gap Analysis of Willamette Valley Conservation Study Habitat Objectives

Habitat Type	Patch Size	Acres	Habitat Objective	Currently Protected	Not Protected
Grasslands (Valley Floor)	Large	1,313	2	2	0
Grasslands (Valley Floor)	Medium	983	4	1	3
Grasslands (Valley Floor)	Small	563	10	0	10
Grasslands (Foothills)	Large	475	3	0	3
Grasslands (Foothills)	Medium	340	6	0	6
Grasslands (Foothills)	Small	205	9	3	6
Oak Savanna	Large	265	3	1	2
Oak Savanna	Medium	190	6	0	6
Oak Savanna	Small	110	11	2	9
Oak Woodland	Large	900	10	1	9
Oak Woodland	Medium	600	20	0	20
Oak Woodland	Small	300	39	8	31

There remains a 45,300-acre gap between the current conservation estate (lands currently protected for their conservation values) in the valley and the habitat objectives of the Conservation Study.

10.0 Vulnerability to Climate Change and Other Non-climate Stressors and How the Refuge System will Mitigate Stressors to Ensure the Project’s Resiliency

While climate change is almost certain to affect the Willamette Valley (OCCRI 2010; Schafer et al. 2001), there is uncertainty about the direction and specific consequences it will have to the valley’s species and habitats. The University of Washington studied the potential effects of a changing climate on the Willamette Valley as part of the Conversation Study and the results indicate a trend toward warmer and wetter winters, and hotter and drier summers (Michalak et al. 2013).

The University of Washington developed climate envelope models for several species of conservation concern in the valley and found that relatively few significant changes are expected. This finding

suggests that average projected climate change does not exceed the range of climate conditions currently tolerated by most of the priority conservation species in the valley (Michalak et al. 2013). Warmer, drier summer conditions leading to increased summer drought may benefit the relatively drought-tolerant native prairie and savanna species over the less drought-tolerant tree and other forest species, possibly resulting in prairie/savanna expansion (Bachelet et al. 2011).

This is not to suggest climate change will not adversely affect the valley's sensitive wildlife. Species with limited dispersal abilities, such as the endangered Fender's blue butterfly, may not be capable of redistributing to new areas with suitable conditions if their current locations become unsuitable. In a study of grassland bird reproduction in shortgrass prairies, increased nestling mortality followed very hot days and droughty days (Conrey et al. 2016). Large storm events also resulted in increased nestling mortality. Across the 10 years of the study, lower survival rates were recorded during warmer and drier breeding seasons compared to average conditions. Hotter and drier summers are forecast for the Willamette Valley and short-term (3-month) droughts will be increasingly likely (Jung and Chang 2011). The extent to which grassland bird populations are affected by these changes remains to be seen, but species with low population numbers are already at an increased risk of extirpation and anything that reduces juvenile survival rates only magnifies that risk.

With a changing climate, protecting resilient ecosystems will be necessary for the continued benefit and presence of habitat for species to thrive. Resilient ecosystems provide species with a diversity of conditions in which they can respond to changes in temperature and moisture without the need for a large migration. The Nature Conservancy modeled resilient landscapes across the Pacific Northwest by combining the degree of topographic diversity, climate diversity, and local permeability of an area to determine the most resilient sites across the landscape (Buttrick et al 2015). Permeability is the ease with which wildlife can move through the landscape. Landscapes with high permeability mean wildlife can more readily move through it than landscapes with low permeability. Due to the diversity of topographic and climate conditions and the ability for species movement, resilient systems should allow species the ability to adapt to changes resulting in limited changes in species composition within a site.

The Nature Conservancy used features such as topography, current climate, and permeability to model resilience. Resilient sites are areas with high topographic and climatic diversity, and high permeability. The topographic and climatic diversity in resilient sites provides various potential future conditions for species to move and adapt to while high permeability provides easier movement for species to move to new sites. Figure 4 shows this permeability as flow where high flow means species can more easily move throughout the landscape while low flow indicates restricted movement due to landscape features such as development or undesirable habitat types. Figure 5 shows the resilient sites within the Willamette Valley modeled using the topographic and climatic diversity and permeability.

In the Willamette valley, the more resilient areas are concentrated in the foothills on the eastern, western, and southern part of the valley likely due to the presence of varying elevations. Resilient ecosystems may also provide another strategy for priority-setting throughout the Conservation Area. Increasing the amount of protected wildlife habitat beyond the footprint of the three Refuges (Figure 1), and other protected habitat in the valley, builds resilience into the network of protected wildlife habitats.

FIGURE 4 Willamette Valley Land Protection Plan Current Connectivity and Climate Flow



U.S. Fish & Wildlife Service

Willamette Valley Land Protection Plan

Oregon

Figure 4. Current Connectivity and Climate Flow

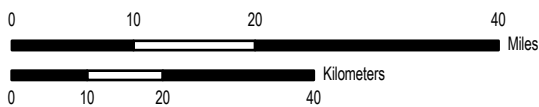
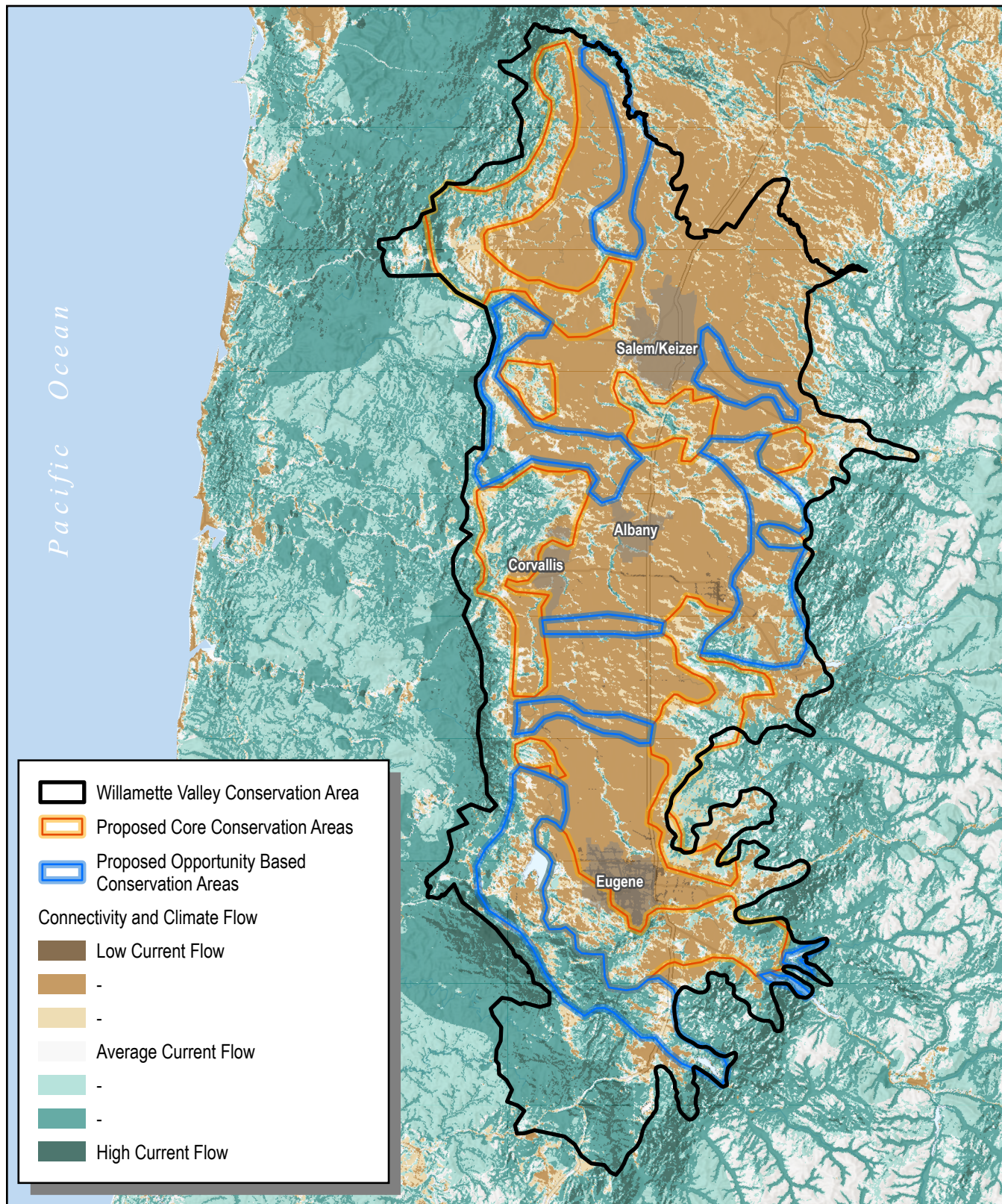


FIGURE 5 Willamette Valley Land Protection Plan Climate Resilient Landscape

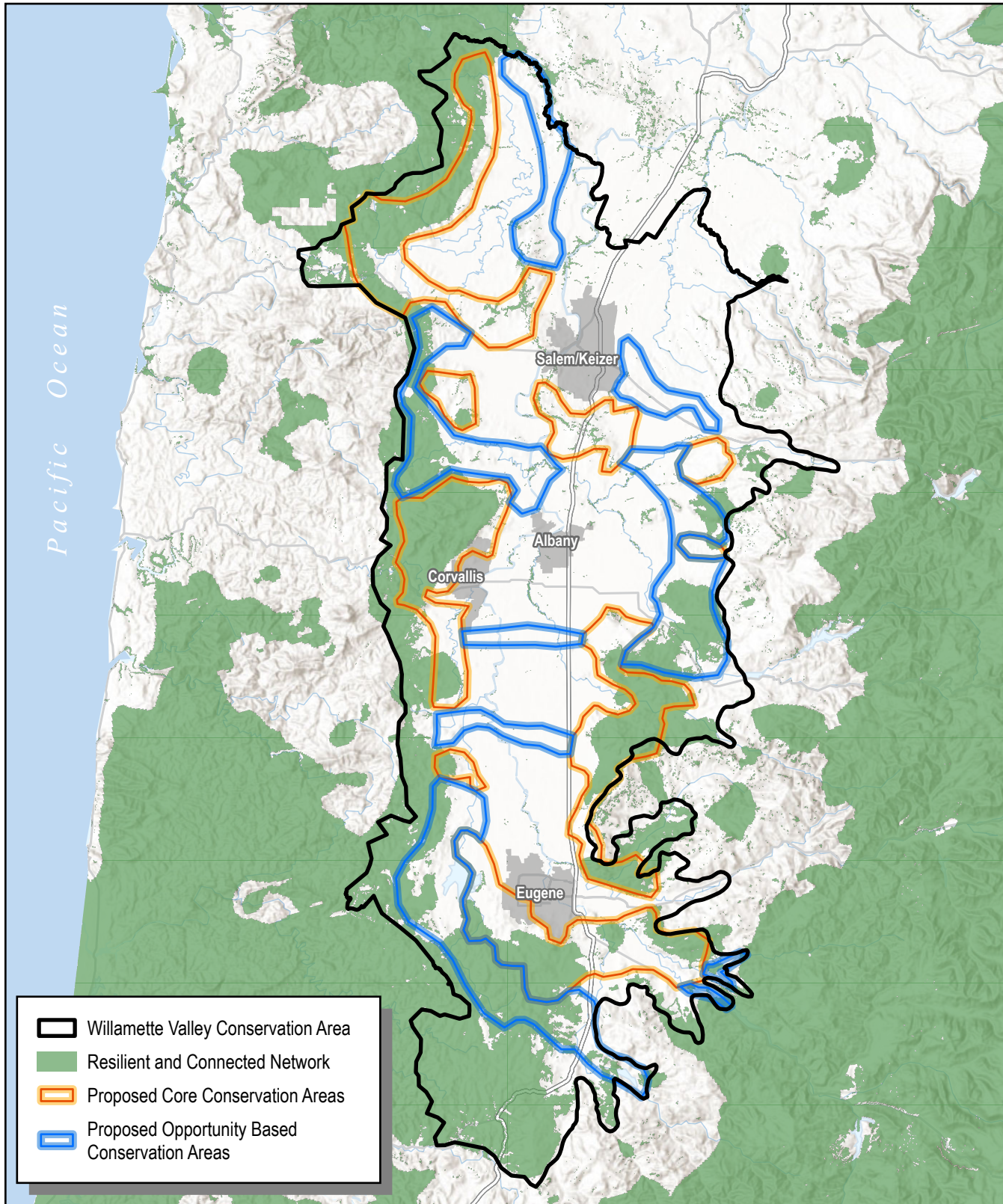


U.S. Fish & Wildlife Service

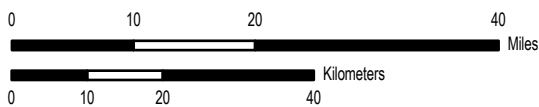
Willamette Valley Land Protection Plan

Oregon

Figure 5. Climate Resilient Landscape



USFWS, NWRS
PORTLAND, OREGON
MAP DATE: 6/30/2022
DATA: The Nature Conservancy,
Climate Resilient Landscapes 2021
FILE: R1_NWRS_FY22_459



UTM 10N
NAD 83

11.0 Summarize Non-biological Considerations such as Potential Funding, Support of Landowners, and Participation of Conservation Partners that Affect Plan Feasibility

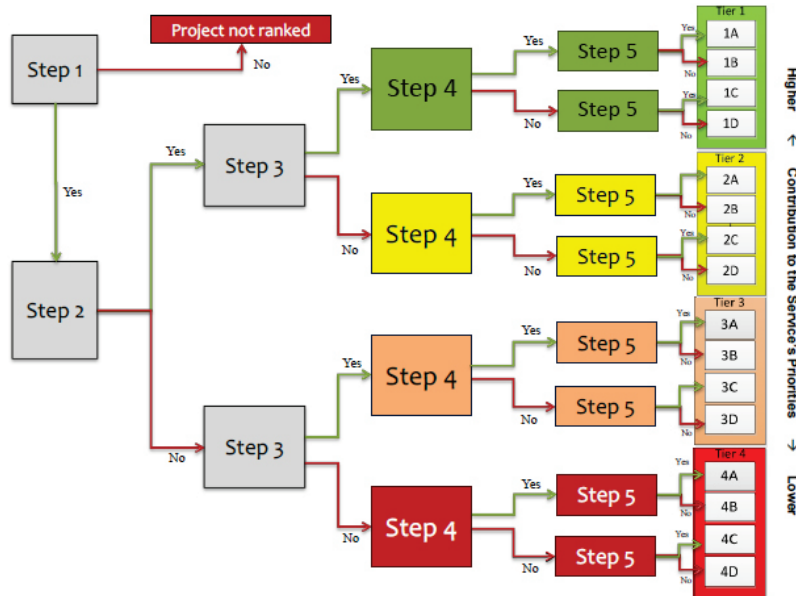
Many private landowners, local communities, non-governmental organizations, and agencies have recognized the ecological significance of the Willamette Valley and the need to develop and fund land protection authorities to conserve this landscape's rich natural heritage. Most strategic plans produced by conservation partners include land protection as one of the primary strategies for achieving their goals for the habitats described in this Land Protection Plan. These partner organizations include the Oregon Department of Fish and Wildlife, Natural Resources Conservation Service, The Nature Conservancy, Confederated Tribes of the Grand Ronde Community of Oregon, Confederated Tribes of the Siletz Indians, Confederated Tribes of Warm Springs, numerous land trusts, the American Bird Conservancy, as well as watershed councils, and various partnerships and workgroups that have coalesced over the last 20 years.

The U.S. Fish and Wildlife Service's Partners for Fish and Wildlife Program has been active in the Willamette Valley for the past 20 years, developing relationships with hundreds of private landowners, state and local agencies, and nongovernmental organizations. These efforts have allowed the Service to become a valued and trusted partner within the conservation community. In recent years, private landowners have approached the Service directly about selling an interest in their lands to the Service. In addition, nongovernmental organization conservation partners have expressed interest in transferring some of their properties to the Service as well. Conservation land protection efforts are in demand in the Willamette Valley as development expands and climate-related concerns increase. The interest in land protection continues to grow while existing funds for land protection efforts through the Oregon Department of Fish and Wildlife's Willamette Wildlife Mitigation Program are beginning to sunset.

To compare potential acquisitions across the Refuge System, the Service developed a series of separate decision trees for each of the Service's strategic growth policy priorities to provide a biological, science-based, and transparent process for ranking the Refuges with proposed land acquisitions. Collectively, these decision trees, along with the associated criteria, are known as the Targeted Resource Acquisition Comparison Tool (TRACT).

TRACT uses a decision tree to rank and prioritize projects. The decision tree ranks refuges based on the response to a number of questions. TRACT generates separate ranked lists of refuges for the recovery of threatened and endangered species, implementing the North American Waterfowl Management Plan, and for each suite of birds of conservation concern, including landbirds, shorebirds, and waterbirds. Tier 1 land acquisition projects, shown in green, are more biologically sound than Tier 2 projects, shown in yellow, meaning the Service is more confident in the ability of the land acquisition to contribute to the Service's priorities. Within Tier 1 of each decision tree, a 1A project has more value than a 1D project. This is similar for all tiers (USFWS 2014).

Figure 6. TRACT Decision Tree Prioritization, Source: USFWS 2014



The three Willamette Valley Refuges and the Willamette Valley Conservation Area (Willamette Valley CA in Table 2) score high in TRACT rankings (Table 2). High scores in the Waterfowl and the threatened and endangered species ranking indicate the Willamette Valley would rank well nationally and be competitive for funding through the Land and Water Conservation Fund, which has been permanently funded at \$900 million dollars annually. This funding increases the Service’s ability to acquire properties necessary to meet the Cooperative’s and Service’s common conservation goals for the valley.

Table 2. Preliminary Fiscal Year 2023 TRACT Assessments – Willamette Valley Refuges and Conservation Area (CA)

Refuge	Waterfowl (2019)	Shorebirds	Waterbirds (2021)	Landbirds (2021)	T&E Species	Landscape Resiliency (2021)
Willamette Valley CA	1B (high)	2C (high/medium)	NR	2B (high/medium)	1B (high)	2 (high/medium)
Baskett Slough NWR	1B (high)	2B (high/medium)	NR	5C (Low)	1B (high)	2 (high/medium)
Ankeny NWR	1D (high)	2C (high/medium)	NR	5C (Low)	1B (high)	3 (medium/low)
William L Finley NWR	3B (medium/low)	2B (high/medium)	NR	2B (high/medium)	1B (high)	2 (high/medium)

NR = Not rated, either because no data was submitted or because the data submitted does not yield a ranking.

This page intentionally left blank

Appendix A

Literature Cited

- Altman, B. 1999. *Status and conservation of state sensitive grassland bird species in the Willamette Valley. A report to the Oregon Department of Fish and Wildlife. (Altman 1999)*
- Altman, B. 2011. *Historical and current distribution and populations of bird species in prairie-oak habitats in the Pacific Northwest. Northwest Science 85:194-222. (Altman 2011)*
- Altman, B. and J.L. Stephens. 2012. *Land managers guide to bird habitat and populations in oak ecosystems of the Pacific Northwest. American Bird Conservancy and Klamath Bird Observatory. (Altman and Stephens 2012)*
- Ball, I.R. and H.P. Possingham. 2000. MARXAN (V1.8.2): *Marine Reserve Design Using Spatially Explicit Annealing, a Manual. (Ball and Possingham 2000)*
- Bachelet, D., B.R. Johnson, S.D. Bridgham, P.V. Dunn, H.E. Anderson, and B.M. Rogers. 2011. *Climate change impacts on western Pacific Northwest prairies and savannas. Northwest Science 85:411-429. (Bachelet et al. 2011)*
- Buttrick, S., K. Popper, M. Schindel, B. McRae, B. Unnasch, A. Jones, and J. Platt. 2015. *Conserving Nature's Stage: Identifying Resilient Terrestrial Landscapes in the Pacific Northwest. The Nature Conservancy, Portland Oregon. 104 pp. Available online at: <http://nature.ly/resilienceNW> March 3, 2015. (Buttrick et al. 2015)*
- Conrey, Reesa Y., Susan K. Skagen, Amy A. Yackel Adams, and Arvind O. Panjabi. 2016. *Extremes of heat, drought, and precipitation depress reproductive performance in shortgrass prairie passerines. Ibis. 185:614-629. (Conrey et al. 2016)*
- Department of the Interior. 2021. *Conserving and Restoring America the Beautiful*, 24 pp. Available at: <https://www.doi.gov/sites/doi.gov/files/report-conserving-and-restoring-america-the-beautiful-2021.pdf>. (DOI 2021)
- Jung, I.W., and H. Chang. 2011. *Assessment of future runoff trends under multiple climate change scenarios in the Willamette River Basin, OR. Hydrological Processes 25:258-277. (Jung and Chang 2011)*
- Michalak, J.L., J.C. Withey, and J.J. Lawler. 2013. *Willamette Valley Climate Change Adaptation Workshop. Report prepared for the North Pacific Landscape Conservation Cooperative. School of Environmental and Forest Sciences, University of Washington, Seattle, WA. (Michalak et al. 2013)*
- North American Waterfowl Management Plan, Plan Committee (NAWMP). 2004. *North American Waterfowl Management Plan 2004. Implementation Framework: Strengthening the Biological Foundation. Canadian Wildlife Service, U.S. Fish and Wildlife Service, Secretaria de Medio Ambiente y Recursos Naturales. (NAWMP 2004)*
- North American Waterfowl Management Plan, Plan Committee (NAWMP). 2018. *North American Waterfowl Management Plan (NAWMP) Update Connecting People, Waterfowl, and Wetlands. Canadian Wildlife Service, U.S. Fish and Wildlife Service, Secretaria de Medio Ambiente y Recursos Naturales. (NAWMP 2018)*

- Noss, R.F., E.T. LaRoe III, and J.M. Scott. 1995. *Endangered Ecosystems of the United States: a preliminary assessment of loss and degradation*. U.S. Department of the Interior. Biological Report 28. Feb. 1995. **(Noss et al. 1995)**
- Oregon Department of Fish and Wildlife (ODFW). 2010. *Declining and state sensitive bird species breeding in the Willamette Valley Grasslands: 2008/09 status update*. Salem, OR. **(ODFW 2010)**
- Oregon Department of Fish and Wildlife (ODFW). 2016. *Oregon Conservation Strategy*. Salem, OR. **(ODFW 2016)**
- Oregon Department of Fish and Wildlife (ODFW). 2021. *ODFW Sensitive Species List*. Salem, OR. **(ODFW 2021)**
- Omernik, J.M. 1987. *Ecoregions of the Conterminous United States*. Annals of the Association of American Geographers 77:118-125. **(Omernik 1987)**
- Oregon Climate Change Research Institute (OCCRI). 2010. *Oregon Climate Assessment Report*. Dello, K.D, and P.W. Mote (eds). College of Oceanic and Atmospheric Sciences, Oregon State University, Corvallis, OR. **(OCCRI 2010)**
- Rockwell, S. M., J. L. Stephens, and B. Altman. 2022. *Population and habitat objectives for landbirds in prairie, oak, and riparian habitats of western Oregon and Washington*. Version 2.0. Prepared for Oregon-Washington Partners in Flight, Pacific Birds Habitat Joint Venture, Bureau of Land Management, and U.S. Forest Service. Klamath Bird Observatory, Ashland, OR, and American Bird Conservancy, Corvallis, OR. **(Rockwell et al. 2022)**
- Shafer, S.I., P.J. Bartlein, and R.S. Thompson. 2001. *Potential changes in the distributions of western North America tree and shrub taxa under future climate scenarios*. Ecosystems 4:200-215.
- U.S. Fish and Wildlife Service (USFWS). 1993. *Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Plant "Sidalcea nelsonianna" (Nelson's checkermallow)*. 58 FR 8235. **(USFWS 1993)**
- U.S. Fish and Wildlife Service (USFWS). 1996. Part 341: *Land Acquisition: Policy and Responsibilities*. Available at <https://www.fws.gov/policy/341fw1.html> **(USFWS 1996)**
- U.S. Fish and Wildlife Service (USFWS). 1997. *Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for Castilleja levisecta (Golden Paintbrush)*. 62 FR 31740. **(USFWS 1997)**
- U.S. Fish and Wildlife Service (USFWS). 1998. *Endangered and Threatened Wildlife and Plants; Final Endangered Status for Lomatium bradshawii (Bradshaw's lomatium)*. 53 FR 38448. **(USFWS 1998)**
- U.S. Fish and Wildlife Service (USFWS). 2000. *Endangered and Threatened Wildlife and Plants; Endangered Status for Erigeron decumbens var. decumbens (Willamette Daisy) and Fender's Blue Butterfly (Icaricia icarioides fenderi) and Threatened status for Lupinus sulphureus ssp. Kincaidii (Kincaid's Lupine)*. 65 FR 3875. **(USFWS 2000)**
- U.S. Fish and Wildlife Service (USFWS). 2008. *Strategic habitat conservation handbook: a guide to implementing the technical elements of strategic habitat conservation (Version 1.0)*. A report from the National Technical Assistance Team. February 11, 2008. **(USFWS 2008)**

- U.S. Fish and Wildlife Service (USFWS 2010). *Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington*. U.S. Fish and Wildlife Service, Portland, OR. xi + 241 pp. **(USFWS 2010)**
- U.S. Fish and Wildlife Service (USFWS). 2011. *Comprehensive Conservation Plan for the Willamette Valley National Wildlife Refuge Complex*. **(USFWS 2011)**
- U.S. Fish and Wildlife Service (USFWS). 2012. *Draft Guidance on Selecting Species for Design of Landscape-scale Conservation*. July 20, 2012. **(USFWS 2012)**
- U.S. Fish and Wildlife Service (USFWS). 2013. *Determination of Endangered Status for the Taylor's Checkerspot Butterfly and Threatened Status for the Streaked Horned Lark; Final Rule*. 78 FR 61451. **(USFWS 2013)**
- U.S. Fish and Wildlife Service. 2014. *Draft Land Acquisition Ranking Criteria for the National Wildlife Refuge System*. Technical Report. Version 1. United States Department of Interior, Fish and Wildlife Service, National Wildlife Refuge System, Falls Church, VA. 111pp. **(USFWS 2014)**
- U.S. Fish and Wildlife Service. 2014a. Part 602: *Refuge Planning: Strategic Growth Policy*. Available at <https://www.fws.gov/policy/602fw5.html> **(USFWS 2014a)**.
- U.S. Fish and Wildlife Service (USFWS). 2015. *Endangered and Threatened Wildlife and Plants; Removing the Oregon Chub from the Federal List of Endangered and Threatened Wildlife: Final rule*. 80 FR 9125. **(USFWS 2015)**
- U.S. Fish and Wildlife Service (USFWS). 2017. *Willamette Valley Conservation Study: Strategic Habitat Conservation in Oregon's Willamette Valley*. U.S. Fish and Wildlife Service. 2017. Willamette Valley Conservation Study. Pacific Region, Portland, OR. 148 pp. **(USFWS 2017)**
- U.S. Fish and Wildlife Service (USFWS). 2019. *Draft Recovery Plan for the Streaked Horned Lark (Eremophila alpestris strigata)*. U.S. Fish and Wildlife Service Portland, OR. 28pp. **(USFWS 2019)**
- U.S. Fish and Wildlife Service (USFS). 2021. *Birds of Conservation Concern 2021*. United States Department of the Interior, U.S. Fish and Wildlife Service, Migratory Birds, Falls Church, VA. <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>. **(USFWS 2021)**
- Willamette Valley Oak and Prairie Cooperative (WVOPC). 2020. *Strategic Action Plan, March 2020*. 70pp. **(WVOPC 2020)**

This page intentionally left blank

Appendix B
List of Acronyms

Acronym	Full Phrase
America the Beautiful	American the Beautiful Initiative
Complex	Willamette Valley National Wildlife Refuge Complex
Conservation Area	Willamette Valley Conservation Area
Conservation Study	Willamette Valley Conservation Study
Cooperative	Willamette Valley Oak and Prairie Cooperative
Core Area	Core Conservation Area
ESA	Endangered Species Act
Improvement Act	National Wildlife Refuge System Improvement Act of 1997
ODFW	Oregon Department of Fish and Wildlife
Refuge System	National Wildlife Refuge System
Service	U.S. Fish and Wildlife Service
WVOPC	Willamette Valley Oak and Prairie Cooperative
WWMP	Willamette Wildlife Mitigation Program

This page intentionally left blank

Appendix C
CONCEPTUAL MANAGEMENT PLAN
PROPOSED WILLAMETTE VALLEY CONSERVATION AREA
OREGON

This page intentionally left blank

APPENDIX C

CONCEPTUAL MANAGEMENT PLAN

PROPOSED WILLAMETTE VALLEY CONSERVATION AREA

OREGON

1.0 Introduction

This conceptual management plan for the proposed Willamette Valley Conservation Area (Conservation Area) presents a general outline on how new refuge lands would be initially operated and managed. Because it is impossible to predict which lands would be brought into the National Wildlife Refuge System (Refuge System), this plan does not provide restoration or long-term management details, identify where facilities would be located, or where future public uses may be allowed.

Long-term management planning would involve amending the existing Comprehensive Conservation Plan (CCP) for new lands included with the Willamette Valley National Wildlife Refuge Complex (Complex) or developing a new CCP for a new unit of the National Wildlife Refuge System (Refuge System). These planning efforts would include input from the public and be completed in accordance with the National Environmental Policy Act, as well as the compatibility requirements in the National Wildlife Refuge System Administration Act.

Long-term management planning would evaluate alternative management schemes and the infrastructure needed to implement them. Much of the information in this Conceptual Management Plan comes directly from the CCP for the Complex (USFWS 2011).

2.0 Mission and Goals of the National Wildlife Refuge System

The mission of the Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

The goals of the Refuge System are:

- To fulfill our statutory duty to achieve refuge purpose(s) and further the System mission.
- Conserve, restore where appropriate, and enhance all species of fish, wildlife, and plants that are endangered or threatened with becoming endangered.
- Perpetuate migratory bird, interjurisdictional fish, and marine mammal populations.
- Conserve a diversity of fish, wildlife, and plants.

- Conserve and restore, where appropriate, representative ecosystems of the United States, including the ecological processes characteristic of those ecosystems.
- To foster understanding and instill appreciation of fish, wildlife, and plants, and their conservation, by providing the public with safe, high-quality, and compatible wildlife-dependent public use. Such use includes hunting, fishing, wildlife observation and photography, and environmental education and interpretation.

3.0 Refuge Administration

Lands acquired in the Willamette Valley Conservation Area would become part of the Refuge System, administered by the Complex headquartered at W. L. Finley National Wildlife Refuge in Corvallis, Oregon. The Complex is part of the Pacific Region (Region 1) of the U.S. Fish and Wildlife Service (Service). The Regional Office is located in Portland, Oregon, and would provide oversight of refuge administration and management. The Regional Office would also provide technical assistance on matters such as engineering, planning, and migratory bird management.

At 11,145 acres, the Complex includes Baskett Slough, Ankeny, and William L. Finley National Wildlife Refuges. These refuges were created in the mid-1960s to protect historic habitats, including wetlands, oak, prairie, and riparian habitats, and the species that depend on them. The Complex currently supports seven federally listed species under the Endangered Species Act, six of which are associated with imperiled prairie habitats, as well as the array of at-risk species identified by partners in various ecoregional strategic plans.

The Complex is managed by a Project Leader responsible for its three National Wildlife Refuges (NWRs). The Complex is staffed with a Refuge Manager for William L. Finley NWR, another Refuge Manager for Ankeny NWR and Baskett Slough NWR, and a Wildlife Biologist for the Complex. As lands are acquired over time it is conceivable to expect that some level of additional field staff, equipment, and supplies would be needed to manage and maintain new lands. The Service's Region 1 evaluates and determines staffing needs and priorities.

The annual budget for the Complex is approximately \$2 million to cover salaries, equipment maintenance, supplies, and routine equipment and construction material purchases. Identifying construction projects, large water control structures and roads, and the need for additional staff would be included in an amended or new CCP.

4.0 Site Stabilization

Prior to developing long-term management plans, the Service may engage in short-term site stabilization actions. Stabilization is the work necessary to reduce hazards and prevent degradation of a site's potential use and value prior to developing a long-term management plan. Site stabilization actions may include addressing access management, invasive species, erosion concerns, and removing trash or posting boundary markers. Long-term access management plans would be developed and included in an amended or new CCP.

4.1 Access Management and Boundary Marking

Access management and boundary marking may involve such things as blocking or decommissioning roads, erecting fences and posting signs. The Service would post the boundaries of any lands acquired

with NWR signs at regular intervals to allow the public to know where the specific boundary is located. The Service may also construct fences or other types of barriers to control access to the site.

Fence construction would involve posthole excavation, placing fence posts and the fencing material, and posting signs marking the boundary of new NWR land. Road decommissioning may involve installing gates or fences across an existing road, minor ditch excavation across an existing road surface or placement of materials (e.g., logs) to block access.

4.2 Trash Removal

Trash removal is not expected to be an important issue. However, should trash removal be needed, it may involve the use of backhoes and dump trucks. Cleanup actions would be short-term. Trash would be hauled to an authorized landfill.

4.3 Erosion Control

Site stabilization actions may require addressing ongoing erosion concerns at a particular site. Specific actions taken would depend on the individual site characteristics, but may involve minor contouring and planting cover crops, installing ground cover mats and sediment fences, mulching, brush layering, and planting live stakes. Such activities may involve preparing the affected area for seeding (disking, harrowing, rolling), and sowing native grass and forb seeds.

5.0 Facilities Management

Facilities on land acquired may be used as administrative offices, housing, storage, or as shops. If the buildings are not suitable for refuge use, they may be transferred to other refuges or agencies, or sold to the general public. Structures in poor condition with nominal value would likely be demolished with as much of the material recycled as possible. Materials not recycled would be disposed of at an approved landfill. Other methods of disposal may be used, where available and appropriate (e.g., local fire department burning for training). All structures would be surveyed for historical significance prior to demolition.

6.0 Habitat Management

Existing habitats on new lands would be maintained to preserve wildlife values and to prevent degradation of potential uses prior to developing a long-term management plan. Habitats would be managed to promote native wildlife use of the lands, with particular attention to providing safe and secure breeding and rearing areas. The Service may burn or mow grassland habitat to reduce thatch accumulation and to promote vigorous growth and diversity, or to control tree and shrub encroachment. The Service may employ various practices in woodlands to preserve existing habitat values including burning, planting seedlings, or no management depending on the particular objective of each area.

6.1 Invasive Species Control

Invasive species control would employ an integrated management approach. Non-native species, especially invasive species, and other pest plants and animals can disrupt native ecosystems and management of conservation lands. Invasive plants can displace native plants and create habitats of little value to native wildlife. Invasive animals can prey upon native species, transmit diseases to other species, and can damage facilities used to manage habitats and provide public use opportunities. Control of such species would be a high priority for any newly acquired refuge land.

U.S. Department of the Interior and Service policy (517 DM 1 and 569 FW 1) requires that pest control programs on national wildlife refuges be undertaken consistent with the principles of integrated pest management. This integrated approach involves using methods based upon effectiveness, cost, and minimal ecological disruption, including minimum potential effects to non-target species and the environment. Pesticides may be used where mechanical/physical, cultural, and biological methods or combinations thereof are impractical or incapable of providing adequate control, eradication, or containment. If a pesticide is needed, the most specific (selective) chemical available for the target species would be used, unless considerations of persistence or other hazards preclude it. Only pesticides registered with the U.S. Environmental Protection Agency would be applied on refuge lands and waters.

6.2 Cooperative Farming or Grazing Agreements

For sites that are being farmed or grazed at the time of acquisition, the Service may enter into short-term (two to five years) cooperative farming or grazing agreements. Cooperative farming is an effective, interim management practice that prevents invasive species from infesting a highly disturbed area until native vegetation can be restored. Additionally, cropland farming provides high-quality food for wildlife. Wintering and migratory birds readily use agricultural crop fields to help meet their energy needs. Providing additional forage on public lands is a strategy that may reduce crop loss from geese grazing on private farmlands by providing a safe and secure food source on refuge lands.

A cooperative farming agreement is a negotiated agreement between the refuge and a private farmer to manage the lands for both parties. Crops grown would likely include annual ryegrass, perennial ryegrass, fescue, corn, spring and winter wheat, or a pasture mix. Any cooperative farming initiated on newly acquired refuge land would comply with Service policy (620 FW 2) and include the following stipulations:

- Genetically modified seeds and other organisms would not be permitted for use in the farming program.
- Weeds would be controlled in accordance with the refuge's integrated pest management program using methods such as crop rotation, mechanical treatment, biological controls, and approved pesticides.
- Herbicide applications would only be applied with prior approval, and applicators must meet all state, Federal, and agency requirements.
- Equipment of cooperating farmers would be required to be cleaned prior to being moved onto the refuge and between fields when working in areas with weed infestations.
- Cooperating farmers would be required to provide a record of herbicides used, including chemical name, amount used, date, location, and method of application.
- Best management practices would be used to avoid fertilizer runoff into wetlands or leaching into groundwater and to minimize sedimentation of streams and water bodies.
- Monitoring of the farming program would be performed by qualified refuge staff.

7.0 Other Actions

The Service may engage in other management activities prior to developing a site-specific management plan either through an amendment to the current CCP or development of a new CCP for a new National Wildlife Refuge. These activities may include inventorying and monitoring, cultural resource management, coordination with the State of Oregon and Tribes, and refuge revenue sharing.

7.1 Inventorying and Monitoring

Refuge resource management includes monitoring wildlife populations and habitat conditions. These activities provide critical information for sound decision-making and the ability to modify management practices when necessary. Inventory and monitoring activities would be conducted on newly acquired land to evaluate initial site conditions and species presence in order to facilitate future resource management and public-use activities. These management activities have the following attributes:

- Minimum number of samples (e.g., water, soils, vegetative litter, plants, macroinvertebrates, vertebrates) to meet statistical analysis requirements would be collected for identification and/or experimentation in order to minimize long-term or cumulative impacts.
- Proper cleaning of investigator equipment and clothing as well as quarantine methods, where necessary, to minimize the potential spread or introduction of invasive species.
- Projects will adhere to scientifically defensible protocols for data collection, where available and applicable.
- Surveys may include: waterfowl migration counts; nesting surveys to determine densities and success; breeding bird surveys; and banding and marking.

The Service would also conduct surveys in cooperation with Oregon Department of Fish and Wildlife to complement their monitoring programs and would encourage college, university, or other agencies conducting research to find out more information on both plant and wildlife species.

7.2 Cultural Resource Management

Archaeological and other cultural resources are important components of our nation's heritage. The Service is committed to protecting valuable evidence of plant, animal, and human interactions with each other and the landscape. An example of an interaction would be the importance of specific plants to Kalapuya Indians, or the use of fire to burn open spaces that then provided habitat for elk and deer. These interactions may include previously recorded or yet undocumented historic, cultural, archaeological, and paleontological resources as well as traditional cultural properties and the historic built environment.

Protection of cultural resources is legally mandated under numerous federal laws and regulations. Foremost among these are the National Historic Preservation Act as amended, the Antiquities Act, the Historic Sites Act, the Archaeological Resources Protection Act as amended, and the Native American Graves Protection and Repatriation Act. The Service's Native American Policy of 2016 (510 FW 1) articulates the general principles guiding the Service's relationships with Tribal governments in the conservation of fish and wildlife resources.

Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on historic properties. Under the terms of Section 106, adding new lands to the Refuge System is considered to be the type of activity that has no potential to cause effects to cultural resources because land is being brought under the protection of federal cultural resource preservation laws. Therefore, consultation with the Oregon State Historic Preservation Office is not required.

The Service commits to cultural resource surveys and other requirements of Section 106 of the National Historic Preservation Act prior to any groundbreaking on lands brought into federal ownership. Prior to implementing any ground-disturbing project, the applicable cultural resource compliance investigation would be undertaken. If cultural resources are found, appropriate procedures and protocols would be

followed. Whenever possible, activity near cultural resources would be avoided or mitigated. Mitigation options, in addition to site avoidance, would include recovery, using either collection techniques or in-situ site stabilization protection.

7.3 State and Tribal Coordination

The Service would continue to maintain regular discussions with the Oregon Department of Fish and Wildlife and Native American tribes who have an interest in acquired lands. The Service would coordinate and consult on a regular basis regarding issues of shared interest. Currently, the Service seeks assistance from Tribes in both Native American Graves Protection and Repatriation Act and National Historic Preservation Act related issues.

The Service has Partners for Fish and Wildlife agreements with both the Confederated Tribes of the Grand Ronde Community of Oregon and the Confederated Tribes of Siletz Indians to assist with habitat restoration work on key conservation lands owned by the tribes. The Service also has a long-term collaborative agreement with the Grand Ronde Tribe to complete prescribed fire on refuge and private lands.

7.4 Law Enforcement

Enforcement of state and federal laws on refuges is important to safeguard resources and protect and manage visitors. The Refuge System has a Refuge Law Enforcement program with federal officers assigned to geographic zones. Each officer is assigned specific refuge lands/easements within their zone and is responsible for enforcing all state and federal laws on these lands.

7.5 Fire Management

Pursuant to Service policy, fire is used when it is the most appropriate management tool for reaching habitat objectives. For example, a prescribed fire may be used in grasslands to remove encroaching trees and shrubs. The Service would aggressively suppress wildfires unless such natural fires are a part of an approved fire management plan.

The Service currently has staff trained in fire management and an array of equipment for fire suppression. To supplement these capabilities, the Service have cooperative agreements and contracts with state agencies, local Native American tribes, and local fire departments. These partnerships allow resources to be leveraged in order to meet prescribed fire objectives.

7.6 Refuge Revenue Sharing

The Refuge Revenue Sharing Act provides a mechanism to make payments to counties in lieu of taxes. Lands acquired by the Service are removed from county tax rolls. However, the tax losses are offset by annually paying counties and other local governments amounts that often equal or exceed taxes that would have been collected if the lands had remained in private ownership. This funding is based on congressional approval on an annual basis.

8.0 Public Use Opportunities and Management

The Service will encourage wildlife oriented public uses on national wildlife refuges considering they are compatible with the primary purposes of the refuge. For sites that currently provide an existing wildlife-dependent public use (hunting, fishing, wildlife observation, photography, environmental education, and interpretation), Service Policy (603 FW 2) is to determine if the continuance of that public use would materially interfere with or detract from the fulfilling the purposes for which the lands were brought

into the Refuge System. This is done by completing Compatibility Determinations, which are written determinations signed and dated by the refuge manager and Regional Refuge Chief signifying that the existing use is, or is not, a compatible use. Development of new public uses would be done through development of the CCP, subject to public input and review.

9.0 Literature Cited

U.S. Fish and Wildlife Service (USFWS). 2011. *Comprehensive Conservation Plan for the Willamette Valley National Wildlife Refuge Complex*.

This page intentionally left blank

Appendix D
ENVIRONMENTAL ASSESSMENT
of the
PROPOSED WILLAMETTE VALLEY CONSERVATION AREA
LAND PROTECTION PLAN

This page intentionally left blank

TABLE OF CONTENTS

1.0 INTRODUCTION.....	1
2.0 PROPOSED ACTION	1
3.0 PURPOSE OF AND NEED FOR ACTION.....	5
4.0 US FISH AND WILDLIFE SERVICE NATIONAL WILDLIFE REFUGE SYSTEM.....	5
5.0 BACKGROUND.....	6
6.0 WILLAMETTE VALLEY CONSERVATION STUDY	7
7.0 ALTERNATIVES	11
7.1 FEATURES COMMON TO ALL ALTERNATIVES	11
7.1.1 State Coordination:.....	11
7.1.2 Tribal Coordination:.....	11
7.1.3 Latino Engagement.....	11
7.1.4 Refuge Revenue Sharing Payment:.....	11
7.1.5 Partners for Fish and Wildlife:.....	12
7.1.6 Volunteer Program:	12
7.1.7 Refuge Fire Management:	12
7.1.8 Integrated Pest Management:.....	13
7.2 ALTERNATIVE A – NO ACTION ALTERNATIVE	13
7.3 ALTERNATIVE B – PARTNERSHIP APPROACH (PROPOSED ACTION ALTERNATIVE).....	13
7.4 ALTERNATIVE C – SERVICE ALONE APPROACH	15
7.5 ALTERNATIVE(S) CONSIDERED, BUT DISMISSED FROM FURTHER CONSIDERATION.....	15
8.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES	15
8.1 RESOURCES CONSIDERED FOR IMPACT ANALYSIS.....	17
8.2 WILLAMETTE VALLEY UPLAND PRAIRIE AND SAVANNA AND ASSOCIATED WILDLIFE - AFFECTED ENVIRONMENT	18
8.3 WILLAMETTE VALLEY WET PRAIRIE AND ASSOCIATED WILDLIFE – AFFECTED ENVIRONMENT.....	19
8.3.1 Alternative A – Impacts on Affected Resources	21
8.3.2 Alternatives B and C – Impacts on Affected Resources.....	21
8.4 OAK WOODLAND AND ASSOCIATED WILDLIFE – AFFECTED ENVIRONMENT	24
8.4.1 Impacts on Affected Resource – Alternative A.....	25
8.4.2 Impacts on Affected Resource – Alternatives B and C	25
8.5 THREATENED AND ENDANGERED SPECIES AND OTHER SPECIAL STATUS SPECIES – AFFECTED ENVIRONMENT	26
8.6 RECOVERY PLANS	26
8.6.1 Fender’s Blue Butterfly.....	27
8.6.2 Golden paintbrush	27
8.6.3 Taylor’s Checkerspot Butterfly	28
8.6.4 Willamette Daisy.....	28
8.6.5 Streaked Horned Lark	28
8.6.6 Kincaid’s lupine	29
8.6.7 Nelson’s checkermallow.....	29
8.6.8 Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington.....	29
8.6.9 Recovery Plan for the Streaked Horned Lark	30
8.7 ALTERNATIVE A – IMPACTS ON AFFECTED RESOURCE.....	30
8.8 ALTERNATIVES B AND C – IMPACTS ON AFFECTED RESOURCE	30

9.0 INITIAL MANAGEMENT ACTIONS	35
9.1 ALTERNATIVE A – IMPACTS ON AFFECTED RESOURCE.....	35
9.2 ALTERNATIVES B AND C – IMPACTS ON AFFECTED RESOURCE.....	35
10.0 VISITOR USE AND EXPERIENCE	36
10.1 AFFECTED ENVIRONMENT	36
10.2 ALTERNATIVE A - IMPACTS ON AFFECTED RESOURCE	36
10.3 ALTERNATIVES B AND C - IMPACTS ON AFFECTED RESOURCE.....	36
11.0 REFUGE ADMINISTRATION	37
11.1 AFFECTED ENVIRONMENT	37
11.2 ALTERNATIVE A - IMPACTS ON AFFECTED RESOURCE	37
11.3 ALTERNATIVES B AND C - IMPACTS ON AFFECTED RESOURCE.....	37
12.0 LOCAL AND REGIONAL ECONOMIES	38
12.1 AFFECTED ENVIRONMENT	38
12.1.1 <i>Market Value of Agricultural Products Sold</i>	38
12.2 ALTERNATIVE A – IMPACTS ON AFFECTED RESOURCE	38
12.3 ALTERNATIVES B AND C – IMPACTS ON AFFECTED RESOURCE.....	38
13.0 ENVIRONMENTAL JUSTICE	41
13.1 AFFECTED ENVIRONMENT	41
13.1.1 <i>Race and Ethnicity</i>	41
13.1.2 <i>Poverty by Race and Ethnicity</i>	42
13.1.3 <i>Identifying Areas with Higher Environmental Justice Populations</i>	44
13.2 ALTERNATIVE A – IMPACTS ON AFFECTED RESOURCE	47
13.3 ALTERNATIVES B AND C – IMPACTS ON AFFECTED RESOURCE.....	47
14.0 CUMULATIVE EFFECTS.....	48
14.1 WILLAMETTE WILDLIFE MITIGATION PROGRAM	48
14.2 PARTNERS FOR FISH AND WILDLIFE	48
14.3 PRESCRIBED FIRE COOPERATIVE.....	49
15.0 MONITORING.....	51
16.0 SUMMARY OF ANALYSIS	51
16.1 ALTERNATIVE A – NO ACTION ALTERNATIVE (CURRENT MANAGEMENT STRATEGY)	51
16.2 ALTERNATIVE B – PARTNERSHIP APPROACH (PROPOSED ACTION ALTERNATIVE)	51
16.3 ALTERNATIVE C – SERVICE ALONE APPROACH	53
17.0 PUBLIC OUTREACH AND LIST OF AGENCIES, TRIBES, ORGANIZATIONS, AND PERSONS CONSULTED	53
18.0 LIST OF PREPARERS	54

FIGURES

FIGURE 1 WILLAMETTE VALLEY LAND PROTECTION PLAN VICINITY	3
FIGURE 2 30-YEAR CONSERVATION CONCEPT MAP: WILLAMETTE VALLEY OAK AND PRAIRIE COOPERATIVE	4
FIGURE 3 WILLAMETTE VALLEY LAND PROTECTION PLAN PRIORITY CONSERVATION AREAS.....	9
FIGURE 4. EXPECTED NUMBER OF WESTERN MEADOWLARK BREEDING PAIRS FOR VARIOUS PATCH SIZES PROTECTED.	22
FIGURE 5. EXPECTED NUMBER OF OREGON VESPER SPARROW BREEDING PAIRS FOR VARIOUS PATCH SIZES PROTECTED.	22
FIGURE 6. EXPECTED NUMBER OF WESTERN BLUEBIRD BREEDING PAIRS FOR VARIOUS PATCH SIZES PROTECTED.	23
FIGURE 7. EXPECTED NUMBER OF WHITE-BREASTED NUTHATCH BREEDING PAIRS FOR VARIOUS PATCH SIZES PROTECTED.	25
FIGURE 8 WILLAMETTE VALLEY LAND PROTECTION PLAN MINORITY POPULATION ABOVE 50 TH PERCENTILE	45
FIGURE 9 WILLAMETTE VALLEY LAND PROTECTION PLAN LOW INCOME ABOVE 50 TH PERCENTILE	46
FIGURE 10 WILLAMETTE VALLEY LAND PROTECTION PLAN PARTNERS FOR FISH AND WILDLIFE IN THE WILLAMETTE VALLEY.....	50

TABLES

TABLE 1 REFUGE REVENUE SHARING HISTORY.....	12
TABLE 2. RESOURCES AND THE POTENTIAL FOR ADVERSE IMPACTS.....	17
TABLE 3. PRAIRIE SPECIES LISTED UNDER THE FEDERAL ESA AND THEIR CURRENT STATUS	27
TABLE 4. ACRES OF FARMLAND BY COUNTY	34
TABLE 5. ECONOMIC INDICATORS.....	38
TABLE 6. FINLEY NWR: VISITOR RECREATION EXPENDITURES (2006) IN THOUSANDS OF DOLLARS.....	39
TABLE 7. FINLEY NWR LOCAL ECONOMIC EFFECTS ASSOCIATED WITH RECREATION VISITS (2006) IN THOUSANDS OF DOLLARS.....	40
TABLE 8. FINLEY NWR: SUMMARY OF LOCAL ECONOMIC EFFECTS OF RECREATION VISITS (2006) IN THOUSANDS OF DOLLARS.....	40
TABLE 9. RACE AND ETHNICITY AS A PERCENT OF THE TOTAL POPULATION 2019.....	41
TABLE 10. RACE AND ETHNICITY TRENDS.....	42
TABLE 11. POVERTY BY RACE AND ETHNICITY AS A PERCENT OF THE TOTAL POPULATION 2019	43
TABLE 12. POVERTY BY RACE AND ETHNICITY AS A PERCENT OF EACH COUNTY'S TOTAL POPULATION 2019.....	43

APPENDICES

APPENDIX A STATEMENT OF COMPLIANCE FOR THE PROPOSED WILLAMETTE VALLEY CONSERVATION AREA.....	A-1
APPENDIX B SPECIES LIST	B-1
APPENDIX C LITERATURE CITED	C-1
APPENDIX D LIST OF ACRONYMS AND TERMS	D-1
APPENDIX E ENDANGERED SPECIES ACT SECTION 7 CONSULTATION	E-1

1.0 Introduction

This Draft Environmental Assessment evaluates the effects associated with establishing the Willamette Valley Conservation Area in Oregon's Willamette Valley (Figure 1), as described in the Land Protection Plan and actions described in the Conceptual Management Plan. This Environmental Assessment complies with the National Environmental Policy Act (NEPA) in accordance with Council on Environmental Quality regulations implementing NEPA at 40 CFR Part 1500, Departmental NEPA regulations at 43 CFR Part 46, and the Departmental Manual at Part 516 DM, Chapters 1-15, which requires examination of the effects of proposed actions on the natural and human environment. This EA was prepared to determine if the Proposed Action would significantly affect the natural and human environment, warranting preparation of an Environmental Impact Statement (EIS), or if significant effects are not anticipated, the preparation of a Finding of No Significant Impact (FONSI).

2.0 Proposed Action

The U.S. Fish and Wildlife Service (Service) proposes to create the Willamette Valley Conservation Area (Conservation Area) in Oregon's Willamette Valley to partner with the Willamette Valley Oak and Prairie Cooperative (Cooperative) in the delivery of their mission as stated in their [Strategic Action Plan](#) (WVOPC 2020).

"To protect, restore, and maintain a functional, resilient network of oak and prairie habitats in the Willamette Valley through a coordinated and strategic approach that leverages resources, focuses on priority geographies and species, and produces substantial ecological returns."

The Cooperative is a partnership comprised of local tribes, non-governmental organizations, and state and local governmental agencies with a long-term vision to conserve and maintain prairie and oak habitats within the Willamette Valley through a regionally focused, collaborative, and sustainable program.

The Service is in a unique position in the valley as the only federal agency with the singular mission to preserve, protect, and manage wildlife habitat for the continuing benefit of the American people. The Willamette National Wildlife Refuge Complex (Complex) would coordinate with the Cooperative as lands are reviewed for potential acquisition by willing sellers either through fee title or easement. The Complex, which is comprised of Ankeny, Baskett Slough, and the W. L. Finley National Wildlife Refuges (see Figure 1), and the Cooperative are described in Sections 1 and 2 of the Land Protection Plan for the Proposed Willamette Valley Conservation Area.

The boundary for the Conservation Area would be the Cooperative's Primary Planning Area as shown on the 30 Year Conservation Concept Map. The Conservation Area covers approximately 2.4 million acres (3,750 square miles or about 75 percent of the entire valley), is approximately 120 miles long (north to south) and 40 miles wide (east to west). The area is bound by the Oregon Coast Range to the west, the Cascade Mountains to the east, and by the Portland Metropolitan Area to the north. Agricultural and urban uses dominate the valley floor. Six counties comprise the vast majority of the Conservation Area: Benton, Lane, Linn, Marion, Polk, and Yamhill, although most counties extend well beyond the Conservation Area boundary. Less than four percent of the land within the Conservation Area is currently managed by public or non-profit organizations for habitat conservation purposes or is otherwise in a permanent conservation status (WVOPC 2020).

The Service would be authorized to purchase land in the Conservation Area (as shown in Figure 1, which is the same as the Cooperative's Primary Planning Area in Figure 2) from willing landowners wishing to sell their land or an interest in their land to the Service. The Service would focus on grassland and oak woodland protection in the areas mapped by the Cooperative as Core Conservation Areas (Core Areas) (WVOPC 2020) (Figure 2). Core Areas are the Cooperative's highest priority for immediately investing in acquiring and restoring oak and prairie habitats. The Core Areas were selected based on:

- their proximity to existing anchor habitat patches, which include known concentrations of particularly high-quality oak and prairie habitat on larger parcels; or
- high-value oak or prairie habitats under a high level of threat from agricultural conversion and/or rural development.

The Service would also evaluate potential acquisitions within the Cooperative's Opportunity Conservation Areas (Opportunity Areas) (Figure 2). Opportunity Areas are areas that contain dispersed oak and prairie habitats that are critical for providing connectivity between Core Areas. The Cooperative's long-term land acquisition goals in these areas focus on aligning with on-going restoration and management efforts and would be designed to build new anchor habitat patches where high-quality conservation opportunities are developed (WVOPC 2020).

Anchor habitats are areas of suitable habitat and sufficient size, which contain the properties and elements required for successful reproduction and survival of the targeted species. Within these core habitat patches wildlife management would be prioritized over other management concerns. Not only would the species selected to represent these habitats benefit, but also the suite of species dependent on these habitats.

As described in the Land Protection Plan, The Nature Conservancy completed the Resilient and Connected Network project across the Pacific Northwest to identify areas on the landscape that are more resilient to disturbance including climate change. The Service used this information to identify areas more resilient to climate change and permeable areas for wildlife movement within the Willamette Valley. Extending the boundary of the Conservation Area to the eastern and western flanks of the Willamette Valley Level III Ecoregion (Omernik 1987), would include in the Conservation Area areas that are more permeable to wildlife movement and more resilient to the effects of climate change than what is expected at the valley floor (see LPP Figures 4 and 5; McRae et al. 2016).

The Service is proposing two action alternatives. Both alternatives focus on grassland and oak woodland protection in the Core Areas and the Opportunity Areas. Additionally, the Service would be authorized to work with willing landowners wishing to permanently protect and advance recovery of threatened or endangered species populations on their land wherever it occurs inside the Conservation Area's boundary. The decision to sell their land, or an interest in their land (e.g., easements), to the Service rests entirely with the landowner. Condemnation of private land will not be considered.

Proposed actions may evolve during the NEPA process as the agency gathers feedback from the public, tribes, and other agencies. The proposed actions will be finalized at the conclusion of the public comment period for this Environmental Assessment and may be different from the original.

FIGURE 1 Willamette Valley Land Protection Plan Vicinity

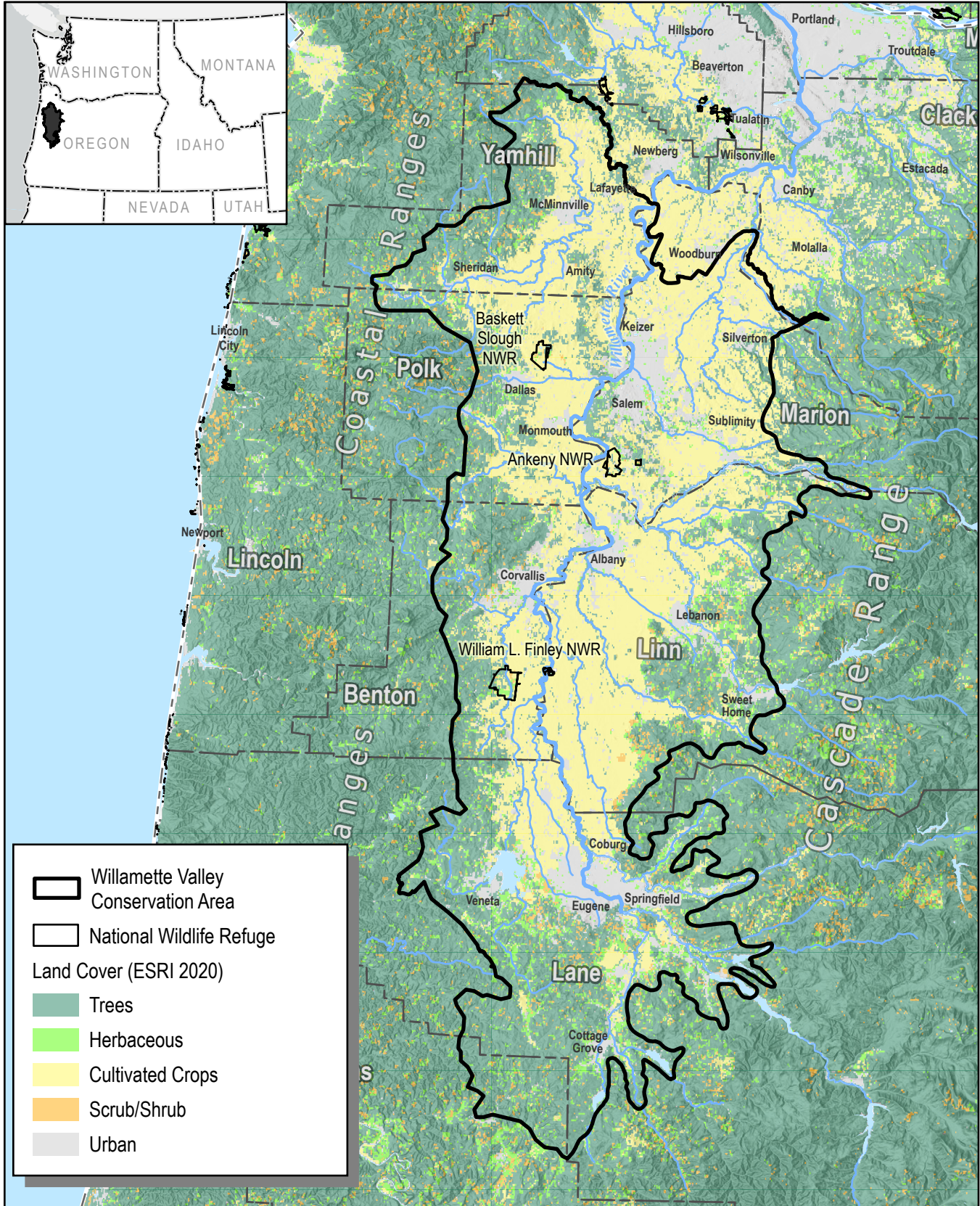


U.S. Fish & Wildlife Service

Willamette Valley Land Protection Plan

Oregon

Figure 1. Vicinity



- Willamette Valley Conservation Area
- National Wildlife Refuge
- Land Cover (ESRI 2020)
 - Trees
 - Herbaceous
 - Cultivated Crops
 - Scrub/Shrub
 - Urban

USFWS, NWRS
 PORTLAND, OREGON
 MAP DATE: 8/15/2022
 BASE DATA: ESRI Land Cover 2020
 FILE: R1_NWRS_FY22_459

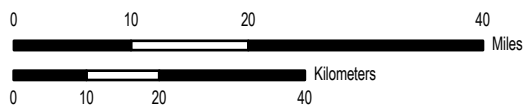
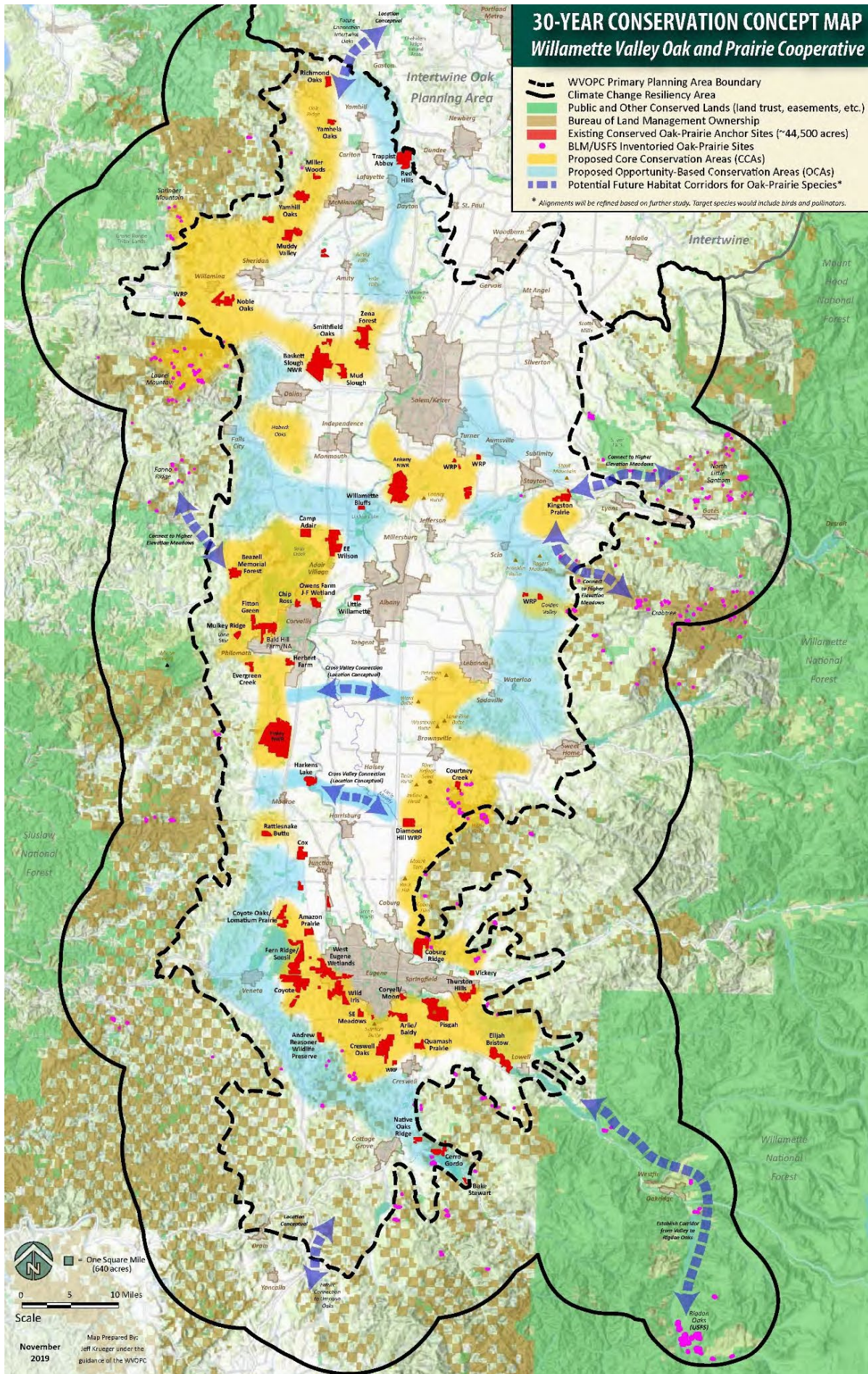


FIGURE 2 30-Year Conservation Concept Map: Willamette Valley Oak and Prairie Cooperative



3.0 Purpose of and Need for Action

The purpose of this proposed action is for the National Wildlife Refuge System (Refuge System) to help support the Cooperative's mission of protecting, restoring, and maintaining a functional, resilient network of oak and prairie habitats in the Willamette Valley and to assist in the recovery of species listed under the federal Endangered Species Act.

The Service does this by permanently protecting oak and prairie habitats and populations of the listed species and managing those lands for their wildlife values. Protected lands would become part of the Complex.

Action is needed because the extensive loss of native habitats has contributed to steep declines in wildlife populations and the listing of Willamette Valley endemic species under the federal Endangered Species Act. Action also supports the Department of Interior's efforts to implement locally led and designed conservation efforts to conserve and restore wildlife habitats across America.

"to work with States, local communities, and others to explore where there is support to enhance the National Wildlife Refuge System, which provides important anchors for wildlife conservation throughout the nation."

4.0 US Fish and Wildlife Service National Wildlife Refuge System

National Wildlife Refuges (NWRs) are specific geographic areas identified and designated for conservation purposes. All NWRs are guided by the mission and goals of the National Wildlife Refuge System (Refuge System), the purposes of an individual refuge, Service policy, and laws and international treaties. Relevant guidance includes the Refuge Recreation Act of 1962, the National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997 (16 U.S.C. 668dd et seq.), and selected portions of the Code of Federal Regulations and Fish and Wildlife Service Manual.

The mission of the Refuge System, as outlined by the National Wildlife Refuge System Administration Act, as amended by the National Wildlife Refuge System Improvement Act, is

"... to administer a national network of lands and waters for the conservation, management and, where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans." (16 U.S.C. 668dd et seq.)

Additionally, the Administration Act mandates the Secretary of the Interior to administer the Refuge System to:

- Provide for the conservation of fish, wildlife, and plants, and their habitats within the Refuge System.
- Ensure that the biological integrity, diversity, and environmental health of the Refuge System are maintained for the benefit of present and future generations of Americans.
- Ensure that the mission of the Refuge System and the purposes of each refuge are carried out.
- Ensure effective coordination, interaction, and cooperation with owners of land adjoining refuges and the fish and wildlife agency of the states in which the units of the Refuge System are located.

- Assist in the maintenance of adequate water quantity and water quality to fulfill the mission of the Refuge System and the purposes of each refuge.
- Recognize compatible wildlife-dependent recreational uses as the priority general public use of the Refuge System through which the American public can develop an appreciation for fish and wildlife.
- Ensure that opportunities are provided within the Refuge System for compatible wildlife-dependent recreational uses.
- Monitor the status and trends of fish, wildlife, and plants in each refuge.

5.0 Background

Oak and prairie are some of the most culturally and ecologically important habitats in the Willamette Valley, and once covered an estimated 1,400,000 acres prior to Euro-American settlement (WVOPC 2020). The rapid decline of these habitats over the past 170 years to just a fraction of their historic range has resulted in steep declines in many oak and prairie dependent species such as western meadowlark, western bluebird, and others (Altman 1999). These habitats are now considered some of the most imperiled ecosystems in the United States (Noss et al. 1995).

At the time of Euro-American settlement, which began in earnest only a little more than 170 years ago, the valley was typically described as a landscape dominated by vast open prairies interspersed with solitary oak and pine trees. The open prairies were surrounded by bands of oak woodlands. Closed canopy coniferous forests were limited to the upper foothills and beyond (Johannessen et al. 1971; Christy and Alverson 2011). The valley's major rivers were lined by wide extents of hardwood forests and shrublands, which experienced flooding on an annual basis (Hulse et al. 2002).

For millennia, the prairies were kept free of encroaching trees and shrubs by frequent, low severity fires set by the native Kalapuya people. Burning increased the distribution and quantity of food that could be harvested by increasing the amounts of acorns and filberts, stimulating berry and root production (especially in the extensive camas prairies), and driving deer to desirable areas for hunting (Taft and Haig 2003, Connolly 2000, Johannessen et al. 1971, Hamman et al. 2011). Annual springtime flooding along the Willamette River rejuvenated and maintained complex river and floodplain habitats (Hulse et al. 2002).

As settlers arrived in the valley, malaria and other introduced diseases ravaged the Kalapuya, and as more settlers moved in, the remaining Kalapuya were driven out (Connolly 2000, Taft and Haig 2003). Ranching, farming, and logging practices were introduced (Christy and Alverson 2011) and the practice of annual burning was greatly curtailed (Taft and Haig 2003, Hamman et al. 2011, Johannessen et al. 1971). As burning was curtailed, oak densities increased and conifers began to invade the open prairies and savannas, which over time, converted to closed-canopy forests (Connolly 2000, Christy and Alverson 2011, ODFW 2006).

The ongoing conversion of undeveloped open spaces and the exclusion of fire continues to have a significant effect on the valley's native habitats and the wildlife they support. The vast prairies, savannas, oak woodlands, the forests and shrublands growing along the shores of the area's rivers and other waterways that once dominated the valley's landscape are now highly diminished, degraded, fragmented, and no longer capable of supporting some of Oregon's iconic wildlife.

Native species and ecosystems may be at an ecological tipping point, as evidenced by the declining populations and range contractions of many native fish, wildlife, and plant species. Twelve species native to the valley have been listed under the federal Endangered Species Act. Many species are extirpated from the valley, and many more are threatened with extirpation including the State Bird of Oregon, the western meadowlark (ODFW 2016). Extirpation refers to a species of plant or animal that ceases to exist in a given geographic area such as the Willamette Valley, though it still exists elsewhere.

The projected human population growth will only increase the need for additional outputs from the valley's working landscapes, putting ever more pressure on the limited remaining natural areas.

Over the past 25 years, conservation efforts have begun to focus on these habitats and restoration and management techniques are becoming much more refined. The Oregon Conservation Strategy, first released in 2006 and refined in 2016, has designated grasslands (including upland prairie, oak savannas, and wet prairies), and oak woodlands in the Willamette Valley as "strategy habitats" meaning they are given high priority for conservation and restoration efforts in the state of Oregon (WVOPC 2020).

6.0 Willamette Valley Conservation Study

In 2017, the Service completed the [Willamette Valley Conservation Study](#) (Conservation Study), a landscape conservation design of the valley using the Strategic Habitat Conservation framework (USFWS 2017). The Service adopted the Strategic Habitat Conservation framework as its approach for the efficient conservation of wildlife populations with the overall goal of maintaining functional landscapes capable of supporting self-sustaining populations of native fish, wildlife, and plants (USFWS 2008). Functional landscapes are lands and waters with the properties and elements required to support desirable populations of fish and wildlife, while also providing human society with desired goods and services, including food, fiber, water, energy, and living space (USFWS 2012). These areas would purify and safeguard drinking water, clean the air, and would increase resilience in the face of climate change while supporting the recovery of endangered and threatened species in the valley.

Per the Strategic Habitat Conservation protocols, the Service worked with the Oregon Department of Fish and Wildlife, the American Bird Conservancy, The Nature Conservancy, the University of Oregon, Washington State University, the University of Washington, the Institute for Applied Ecology, and others involved in conservation in the valley to:

- select species that best represent the valley's native terrestrial habitats of concern,
- establish population objectives for those species, and
- determine a spatial distribution of habitat needed to achieve the population objectives.

The Conservation Study concluded that the current amount and distribution of lands managed for sensitive native wildlife species is inadequate for depressed populations to recover to a healthy and viable condition. The Conservation Study recommended that networks of grasslands, oak woodlands, and riparian habitats in specific areas of the valley—subsets of Conservation Opportunity Areas identified by the Oregon Department of Fish and Wildlife (ODFW), be protected as safe and secure habitat to allow populations of sensitive native wildlife and plants space and time to recover and identified areas of the valley where this could occur. The Priority Conservation Area Map is provided as Figure 3. The Cooperative's mission of creating and maintaining a resilient network of oak and prairie habitats and the conclusions of the Conservation Study are essentially identical.

As described in the Land Protection Plan, the Service completed a gap analysis to see how the existing conservation estate (lands currently protected for their conservation values) is already meeting the Conservation Study's habitat objectives and what remains to be protected (see Land Protection Plan Table 1). There remains a 45,300-acre gap between the Conservation Study's habitat objectives and the current conservation estate.

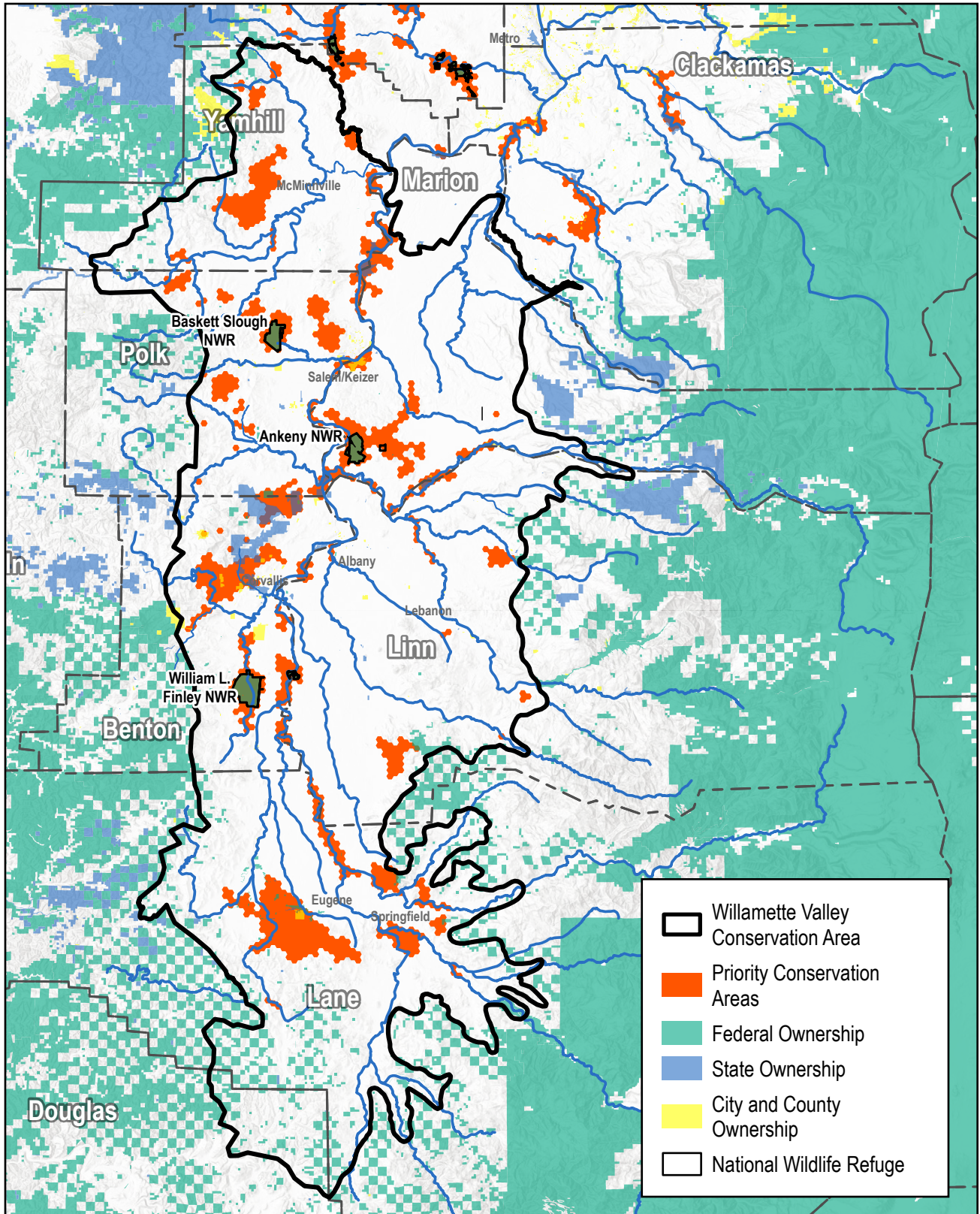
FIGURE 3 Willamette Valley Land Protection Plan Priority Conservation Areas



U.S. Fish and Wildlife Service

Willamette Valley Land Protection Plan

Figure 3. Priority Conservation Areas



This page intentionally left blank

7.0 Alternatives

7.1 Features Common to all Alternatives

The Service is evaluating two action alternatives. The alternatives share some common features, which are presented here to reduce the length and redundancy of the individual alternative descriptions.

7.1.1 State Coordination: Under all alternatives, the Service would continue to maintain regular discussions with ODFW. Key topics for discussion would be Canada goose management, wildlife monitoring, elk management, fisheries management (including fish passage and barriers), hunting and fishing seasons and regulations, endangered species management, and land protection planning efforts.

7.1.2 Tribal Coordination: Regular communication with Native American Tribes who have an interest in the NWRs is common to all alternatives. The Confederated Tribes of the Grand Ronde Community of Oregon is the major local tribal entity the Complex coordinates and consults with on a regular basis regarding issues of shared interest. Currently, the Service seeks assistance from Tribes in endangered species management, land protection planning efforts, and coordinated efforts to comply with the Native American Graves Protection and Repatriation Act, the National Historic Preservation Act, and related issues.

7.1.3 Latino Engagement: In 2015, the Complex initiated its Latino Engagement Program, to make a commitment to reach out and engage with the Latino community. Since 2015, the Complex has hired four Latino Engagement Coordinators through Environment for the Americas with Service Youth Funding. These Coordinators have developed over 20 partnerships in the Latino community and hold monthly bilingual and annual events.

7.1.4 Refuge Revenue Sharing Payment: Lands purchased by the Service are removed from the local tax rolls. The Refuge Revenue Sharing Act (CFR Part 34), as amended, requires the Service to make payments annually to counties and other local governments to help offset lost tax revenues. Refuge lands provide many public benefits, including public wildlife-dependent recreation and environmental education opportunities, while placing few demands on local services such as schools, fire, and police, compared to developed lands. Annual payments to Counties under the Refuge Revenue Sharing Act will continue according to the established formula and subject to payments authorized by Congress.

Over the past 10 years, the Service has paid the counties of Benton, Linn, Marion, and Polk a total of \$445,706 under the Refuge Revenue Sharing Act. Table 1 provides the annual payment history to the four counties. While each county decides how to allocate these payments, the additional funding can help local governments carry out such vital services as firefighting, police protection, and construction of public schools and roads.

Table 1 Refuge Revenue Sharing History

COUNTY	REFUGE	2013 Payment for 2012	2014 Payment for 2013	2015 Payment for 2014	2016 Payment for 2015	2017 Payment for 2016	2018 Payment for 2017
Benton	William L. Finley	\$19,655	\$18,179	\$17,015	\$17,890	\$20,287	\$16,506
Linn	Oak Creek	\$548	\$643	\$602	\$633	\$718	\$584
Linn	William L. Finley	\$1,684	\$2,011	\$1,883	\$1,979	\$2,245	\$1,826
Marion	Ankeny	\$9,444	\$13,790	\$12,907	\$13,570	\$15,388	\$12,520
Polk	Baskett Slough	\$10,669	\$11,345	\$10,619	\$11,164	\$12,660	\$10,669
	Annual Total	\$42,000	\$45,968	\$43,026	\$45,236	\$51,298	\$42,105

Table 1 Refuge Revenue Sharing History continued

COUNTY	REFUGE	2019 Payment for 2018	2020 Payment for 2019	2021 Payment for 2020	2022 Payment for 2021	Total
Benton	William L. Finley	\$18,915	\$16,400	\$15,414	\$15,414	\$175,675
Linn	Oak Creek	\$669	\$580	\$545	\$541	\$6,063
Linn	William L. Finley	\$2,093	\$1,815	\$1,705	\$1,691	\$18,932
Marion	Ankeny	\$14,348	\$12,440	\$11,691	\$11,593	\$127,691
Polk	Baskett Slough	\$11,804	\$10,669	\$10,669	\$10,669	\$110,937
	Annual Total	\$47,829	\$45,221	\$40,024	\$42,999	\$445,706

Source: USFWS 2022a

7.1.5 Partners for Fish and Wildlife: The Complex would continue to implement the Partners Program and work with willing private landowners to restore fish and wildlife habitat on their land located in the Conservation Area.

7.1.6 Volunteer Program: Ongoing volunteer opportunities and partnerships exist in all alternatives. These relationships are a key component of successfully managing public lands and are vital to implementing refuge programs, plans, and projects.

7.1.7 Refuge Fire Management: When new lands are added to the Complex, they are covered by the Service’s Fire Management Plan, which authorizes the use of prescribed fire as a management tool. Fire management actions would continue as directed by the Fire Management Plan.

7.1.8 Integrated Pest Management: An integrated approach to pest management would be followed under all alternatives, where practical, to eliminate, control, or contain pests and invasive species on refuge land. Pesticides may be used where physical, cultural, and biological methods, are impractical or incapable of providing adequate control, eradication, or containment. Pesticides would be used primarily to supplement, rather than substitute for, practical and effective control measures of other types. If a pesticide should be needed, the most specific (selective) chemical available for the targeted species would be used unless environmental and/or other hazards would preclude it. See Appendix F of the Complex's Comprehensive Conservation Plan for a complete description of the Integrated Pest Management approach (USFWS 2011).

7.2 Alternative A – No Action Alternative

Under Alternative A, the Service would not establish the Conservation Area and would not be authorized to permanently protect lands beyond minor additions to the three existing Refuges of the Complex. Minor additions are additions that cumulatively add up to 10 percent of a refuge's approved acquisition boundary. The Service would not collaborate with the Cooperative and its partner organizations to help implement the Strategic Action Plan (WVOPC 2020) to protect native prairie and oak habitats. The Service would not be authorized to permanently protect populations outside of already authorized areas of listed threatened or endangered species that would contribute to their recovery.

7.3 Alternative B – Core Area Focus (Preferred Alternative)

Under Alternative B, the Service would establish the Conservation Area and would work to deliver perpetual protection, in the form of conservation easements and fee title acquisition from willing sellers, on up to 22,650 acres of grasslands (prairies and oak savanna), and oak woodlands in the Willamette Valley, contributing to the commitment to protect and restore wildlife habitats across America. The Service would focus its efforts in the mapped Core Areas (see Figure 2) and would also carefully evaluate conservation opportunities in the Opportunity Areas in line with the Cooperative's conservation strategy. The Service would also evaluate opportunities to permanently protect populations of species listed under the federal Endangered Species Act that address recovery plan objectives wherever they occur within the Conservation Area.

Protecting 22,650 acres is one-half of the area needed to close the gap between the Conservation Study's habitat objectives and the current conservation estate in the valley. The Service would rely on the Cooperative's diverse group of conservation partners to continue efforts to complete the network of protected land. Members of the Cooperative engaged in land protection efforts include the Confederated Tribes of the Grand Ronde Community of Oregon, the Confederated Tribes of the Siletz Indians, ODFW, Soil and Water Conservation Districts, local Watershed Councils, and members of the Coalition of Oregon Land Trusts. Continuing to build and ultimately completing the conservation network requires contributions from as many partners as possible.

Several funding opportunities are available to Service conservation partners for future land protection.

- The Willamette Wildlife Mitigation Program (WWMP), while sun-setting, still has funds available.
- The National Fish and Wildlife Federation manages the America the Beautiful Challenge, which is a public-private grant program for locally led ecosystem restoration projects that invest in watershed restoration, resilience, equitable access, workforce development, corridors and

connectivity, and collaborative conservation, consistent with the America the Beautiful Initiative.

- The Oregon Watershed Enhancement Board (OWEB) funds Focused Investment Partnerships that address board-identified Focused Investment Priorities of significance to the state. The Cooperative is one such Partnership. Oak woodlands and prairies are OWEB investment priorities. OWEB's acceptance of the Cooperative's Strategic Action Plan (WVOPC 2020) makes it eligible for Focused Investment Priorities funding.

The Service believes that focusing on protecting 22,650 acres (less than one percent of the Conservation Area) would allow it to concentrate on some of the larger habitat objectives, which were generally not being met by WWMP purchases. The conservation strategy is based on the following assumptions:

- Areas with low habitat fragmentation (areas that are continuous and not split apart) are better than areas with high fragmentation
- Large areas of habitat are better than small ones
- Areas close together are better than areas far apart.

These assumptions will most likely direct the Service to consider undeveloped habitat areas rather than active agricultural areas. However, given the high degree of loss of certain habitat types, the Service may consider areas to restore that may affect agricultural land and work only with willing sellers.

The Service developed a Conceptual Management Plan (Appendix C to the Land Protection Plan) to provide a general outline on how new refuge lands may be managed until the Complex's Comprehensive Conservation Plan (CCP) is amended. The Conceptual Management Plan (CMP) describes initial management activities such as access management and boundary marking, removing trash, erecting fences and posting signs, and controlling invasive weeds following integrated pest management principles. Wildlife and plant communities would also be inventoried and monitored.

To assist in the recovery of listed threatened and endangered species, the Service would work with Conservation Area willing landowners to protect populations of listed species if protecting the population addresses published recovery criteria (USFWS 2010, USFWS 2013). The federal Endangered Species Act requires federal agencies to conserve endangered and threatened species and to utilize their authorities in furtherance of the purposes of the Act.

Prior to land acquisition, the Service would complete a compatibility determination (USFWS 2000a) for any existing wildlife-dependent recreational public uses occurring on the land. For the Service, wildlife-dependent recreational public uses include hunting, fishing, wildlife observation, photography, environmental education, and interpretation. The Service would allow those uses determined to be compatible on an interim basis, pending a revision to the CCP. Pre-acquisition compatibility determinations only apply to existing wildlife-dependent recreational public uses and are intended to be short-term in nature, bridging the gap between acquisition of refuge lands and amending the CCP.

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) requires federal agencies to evaluate the environmental conditions of properties, and to take remedial actions as necessary, to protect human health and the environment before acquiring the property. The Service would complete a pre-acquisition environmental site assessment on all parcels prior to completing the acquisition.

7.4 Alternative C – Core Areas Plus Expanded Opportunity Areas

Under Alternative C, the Service would establish the Conservation Area as it would under Alternative B, and deliver perpetual protection, in the form of conservation easements and fee title land acquisitions from willing sellers, on up to 45,300 acres of grasslands (prairies and oak savanna), and oak woodlands, contributing to the commitment to protect and restore these areas. The effects of Alternative B and C are identical up to the point where the acreage cap for Alternative B is reached. Beyond that amount, Alternative C provides incrementally more protected habitat and the associated effects of federally protecting an additional 22,650 acres.

The same conservation strategy described under Alternative B would apply to Alternative C. As with Alternative B, the Service would coordinate with the Cooperative and work to implement their vision by focusing on protecting land within the areas mapped as Core Areas and would evaluate potential acquisitions within the Opportunity Areas.

Protecting up to 45,300 acres would allow the Service to meet all Conservation Study habitat objectives that are not currently protected. These new Refuge System lands may provide new opportunities for the public to engage in safe and inclusive wildlife-dependent recreation. As with Alternative B, the Service would be authorized to work with willing landowners wishing to sell an interest in their property to protect populations of species listed under the Endangered Species Act (ESA).

As with Alternative B, the CMP outlines potential initial management actions we may employ on acquired lands. The reasonably certain effects related to implementing these refuge management actions described in the CMP are analyzed in this EA.

Also, as with Alternative B, prior to land acquisition, the Service would complete a compatibility determination for any existing wildlife-dependent recreational public uses prior to acquiring land. The Service would continue to allow those uses determined to be compatible on an interim basis, pending amendment of the CCP. Consistent with CERCLA and SO 3127, the Service would complete a pre-acquisition environmental site assessment on all parcels prior to completing the acquisition.

7.5 Alternative(s) Considered, But Dismissed from Further Consideration

The Service considered alternatives with smaller acreage caps and a smaller Conservation Area, but these do not meet the purpose of permanently protecting populations of ESA-listed species wherever they may occur in the valley. In addition, a smaller Conservation Area focusing on the valley floor would exclude areas of the valley that The Nature Conservancy determined were most permeable for wildlife movement and the most resilient to the effects of climate change (Buttrick 2015). Permeability is the ease with which wildlife can move through the landscape. Landscapes with high permeability mean wildlife can more readily move through it than landscapes with low permeability.

8.0 Affected Environment and Environmental Consequences

This section is organized by potentially affected resources and environmental consequences of the action on those resources. Each resource section discusses both (1) baseline conditions (affected environment) in the Conservation Area, and (2) expected effects of the no action and two action alternatives on each resource.

“Effects” include

- direct effects, which are caused by the action and occur at the same time and place (40 CFR § 1508.8);
- indirect effects, which are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable (40 CFR § 1508.8); and
- cumulative effects which are the impact on the environment resulting from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Actions by federal, non-federal agencies, and private parties must be considered (40 CFR § 1508.7).

Reasonably foreseeable effects to the wildlife and ESA-listed species living within these habitats are also examined. Other habitat types may be included on a particular parcel that is acquired, but acquiring such habitats is incidental and effects to these unknown habitats are not considered.

The terms below were used to describe the scope, scale, and intensity of effects on the natural (physical and biological) and built (socioeconomic and cultural) environments.

- **Neutral or Negligible.** Resources would not be affected (neutral effect), or the effects would be at or near the lowest level of detection (negligible effect). Resource conditions would not change or would be so slight there would not be any measurable or perceptible consequence to wildlife or plant communities or other aspects of the natural or built environments. If a resource is not discussed, impacts to that resource are assumed to be neutral.
- **Minor.** Effects would be detectable, but localized, small, and of little consequence to wildlife or plant communities or other aspects of the natural or built environments. Mitigation, if needed to offset adverse effects, would be easily implemented and successful based on knowledge and experience.
- **Intermediate or Moderate.** Effects would be readily detectable and localized with measurable consequences to wildlife or plant communities or other aspects of the natural or built environments, but not easily detectable or measurable beyond the immediate area of impact. Mitigation measures may offset adverse effects, and could be extensive, moderately complicated to implement, and probably successful based on knowledge and experience.
- **Significant or Major.** Region-wide effects would be obvious and would result in substantial consequences to wildlife or plant communities or other aspects of the natural or built environments. Extensive mitigating measures may offset adverse effects, but would be large-scale in nature, possibly complicated to implement, and may not have a high probability for success. In some instances, major effects would include the irretrievable loss of the resource.

This Environmental Assessment examines the reasonably foreseeable effects associated with permanently protecting the target habitat types identified in the Land Protection Plan which include grasslands (upland prairies, oak savannas, and wet prairies) and oak woodlands. These habitats are identified by the Oregon Department of Fish and Wildlife as “strategy habitats” in the Oregon Conservation Strategy (ODFW 2016). Strategy habitats are habitats of conservation concern within Oregon that provide important benefits to Strategy Species. Strategy Species are defined as having small or declining populations, are at-risk, and/or are of management concern (ODFW 2016). Each species

selected to represent the valley’s native habitats for the Conservation Study are all State of Oregon Strategy Species.

8.1 Resources Considered for Impact Analysis

Written analyses of the environmental consequences on a resource are included in this Environmental Assessment only when the impacts on that resource could be more than negligible and considered an “affected resource.” Any resources that do not exist within the Conservation Area or will not be more than negligibly impacted by the action have been dismissed from further analyses. Table 2 identifies those resources that either do not exist within the Conservation Area or would either not be affected or only negligibly affected by the proposed action. As such, aquatic species, geology and soils, air quality, water resources, wilderness, and cultural resources, will not be further analyzed in this Environmental assessment.

Table 2. Resources and the Potential for Adverse Impacts

Resources	Not applicable: Resource does not exist in project area	No/negligible impacts: Resource exists but no or negligible impacts	Greater than negligible impacts: Impacts analyzed in this EA
Terrestrial Wildlife	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Aquatic Species	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Threatened and Endangered Species and Other Special Status Species	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vegetation (Including Vegetation of Special Management Concern)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Geology & Soils	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Air Quality	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Water Resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wetlands (wet prairies)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Floodplains	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Wilderness	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land Use	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Visitor Use and Experiences	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Cultural Resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Refuge Administration	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Local and Regional Economies	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

During development of the Conservation Study, we conducted a geographic information system (GIS) analysis of the valley to determine the potential for new wilderness areas. The analysis attempted to find any roadless area of 5,000 acres or greater within the valley, or any roadless areas within the valley

that extend beyond the Conservation Area boundary that equaled at least 5,000 acres. No such areas were identified.

Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on historic properties. While cultural resources are likely to be identified on some properties, under the terms of Section 106, the proposed action is considered to be the type of activity that has no potential to cause effects to cultural resources because land is being brought under the protection of federal cultural resource preservation laws. Therefore, the full Section 106 process, including consultation with the State Historic Preservation Office, is not required at this time. The Service commits to cultural resource surveys and compliance with other requirements of Section 106 prior to initiating specific management activities including groundbreaking actions on new lands of the Refuge System.

This Environmental Assessment does not analyze the effects to air quality, water quality and quantity, and geology and soils. While each protected parcel may incrementally clean the air and purify and store water, these beneficial impacts are not quantifiable, are considered to be negligible and not important to the decision to implement the proposed action or not.

8.2 Willamette Valley Upland Prairie and Savanna and Associated Wildlife – Affected Environment

This section begins by describing the affected environment for both the Willamette Valley Upland Prairie and Savanna and the Willamette Valley Wet Prairie as they often occur along a moisture gradient and are often spatially interspersed. Following the description is an analysis of the reasonably certain effects resulting from implementing the three alternatives.

This Environmental Assessment adopts the ecological systems nomenclature of the International Terrestrial Ecological Systems Classification (NatureServe 2011) for these habitat types in the valley:

- Willamette Valley Upland Prairie and Savanna
- Willamette Valley Wet Prairie
- North Pacific Oak Woodland

Ecological systems are recurring groups of biological communities that are found in similar physical environments and are influenced by similar dynamic ecological processes, such as fire or flooding (Comer et al. 2003).

At the time of Euro-American settlement, upland prairies were the most extensive prairie type in the valley, covering approximately 707,000 acres or about 22 percent of the valley (Christy and Alverson 2011). Oak savannas historically covered about 540,000 acres or 17 percent of the valley. Today, less than one percent of this habitat remains as remnant patches scattered across the valley (ODFW 2016), making the Willamette Valley Upland Prairie and Savanna one of the most critically endangered ecosystems of the United States (Noss et al. 1995). Grasslands have been lost due to conversion to other uses, particularly development, vegetation changes following fire suppression and invasive species. In the valley, grasslands are particularly fragmented and isolated (ODFW 2016). Oak savanna in Washington, Oregon, and California has been designated by the American Bird Conservancy as one of the 20 most threatened bird habitats in the United States (ABC 2006).

Related to this loss has been a substantial decline of wildlife populations dependent on this habitat, resulting in several imperiled species being listed under the Endangered Species Act with more

identified as species of conservation concern (ODFW 2021). Altman (Altman 2011) documents the extirpation of five prairie-oak bird species from the Willamette Valley since the 1940s: Lewis's woodpecker, Say's phoebe, short-eared owl, western burrowing owl, and lark sparrow.

The Willamette Valley Upland Prairie and Savanna system is endemic (native and restricted to a certain place like the Willamette Valley) to the Willamette Valley and the Puget Trough of Washington State (NatureServe 2011). It is comprised of five component plant associations dominated primarily by graminoids, such as California oatgrass, Roemer's fescue, bearded wheatgrass, rushes, and sedges (NatureServe 2011). A plant association is a vegetation classification unit defined on the basis of a characteristic range of species composition, diagnostic species occurrence, habitat conditions, and physiognomy.

Willamette Valley oak savannas are grasslands with scattered Oregon white oak, generally only one or two trees per acre. Oak trees in savannas are usually large with well-developed limbs and canopies (ODFW 2016). Ponderosa pine savannas are also present. This system occurs on well-drained, deep soils and was maintained historically by frequent low-intensity fires (Johannessen et al. 1971, Christy and Alverson 2011). Prior to Euro-American settlement, this system formed a complex mosaic of varying patch sizes with wet prairies and riparian forests over much of the Willamette Valley. Riparian areas are lands that occur along the edges of and influenced by rivers, streams, lakes, and other water bodies.

In the absence of disturbance such as fire, conifers invade this system and many historic savannas have converted to forest (Christy and Alverson 2011, ODFW 2016). This process of habitat loss through succession continues to this day. At present, much of the oak savanna habitat has been degraded by non-native grasses and forbs (herbaceous flowering plants that are not graminoids), as well as invasive woody vegetation such as Himalayan blackberry. Poison oak, although native, is also more abundant today in most oak habitats because of the lack of fire.

The Oregon Conservation Strategy identifies grasslands as a Strategy Habitat in the Willamette Valley ecoregion (ODFW 2016). Strategy Species associated with Willamette Valley grasslands include the burrowing owl, common nighthawk, grasshopper sparrow, Oregon vesper sparrow, streaked horned lark, western bluebird, western meadowlark, Fender's blue butterfly, Kincaid's lupine, and Taylor's checkerspot butterfly (ODFW 2016).

Plants native to upland prairies include various species of grasses such as California oatgrass, Roemer's fescue, bearded wheatgrass, Sandberg bluegrass, prairie Junegrass, Lemmon's needlegrass, and slender wheatgrass. Native perennial forbs include Oregon sunshine, slender cinquefoil, dwarf checkermallow, lance selfheal and Tolmie startulip (USFWS 2017).

Species listed under the federal Endangered Species Act and species of conservation concern associated with the Willamette Valley Upland Prairie and Savanna system include: Fender's blue butterfly, Taylor's checkerspot butterfly, streaked horned lark, western meadowlark, Oregon vesper sparrow, western burrowing owl, Lewis' woodpecker, band-tailed pigeon, camas pocket gopher, golden paintbrush, Kincaid's lupine, shaggy horkelia, Bradshaw's lomatium, Willamette Valley daisy, peacock larkspur, white-rock larkspur, and thin-leaved peavine (USFWS 2017).

8.3 Willamette Valley Wet Prairie and Associated Wildlife – Affected Environment

At the time of settlement, Willamette Valley wet prairies occurred as a mosaic of emergent marsh, seasonally flooded grasslands, Oregon ash swales and vernal pools. They were a common feature,

covering about 340,000 acres or approximately 10 percent of the valley. Wet prairies were maintained on the landscape by a combination of the wetland soil hydrology and frequent low intensity fires. The Oregon State of the Environment Report 2000 (OPB 2000) estimated that 99 percent of the valley's original wet prairies are gone. Today this system occurs as widely dispersed habitat patches, generally in poor condition relative to historic conditions. They are located primarily on the heavy clay soils of the valley floor that are either perennially saturated or flooded during the winter and early spring (Christy and Alverson 2011).

Wet prairies provide important habitat for migrating and breeding shorebirds, waterbirds, waterfowl, songbirds, mammals, amphibians and reptiles. Wet prairies have direct value for people because they improve water quality by trapping sediments and pollutants, recharge aquifers, store water and reduce the severity of floods. Seasonal wetlands such as the Willamette Valley Wet Prairie that dry up during the summer provide important ecological functions, such as supporting water quality and sequestering carbon (ODFW 2016).

Almost all remaining wet prairies in Willamette Valley have been degraded to some degree by altered water regimes, pollution, and invasive plants and animals. Wetlands in the Willamette Valley serve important ecological functions for communities, provide habitat for amphibians, birds, and offer key bird migratory pathways (ODFW 2016).

Wet prairies are characterized by saturated soil and shallow ponding of water (less than 6" deep) throughout the winter and early spring. These prairies support a large diversity of grasses, sedges, and forbs. The Willamette Valley Wet Prairie system is comprised of seven component plant associations (NatureServe 2011), dominated primarily by graminoids, especially tufted hairgrass, rushes, and sedges. Perennial and annual forbs, such as common camas, great camas, coyote-thistle, and elegant downingia are also commonly found in Willamette Valley wet prairies (IAE 2010).

Wet prairies are known for mounded topography. Ant hills are common in undisturbed prairie and are good indicators of the water needed to support wet prairie species, as the elevated ant hills are built to stay above the water level. Oregon ash is the most common tree, and Nootka rose is the most abundant shrub, but both are held in check with periodic fire (USFWS 2011).

Wet prairies are important habitats for grassland birds and several rare plant species, including Bradshaw's lomatium and peacock larkspur. The large Willamette Floodplain Research Natural Area on Finley National Wildlife Refuge (Finley NWR) supports populations of grassland bird species, many of whose populations have severely declined. Surveys for grassland birds in the late 1990s found no nesting meadowlarks on Finley NWR (Altman 1999). Since that time, meadowlarks have responded so well to prairie management that Finley NWR now supports one of the largest breeding populations found in the Valley (B. Altman pers. Comm.)

Listed species and species of conservation concern associated with the Willamette Valley Wet Prairie system include northern harrier, short-eared owl, American grass bug, Bradshaw's lomatium, shaggy horkelia, Nelson's checkermallow, racemed goldenweed, white-topped aster, and Willamette Valley daisy (USFWS 2017).

Bird species dependent on grasslands are among those that have experienced the steepest population declines in the U.S. (Rosenberg et al., 2016), and the Willamette Valley is no exception. The North

American Breeding Bird Survey (BBS) for each of the species selected to represent the valley's grassland and oak woodlands have experienced serious population declines since the 1970s.

In the 1930s, Ira Gabrielson and Stanley Jewett completed the first comprehensive bird survey of Oregon and published their results in *Birds of Oregon*, later republished as the *Birds of the Pacific Northwest* (Gabrielson and Jewett 1940). What they observed in the 1930s is far different from the realities of today. Western meadowlark, the State Bird of Oregon, were described by Gabrielson and Jewett as "*probably the most widely distributed and among the most abundant of the permanent resident birds*" (Gabrielson and Jewett 1940), but recent surveys of grassland birds in the Willamette Valley documented that over a 12-year time frame (1996-2008) western meadowlark suffered a 60 percent decrease in relative abundance (the mean number of individuals tallied at each sample station) and a 30 percent decrease in the number of areas in which meadowlarks were detected (ODFW 2010). These results are reflected by the Breeding Bird Survey, which documented a 10 percent decline per year from 1966 to 2007, the last year data are available for the valley (Sauer et al. 2008). This 10 percent decline per year equates to an overall population loss of about 98 percent since the mid-1960s (Rockwell et al. 2022). ODFW now considers the once common State Bird of Oregon as threatened with extirpation from the valley (ODFW 2021).

In the 1930s, Oregon vesper sparrow were described as an "*abundant summer resident in the Willamette Valley*" (Gabrielson and Jewett 1940), but now they have "*nearly vanished from western Oregon*" (Csuti et al. 2001). Breeding Bird Surveys indicate they have declined about 8.6 percent per year since the mid-1960s or by about 97 percent overall (Sauer et al. 2008). ODFW considers Oregon vesper sparrow as being imperiled with extirpation from the valley (ODFW 2021).

Western bluebirds were so common in western Oregon that "*it vies with the robin for first rank as a dooryard bird*" (Gabrielson and Jewett 1940). These cavity-nesting birds have since suffered precipitous population declines due to habitat loss and degradation, and avian competition for nesting cavities from species such as the non-native European starling (Marshall et al. 2003). Recent range contractions and extirpations have been documented in mainland British Columbia, Vancouver Island, the San Juan Islands, north Puget lowlands, and the Long Beach Peninsula (Rich et al. 2004, Guinan et al. 2008, Altman 2011), although they have recently been reintroduced in the San Juan Islands. Western bluebirds in the Willamette Valley are now isolated from the rest of the species range (Keyser et al. 2004).

8.3.1 Alternative A – Impacts on Affected Resources

Under Alternative A, the Service would not establish the Conservation Area and would not be authorized to work with partner landowners to permanently protect private lands beyond minor additions to the three existing national wildlife refuges. Rare oak habitats would continue to be converted to other uses (e.g., vineyards, orchards, etc.) and the declining trends in native wildlife populations would likely continue, possibly to the point that additional listings under the federal Endangered Species Act maybe warranted. The factors identified by ODFW as leading to the declines of wildlife in these habitat types would remain.

8.3.2 Alternatives B and C – Impacts on Affected Resources

ODFW (2016) identified two important factors limiting populations of grassland birds in the Willamette Valley. The first is the loss of grassland habitats and the degradation of remaining habitat due to invasive species and the lack of fire, resulting in small, disjunct populations. The second was nesting failure due

to the timing of land management practices (mowing, haying, spraying) occurring during critical nesting times (mid-April to mid-July) for these ground-nesting species.

Alternatives B and C would address both limiting factors. New breeding and rearing grounds would be protected, restored and managed for their wildlife values. This provides an intermediate or moderate beneficial effect to Willamette Valley grasslands (prairies) and associated wildlife in that the effects would be readily detectable and localized with measurable consequences to wildlife and plant communities but not readily detectable or measurable beyond the immediate area protected.

Western Meadowlark

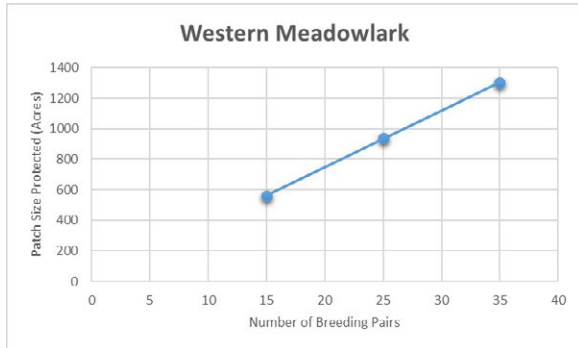


Figure 4. Expected number of western meadowlark breeding pairs for various patch sizes protected.

Based on the valley’s habitat characteristics and western meadowlark breeding requirements, a large, protected grassland habitat patch (upland and/or wet prairie) of about 1,000 acres could provide 30 to 40 breeding territories. A habitat patch of around 500 acres could provide 10 to 20 breeding territories (USFWS 2017). Western meadowlarks have a normal clutch of 5 eggs with a range of 3 to 7 and some males may be polygynous, which would add to the population (Csuti et al. 2001). With each female laying 3 to 7 eggs, the conditions would be set for the population to begin to recover.

Under Alternative B, the Service expects to protect sufficient habitat for 125 to 175 western meadowlark breeding territories on the valley floor.

Under Alternative C, the Service expects to protect habitat sufficient for 250 to 350 western meadowlark breeding territories.

Vesper Sparrows

In the foothills where Oregon vesper sparrows are more likely to be found, and based on breeding territory size and habitat suitability, the Service expects a 500-acre protected grassland could support a subpopulation of about 15 breeding pairs, while a smaller habitat patch of around 200 acres could support 5 to 10 breeding pairs (USFWS 2017). Vesper sparrows have a normal clutch of three to five eggs with a range of 3 to 6 eggs (Csuti et al. 2001). With each pair laying 3 to 6 eggs, the conditions would be set to help recover the population.

Under Alternative B, the Service would protect sufficient habitat for 125 to 200 Oregon vesper sparrow breeding territories.

Under alternative C, the Service expects to protect sufficient habitat for 250 to upwards of 400 Oregon vesper sparrow breeding territories in the foothills.

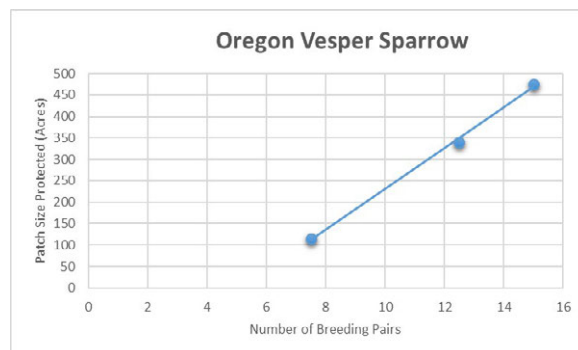


Figure 5. Expected number of Oregon vesper sparrow breeding pairs for various patch sizes protected.

Western Bluebirds

Western bluebirds defend a relatively small breeding territory, ranging from one to several acres (Csuti et al. 2001). For the savanna portions of grassland habitat, and based on territory size and habitat suitability, a 250-acre patch of protected savanna habitat could support a subpopulation of about 30 to 40 breeding pairs. A patch of around 100 acres could support 10 to 20 breeding pairs. Western bluebirds have a normal clutch of four to five eggs with a range of 3 to 7 eggs. They may rear two broods per year (Csuti et al. 2001). With each female laying 3 to 7 eggs and with some raising two broods a year, the stage would be set to help the population rebound.

Under Alternative B, the Service would protect habitat sufficient to support 175 to 250 western bluebird breeding territories.

Under Alternative C, we expect to protect sufficient habitat for 350 to upwards of 500 breeding territories.

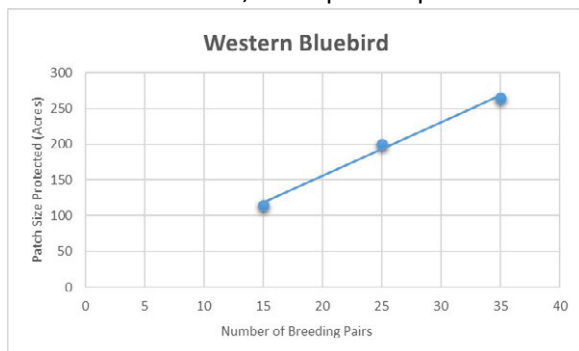


Figure 6. Expected number of western bluebird breeding pairs for various patch sizes protected.

The stage would also be set for species highly dependent on Willamette Valley prairies to benefit from conservation actions directed towards the western meadowlark, Oregon vesper sparrow, and western bluebird. Each of these species may benefit from new, safe and secure breeding and rearing grounds. Rockwell et al. (2022) provides a list of imperiled bird species that have a strong breeding season habitat association with oak and grassland habitats. The list of other benefiting species include

the common nighthawk, grasshopper sparrow, horned lark, lark sparrow, savanna sparrow, and short-eared owl.

Alternatives B and C would generate moderate beneficial impacts to species dependent on Willamette Valley grasslands in that the effects would be readily detectable and localized with measurable consequences to wildlife and native plant communities, but not readily detectable or measurable beyond the immediate area protected.

Rockwell et al. (2022) also provides lists of benefiting species for oak savannas based on habitat structures, all of which may be included on various protected and restored parcels. Protecting oak savannas with large mature trees would also benefit California scrub-jay, chipping sparrow, western wood-pewee, Lewis's woodpecker if present, slender-billed white-breasted nuthatch, and purple martin. Species benefiting from protected oak savannas with moderate and patchy shrub cover include Lazuli bunting, blue-gray gnatcatcher, California towhee, Hutton's vireo, and the lark sparrow.

Protecting savannas with low-statured herbaceous ground cover would benefit chipping sparrow, California scrub-jay, Oregon vesper sparrow, and western meadowlark.

The Service lists the Oregon vesper sparrow and the slender-billed white-breasted nuthatch as Birds of Conservation Concern in Bird Conservation Region 5, the region that includes the Conservation Area (USFWS 2021). Bird Conservation Regions are ecologically distinct regions in North America with similar bird communities, habitats, and resource management issues within their boundaries. Birds of Conservation Concern are species, subspecies and populations of all migratory nongame birds that

without additional conservation action are likely to become candidates for listing under the Endangered Species Act of 1973 (ESA).

8.4 Oak Woodland and Associated Wildlife – Affected Environment

Prior to Euro-American settlement, woodlands with an oak component occurred on approximately 330,000 acres or about 10 percent of the valley. Oak was either the dominant species or occurred in combination with Douglas-fir, big-leaf maple, and Ponderosa pine (Christy and Alverson 2011). The Oregon State of the Environment Report (OPB 2000) reported that about 87 percent of the upland forests at the margins of the valley have been converted to other uses (OPB 2000).

Oak woodlands once covered almost 400,000 acres in the Willamette Valley. Currently, the Willamette Valley supports less than 5 percent of the original woodlands (ODFW 2016). Oak woodlands have been impacted by conversion to other land uses, invasive species and vegetation changes due to fire suppression. As a result of conifer plantings and changes in fire frequency and intensity following European settlement, Douglas-fir now dominates in many areas of the Willamette Valley foothills. Oak habitats are also being converted to agriculture, residential and other uses in the Willamette Valley (ODFW 2016).

Loss of oaks, particularly large-diameter, open-structured trees valuable to wildlife, is of particular concern because oak trees have a slow growth rate, slowing restoration success. In addition, reproduction and younger trees are limited in many areas (ODFW 2016). Over the last 170 years, due to the decreasing frequency of disturbance like fire, some areas that were formally oak savanna have transitioned into oak woodlands. Additional trees have filled in the spaces formerly occupied by grasslands. The younger oaks are usually smaller diameter and have more uniform growth patterns, being straight with few large lateral branches because of the reduced sunlight (Pacific Northwest Research Station 2007).

In the Willamette Valley, white oaks were originally found in a mosaic of prairies, oak savanna, and riparian habitats throughout the valley floor and low-elevation slopes. Oaks were most common on flat to moderately rolling terrain, usually in drier landscapes, and often between prairie remnants and conifer forests. Today, oak woodlands generally are found in small, isolated pockets surrounded by other land uses, such as development or agriculture (ODFW 2016).

The North Pacific Oak Woodland system occurs primarily in the Willamette Valley and Washington's Puget Trough. It typically occurs along the ecotone between upland prairie and savanna habitats and conifer-dominated forests found at higher elevations in the valley foothills (Christy and Alverson 2011). An ecotone is a transition area between two systems or plant communities that may be a gradual blending of the communities or a sharp boundary line.

This system is comprised of eight component plant associations in which Oregon white oak is either the sole dominant tree species or co-dominant with Douglas fir (NatureServe 2011). It is associated with dry, predominantly higher-elevation sites within the valley. These sites likely experienced pre-settlement low-intensity fires. The system's tree density and a brushy understory suggests that burning was less frequent in woodlands than in prairie or savanna habitats but was more frequent than in closed forests (Christy and Alverson 2011). In the absence of fire, succession tends to favor increased shrub dominance in the understory, increased tree density and increased cover by conifers, especially Douglas fir. The

result of this succession is conversion to a conifer forest and loss of oak woodland habitat (NatureServe 2011).

Oak woodlands encroached on by Douglas fir are characterized by a reduced amount of light reaching the woodland floor, which can reduce the percent cover and diversity of understory plants (Willamette Restoration Initiative 2004). This trend toward structural simplification and smaller-diameter trees has been documented as having adverse effects on at least 12 bird species (Hagar and Stern 2001). In addition, where oaks are stunted due to overcrowding, production of acorns may consequently decline (USFWS 2017).

ODFW Strategy Species associated with oak woodlands include Columbian white-tailed deer (now extirpated from the Willamette Valley), chipping sparrow, white-breasted nuthatch, Lewis's woodpecker (now extirpated as a breeding species in the Willamette Valley), white rock larkspur, and wayside aster (ODFW 2016).

Common native plant species in oak woodlands include blue wildrye, common camas, Pacific black snakeroot, poison-oak, common snowberry, and Pacific sword fern.

Species of conservation concern associated with the North Pacific Oak Woodland system include acorn woodpecker, olive-sided flycatcher, Oregon vesper sparrow, band-tailed pigeon, Oregon slender salamander, Bradshaw's lomatium, and thin-leaved peavine. Red-legged frogs use this habitat during their summer migration from wetlands to upland habitat (IAE 2010).

The Service (2022) lists the slender-billed white-breasted nuthatch and the oak titmouse as birds of conservation concern within Bird Conservation Region 5 (USFWS 2021). As noted, birds of conservation concern are migratory nongame birds that without additional conservation action are likely to become candidates for listing under the federal ESA.

8.4.1 Impacts on Affected Resource – Alternative A

Under Alternative A, the Service would not establish the Willamette Valley Conservation Opportunity Area and would not be authorized to work with partner landowners to permanently protect private lands beyond minor additions to the three existing national wildlife refuges. Oak woodlands would continue to be converted to other uses (e.g., vineyards, orchards, homesites, etc.) and the declining trends in native wildlife populations would likely continue, possibly to the point that additional listings under the federal Endangered Species Act maybe warranted.

8.4.2 Impacts on Affected Resource – Alternatives B and C

Under Alternatives B and C, the Service would work with the Cooperative to implement their mission to protect, restore and maintain a functional, resilient network of oak and prairie habitats. New oak woodland breeding and rearing grounds would be protected and restored to provide the properties and elements required to support oak-woodland dependent species. This provides an intermediate or moderate beneficial effect to oak woodlands and their associated wildlife because the effects would be readily detectable but localized with measurable

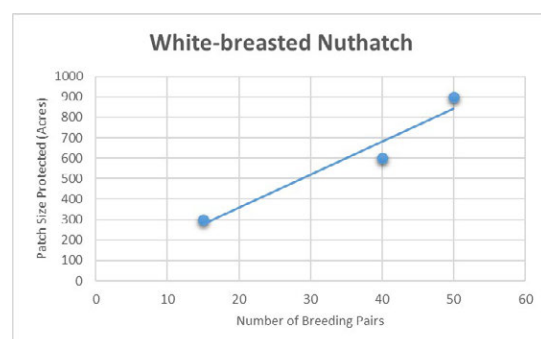


Figure 7. Expected number of white-breasted nuthatch breeding pairs for various patch sizes protected.

consequences to wildlife and plant communities in the properties protected, but not necessarily readily detectable or measurable beyond the properties protected.

The slender-billed white-breasted nuthatch was selected to represent oak woodlands (USFWS 2017). It defends territories of various sizes ranging from a few acres to nearly 100 acres depending on habitat conditions (Csuti et al. 2001). The Conservation Study used a conservative home-range figure of 10 acres. Based on habitat characteristics and breeding requirements, a protected oak woodland of approximately 1,000 acres would provide 50 to 60 slender-billed white-breasted nuthatch breeding territories. A smaller woodland of around 500 acres would provide 20 to 30 breeding territories.

Alternative B would provide approximately 170 to 180 breeding territories while Alternative C would provide approximately 340 to 360 breeding territories. Western bluebird's normal clutch size is from four to six eggs, and they may raise two broods per year (Csuti et al. 2001).

Protecting oak woodlands with large mature trees also benefits acorn woodpecker, California scrub-jay, western wood-pewee, Lewis's woodpecker if present, and western bluebird (Rockwell et al. 2022).

Species benefiting from protecting oak woodlands with moderate shrub cover and open canopy trees include purple finch, Cassin's vireo, Hutton's vireo, oak titmouse, and black-throated gray warbler.

Protecting oak woodlands with moderate sub-canopy or shrub cover benefits house wren, acorn woodpecker, oak titmouse, and black-throated gray warbler (Rockwell et al. 2022).

8.5 Threatened and Endangered Species and Other Special Status Species – Affected Environment

Seven native species of wildlife and plants closely associated with Willamette Valley prairies and oak habitats have been listed as threatened or endangered under the federal Endangered Species Act (ESA; USFWS 1993, 1997, 1998, 2000, 2006, 2013). Table 3 shows the prairie species listed under the federal ESA and their current status. Three other federally listed species, the Columbian white-tailed deer, Oregon spotted frog, and yellow-billed cuckoo, historically bred in the valley but are now extirpated.

8.6 Recovery Plans

There are two recovery plans related to these species: the Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington (USFWS 2010) (Prairie Species Recovery Plan), and the Draft Recovery Plan for the Streaked Horned Lark (USFWS 2019) (Draft Recovery Plan). The Service and conservation partners have been implementing the Prairie Species Recovery Plan since it was published.

Through these actions, Bradshaw's lomatium achieved recovery objectives in terms of protected populations of sufficient size and distribution across the valley's recovery zones and was recently delisted, demonstrating that the recovery strategy of protecting, restoring and managing habitat for these species can lead to successful recovery. As a recovered species, Bradshaw's lomatium will not be addressed in this EA.

Golden paintbrush, once extirpated in the valley, has met recovery objectives and the Service is proposing to delist the species. The same can be said for Nelson's checker-mallow – recovery objectives have been met and the Services proposes to delist the species. Fender's blue butterfly is also on the path to recovery. While the Service is proposing to reclassify the species from endangered status to threatened status, additional actions, including protecting its habitat, are still needed to fully recover this species.

Table 3. Prairie species listed under the federal ESA and their current status

Species	Date	Original status	Current status
Fender’s blue butterfly	January 2000	Endangered	Proposed reclassification to Threatened status
golden paintbrush	June 1997	Threatened	Proposed for delisting
Taylor’s checkerspot butterfly	November 2013	Endangered	Endangered
Willamette daisy	January 2000	Endangered	Endangered
streaked horned lark	November 2013	Threatened	Threatened
Kincaid’s lupine	January 2000	Threatened	Threatened
Nelson’s checkermallow	February 1993	Threatened	Proposed for delisting
Bradshaw’s lomatium	September 1988	Endangered	Delisted due to Recovery

8.6.1 Fender’s Blue Butterfly

The Fender’s blue butterfly is endemic to Willamette Valley, found only in the upland prairie and oak savanna habitats. It is a small butterfly with a wingspan of approximately 1 inch. The upper wings of the males are brilliant iridescent blue, and the borders and basal areas are black. The upper wings of the females are reddish-brown (USFWS 2010). Fender’s blue butterflies have limited dispersal ability. Adult butterflies may remain within 1.2 miles of their natal lupine patch (Schultz 1998).

Originally listed as an endangered species in January 2000, Fender’s blue butterfly remains listed as an endangered species, but the Service has proposed reclassification of the species to threatened status. Critical habitat for this species was designated in 2006 (USFWS 2006). Approximately 3,000 acres containing known populations of Fender’s blue butterfly were designated as critical habitat. These occur on federal, state, and private lands in 13 distinct areas of the valley. All of these locations are within the proposed Willamette Valley Conservation Area.

The Service now proposes to reclassify the species from endangered status to threatened status based on an evaluation of the best available scientific and commercial information, which indicates that the species’ status has improved such that it is not currently in danger of extinction, but that it is still likely to become so in the foreseeable future (USFWS 2021a).

8.6.2 Golden Paintbrush

Golden paintbrush (*Castilleja levisecta*) a short-lived perennial herb listed as threatened, without critical habitat, in June 1997 (USFWS 1997). Golden paintbrush occurs in upland prairies, on generally flat grasslands, including some that are characterized by mounded topography. In Oregon, golden paintbrush historically occurred in the grasslands and prairies of the Willamette Valley in Linn, Marion and Multnomah Counties but was extirpated from Oregon. In 2005, small populations of golden paintbrush were planted in common garden plots at William L. Finley and Baskett Slough NWRs in the Willamette Valley. From these early trial plantings, golden paintbrush is now well established in the Willamette Valley.

Originally listed as a threatened species in 1997 (USFWS 1997), golden paintbrush remains listed as a threatened species, but due to the success of recovery actions the Service now proposes to reclassify the species to threatened status (USFWS 2021b). Critical habitat was never designated for this species.

8.6.3 Taylor's Checkerspot Butterfly

Taylor's checkerspots are medium-sized, colorfully checkered butterflies with a set of reduced brushy forelegs. They are orange with black and yellowish spot bands, giving a checkered appearance. They occupy open grassland habitat found on prairies, shallow soil balds, grassland bluffs, and grassland openings within a forested area (USFWS 2013). Taylor's checkerspot were thought to be widespread, but now only remnant populations exist in Oregon. In 1999, Taylor's checkerspot butterflies were discovered along the power transmission right-of-way corridor in Benton County. In 2004, surveys for the Taylor's checkerspot butterfly were expanded in the Willamette Valley, where a second population was discovered on grassland openings within a forested area, also in Benton County. These two locations are currently the only known occupied patches in Oregon (USFWS 2013).

Originally listed as an endangered species in November 2013 (USFWS 2013), Taylor's checkerspot butterfly remains listed as an endangered species. Within the Conservation Area, one 20-acre area of private land near Corvallis has been designated as critical habitat (USFWS 2013a).

8.6.4 Willamette Daisy

Willamette daisy is a tap rooted perennial herb in the sunflower or daisy family (Asteraceae). It is endemic to the Willamette Valley. It grows 6 to 28 inches tall. Flowering stems produce two to five heads, each of which is daisy-like, with pinkish to pale blue ray flowers and yellow disk flowers. Ray flowers often fade to white with age (USFWS 2010). The primary habitat for the Willamette Daisy is native wetland prairie. This habitat is characterized by the seasonally wet tufted hairgrass community that occurs in low, flat regions of the Willamette Valley where flooding creates anaerobic and strongly reducing soil conditions.

The Willamette daisy was listed as endangered, without critical habitat, in January 2000 (USFWS 2000). Critical habitat was later designated in 2006 on approximately 718 acres containing known populations of Willamette daisy. These occur on federal, state, and private lands in nine distinct areas of the valley (U.S. Fish and Wildlife Service 2006). Critical habitat areas are designated in Benton, Lane, Linn, Marion, and Polk Counties, Oregon.

8.6.5 Streaked Horned Lark

Streaked horned lark is endemic to the Pacific Northwest and is a subspecies of the wide-ranging horned lark. Streaked horned larks are small, ground-dwelling birds, approximately 6 to 8 inches in length. The male's face has a yellow wash, a black bib, black whisker marks, and black "horns" which are feather tufts that can be raised or lowered. Habitat used by larks is generally flat with substantial areas of bare ground and sparse low-growth vegetation primarily made up of grasses and forbs (USFWS 2010).

Streaked horned lark no longer breed throughout all of its former range in British Columbia, the San Juan Islands, the northern Puget Trough, the Washington coast north of Grays Harbor, the Oregon coast, and the Rogue and Umpqua Valleys in southwestern Oregon. The current breeding range includes the south Puget Sound in Washington, the Washington coast and lower Columbia River islands (including dredge spoil deposition sites near the Columbia River in Portland, and the Willamette Valley. In the valley, streaked horned larks breed in Benton, Clackamas, Lane, Linn, Marion, Polk, Washington, and Yamhill Counties. Larks are most abundant in the southern part of the Willamette Valley (USFWS 2010).

Originally listed as a threatened species in November 2013 (USFWS 2013), the streaked horned lark remains listed as a threatened species. Critical habitat was designated on 1,729 acres on three sites in

the Conservation Area. The three sites are within the boundaries of Baskett Slough, Ankeny, and W.L. Finley NWRs (USFWS 2013a).

8.6.6 Kincaid's Lupine

Kincaid's lupine is a long-lived, herbaceous perennial in the legume family (Fabaceae). It is a preferred host plant of Fender's blue butterfly. It grows numerous unbranched stems 16 to 39 inches tall. Leaflets are narrowly oblong and about 1 to 2 inches long. The flowers are numerous and range in color from bluish or purple to yellowish or creamy white, fading to orange-brown. Its range extends from Lewis County, Washington, south to Douglas County, Oregon. It shows a close association with native upland prairie sites that are characterized by heavier soils with wet to slightly dry soil moisture levels (USFWS 2000).

Originally listed as a threatened species in January 2000 (USFWS 2000), Kincaid's lupine remains listed as a threatened species. Critical habitat for this species was designated in 2006 (USFWS 2006).

Approximately 580 acres containing known populations of Kincaid's lupine were designated as critical habitat. These occur on federal, state, and private lands in 12 distinct areas within the Conservation Area.

8.6.7 Nelson's Checkermallow

Nelson's checkermallow was listed as a threatened species in 1993 (USFWS 1993). Critical habitat has not been designated for this species. Nelson's checkermallow is a perennial herb with pinkish-lavender to pinkish-purple flowers born in clusters at the end of 1 to 2.5 feet-tall stems. Nelson's checkermallow occurs in the Willamette Valley and the adjacent Oregon Coast Range and in Cowlitz County, Washington. Nelson's checkermallow primarily grows in open areas with little or no shade and does not tolerate shady conditions created by woody species (USFWS 2013). Due to recovery actions carried out to benefit this species, the Service proposed in 2022 to remove Nelson's checkermallow from the list of threatened or endangered species (USFWS 2022).

8.6.8 Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington

The Prairie Species Recovery Plan was developed for the following six prairie species native to the Willamette Valley: Fender's blue butterfly, Willamette daisy, Bradshaw's lomatium, Kincaid's lupine, Nelson's checker-mallow, and golden paintbrush. The Prairie Species Recovery Plan strategy to achieve recovery of these species is as follows:

"To restore and maintain multiple viable populations of the species by protecting, restoring, maintaining, and connecting the remaining fragments of prairie habitats or areas with potential for restoration to prairie habitats within their historical range."

"The first step in the recovery of these species is to identify and protect the remaining populations with the greatest potential for restoration. Recovery for all of these species will depend upon the successful establishment of a network of protected populations in managed, suitable prairie habitats distributed across their historical range."

The Prairie Species Recovery Plan established population objectives for the listed prairie species in terms of population abundance, trend, and distribution across recovery zones in the Willamette Valley. The number one priority recovery action is *"to preserve, restore, and manage populations and habitat for the listed prairie species"*. Priority one actions are those that must be taken to prevent extinction or

prevent the species from declining irreversibly in the foreseeable future. The Service is identified in the recovery plan as one of the parties responsible for implementing this crucial recovery action.

8.6.9 Recovery Plan for the Streaked Horned Lark

The Service published a Draft Recovery Plan for the Streaked Horned Lark in August 2019 (USFWS 2019). The plan provides for long-term survival of streaked horned larks by protecting and managing habitat on sites distributed across their range. Recovery objectives are twofold: develop self-sustaining regional populations and protect and manage sufficient habitat to support well-distributed regional populations. The plan describes “core sites” and “matrix lands.” Core sites are locations that are intentionally managed for the long-term benefit of streaked horned larks and provide for population growth. Matrix lands are short-term habitats with multiple or non-conservation management objectives that are needed to allow the streaked horned lark to adapt to changing environments.

8.7 Alternative A – Impacts on Affected Resource

Under Alternative A, the Service would not establish the Conservation Area and would not be authorized to work with partner landowners to permanently protect populations of listed species or their habitats to assist in the recovery of these species. Ongoing trends of habitat loss, fragmentation and degradation through land use changes and the invasion of non-native weedy species would likely continue and additional listings under the Endangered Species Act may be warranted.

Privately owned lands where populations of listed species are found constitute a significant portion of the range of these species, and these privately owned lands play a substantial role in their continued existence (USFWS 2000). However, listed plant species are only afforded limited legal protections. The federal ESA does not extend protection to listed plants on private property. The Oregon State Endangered Species Act also does not extend protections to listed plant species on private lands and does not list invertebrates as endangered or threatened. This leaves species such as Fender’s blue butterfly and Taylor’s checkerspot butterfly vulnerable to loss.

The Service, through its Partners Program, would continue to work with private landowners to restore native habitats on their properties, which may include listed species. While this program has assisted in recovering Oregon chub, Bradshaw’s lomatium, and Nelson’s checker-mallow, there is still much to do in terms of identifying and protecting the remaining populations with the greatest potential for restoration, the first step in the recovery of these species.

8.8 Alternatives B and C – Impacts on Affected Resource

Under Alternatives B and C, the Service would be authorized to work with private landowners to permanently protect populations of listed species that contribute to their recovery wherever they may occur within the Conservation Area. Each protected population incrementally adds to the recovery of the listed species and addresses the number one priority recovery action – to identify and protect the remaining populations with the greatest potential for restoration.

Each population would be checked against the recovery criteria and status to determine if permanent protection contributes to recovery and permanent protection is warranted. As the Service and its conservation partners have worked to recover Bradshaw’s lomatium over the years, similar results are expected for other listed species as populations are protected over time.

The Prairie Species Recovery Plan outlines recovery actions for the five listed prairie species at the time: Fender's blue butterfly, Willamette daisy, Kincaid's lupine, Bradshaw's lomatium, and Nelson's checkermallow. Each of these species were threatened by the continued degradation, loss and fragmentation of their native prairie ecosystems. On lands protected for listed species, the Service would restore the lands to a functional prairie ecosystem and maintain a diversity of native species typical of these prairie communities.

The recovery goals for the listed species stress maintaining large populations distributed across their historical range, with management plans focusing on protecting sites with high habitat diversity and a range of elevations. Maintaining large populations is essential to buffering environmental variation and ensuring the continuation of evolutionary processes (Traill et al. 2010). Habitat diversity and elevation gradients within protected lands will provide a large range of microhabitats and allow for the greatest amount of internal species movement under changing environmental conditions (Butrick 2015).

The plan established recovery zones and set goals for the distribution and abundance for the covered species in each recovery zone for which historical data indicated that the species occurred. The Service would evaluate each property offered by a landowner wishing to sell an interest in their land and consider whether the distribution and abundance goals in the plan would be met. The Service would only purchase properties if permanent protection and subsequent management of the property meets recovery criteria.

The plan set recovery targets for the Fender's blue butterfly in terms of "functioning networks" and independent populations. A functioning network is a metapopulation that consists of several potentially interacting subpopulations of Fender's blue butterfly distributed across a landscape. A metapopulation is a group of local subpopulations that interact with one another often through dispersal (Hanski and Gilpen 1991, Hanski 1998). The Service would evaluate lands for their potential to support or contribute to a functional network in recovery zones lacking the requisite number of protected functional networks called for in the plan.

An additional goal of the recovery plan is to focus on restoring both native upland and wet prairie ecosystems within the valley. This ecosystem approach takes into consideration the needs of non-listed species that are endemic to prairie habitats. Consequently, many of the recovery actions proposed in the plan may help to stabilize and enhance populations of species such as pale larkspur, Willamette Valley larkspur, peacock larkspur, shaggy horkelia, white-topped aster, and Hitchcock's blue-eyed grass.

On suitable new Refuge System lands, the Service would manage suitable habitat not only for the listed species it may support, but also for these non-listed, but vulnerable prairie-dependent species. Implementing management actions toward these species' conservation may result in not needing to extend the protections of the Endangered Species Act to other prairie species in the future (USFWS 2010).

The Draft Recovery Plan for the Streaked Horned Lark (USFWS 2019) created three recovery zones in the Willamette Valley that intersect with the Conservation Area (north, west, and southeast), and established population objectives for each zone. The north zone extends northward beyond the Conservation Area boundary.

Draft Recovery Plan Priority 1a actions for the Willamette Valley region are to implement conservation actions on core sites; identify and conserve current and potentially suitable sites; and "*where feasible*,

incorporate potential core sites into the [Refuge] System for management.” Priority 1a actions are those actions that must be taken to prevent extinction or to prevent the species from declining irreversibly (USFWS 2019). The plan calls for three core sites in the north recovery zone, nine in the west zone, and nine in the southeast zone. Core sites described in the recovery plan are different than the Core Areas mapped by the Cooperative.

Under Alternatives B and C, the Service would evaluate each property being offered for its suitability as a new core site and consider whether the core site criteria described in the plan would be met. The Service expects to be able to contribute several new protected core sites to aid in the recovery of streaked horn lark, achieving a moderate beneficial impact. While the effects would be readily detectable and localized with measurable consequences to streaked horned lark, the effects would not readily detectable or measurable beyond the protected core sites.

The Service completed Endangered Species Act Section 7 consultation on the proposed action (Appendix E). Implementing the Willamette Valley Land Protection Plan may affect, but is not likely to adversely affect the listed species and designated critical habitat within the Conservation Area. This determination is based on the primary purpose of the Land Protection Plan, which is to protect and facilitate restoration and enhancement of the prairie habitats on which the listed species depend. The Service will address Section 7 compliance requirements as restoration and management activities are planned and implemented on newly protected lands.

8.7 Land Use – Affected Environment

Currently there are an estimated 70,690 acres of grasslands within the Conservation Area, comprised of 19,278 acres of upland prairie, 16,635 acres of oak savanna, 29,777 acres of unmanaged pastures, and 5,000 acres of wet prairies. Oak woodlands are estimated to cover about 59,180 acres within the Conservation Area. Combined, these acreages cover approximately 5.4 percent of the Conservation Area (WVOPC 2020).

The Conservation Area is primarily located in six counties: Benton, Lane, Linn, Marion, Polk, and Yamhill, although each county extends beyond the Conservation Area boundary. A review of the Comprehensive Plans and land use maps for each of these six counties confirms that beyond urban areas, various forms of agriculture are the dominate land uses inside the Conservation Area.

The Benton County Comprehensive Plan identifies agriculture, agriculture industrial, commercial, forestry, industrial, multi-purpose agriculture, rural residential and significant public lands as important land uses in the county. Agriculture, forestry and rural residential land uses dominate areas outside the Corvallis Urban Growth Boundary. The W.L. Finley Refuge is mapped as one of the county’s significant public lands (Benton County 2017).

The Polk County Comprehensive Code notes the following major land use types: agriculture, city, commercial, farm/forest, industrial and public. Agricultural land use dominates areas north of Highway 22 and on the valley floor in the eastern third of the county. Farm/forest and forest land uses dominate the foothills west of Independence and Monmouth and south of Highway 22. Agricultural areas occur mainly in the eastern and central sections of the County. These areas are characterized by large ownerships and few non-farm uses. The areas designated as forest are located within the western reaches of the county into the Oregon Coast Range. The predominant use in the forest area is timber production (Polk County 2012).

In Marion County, agriculture is the leading industry and dominates areas outside of the Urban Growth Boundaries. Agricultural land uses dominate along the Interstate-5 (I-5) corridor north of Salem extending east to higher elevations where forestland dominates. Forestlands extend to the east outside of the Conservation Area. Special agriculture and rural residential areas are interspersed immediately south and east of Salem. Special agriculture lands are characterized by small-scale commercial farm enterprises or areas with a mixture of good and poor farm soils where the existing land use pattern is a mixture of large and small farm units and some acreage in home sites. (Marion County 2022).

In Linn County, agricultural resource lands dominate land use outside of the cities and towns along both sides of the I-5 corridor. Between the farmlands in the west and the mountainous forests in the east is an area that blends the character of the two major geographic regions of Linn County. In the foothills of the Cascade Mountains, spanning from the northern to the southern border of the county are hilly lands with many streams. These lands may be forested, may be cleared for farm production or may be suitable for either type of resource-related land use. Much of the area in the eastern portion of Linn County into the Cascade Mountains is classified as forest resource, which is outside of the Conservation Area (Linn County 2013).

In Lane County, land uses surrounding the Eugene/Springfield Urban Growth Boundaries include a mix of agriculture and rural residential areas, which occur along the main transportation corridors extending west to the Fern Ridge Reservoir, to the south along the I-5 corridor, and to the east along the McKenzie River. North of Eugene agricultural lands dominate the landscape. Forest land uses dominate lands to the east and west of the Conservation Area (Lane County 1984).

In Yamhill County, agricultural and forestry land uses dominate the valley floor outside of the urban areas, transitioning to the foothills and Oregon Coast Range (outside the Conservation Area) where commercial forestlands are interspersed with Bureau of Land Management lands (Yamhill County 1996).

8.7.1 Alternative A – Impacts on Affected Resource

Under Alternative A, The Service would not work with the Cooperative to permanently protect and restore Willamette Valley native grassland and oak woodland habitats. Current land use would remain as is or would be converted to other uses as directed by landowners subject to state and county land use laws and regulations.

8.7.2 Alternatives B and C – Impacts on Affected Resource

Under Alternatives B and C, the Service would establish the Conservation Area and would work with the Cooperative to protect and restore grassland and oak woodland habitats, primarily in the Cooperative's mapped Core and Opportunity Areas. Within these areas, the Service is particularly focused on acquiring high quality habitat via fee title land purchase or conservation easement from willing sellers. The Service's would focus its efforts on undeveloped areas of the valley with the goal of protecting high-quality habitat. There would be no effect to lands within Urban Growth Boundaries.

There is currently sufficient area of habitat, including unmanaged pastures, to meet the acreage objectives for Alternatives B and C. However, given the dominance of agricultural land use in the valley, it is expected that some agricultural land will be included in lands offered from willing sellers to the Service for permanent protection as wildlife habitat. Properties with intensified agricultural infrastructure (e.g., row crops, orchards, vineyards, barns, outbuildings) would not be purchased if offered to the Service. The U.S. Fish and Wildlife Service's Partners for Fish and Wildlife Program has been active in the Willamette Valley for the past 20 years, developing relationships with hundreds of

private landowners and in recent years, several private landowners have approached the Service directly about selling an interest in their lands to the Service.

The 2017 Census of Agriculture provides farm acreage by county. The Census defines a farm as any place from which \$1,000 or more of agricultural products are produced and sold, or normally would have been sold, during the census year. Within the six counties, the Census tallied 1,252,357 acres of farmlands (USDA 2019).

Table 4. Acres of farmland by county

Benton	Lane	Linn	Marion	Polk	Yamhill
127,626	203,148	314,947	288,671	148,905	169,357

Source: USDA 2019

Alternative B’s unmet grassland objectives total approximately 8,000 acres and Alternative C objectives are approximately 16,000 acres. These unmet objectives would amount to 0.6 percent and 1.3 percent, respectively, of the total acres of farmland in the valley, if all grasslands offered to the Service for protection are currently farmed. Converting 0.6 percent and 1.3 percent of farmland to wildlife habitat would represent a minor to moderate impact to land use because the conversion would be readily detectable and localized with measurable consequences to farmland use, but not readily detectable or measurable beyond the protected area.

Currently, oak woodlands are estimated to cover about 59,180 acres within the Conservation Area (WVOPC 2020). Alternative B’s unmet oak woodland objectives total approximately 10,500 acres and Alternative C objectives total approximately 21,000 acres. Both fall within the total estimate of oak woodlands in the Conservation Area. If protected, land use on existing oak woodlands would not materially change, as the idea is to protect and restore oak woodlands, not change them to a different habitat type.

The beneficial effects to grasslands, oak woodlands, and associated wildlife, as a result of these acquisitions as permanent wildlife habitat is described in sections 8.2 to 8.4.

Upon acquisition, the Service would initially manage the lands as described in the Conceptual Management Plan (Appendix C to the Land Protection Plan). Properties used for agricultural production at the time of acquisition may continue operation in the short-term under a negotiated agreement with the Service. During that time, the Service would evaluate whether continued agricultural production is beneficial to wildlife and habitats or if other restoration practices are needed to meet habitat objectives for the Refuge. At the time of acquisition, or at the conclusion of a cooperative agreement, the Service could restore agricultural lands to a more natural condition and manage the property for wildlife habitat. This would permanently convert farmland to a more restored status, representing a moderate impact to land use in the immediate area, and a minor impact to agricultural land use across the Conservation Area where farmland is common.

The Service only acquires land for the Refuge System that the owner wishes to sell. Selling private property is a right of the property owner. We provide the owner with another option for whom to sell to. Land potentially could be sold to a developer, farmer, or other interest.

9.0 Initial Management Actions

The Conceptual Management Plan (Appendix C of the Land Protection Plan) describes initial management actions that may be implemented on new Refuge System lands based on the conditions encountered. These management actions are typical for National Wildlife Refuges and the effects on the human environment have been detailed in the [USFWS Willamette Valley National Wildlife Refuges Final Comprehensive Conservation Plan and Environmental Assessment](#) (CCP) (USFWS 2011).

9.1 Alternative A – Impacts on Affected Resource

Under Alternative A, the Service would not be authorized to add new lands to the refuge system, removing any need for initial management activities.

9.2 Alternatives B and C – Impacts on Affected Resource

Under Alternatives B and C, the Service would add up to 22,650 or 45,300 acres of new land, respectively, to the Refuge System. Initial site stabilization actions the Service may employ on a given parcel include access management and boundary marking, trash removal and controlling minor erosion. Access management and boundary marking may involve blocking or decommissioning roads or erecting fences and posting signs. These actions may involve minor amounts of brush clearing and excavating post holes, but the effects would be minor in that they would be detectable, but localized, small, and of little consequence to wildlife or plant communities or other aspects of the natural or built environments.

Existing habitats on new lands would be maintained to preserve wildlife values and to prevent degradation prior to developing a long-term management plan. Depending on site-specific conditions, the Service may burn or mow grasslands and oak woodlands to reduce thatch accumulation and to promote vigorous growth and diversity, or to control tree and shrub encroachment.

The effects of prescribed fires on the human environment are described in detail in the Complex's CCP. All prescribed fires would follow strict health and safety protocols described in Complex's Fire Management Plan which authorizes the use of prescribed fire, providing there is a burn plan in place. Following these protocols, prescribed fire generally results in minor, temporary, localized disturbance, but these effects would be shortly eclipsed by enhanced habitat structure and composition. Smoke may be present in increased quantities in the local area during limited periods of time. However, in the context of the Willamette Valley, the amount of smoke is expected to be minimal. Burning is only allowed during windows approved by the Oregon Department of Environmental Quality Air Quality Control Board, therefore any potential air quality impacts to surrounding populations are expected to be within regional parameters.

Invasive weeds would be controlled following Integrated Pest Management protocols described in Appendix F of the Complex's CCP and section 7.18 of this Environmental Assessment. For weed species that are established, mechanical, cultural, biological, and chemical control methods would be evaluated (see Appendix F, section F.2 for descriptions of general weed control methods). Chemical usage will be subject to provisions of the Integrated Pest Management plan. Among other provisions, this plan provides direction that "the most efficacious pesticide available with the least potential to degrade environmental quality (soils, surface water and groundwater) as well as least potential effect to native species ... would be acceptable for use on the refuge." Each approved pesticide would undergo a

chemical profile analysis; active ingredients would be analyzed for their risk quotient and this value compared to a Level of Concern for surrogate species, as established by the Environmental Protection Agency. All applications of herbicides will conform to the specific pesticide label requirements.

In summary, the use of the specified habitat management techniques would help maintain habitat structure, plant diversity and native plant composition. Minor, temporary, localized disturbance and damage could occur as a result of using these habitat management techniques, but these effects would be temporary and shortly eclipsed by enhanced habitat structure and composition. Overall, the initial management actions under Alternatives B and C represent a minor positive effect to both habitat quantity and quality for species associated with Willamette Valley grasslands and oak woodlands.

10.0 Visitor Use and Experience

10.1 Affected Environment

The Complex encompasses approximately 10,000 acres over four counties in the Willamette Valley: Marion, Linn, Polk and Benton. With 96 percent of the Willamette Valley being privately owned (WVOPC 2021), recreation and public access values of Ankeny, Baskett Slough, and William L. Finley Refuges is an important asset to local residents. The Oregon Conservation Strategy lists the Complex as one of the six *Important Nature-based Recreation Areas* in the Willamette Valley (ODFW 2016).

According to unpublished Service tracking data, wildlife observation was one of the most popular activities within the Complex. Annually, total Complex visitation hovers around 340,000 visitors. In February 2022, the Ankeny Hill Nature Center (Nature Center) at Ankeny National Wildlife Refuge opened its gates for the first time. Each month the Nature Center sees approximately 1,000 visitors, with numbers steadily increasing. The next phase of the Nature Center is to construct the Dave Marshall Outdoor Classroom, which will double as an additional public use space. The third phase will bring full build-out of Gehlar Hall, which will include a welcome area, rotating exhibits, library space and additional teaching/event space. The hall is named for Mr. Mark Gehlar, whose generous bequest to the Salem Audubon Society funded construction of the Nature Center.

In 2015, Complex staff acknowledged the need for additional resources in order to properly reach the growing Latinx population in the valley. The following year the Complex hosted their first Latino Engagement Coordinator position in partnership with Environment for the Americas. This has become an annually funded position, bringing bilingual programming, materials and interpretative signs to the Latino community.

10.2 Alternative A – Impacts on Affected Resource

Under Alternative A, the Service would not establish the Conservation Area and would not be adding new lands to the Refuge System. Visitor use would continue as it is today. The Service would continue to develop the Nature Center, adding an outdoor classroom and the full build-out of Gehlar Hall, which as described above will include a welcome area, rotating exhibits, library space and additional teaching/event space. As the facilities and capacity of the Nature Center grow, recreational and educational opportunities will also expand at Ankeny NWR. The complex would continue with its Latino Engagement program. This represents a minor positive benefit to Refuge visitors.

10.3 Alternatives B and C – Impacts on Affected Resource

Under Alternatives B and C, the Service would add up to 22,650 or 45,300 acres of new lands, respectively, to the Refuge System. The Service would continue developing the Nature Center as well as continuing with the Latino Engagement program as described under Alternative A.

Per Service policy, new refuge lands would be closed to public use until public uses are found to be compatible with Refuge System management. The Service would evaluate the compatibility (USFWS 2000a) of new wildlife-dependent recreational public uses (hunting, fishing, wildlife observation, photography, environmental education and interpretation) as lands are added to the Refuge System. The Service expects that some new lands would be open to the public and the Latino Engagement program could be expanded as well. This provides an intermediate or moderate beneficial impact to the visiting public and could potentially improve quality of life for nearby populations. The result would likely have a positive impact on the local communities of Salem, Keizer, Corvallis, Eugene, Albany, and Lebanon because new recreational opportunities may be available in underserved areas of the valley.

Prior to acquiring land, the Service would complete a compatibility determination (USFWS 2000a) for any existing wildlife-dependent recreational public uses occurring on the land. The Service would allow those uses determined to be compatible on an interim basis, pending completion of the CCP. Pre-acquisition compatibility determinations only apply to existing wildlife-dependent recreational public uses and are intended to be short-term in nature, bridging the gap between acquisition of Refuge lands and completion of a CCP.

11.0 Refuge Administration

11.1 Affected Environment

The Complex staff includes 21 permanent employees and up to 10 seasonal Biological Technicians, Interns and Equipment Operators. The permanent full-time positions include a Project Leader, 2 Refuge Managers, 4 Biologists (3 of which are in our Partners for Fish and Wildlife Program), 1 Law Enforcement Officer, 1 Visitor Services Program Manager, 3 Fire Program staff, 2 Administration staff and 7 permanent full time equipment operator/maintenance employees. The annual base funding for all permanent staff and operations is approximately \$2 million dollars per year with additional funding coming in through grants and interagency agreements.

11.2 Alternative A – Impacts on Affected Resource

Under Alternative A, no new lands would be added to the Complex. There would be no effect to the Complex's budget, personnel and equipment.

11.3 Alternatives B and C – Impacts on Affected Resource

Under Alternatives B and C, there would be ongoing staff involvement in identifying willing landowners, assessing property habitat values, and coordination of the process for potential land acquisition. Over time, if the Service acquires one or two properties per year, there will gradually be a need to spend additional staff time on habitat restoration and maintenance. In future years, as this effort results in the acquisition of several additional properties, there will likely be a need to further expand staff involvement in maintaining these properties.

12.0 Local and Regional Economies

12.1 Affected Environment

Socioeconomic indicators are presented for the six counties that comprise the vast majority of the Conservation Area: Benton, Lane, Linn, Marion, Polk, and Yamhill counties in Table 5. Economic trends in the six counties are roughly equal to the state, but typically exceed those for the U.S. Population growth. From 2000 to 2020 in the six counties, growth was just a little bit slower than the state, but faster than the U.S. The percent change in employment has lagged behind both the state and the U.S. Growth in personal income is slightly lower in the six counties compared to the state, but greater than that of the U.S. Average earnings per job was about equal to the state but grew at a faster rate compared to the U.S. Per capita income increased slightly slower in the six counties compared to the state but was about equal to the U.S. (USDC 2022).

Table 5. Economic Indicators

Economic Indicators	6 counties	Oregon	U.S.
Population, % change, 2000-2020	22.8	23.7	16.8
Employment, % change, 2000-2020	13.5	17.2	15.4
Personal Income, % change, 2000-2020	58.0	63.2	50.7
Avg. Earnings per Job, % change, 2000-2020	22.0	21.4	15.4
Per Capita Income, % change, 2000-2020	28.7	32.0	29.1

Source: USDC 2022

12.1.1 Market Value of Agricultural Products Sold

Market value of agricultural products sold represents the gross market value before taxes and production expenses of all agricultural products sold or removed in 2017 regardless of who received the payment. It is equivalent to total sales. (USDA 2019). In 2012, total sales for the six counties were \$1,510,603,000. By 2015 total sales grew by \$118,050,000 to \$1,628,653,000, or a 7.8 percent increase. This occurred during the time the WWMP was actively acquiring land from willing sellers.

12.2 Alternative A – Impacts on Affected Resource

Under Alternative A, the Service would not establish the Conservation Area and would not expand the Refuge System beyond minor boundary modifications. The Service would not contribute to the local economy by purchasing and managing new Refuge System lands. The current minor beneficial effects the Complex provides to the local economies would continue as today.

12.3 Alternatives B and C – Impacts on Affected Resource

Under Alternatives B and C, the Service would add new lands to the Refuge System. The money spent on the purchase and initial site restoration and management activities would provide a small, but positive additional benefit to the local economies. Restoration creates jobs and puts Oregonians to work on jobs that cannot be outsourced to far-off places. Restoration projects create jobs in construction, in technical fields such as engineering and wildlife biology, and in supporting businesses such as plant nurseries, heavy equipment companies and other area businesses. Restoration investments provide a minor stimulation to economic growth. Every dollar spent generates additional spending and economic activity. Economists model this ‘multiplier effect’ to determine how investments in restoration are

recirculated throughout the local economy. For example, a landowner who sells an interest in their land to the Service will likely reinvest a portion of the funds they receive purchasing goods and services within the local economy; a project to restore a native prairie will purchase supplies from a local nursery; the nursery, in turn, will hire workers and more supplies from area businesses.

In 2019, the Service released Banking on Nature 2017 (USFWS 2019a), which examined the local economic contributions of recreational visits to 162 national wildlife refuges in 47 states and 1 territory for fiscal year 2017 (October 1, 2016 - September 30, 2017).

For fiscal year 2017, the National Wildlife Refuge System estimated 53.6 million visitors.

- Trip-related spending by recreational visits generated \$3.2 billion of economic output in local economies.
- As this spending flowed through the economy, it supported over 41,000 jobs and generated about \$1.1 billion in employment income.
- About 86 percent of total recreation-related expenditures are generated by non-consumptive activities on refuges. Fishing accounted for 10 percent and hunting 4 percent of expenditures.
- On average, local visitors accounted for 17 percent of expenditures while visitors traveling more than 50 miles accounted for 83 percent of expenditures.
- Refuge recreational spending generated about \$229 million in tax revenue at the local, county, and state levels.

Closer to home, a 2006 prequel to the 2017 report (USFWS 2006a) documented that the economic impacts associated with visits to the Finley NWR provide a small, but positive impact to the Benton County economy. Visitor recreation expenditures for 2006 are shown in Table 6. Total expenditures were \$1.4 million (in 2006 dollars) with non-residents accounting for \$687,200 or 48 percent of total expenditures. Expenditures on non-consumptive activities accounted for 99 percent of all expenditures.

Table 6. Finley NWR: Visitor Recreation Expenditures (2006) in thousands of dollars

Activity	Residents	Non-Residents	Total
Non-Consumptive			
Birding	\$418.5	384.1	\$799.9
Other Non-Consumptive	\$335.6	305.9	\$641.5
Total Non-Consumptive	\$754.1	687.2	\$1,441.3
Hunting			
Big Game	\$1.5	\$0	\$1.5
Small Game	\$0	\$0	\$0
Migratory Birds	\$0	\$0	\$0
Total Hunting	\$1.5	\$0	\$1.5
Fishing			
Freshwater	\$0	\$0	\$0
Saltwater	\$0	\$0	\$0
Total Fishing	\$0	\$0	\$0
Total Expenditures	\$755.5	\$687.2	\$1,442.8

Source: USFWS 2006a).

Table 7 summarizes the local economic effects associated with recreation visits to Finley NWR. Final demand totaled \$1.5 million with associated employment of 22 jobs, \$488,700 in employment income and \$238,000 in total tax revenue.

Table 7. Finley NWR Local Economic Effects Associated with Recreation Visits (2006) in thousands of dollars

	Residents	Non-Residents	Total
Final Demand	\$785.3	\$674.7	\$1,460.1
Jobs	12	10	22
Job Income	\$262.2	\$226.6	\$488.7
Total Tax Revenue	\$126.2	\$111.8	\$238.0

Source: USFWS 2006b.

Table 8 shows total economic effects (total recreation expenditures plus net economic value) compared with the 2006 budget for Finley NWR. For an individual, net economic value is that person's total willingness to pay for a particular recreation activity minus his or her actual expenditures for that activity. The figure for economic value is derived by multiplying net economic values for hunting, fishing, and non-consumptive recreation use (on a per-day basis) by estimated refuge visitor days for that activity. This figure is combined with the estimate of total expenditures and divided by the refuge budget for 2006. The \$1.47 means that for every \$1 of budget expenditures, \$1.47 of total economic effects are associated with these budget expenditures. This ratio is provided only for the purpose of broadly comparing the magnitude of economic effects resulting from refuge visitation to budget expenditures and should not be interpreted as a benefit-cost ratio (USFWS 2013a).

Table 8. Finley NWR: Summary of Local Economic Effects of Recreation Visits (2006) in thousands of dollars

FY 2006 Budget	Expenditures	Economic Value	Total Economic Effects per \$1 budget Expenditure
\$1,960.1	\$1,442.8	\$1,432.3	\$1.47

It is expected that similar spending on new national wildlife refuge lands, when opened to the public, would also have a moderate beneficial impact on the local economies.

13.0 Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires all federal agencies to incorporate environmental justice into their actions. The U.S. Environmental Protection Agency defines environmental justice as

“the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.”

Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies (EPA 2019).

13.1 Affected Environment

This section examines race and ethnicity and poverty rates by race and ethnicity, and population trends within the six counties that comprise the vast majority of the Conservation Area as compared to Oregon and the United States. Maps of Environmental Justice communities within the Conservation Area by census block group are included.

13.1.1 Race and Ethnicity

Table 9 presents the race and ethnicity for the six counties that comprise most of the geography inside the Conservation Area (Benton, Lane, Linn, Marion, Polk, and Yamhill), even though this includes some areas outside of the Conservation Area. These are compared to race and ethnicity for the state of Oregon and the United States to identify concentrations of minority populations in the Conservation Area (USDA 2022). The word “alone” indicates that the person is of a single race, not multiracial (EPA 2019).

Table 9. Race and Ethnicity as a Percent of the Total Population 2019

Race and Ethnicity	6 Counties (%)	Oregon (%)	U.S. (%)
White alone	85.3	84.0	72.5
Black or African American alone	1.0	2.0	12.7
American Indian alone	1.1	1.0	0.8
Asian alone	2.5	4.0	5.5
Native Hawaii & Other Pacific Is. Alone	0.4	0.4	0.2
Some other race alone	4.3	3.0	4.9
Two or more races	5.3	5.0	3.3
Hispanic or Latino (of any race)	15.2	13.0	18.0
Not Hispanic or Latino	84.8	87.0	82.0
Not Hispanic & White alone	76.4	76.0	60.7
Total Minority Population	23.6	24.0	39.3

Source: USDA 2022

Race and ethnicity in the six counties is less diverse than the state of Oregon and the United States. People identifying as white alone account for 85 percent of the population of the six counties compared to 84 percent for Oregon and 72 percent for the United States. People identifying as Black or African American comprise only 1 percent in the six counties compared to 2 percent for Oregon and 13 percent for the United States. The population of people identifying as Hispanic or Latino in the Census Blocks and the six counties combined is on par with that of the United States with about 16 percent in the six counties, compared to 13 percent for the state and 18 percent for the U.S. Total minority population is approximately 24 percent for the six counties and the state compared to 39 percent for the U.S.

From 2010 to 2020, minority populations were growing at a faster rate in the six counties compared to the white population, but still comprise less than a quarter of the total population (Table 10). People who identify as Native Hawaii and Other Pacific Islands alone grew at the fastest rate of all populations but comprise only 0.4 percent of the total population. The Hispanic or Latino population grew at the second fastest rate (63.4 percent) and now account for 13.5 percent of the total population in the six counties. In 2000, the Hispanic or Latino population represented 9.2 percent of the six counties total population.

Table 10. Race and Ethnicity Trends

Race and Ethnicity	2010	2020	Percent Change	Percent of Total
White alone	822,201	887,112	7.9	85.0
Black or African American alone	7,014	9,329	33.0	0.9
American Indian and Alaska Native alone	12,089	14,240	17.8	1.4
Asian alone	17,363	22,766	31.1	2.2
Native Hawaii and Other Pacific Islands alone	2,217	3,846	73.5	0.4
Some other race alone	46,911	6,6704	42.2	6.4
Two or more races	28,592	39,848	39.4	3.8
Hispanic or Latino	86,244	140,935	63.4	13.5

Source: USDA 2022

13.1.2 Poverty by Race and Ethnicity

Table 11 presents poverty by race and ethnicity for the six counties, which is compared to poverty by race and ethnicity in the state of Oregon and the United States. Poverty for people who identify as white only is higher in the six counties compared to the state, which is higher than the rate in the U.S. The poverty rate among those who identify as Black or African American alone is also slightly higher in the six counties compared to the U.S. but is a little lower than that of the state. Within the six counties, the poverty rate among Black or African American alone is twice that of whites alone. The poverty rate among those who identify as Hispanic or Latino is similar across the state of Oregon and the U.S., but still higher than that of whites alone. The poverty rate for those identifying as American Indian is a couple of percentage points lower than the rate for the state, which is a couple of percentage points lower than for the U.S. The poverty rate for people who identify as Native Hawaii & Other Pacific Islands alone, while making up only four percent of the total population, is markedly higher in the six counties

(38.7 percent) compared to Oregon (21.0), which is a couple of points higher than the rate of poverty across the U.S. (17.5 percent).

Table 11. Poverty by Race and Ethnicity as a Percent of the Total Population 2019

Poverty by race and ethnicity 2019	6 Counties (%)	Oregon (%)	U.S. (%)
White alone	14.1	12.3	11.1
Black or African American alone	25.9	26.3	23.0
American Indian alone	20.4	22.4	24.9
Asian alone	26.0	13.6	10.9
Native Hawaii & Other Pacific Is. Alone	38.7	21.0	17.5
Some other race	18.4	17.2	21.0
Two or more races	22.5	17.9	16.7
Hispanic or Latino (of any race)	20.6%	20.1%	19.6%
Not Hispanic or Latino (of any race)	13.3%	11.3%	9.6%

Source: USDA 2022

There are some stark differences in poverty rates by race and ethnicity among the counties. For people identifying as Native Hawaiian and Other Pacific Islanders alone the poverty rate has a low of 5.9 percent in Yamhill County but 64.2 percent in Linn County. These estimates are based on rather small populations estimated to be only 9 individuals in Yamhill County and 79 in Linn County. For people identifying as Asian alone in Linn County, the poverty rate is 9 percent but 42 percent in Benton County where 2,490 individuals identified as Asian alone. The population estimate for Asian alone in Linn County is 121 individuals.

Table 12. Poverty by Race and Ethnicity as a Percent of each County's Total Population 2019

Race & Ethnicity	Benton	Lane	Linn	Marion	Polk	Yamhill	Combined
White alone	16.6	16.6	13.0	12.5	11.5	11.8	14.1
Black or African American alone	34.7	26.4	2.2	25.1	40.6	21.0	25.9
American Indian alone	23.7	23.9	13.7	19.1	23.3	12.8	20.4
Asian alone	42.0	25.7	9.0	16.8	31.2	12.9	26.0
Native Hawaii & Other Pacific Islanders alone	15.2	37.7	64.2	44.4	14.0	5.9	38.7
Some other race	32.7	17.2	17.5	19.7	5.2	17.5	18.4
Two or more races	21.9	26.3	15.9	22.4	25.5	12.1	22.5
Hispanic or Latino (of any race)	26.8	21.9	16.6	21.1	16.6	18.9	20.6
Not Hispanic or Latino (of any race)	15.9	16.3	12.7	10.5	10.4	10.7	13.3

Source: USDA 2022

13.1.3 Identifying Areas with Higher Environmental Justice Populations

EJScreen (EPA 2019) is an environmental justice mapping and screening tool developed by the Environmental Protection Agency. This tool provides a nationally consistent dataset and approach for combining environmental and demographic indicators to assist in identifying environmental justice communities within a planning area, such as the Conservation Area. For the purposes of this Environmental Assessment, the Service is focusing its analysis on identifying areas with higher populations of people of color and areas with concentrations of people earning a low income.

EJScreen maps data by census block group. A block group is a combination of census blocks, which are a subdivision of a census tract. A block group is the smallest geographic entity for which the 10-year census tabulates and publishes sample data. Data are provided as percentiles by block group. For example, if a given location is at the 80th percentile nationwide, this means that only 20 percent of the U.S. population has a higher block group value than the average in the location being analyzed.

Percent people of color: The percent of individuals in a block group who list their racial status as a race other than white alone and/or list their ethnicity as Hispanic or Latino. That is, all people other than non-Hispanic white-alone individuals. The Service overlaid areas with a higher percentage of people of color than on average onto a map that approximates the locations of the Cooperative's Core and Opportunity areas (Figure 8). While there are some areas of concentrations of people of color that overlap Core and Opportunity Areas, most areas where a concentration of people of color occur are in and around urban areas, outside of Core and Opportunity areas.

Percent low-income: The percentage of people of low-income is based on the percentage of individuals whose ratio of household income to poverty level in the past 12 months was less than 2 (EPA 2019). More of the valley outside of urban areas have concentrations of low-income households (Figure 9). These overlap Core areas in Yamhill County and east of Eugene. They overlap Opportunity Areas west and south of Eugene and in scattered locations around the valley.

FIGURE 8 Willamette Valley Land Protection Plan, Minority Population Above 50th Percentile

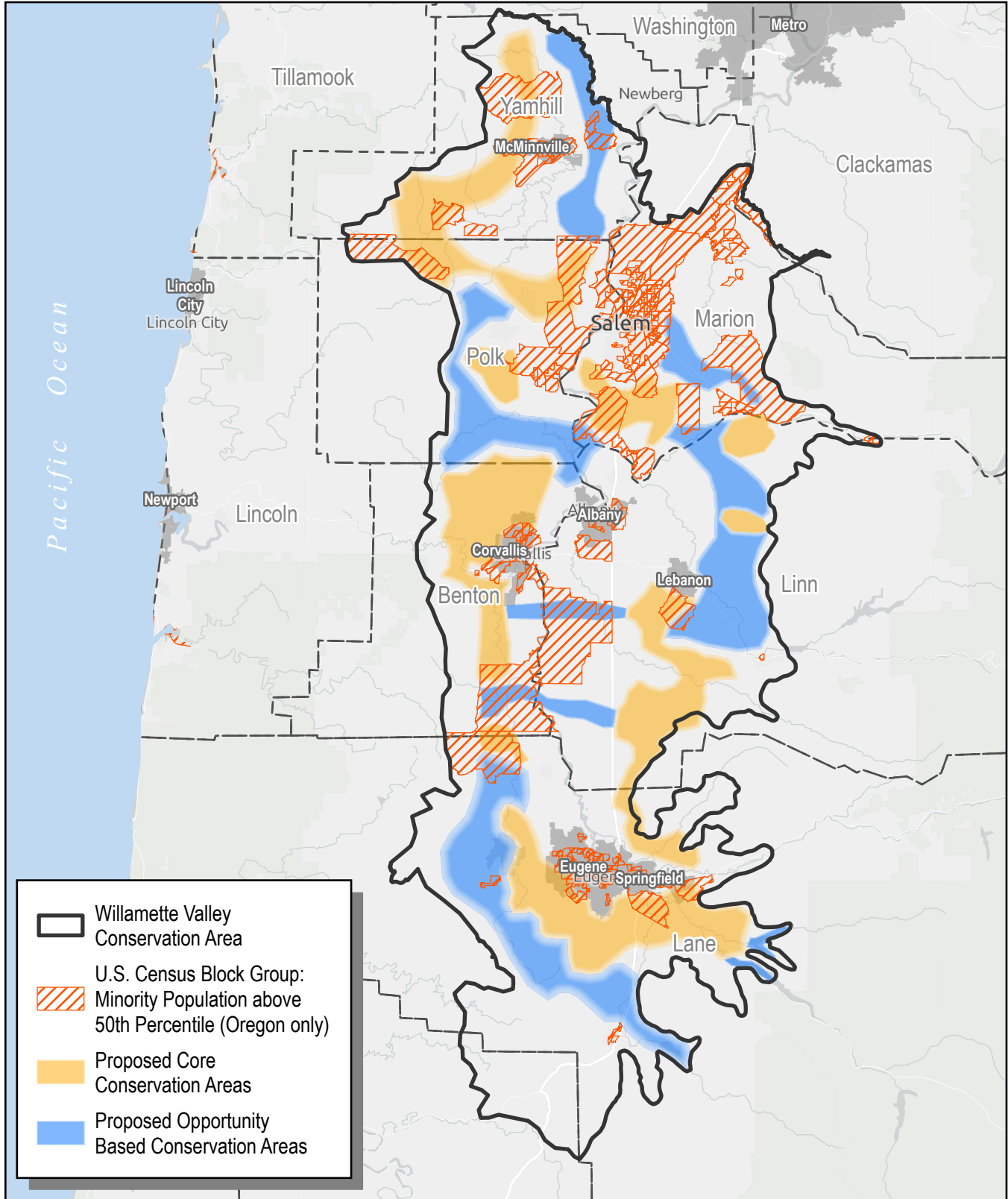


U.S. Fish & Wildlife Service

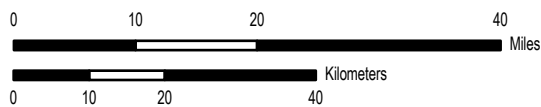
Willamette Valley Land Protection Plan

Oregon

Figure 8. Minority Population above 50th Percentile



USFWS, NWRS
 PORTLAND, OREGON
 MAP DATE: 8/19/2022
 DATA: US Census Bureau,
 American Community Survey Data, 2020
 FILE: R1_NWRS_FY22_459



UTM 10N
 NAD 83

FIGURE 9 Willamette Valley Land Protection Plan, Low Income Above 50th Percentile

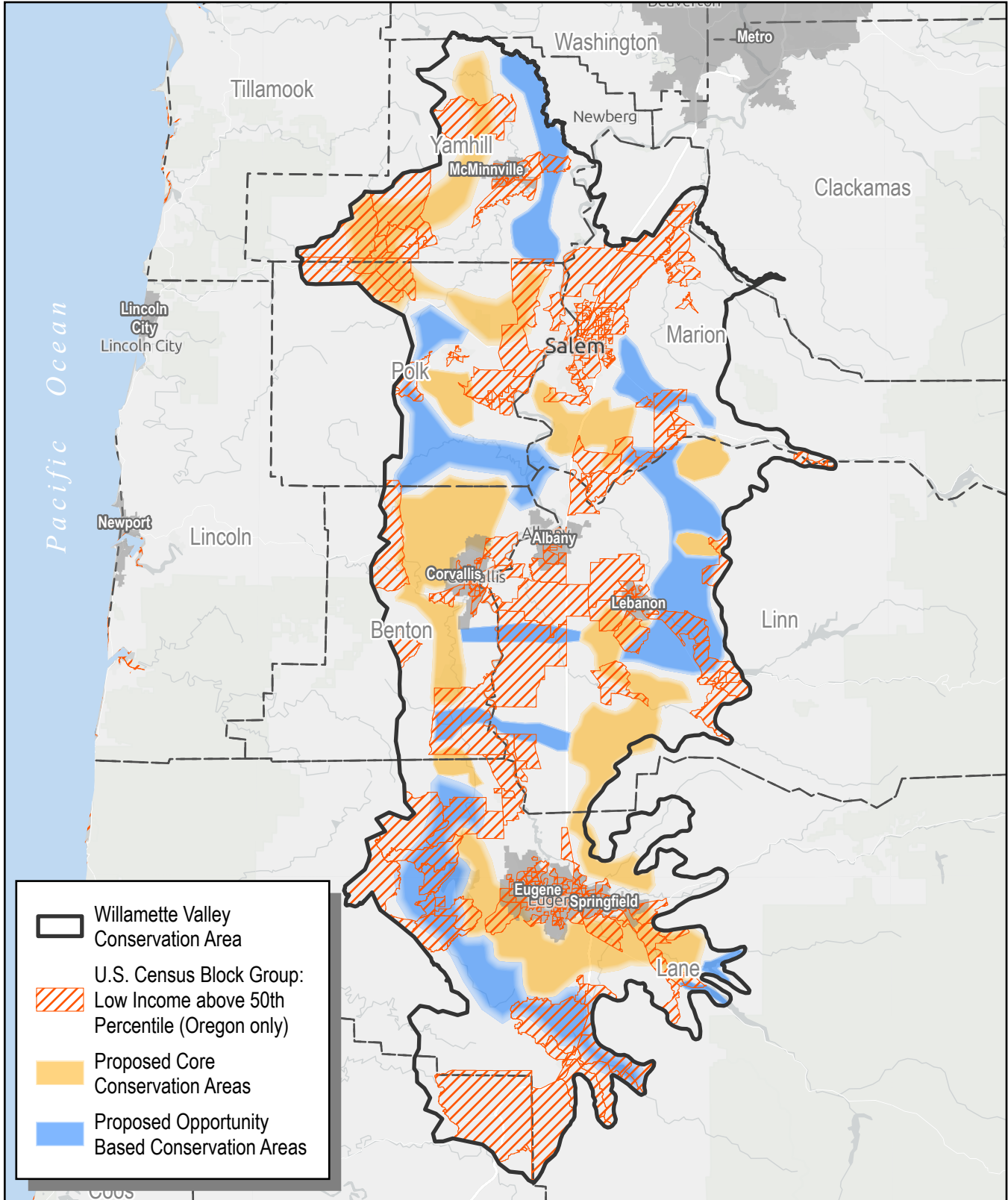


U.S. Fish & Wildlife Service

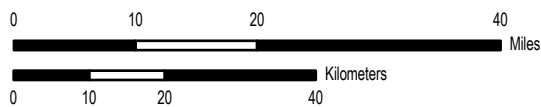
Willamette Valley Land Protection Plan

Oregon

Figure 9. Low Income Above 50th Percentile



USFWS, NWRS
 PORTLAND, OREGON
 MAP DATE: 8/19/2022
 DATA: US Census Bureau,
 American Community Survey Data, 2020
 FILE: R1_NWRS_FY22_459



UTM 10N
 NAD 83

13.2 Alternative A – Impacts on Affected Resource

Under Alternative A, the Service would not be authorized to purchase new units of the Refuge System from owners who wish to sell an interest in their land to the Service. New units of the Refuge System would not be established and there would be no new opportunities for minorities and low-income populations and communities to participate in new wildlife-dependent recreational opportunities. The Refuge Complex would continue to reach out to disadvantaged communities through programs such as the Latino Engagement Program to engage these communities in the existing refuge lands.

13.3 Alternatives B and C – Impacts on Affected Resource

Under Alternatives B and C, the Service would establish the Conservation Area and would be authorized to purchase land from willing landowners wishing to sell to the Service in order to create new units of the Refuge System. Establishing new units of the Refuge System does not result in adverse human health or negative environmental effects. Therefore, establishing new units of the Refuge System would not result in disproportionately high or adverse human health or environmental effects on minority and low-income populations and communities. Conversely, new units of the Refuge System may provide new opportunities for the public, including historically excluded communities, to enjoy a safe and welcoming environment to participate in wildlife-dependent recreational activities, should any new units of the Refuge System be opened to the public.

Depending on proximity, land conservation can provide many benefits to minority and low-income populations including increased access to wildlife-dependent recreational activities. These recreational opportunities are not guaranteed as they depend on the location and accessibility of protected land. Land that is not open to the public or located far from low-income or minority communities would not provide these additional recreational opportunities and benefits.

Because there is not a lot of overlap of Core and Opportunity areas with areas of higher concentrations of low-income and minority populations, land secured from willing sellers that meets the Service's habitat objectives may not be near environmental justice communities. However, there are some census blocks overlapping the Core and Opportunity Areas that are within the 50th to 80th percentile of low-income households, meaning there are more low-income households than the state average. If land is acquired in these areas and recreation opportunities are provided, these communities could benefit from increased access to outdoor recreation and additional natural open space. Additionally, if land is acquired near major cities where there are concentrations of low-income households and minority populations, such as Salem and Woodburn, minority populations generally would benefit from the proximity of additional natural space assuming the lands are accessible and open for recreation.

Land acquisition in the Service is particularly focused on acquiring high quality habitat through land purchases or conservation easements. The Service's conservation assumptions that areas with low habitat fragmentation are better than areas with high fragmentation; large areas of habitat are better than small ones; and areas close together are better than areas far apart. These assumptions will likely lead the Service to focus on less densely populated areas of the valley, which are less likely to be in the proximity of minority or low-income communities. High quality habitat is also often near other already protected land because of the high conservation values of the area (Loucks et al. 2008; McDonald and Boucher 2011). Acquisition of habitat in an area like this would be adding more conservation land in a community that already contains conservation land and may not address the inequitable pattern where minority and low-income communities contain fewer and lower quality natural areas (Landau et al 2020).

Under these Alternatives, the Service would continue programs such as the Latino Engagement Program focused on reaching out and engaging with disadvantaged communities around refuge lands. These programs can help to identify ways to improve and expand communities' interactions with and access of refuge lands. As new refuge land is acquired, the Service would work with local communities to ensure these communities' needs and desires are a part of the planning process around Refuge management, recreational access and other conservation processes.

14.0 Cumulative Effects

Several programs in the valley also affect grassland and oak woodland habitats such as: ODFW's Willamette Wildlife Mitigation Program, the Service's Partners for Fish and Wildlife, and an emerging cooperative dedicated to restoring prescribed fires in grassland habitats.

14.1 Willamette Wildlife Mitigation Program

The Bonneville Power Administration (BPA) entered into an Agreement with ODFW to mitigate the impacts to wildlife related to dam construction, subsequent flooding of wildlife habitat, and operation of the Willamette River Basin Flood Control Projects. Under the terms of the Agreement, the Bonneville Power Administration agreed to fund the acquisition of up to 16,880 acres of wildlife mitigation property. To accomplish this mitigation objective the parties established the Willamette Wildlife Mitigation Program (WWMP), managed by ODFW. Properties could be located anywhere within the Willamette Valley, which includes areas beyond the geography for this proposed action. The Program does not have a grassland and oak focus, but rather focuses on all habitats identified in the ODFW Wildlife Action Plan (ODFW 2016) as Priority habitats. These include grasslands, wetlands, flowing water, and riparian habitat, old growth conifer forests, and natural lakes.

Prior to the agreement, the Bonneville Power Administration had funded the purchase of 9,657 acres of mitigation property, some of it outside the geography for this proposed action. Working under the agreement, approximately 5,250 acres of oak woodlands and grasslands (including oak savanna) are now protected (approximately 44 percent of all lands protected). The program is anticipated to sunset in a couple of years.

14.2 Partners for Fish and Wildlife

With such a large percentage of the Willamette Valley in private ownership, it is essential that the Service work with a broad array of stakeholders in the community in order to achieve the Service's mission. For more than 20 years, the Service's Partners for Fish and Wildlife Program (Partners Program) has been providing technical and in-kind assistance and funding to landowners doing voluntary habitat restoration on non-federal and non-state lands throughout the Conservation Area. These stakeholders include private landowners, businesses, nongovernmental organizations (e.g., watershed councils, land trusts), tribes, schools, and local governments. Projects are voluntary and customized to meet landowners' needs. Participating landowners continue to own and manage their land while they improve conditions for wildlife.

Operating out of the Willamette Valley NWR Complex, Partners Program staff consists of biologists and equipment operators located at W. L. Finley and Baskett Slough NWRs who often utilize refuge equipment to bring cost-effective contributions to projects. The Partners Program continues to be one of the primary outreach tools that the Complex utilizes to establish relationships with a broad array of landowners leading to many of the recent conservation acquisitions in the Willamette Valley. Figure 10

shows the number and distribution of landowners who have worked with the Partners Program to restore wildlife habitat on their properties. Several of property owners have approached the Partners Program about permanently protecting their properties, which is an indication of the conservation opportunities that exist in the valley.

14.3 Prescribed Fire Cooperative

As noted, the Oregon Conservation Strategy (ODFW 2016) identified two important factors limiting populations of grassland birds in the Willamette Valley. The first is the loss of grassland habitats and the degradation of remaining habitat due to invasive species and the lack of fire, resulting in small, disjunct populations. Conservation practitioners are coming together to address this limiting factor. The Long Tom Watershed Council has been working to fill the need in the Willamette Valley of a prescribed fire network/collaborative. The program the council is building is in partnership with and being led by The Confederated Tribes of the Grand Ronde Community of Oregon. Recently, Oregon's legislature awarded the Long Tom Watershed Council \$500,000 to advance this work.

The program seeks to build prescribed fire capacity on Tribal and private lands, working in close collaboration with federal and public lands partners in the Willamette Valley. Collaborating with two Tribes, and more than 30 partners, the program will establish a five-person year-round ecological fire team and a regional prescribed fire coordinator, regional training opportunities, close collaboration with Tribal and federal partners, and increased burning on non-federal lands. Long-term, the program commits to developing a regional prescribed administered fire program that centers on Indigenous people and their priorities, and improvements to land and community health.

FIGURE 10 Willamette Valley Land Protection Plan, Partners for Fish and Wildlife in the Willamette Valley

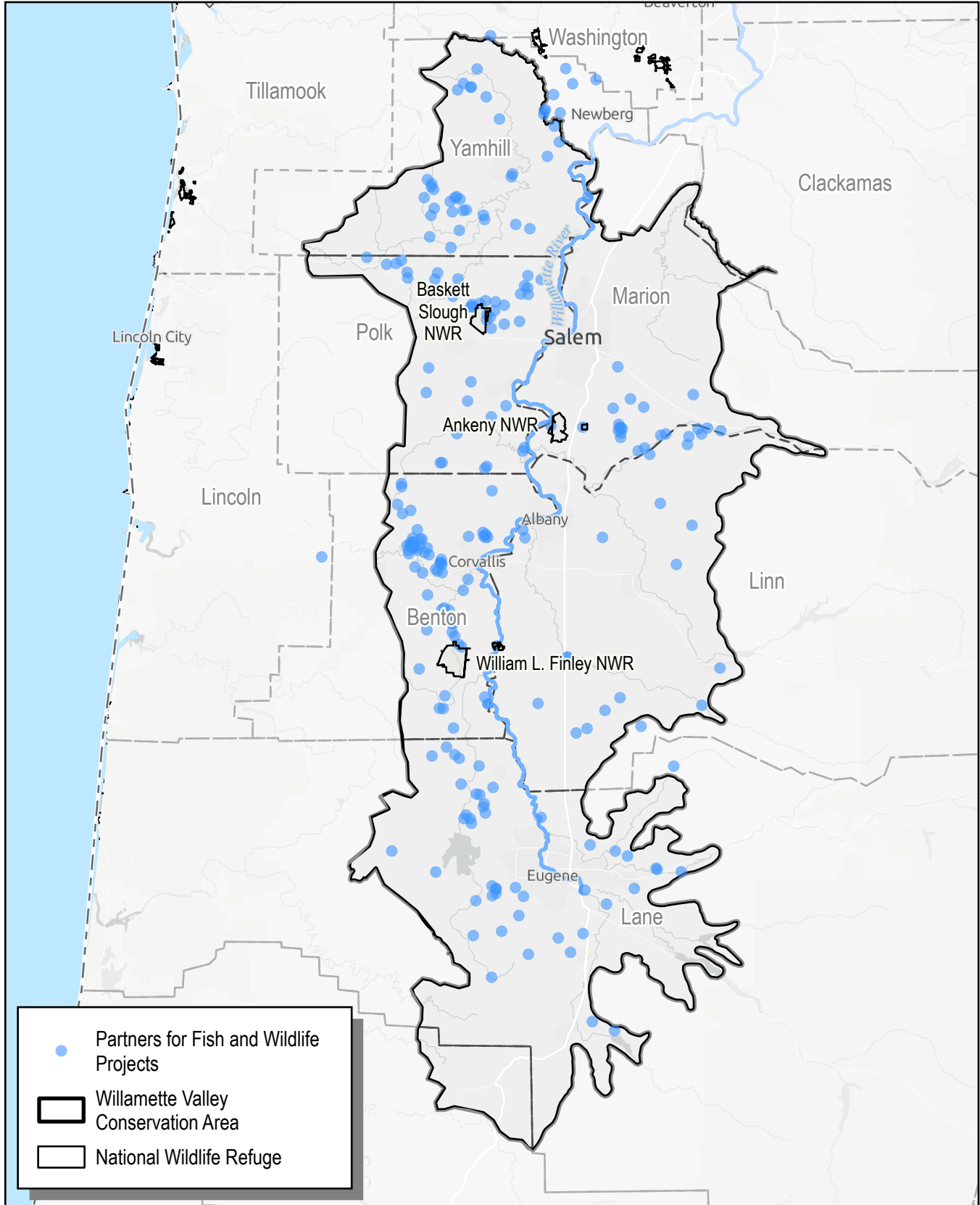


U.S. Fish & Wildlife Service

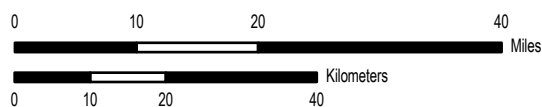
Willamette Valley Land Protection Plan

Oregon

Figure 10. Partners for Fish and Wildlife in the Willamette Valley



USFWS, NWRS
PORTLAND, OREGON
MAP DATE: 8/19/2022
BASE DATA: ESRI Topographic Map
FILE: R1_NWRS_FY22_459



15.0 Monitoring

While the Complex is involved with many monitoring efforts that are described in its Comprehensive Conservation Plan (CCP), the monitoring described here is meant to ensure that actions taken under Alternatives B or C would not result in significant detrimental effects.

Acquiring land from willing landowners wishing to sell to the Service would not result in significant detrimental effects to the human environment. However, the Conceptual Management Plan (CMP) describes refuge management activities that the Service may employ prior to amending the Complex's CCP. Two of those activities, prescribed fire and controlling noxious and invasive species, are typically monitored to ensure there are no significant detrimental effects.

As described in Appendix F of the CCP, the Service follows an Integrated Pest Management (IPM) approach to pest management. IPM is a science-based, decision-making process that incorporates management goals, consensus building, pest biology, monitoring, environmental factors, and selection of the best available technology to achieve desired outcomes while minimizing effects to non-target species and the environment and preventing unacceptable levels of pest damage (569 FW1). The overall goal is to use an IPM approach for the prevention, early detection and identification, monitoring, and control or eradication of invasive plant species and other pests.

Monitoring and evaluation are a critical part of the Willamette Valley National Wildlife Refuge fire management program. This program provides the means by which Refuge personnel can determine if applicable sections of the fire management plan are being implemented as planned and if fire-related goals and objectives are being achieved. Any prescribed fire treatment would be monitored according to the Complex's fire management plan. Protocols for monitoring prescribed fire effectiveness would include, at a minimum, mapping of burn unit boundaries, observations of weather and fire behavior parameters, and establishing photography points to allow for pre-burning and post-burning monitoring.

16.0 Summary of Analysis

16.1 Alternative A – No Action Alternative (Current Management Strategy)

Alternative A does not meet the purpose of and the need for action. As described above, under Alternative A, the Service would not establish the Conservation Area, thereby limiting current work with the Cooperative to help implement its mission of protecting, restoring, and maintaining a functional and resilient network of oak and prairie habitats in the Willamette Valley. Funding for conservation land protection efforts will decrease in the valley as the Willamette Wildlife Mitigation Program sunsets.

The Partners for Fish and Wildlife would continue to work with private landowners to restore and maintain wildlife habitat. The factors leading to the listing of native prairie species as threatened or endangered would continue. Habitat loss and fragmentation, invasive species colonization and dominance, and woody species encroachment will continue, leading to the possibility that additional species will be listed under the federal Endangered Species Act.

16.2 Alternative B – Core Area Focus (Preferred Alternative)

While the Service would protect less land under Alternative B than Alternative C, the Service believes the acreage cap of 22,650 acres is much more feasible to attain by a single entity within a reasonable

time period. The partnership approach to conservation and species recovery has long been practiced in the valley.

By protecting prairie, oak savanna, and oak woodlands, the Service would incrementally add to the network of anchor habitats in the valley. Anchor habitats are areas of suitable habitat and sufficient size, which contain the properties and elements required for successful reproduction and survival of the targeted species. Within these core habitat patches wildlife management would be prioritized over other management concerns. Not only would the species selected to represent these habitats benefit, but also the suite of species dependent on these habitats. Species such as the Oregon vesper sparrow, burrowing owl, common nighthawk, grasshopper sparrow, northern harrier, acorn woodpecker, and chipping sparrow would all benefit from new protected lands managed to support breeding and rearing.

The actions proposed in Alternative B address the major factors that led to the decline in native wildlife, habitat loss, fragmentation, and degradation that results in small, separated populations that are at increased risk of genetic isolation and extirpation from the valley. The Service would be authorized to work with willing landowners wanting to protect populations of listed species wherever they may occur in the Conservation Area, if their protection aids in the species recovery. Over time, and as lands are added to the Refuge System, the Services expects to be able to meet recovery requirements for the listed species.

Alternative B addresses the purpose of and the need for action and fulfills the Service mandates under the National Wildlife Refuge System Administration Act to provide for the conservation of fish, wildlife, and plants, and their habitats within the Refuge System and to

“plan and direct the continued growth of the System in a manner that is best designed to accomplish the mission of the System, to contribute to the conservation of the ecosystems of the United States, to complement efforts of and other Federal agencies to conserve fish and wildlife and their habitats, and to increase support for the System and participation from partners and the public.”

Alternative B also fulfills the Endangered Species Act (ESA) requirement that

“all federal departments and agencies conserve endangered species and threatened species and to utilize their authorities in furtherance of the purposes of the ESA” (16 U.S.C. §1531 (C)(2)).

Alternative B:

- would not result in significant adverse effects to the human environment;
- would not affect public health or safety;
- would not result in disproportionately high or adverse human health or environmental effects on minorities and low-income populations and communities;
- would not result in effects that are highly uncertain or involve unique or unknown risks;
- would not negatively impact cultural resources or species listed under the federal ESA;

- would not cause the destruction of significant scientific, cultural, or historical resources; and
- would not violate federal, state, or local law or requirements imposed for the protection of the environment.

16.3 Alternative C – Core Areas Plus Expanded Opportunity Areas

Alternative C also meets the purpose of and the need for taking action to address the Willamette Valley’s declining populations of wildlife dependent on grasslands and oak woodlands. As land is acquired for the Refuge System, the Service would evaluate each acquisition for its ability to provide safe and welcoming wildlife-dependent recreational opportunities for the valley’s population. While protecting 45,300 acres is achievable, it would take many, many years to acquire sufficient land. Alternative C would also not result in significant negative effects to the human environment for the same reasons as described under Alternative B.

17.0 Public Outreach and List of Agencies, Tribes, Organizations, and Persons Consulted

The Service initiated public outreach in a meeting with ODFW in May 2022. In attendance were Jennifer Ringo, South Willamette Watershed District Manager and Kelly Ries, Willamette Fish and Wildlife Policy and Program Manager. The Land Protection Plan for the proposed Conservation Area was first discussed during this meeting.

The Service held its initial meeting with the Cooperative regarding the Land Protection Plan on June 7, 2022. Thirteen members of the Cooperative’s steering committee, as well as the ODFW coordinators of the Willamette Wildlife Mitigation Program were present. At the meeting, steering committee members and the ODFW representatives voiced strong support for the Service to work with the Cooperative to complete the Land Protection Plan.

Attendees at the June 7, 2022, meeting with the Cooperative included:

- City of Eugene: Emily Steel, Shelly Miller
- Confederated Tribes Grand Ronde Community of Oregon: Lawrence Schwabe
- Ducks Unlimited: Kelly Warren
- Greenbelt Land Trust: Jessica McDonald, Matt Blakeley-Smith, Carolyn Menke (notes)
- Institute for Applied Ecology: Tom Kaye
- Long Tom Watershed Council: Clinton Begley, Katie MacKendrick
- Pacific Birds Habitat Joint Venture: Sara Evans-Peters
- Willamette Partnership: Nicole Maness
- Yamhill Partners for Land and Water: Will Neuhauser
- ODFW: Jennifer Ringo, Kelly Reis, Laura Tesler
- USFWS: Damien Miller, Kevin O’Hara, Becky Clow, Chris Seal, Jarod Jebousek, Eddy Pausch, Graham Evans-Peters

In late June 2022, the Service provided an advance, working copy of the Land Protection Plan and Conceptual Management Plan to the Cooperative’s steering committee for their review and comment.

At the same time, the Service contacted the federal Congressional delegation that represents the Willamette Valley to inform them that the Service was developing a land protection plan that would

create the Conservation Area and described how it supports the long-running Oregon Conservation Strategy developed by ODFW and the Cooperative's Strategic Action Plan (WVOPC 2020). The Service contacted the following congressional offices:

- Senator Wyden: Lisa Rockower
- Senator Merkley: Betsy Emery and Jessica Stevens
- Rep. DeFazio: Dan Whelan
- Rep. Schrader: Suzanne Kunse

The Service received no questions, comments, or concerns as a result of that email.

As part of the public review process, this Draft Environmental Assessment is available for a 30-day review period. Comments or requests for additional information may be submitted through any of the following methods.

Email: willamettevalley@fws.gov. Include "Land Protection Plan" in the subject line of the message.

Fax: Attn: Land Protection Plan, fax number 541-757-4450.

U.S. Mail: U.S. Fish and Wildlife Service, Attn: Damien Miller, Project Leader, 26208 Finley Refuge Road, Corvallis, Oregon, 97333.

All comments received from individuals become part of the official public record. The Service will handle all requests for such comments in accordance with the Freedom of Information Act and the Council of Environmental Quality NEPA regulations (40 CFR 1506.6(f)). The Service's practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. Individual respondents may request that their home address is withheld from the record, which the Service will honor to the extent allowable by law. Individuals requesting their name and/or address be withheld must state this prominently at the beginning of their comments.

18.0 List of Preparers

Damien Miller, USFWS, Project Leader, Willamette Valley National Wildlife Refuge Complex

Kevin O'Hara, USFWS, Conservation Planner

Becky Clow, USFWS, Conservation Planner

Claire McClory, USFWS, Planning Branch Chief, Region 1

Jarod Jebousek, USFWS, Biologist, Partners for Fish and Wildlife

Chris Seal, USFWS, Biologist, Partners for Fish and Wildlife

Sam Bartling, USFWS, Visitor Services Manager, Willamette Valley National Wildlife Refuge Complex

Liz Cruz, USFWS, Geographer/GIS Specialist

Jonathan Bloomfield, USFWS, Realty Specialist

Appendix A
Statement of Compliance
for the
Proposed Willamette Valley Conservation Area

The following Executive Orders and legislative acts were reviewed as they apply to the establishment of the Willamette Valley Conservation Area.

National Environmental Policy Act of 1969 (42 U.S.C. §4321 et seq.) (NEPA). As a federal agency, the Service must comply with provisions of NEPA, as amended (42 U.S.C. 4321-4347). An analysis is required to evaluate reasonable alternatives that would meet stated objectives and to assess the possible physical, biological, social, and cultural impacts to the human environment. The NEPA process facilitates the involvement of government agencies and the public in the decision-making process. The planning and assessment process has been conducted in accordance with Department of the Interior and the U.S. Fish and Wildlife Service NEPA procedures and has been performed in coordination with the affected public.

Executive Order 11593: Protection of Historical, Archaeological, and Scientific Properties and the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470-470x) (NHPA). Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties. Under the terms of Section 106, the actions proposed in this Environmental Assessment are undertakings that are considered to be of the type of activity that has no potential to cause effects to cultural resources because land is being brought under the protection of federal cultural resource preservation laws. The Service commits to cultural resource surveys and compliance with other requirements of Section 106 of the National Historic Preservation Act prior to specific management activities, including groundbreaking, when the lands are brought into federal ownership.

Executive Order 13007: Indian Sacred Sites. This Executive Order requires federal agencies to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and to avoid adversely affecting the physical integrity of such sacred sites. The Service commits to coordinate with the Confederated Tribes of the Grand Ronde Community of Oregon, the Confederated Tribes of the Siletz Indians, and the Confederated Tribes of the Warm Springs prior to any acquisition to help identify and protect any Indian sacred sites that may be acquired.

Executive Order 12996: Management and General Public Use of the National Wildlife Refuge System, and the National Wildlife Refuge Administration Act of 1966, as amended by the National Wildlife Refuge Improvement Act of 1997 (16 U.S.C. 668dd-668ee). The proposed land acquisition is consistent with Executive Order 12996 and the Refuge Administration Act as amended by the Improvement Act because it will facilitate the protection of wildlife species and habitats to maintain biological integrity, diversity, and environmental health of the Refuge System for the benefit of present and future generations of Americans. The actions proposed in this Environmental Assessment would also contribute to the continued growth of the Refuge System in a manner that supports the mission of the Refuge System, which is to contribute to the conservation of the ecosystems of the United States, to complement efforts of and other Federal agencies to conserve fish and wildlife and their habitats, and to increase support for the Refuge System and participation from partners and the public.

Executive Order 11988: Floodplain Management. Executive Order 11988 requires federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of flood plains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. By bringing property into federal ownership, any floodplains present would be protected as part of the Refuge System.

Executive Order 11990: Protection of Wetlands. Executive Order 11990 requires federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. Any wetlands on the acquired property will be protected as part of the Refuge System because the land is being brought under federal ownership.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). CERCLA requires federal agencies to evaluate the environmental condition of property, and to take remedial actions as necessary, to protect human health and the environment before acquiring property. The actions proposed in this Environmental Assessment are consistent with CERCLA because the Service would complete a pre-acquisition environmental site assessment on all parcels prior to completing the acquisition.

Executive Order 12898: Federal Actions to Address Environmental Justice in Minority and Low-Income Populations. Executive Order 12898 requires all federal agencies to incorporate environmental justice into their actions. The Environmental Protection Agency defines “environmental justice” as

“the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or policies” (EPA 2019).

Establishing new units of the Refuge System does not result in adverse human health or negative environmental effects. Therefore, establishing new units of the Refuge System would not result in disproportionately high or adverse human health or environmental effects on minorities and low-income populations and communities.

The Endangered Species Act of 1973 (16 U.S.C. § 1531 et seq.) (ESA). The Endangered Species Act directs all federal agencies to work to conserve endangered and threatened species and to use their authorities to further the purposes of the ESA. Within the Conservation Area, the Service would protect populations of listed species, as long as protecting the population aides in the recovery of the species. Grasslands brought into the Refuge System would be evaluated for their suitability to be managed as a streaked horned lark core site. The Service completed a Section 7 consultation on the effects to listed species and designated critical habitat. The Service concluded that implementing the Willamette Valley Land Protection Plan may affect, but is not likely to adversely affect the listed species and designated critical habitat within the Conservation Area. This determination is based on the presence of listed species and critical habitat within the Conservation Area and the beneficial effects expected for listed species.

Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds. The Migratory Bird Treaty Act imposes substantive obligations on the United States for the conservation of migratory birds and their habitats. Executive Order 13186 directs executive departments and agencies to take certain actions to further implement the Migratory Bird Treaty Act, including supporting the

conservation intent of the migratory bird conventions; restoring and enhancing the habitat of migratory birds, as practicable; and preventing or abating detrimental alteration of the environment for the benefit of migratory birds, as practicable. The actions proposed in this Environmental Assessment comply with Executive Order 13186 because lands brought into the Refuge System would provide safe and secure habitat to allow populations of sensitive native migratory birds space and time to recover.

Executive Order 13112. Responsibilities of Federal Agencies Pertaining to Invasive Species

Executive Order 13112 requires federal agencies to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause. The actions proposed in this Environmental Assessment would comply with Executive Order 13112 because the Service would control invasive species on land brought into the Refuge System following Integrated Pest Management protocols.

This page intentionally left blank

Appendix B Species List

Birds

Common Name	Scientific Name
acorn woodpecker	<i>Melanerpes formicivorus</i>
American grass bug	<i>Acetropis americana</i>
band-tailed pigeon	<i>Patagioenas fasciata</i>
black-throated gray warbler	<i>Setophaga nigrescens</i>
blue-gray gnatcatcher	<i>Polioptila caerulea</i>
burrowing owl	<i>Athene cunicularia</i>
California scrub-jay	<i>Aphelocoma californica</i>
California towhee	<i>Melospiza crissalis</i>
Cassin's vireo	<i>Vireo cassinii</i>
chipping sparrow	<i>Spizella passerina</i>
common nighthawk	<i>Chordeiles minor</i>
downy woodpecker	<i>Picoides pubescens</i>
grasshopper sparrow	<i>Ammodramus savannarum</i>
horned lark	<i>Eremophila alpestris</i>
house wren	<i>Troglodytes aedon</i>
Hutton's vireo	<i>Vireo huttoni</i>
lark sparrow	<i>Chondestes grammacus</i>
Lazuli bunting	<i>Passerina amoena</i>
Lewis' woodpecker	<i>Melanerpes lewis</i>
northern harrier	<i>Circus cyaneus</i>
oak titmouse	<i>Baeolophus inornatus</i>
olive-sided flycatcher	<i>Contopus cooperi</i>
Oregon slender salamander	<i>Batrachoseps wrighti</i>
Oregon vesper sparrow	<i>Pooecetes gramineus affinis</i>
purple martin	<i>Progne subis</i>
racemed goldenweed	<i>Pyrrocoma racemosa</i> var. <i>racemosa</i>
savannah sparrow	<i>Passerculus sandwichensis</i>
Say's phoebe	<i>Sayornis saya</i>
short-eared owl	<i>Asio flammeus</i>
slender-billed white-breasted nuthatch	<i>Sitta carolinenses aculeata</i>
streaked horned lark	<i>Eremophila alpestris strigata</i>
western bluebird	<i>Sialia mexicana</i>
western burrowing owl	<i>Athene cunicularia hypugaea</i>
western meadowlark	<i>Sturnella neglecta</i>
western screech-owl	<i>Megascops kennicottii</i>
western wood-pewee	<i>Contopus sordidulus</i>

Plants

Common Name	Scientific Name
bearded wheatgrass	<i>Elymus caninus</i>
big-leaf maple	<i>Acer macrophyllum</i>
birdsfoot trefoil	<i>Lotus corniculatus</i>
blue wildrye	<i>Elymus glaucus</i>
Bradshaw's lomatium	<i>Lomatium bradshawi</i>
California oatgrass	<i>Danthonia californica</i>
common camas	<i>Camassia quamash ssp. maxima</i>
common snowberry	<i>Symphoricarpos albus</i>
coyote-thistle	<i>Eryngium petiolatum</i>
Douglas fir	<i>Pseudotsuga menziesii</i>
dwarf checkermallow	<i>Sidalcea virgata</i>
elegant downingia	<i>Downingia elegans</i>
golden paintbrush	<i>Castilleja levisecta</i>
great camas	<i>Camassia leichtlinii ssp. suksdorfii</i>
Hitchcock's blue-eyed grass	<i>Sisyrinchium hitchcockii</i>
junegrass	<i>Koeleria macrantha</i>
Kincaid's lupine	<i>Lupinus sulphureus ssp. kincaidii</i>
lance selfheal	<i>Prunella vulgaris ssp. lanceolata</i>
Lemmon's needlegrass	<i>Achnatherum lemmonii</i>
Lewis' woodpecker	<i>Melanerpes lewis</i>
Nelson's checker-mallow	<i>Sidalcea nelsoniana</i>
Nootka rose	<i>Rosa nutkana</i>
orchard grass	<i>Dactylis glomerata</i>
Oregon ash	<i>Fraxinus latifolia</i>
Oregon sunshine	<i>Eriophyllum lanatum</i>
Oregon white oak	<i>Quercus garryana</i>
Pacific blacksnakeroot	<i>Sanicula crassicaulis</i>
Pacific sword fern	<i>Polystichum munitum</i>
pale larkspur	<i>Delphinium leucophaeum</i>
peacock larkspur	<i>Delphinium pavonaceum</i>
perennial ryegrasses	<i>Lolium perenne</i>
poison-oak	<i>Toxicodendron diversilobum</i>
Ponderosa pine	<i>Pinus ponderosa</i>
purple martin	<i>Progne subis</i>
prairie Junegrass	<i>Koeleria macrantha</i>
racemed goldenweed	<i>Pyrrocoma racemosa var. racemosa</i>
Roemer's fescue	<i>Festuca roemerii</i>
rushes	<i>Juncus spp.</i>
Sandberg bluegrass	<i>Poa secunda</i>
sedges	<i>Carex spp</i>
shaggy horkelia	<i>Horkelia congesta ssp. Congesta</i>
slender cinquefoil	<i>Potentilla gracilis</i>
slender wheatgrass	<i>Elymus trachycaulus</i>
thin-leaved peavine	<i>Lathyrus holochlorus</i>

Common Name	Scientific Name
Tolmie startulip	<i>Calochortus tolmiei</i>
tufted hairgrass	<i>Deschampsia caespitosa</i>
white-rock larkspur	<i>Delphinium leucophaeum</i>
white-topped aster	<i>Sericocarpus rigidus</i>
Willamette Valley daisy	<i>Erigeron decumbens</i>
Willamette Valley larkspur	<i>Delphinium oregonum</i>

Invertebrates, Amphibians, and Rodents

Common Name	Scientific Name
American grass bug	<i>Acetropis americana</i>
camas pocket gopher	<i>Thomomys bulbivorus</i>
Columbian white-tailed deer	<i>Odocoileus virginianus leucurus</i>
Fender's blue butterfly	<i>Icaricia icarioides fenderi</i> syn. <i>Plebejus icarioides fenderi</i>
northern red-legged frog	<i>Rana aurora</i>
Oregon slender salamander	<i>Batrachoseps wrighti</i>
Taylor's checkerspot butterfly	<i>Euphydryas editha taylori</i>

This page intentionally left blank

Appendix C

Literature Cited

- American Bird Conservancy 2006. *Top 20 most threatened bird habitats in the United States. Bird Conservation*, Summer 2006. **(ABC 2006)**
- Altman, B. 1999. *Status and conservation of state sensitive grassland bird species in the Willamette Valley. A report to the Oregon Department of Fish and Wildlife.* **(Altman 1999)**
- Altman, B. 2011. *Historical and current distribution and populations of bird species in prairie-oak habitats in the Pacific Northwest.* Northwest Science 85:194-222. **(Altman 2011)**
- Buttrick, S., K. Popper, M. Schindel, B. McRae, B. Unnasch, A. Jones, and J. Platt. 2015. *Conserving Nature's Stage: Identifying Resilient Terrestrial Landscapes in the Pacific Northwest.* The Nature Conservancy, Portland Oregon. 104 pp. Available online at: <http://nature.ly/resilienceNW> March 3, 2015. **(Buttrick 2015)**
- Benton County 2017. *Benton County Comprehensive Plan.* Available at: <https://www.co.benton.or.us/sites/default/files/fileattachments/planning/page/1921/cp-complete.pdf> Assessed: July 24, 2022. **(Benton County 2017)**
- Christy, John A., Edward R. Alverson 2011. *Historical Vegetation of the Willamette Valley, Oregon, circa 1850.* Northwest Science, 85(2):93-107 (2011). **(Christy and Alverson 2011)**
- Comer, P., D. Faber-Langendoen, R. Evans, S. Gawler, C. Josse, G. Kittel, S. Menard, M. Pyne, M. Reid, K. Schulz, K. Snow, and J. Teague. 2003. *Ecological Systems of the United States: A Working Classification of U.S. Terrestrial Systems.* NatureServe, Arlington, Virginia. (Comer et al. 2003)
- Connolly, T.J. 2000. *Anthropological and Archaeological Perspectives on Native Fire Management of the Willamette Valley.* Paper presented at the 81st Annual Meeting of the American Association for the Advancement of Science, Pacific Division (Symposium: Fire History in the Pacific Northwest: Human and Climatic Influences), June 11-14, 2000, Ashland, OR. http://www.orww.org/Kalapuya-Amin_2006/Program/ConnollyT/Indian_Burning_20000611.pdf. **(Connolly 2000)**
- Csuti, B., T.A. O'Neil, M.M. Shaughnessy, E.P. Gaines, and J.C. Hak. 2001. *Atlas of Oregon Wildlife: Distribution, Habitat, and Natural History*, 2nd edition. Oregon State University Press. Corvallis, OR. **(Csuti et al. 2001)**
- Department of the Interior. 2021. *Conserving and Restoring America the Beautiful*, 24 pp. Available at: <https://www.doi.gov/sites/doi.gov/files/report-conserving-and-restoring-america-the-beautiful-2021.pdf>. **(DOI 2021)**
- Guinan, J.A., P.A. Gowaty, and E.K. Eltzroth. 2008. *Western Bluebird (*Sialia mexicana*)*, *The Birds of North America Online* (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/510>. **(Guinan et al. 2008)**
- Hagar, J.C., and M.A. Stern 2001. *Avifauna in oak woodlands of the Willamette Valley, Oregon.* Northwestern Naturalist. 82: 12-25. **(Hagar and Stern 2001)**
- Hanski, I., and M. Gilpen. 1991. *Metapopulation dynamics: brief history and conceptual domain.* Biological Journal of the Linnean Society 42:3-16. **(Hanski and Gilpen 1991)**

- Hanski, I.A. 1998. *Metapopulation dynamics*. Nature 396:41-49. **(Hanski 1998)**
- Hamman, S.T., P.W. Dunwiddie, J.L. Nuckols, and M. McKinley. 2011. *Fire as a restoration tool in the Pacific Northwest prairies and oak woodlands: challenges, Successes, and future directions*. Northwest Science 85:317-328. **(Hamman et al. 2011)**
- Institute for Applied Ecology. 2010. *Benton County, Oregon: prairie conservation strategy*. December 2010. **(IAE 2010)**
- Gabrielson, I.N., and S.G. Jewett. 1940. *Birds of Oregon*. Oregon State College, Corvallis, OR. (reprinted in 1970 as *Birds of the Pacific Northwest*. Dover Publishing. New York, NY.) **(Gabrielson and Jewett 1940)**
- Hulse D., S. Gregory, and J. Baker editors. 2002. *Willamette River Basin Planning Atlas: Trajectories of Environmental and Ecological Change*, 2nd edition. Oregon State University Press, Corvallis, OR. **(Hulse et al. 2002)**
- Johannessen, C.L., W.A. Davenport, A. Millet, and S. McWilliams. 1971. *The Vegetation of the Willamette Valley*. Annals of the Association of American Geographers 61:286-302. **(Johannessen et al. 1971)**
- Keyser, A.J., M.T. Keyser, and D.E.L. Promislow. 2004. *Life-history variation and demography in western bluebirds (*Salix mexicana*) in Oregon*. The Auk 121:118-133. **(Keyser et al. 2004)**
- Landau, V. A., M. L. McClure, and B. G. Dickson. 2020. *Analysis of the Disparities in Nature Loss and Access to Nature*. Technical Report. Conservation Science Partners, Truckee, CA. **(Landau et al. 2020)**
- Lane County. 1984. *Lane County Rural Comprehensive Plan General Plan Policies*. Updated 2009. Available at <https://www.lanecounty.org/common/pages/DisplayFile.aspx?itemId=6477350>. Assessed July 24, 2022. **(Lane County 1984)**
- Linn County. 2013. *Linn County Comprehensive Plan Code*. Available at <http://www.co.linn.or.us/cc/LCC%20900%20-%20Comp%20Plan%20Generally.pdf>. Accessed July 24, 2022. **(Linn County 2013)**
- Loucks, C., Ricketts, T. H., Naidoo, R., Lamoreux, J., and Hoekstra, J. 2008. *Explaining the global pattern of protected area coverage: Relative importance of vertebrate biodiversity, human activities and agricultural suitability*. Journal of Biogeography, 35(8), 1337–1348. **(Loucks et al. 2008)**
- Marion County. 2022. *Marion County Comprehensive Land Use Plan*. Available at <https://www.codepublishing.com/OR/MarionCounty/#%21/MarionCompNT.html>. Accessed July 24, 2022. **(Marion County 2022)**
- Mcdonald, R., and Boucher, T. 2011. *Global development and the future of protected area strategy*. Biological Conservation, 144, 383–392. **(Mcdonald and Boucher. 2011)**
- McRae, B.H., K. Popper, A. Jones, M. Schindel, S. Buttrick, K. Hall, R.S. Unnasch, and J. Platt. 2016. *Conserving Nature’s Stage: Mapping Omnidirectional Connectivity for Resilient Terrestrial Landscapes in the Pacific Northwest*. The Nature Conservancy, Portland Oregon. 47 pp. Available online at: <http://nature.org/resilienceNW> June 30, 2016. **(McRae et al. 2016)**
- NatureServe. 2011. *International Ecological Classification Standard: Terrestrial Ecological Classifications*. NatureServe Central Databases. Arlington, VA. Data current as of July 31, 2011. **(NatureServe 2011)**

- Noss, R.F., E.T. LaRoe III, and J.M. Scott. 1995. *Endangered Ecosystems of the United States: a preliminary assessment of loss and degradation*. U.S. Department of the Interior. Biological Report 28. Feb. 1995. **(Noss et al. 1995)**
- Omernik, J.M. 1987 *Ecoregions of the conterminous United States*. Annals of the Association of American Geographers 77:118-125. **(Omernik 1987)**
- Oregon Department of Fish and Wildlife. 2010. *Declining and state sensitive bird species breeding in the Willamette Valley Grasslands: 2008/09 status update*. ODFW, Salem, OR. **(ODFW 2010)**
- Oregon Department of Fish and Wildlife. 2016. *Oregon Conservation Strategy*. Oregon ODFW, Salem, Oregon. **(ODFW 2016)**
- Oregon Department of Fish and Wildlife. 2021. *Sensitive Species List*. ODFW, Salem, ORODFW, Salem, OR. **(ODFW 2021)**
- Oregon Progress Board. 2000. *Oregon State of the Environment Report 2000: Statewide Summary*. **(OPB 2000)**
- Pacific Northwest Research Station. 2007. *Move over, Douglas-fir: Oregon white oaks need room to grow*. Science Findings 98. **(Pacific Northwest Research Station 2007)**
- Polk County. 2012. *Polk County Comprehensive Code*. Available at: <https://www.co.polk.or.us/cd/polk-county-comprehensive-plan>. Assessed July 24, 2022. **(Polk County 2012)**
- Rich, T.D., C.J. Beardmore, H. Berlanga, P.J. Blancher, M.S.W. Bradstreet, G.S. Butcher, D.W. Demarest, E.H. Dunn, W.C. Hunter, E.E. Iñigo-Elias, J.A. Kennedy, A.M. Martell, A.O. Panjabi, D.N. Pashley, K.V. Rosenberg, C.M. Rustay, J.S. Wendt, T.C. Will. 2004. *Partners in Flight North American Landbird Conservation Plan*. Cornell Lab of Ornithology. Ithaca, NY. **(Rich et al. 2004)**
- Rockwell, S. M., J. L. Stephens, and B. Altman. 2022. *Population and habitat objectives for landbirds in prairie, oak, and riparian habitats of western Oregon and Washington*. Version 2.0. Prepared for Oregon-Washington Partners in Flight, Pacific Birds Habitat Joint Venture, Bureau of Land Management, and U.S. Forest Service. Klamath Bird Observatory, Ashland, OR, and American Bird Conservancy, Corvallis, OR. **(Rockwell et al. 2022)**
- Rosenberg, K. V., J. A. Kennedy, R. Dettmers, R. P. Ford, D. Reynolds, J.D. Alexander, C. J. Beardmore, P. J. Blancher, R. E. Bogart, G. S. Butcher, A. F. Camfield, A. Couturier, D. W. Demarest, W. E. Easton, J.J. Giocomo, R.H. Keller, A. E. Mini, A. O. Panjabi, D. N. Pashley, T. D. Rich, J. M. Ruth, H. Stabins, J. Stanton, T. Will. 2016. *Partners in Flight Landbird Conservation Plan: 2016 Revision for Canada and Continental United States*. Partners in Flight Science Committee. 119 pp. **(Rosenberg et al. 2016)**
- Sauer, J.R., J.E. Hines, and J. Fallon. 2008. *The North American Breeding Bird Survey, Results and Analysis 1966-2007. Version 5.15.2008*. (Archived) USGS Patuxent Wildlife Research Center, Laurel, MD. **(Sauer et al. 2008)**
- Taft, O.W., and S.M. Haig. 2003. *Historical wetlands in Oregon's Willamette Valley: implications for restoration of winter waterbird habitat*. Wetlands 23:51-46. **(Taft and Haig 2003)**
- U.S. Department of Agriculture. 2019. *National Agricultural Statistics Service. 2017 Census of Agriculture Oregon State and County Data Volume 1*. Geographic Area Series. Part 37. AC-17-A-37. **(USDA 2019)**

- U.S. Department of Commerce. 2022. Bureau of Economic Analysis, Regional Economic Accounts, Washington, D.C.; U.S. Department of Labor. 2022. Bureau of Labor Statistics, Local Area Unemployment Statistics, Washington, D.C.; U.S. Department of Labor. 2021. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Washington, D.C. **(USDC 2022)**
- U.S. Environmental Protection Agency. 2019. EJSCEEN Technical Documentation. **(EPA 2019)**
- U.S. Fish and Wildlife Service 1993. *Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Plant "Sidalcea nelsonianna" (Nelson's checkermallow)*. 58 FR 8235. **(USFWS 1993)**
- U.S. Fish and Wildlife Service. 1997. *Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for Castilleja levisecta (Golden Paintbrush)*. 62 FR 31740. **(USFWS 1997)**
- U.S. Fish and Wildlife Service (USFWS). 1998. *Endangered and Threatened Wildlife and Plants; Final Endangered Status for Lomatium bradshawii (Bradshaw's lomatium)*. 53 FR 38448. **(USFWS 1998)**
- U.S. Fish and Wildlife Service. 2000. *Endangered and threatened wildlife and plants; Endangered Status for Erigeron decumbens var. decumbens (Willamette Daisy) and Fender's Blue Butterfly (Icaricia icarioides fenderi) and Threatened Status for Lupinus sulphureus ssp. kincaidii (Kincaid's Lupine)*. Federal Register 65:3875-3890. January 25, 2000. **(USFWS 2000)**
- U.S. Fish and Wildlife Service. 2000a. Part 603: *National Wildlife Refuge System Use Compatibility Policy*. Available at <https://www.fws.gov/policy/603fw2.html>. **(USFWS 2000a)**
- U.S. Fish and Wildlife Service (USFWS). 2006. *Endangered and threatened wildlife and plants: Designation of critical habitat for the Fender's blue butterfly (Icaricia icarioides fenderi), Lupinus sulphureus ssp. kincaidii (Kincaid's lupine), and Erigeron decumbens var. decumbens (Willamette daisy); final rule*. Federal Register 71:63862-63977. October 31, 2006. **(USFWS 2006)**
- U.S. Fish and Wildlife Service (USFWS). 2006a. *Banking on Nature: The Economic Benefits to Local Communities of National Wildlife Visitation*. Division of Economics, U.S. Fish and Wildlife Service. 382 pp. **(USFWS 2006a)**.
- U.S. Fish and Wildlife Service. 2008. *Strategic habitat conservation handbook: a guide to implementing the technical elements of strategic habitat conservation (Version 1.0)*. A report from the National Technical Assistance Team. February 11, 2008. **(USFWS 2008)**
- U.S. Fish and Wildlife Service. 2010. *Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington*. U.S. Fish and Wildlife Service, Portland, Oregon. xi + 241 pp. **(USFWS 2010)**
- U.S. Fish and Wildlife Service. 2011. *Comprehensive Conservation Plan for the Willamette Valley National Wildlife Refuge Complex*. **(USFWS 2011)**
- U.S. Fish and Wildlife Service. 2012. *Draft Guidance on Selecting Species for Design of Landscape-scale Conservation*. July 20, 2012. **(USFWS 2012)**
- U.S. Fish and Wildlife Service. 2013. *Determination of Endangered Status for the Taylor's Checkerspot Butterfly and Threatened Status for the Streaked Horned Lark; Final Rule*. 78 FR 61451. **(USFWS 2013)**

- U.S. Fish and Wildlife Service. 2013a. *Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Taylor's Checkerspot Butterfly and Streaked Horned Lark, Final Rule*. 78 FR 61506. **(USFWS 2013a)**
- U.S. Fish and Wildlife Service. 2017. *Willamette Valley Conservation Study*. Pacific Region, Portland, Oregon. 148 pp. **(USFWS 2017)**
- U.S. Fish and Wildlife Service. 2019. *Draft Recovery Plan for the Streaked Horned Lark (*Eremophila alpestris strigata*)*. U.S. Fish and Wildlife Service, Portland, Oregon. 28pp. **(USFWS 2019)**
- Caudill, James and Erin Carver. 2019a. *Banking on Nature 2017: The Economic Contributions of National Wildlife Refuge Recreational Visitation to Local Communities*. U.S. Fish and Wildlife Service, Falls Church, Virginia. **(USFWS 2019a)**
- U.S. Fish and Wildlife Service. 2021. *Birds of Conservation Concern 2021*. United States Department of the Interior, U.S. Fish and Wildlife Service, Migratory Birds, Falls Church, Virginia. <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>. **(USFWS 2021)**
- U.S. Fish and Wildlife Service. 2021a. *Endangered and Threatened Wildlife and Plants; Reclassifying the Fender's Blue Butterfly From Endangered to Threatened With a Section 4(d) Rule*. 86 FR 32859 **(USFWS 2021a)**
- U.S. Fish and Wildlife Service. 2021b. *Endangered and Threatened Wildlife and Plants; Removing Golden Paintbrush From the Federal List of Endangered and Threatened Plants*. 86 FR 34695 34711 **(USFWS 2021b)**.
- U.S. Fish and Wildlife Service. 2022. *Endangered and Threatened Wildlife and Plants; Removing Nelson's Checker-Mallow From the Federal List of Endangered and Threatened Plants*. 87 FR 25197. **(USFWS 2022)**
- U.S. Fish and Wildlife Service. 2022a. *Revenue Sharing Data*. <https://www.fws.gov/program/land-acquisition-and-realty/revenue-sharing>. **(USFWS 2022a)**
- Willamette Valley Oak and Prairie Cooperative. 2020. *Strategic Action Plan* March 2020. 70pp. **(WVOPC 2020)**
- Yamhill County. 1996. *Yamhill County Comprehensive Land Use Plan*. Available at: https://www.co.yamhill.or.us/sites/default/files/comp_plan_02.pdf. Assessed July 24, 2022. **(Yamhill County 1996)**

This page intentionally left blank

Appendix D

List of Acronyms and Terms

Acronym	Full Phrase
ABC	American Bird Conservancy
Administration Act	National Wildlife Refuge System Administration Act of 1966, as amended by the National Wildlife Refuge System Improvement Act of 1997
CCP	Comprehensive Conservation Plan
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act of 1980
CFR	Code of Federal Regulations
CMP	Conceptual Management Plan: Proposed Willamette Valley Conservation Area Oregon
Conservation Area	Willamette Valley Conservation Area
conservation estate	lands currently protected for their conservation values
Conservation Study	Willamette Valley Conservation Study
Cooperative	Willamette Valley Oak and Prairie Cooperative
Core Area	Core Conservation Area
DOI	Department of the Interior
DM	Departmental Manual
Draft Recovery Plan	Draft Recovery Plan for the Streaked Horned Lark (USFWS 2019)
EA	Environmental Assessment
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act of 1973
Extirpation	Refers to a species of plant or animal that ceases to exist in a given geographic area (e.g., the Willamette Valley), though it still exists elsewhere.
GIS	Geographic Information System
I-5	Interstate 5
IAE	Institute for Applied Ecology
IPM	Integrated Pest Management
NEPA	National Environmental Policy Act of 1969
NWR	National Wildlife Refuge
NWR Complex	Willamette Valley National Wildlife Refuge Complex
ODFW	Oregon Department of Fish and Wildlife
OPB	Oregon Process Board
Opportunity Area	Opportunity Conservation Area
Partners Program	USFWS Partners for Fish and Wildlife Program
permeable, permeability	Permeability is the ease with which wildlife can move through the landscape. Landscapes with high permeability mean wildlife can more readily move through it than landscapes with low permeability.
Prairie Species Recovery Plan	Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington (USFWS 2010)
Refuge	National Wildlife Refuge
Refuge System	National Wildlife Refuge System

Acronym	Full Phrase
Service	U.S. Fish and Wildlife Service
SO	Secretarial Order
U.S.	United States
USC	United States Code
USDC	U.S. Department of Commerce
USFWS	U.S. Fish and Wildlife Service
WVOPC, Cooperative	Willamette Valley Oak and Prairie Cooperative
WWMP	Willamette Wildlife Mitigation Program

Appendix E
Endangered Species Act Section 7 Consultation

This page intentionally left blank

Endangered Species Act Section 7 Consultation Form
for the
Willamette Valley Land Protection Plan

Refuge Name: Willamette Valley National Wildlife Refuge Complex (Complex)

Address: 26208 Finley Refuge Road, Corvallis Oregon, 97333

Phone: 541-757-7236

Refuge Action: The Complex proposes to create the Willamette Valley Conservation Area (Conservation Area) in the southern two-thirds of the Willamette Valley and permanently protect up to 22,650 acres of oak and prairie habitat and populations of listed species.

Part 1

I. Project Overview

1. Project Location

The Action Area and Conservation Area are the same. The Conservation Area is based on the Willamette Valley Oak and Prairie Cooperative's Primary Planning Area as shown in Figure 1 (attached). It is located in the southern portions of the Willamette Valley which includes areas of Benton, Lane, Linn, Marion, Polk, and Yamhill Counties.

2. Description of the Proposed Action

The U.S. Fish and Wildlife Service (Service) proposes to create the Conservation Area to assist the Willamette Valley Oak and Prairie Cooperative (Cooperative) in the delivery of their mission:

"To protect, restore, and maintain a functional, resilient network of oak and prairie habitats in the Willamette Valley through a coordinated and strategic approach that leverages resources, focuses on priority geographies and species, and produces substantial ecological returns" (WVOPC 2020).

The Service is proposing to protect up to 22,650 acres of prairies, oak savannas, and oak woodlands contributing to America the Beautiful Initiative, a ten-year program of the Department of the Interior and other federal agencies to support locally led efforts to restore the lands and waters on which we all depend (DOI 2021). Additionally, the Service would be authorized to work with landowners wishing to permanently protect and advance recovery of threatened or endangered species populations on their land wherever they occur inside the Conservation Area. Protecting a listed species population would have to contribute to achieving published recovery criteria (USFWS 2010, USFWS 2019).

The boundary for the Conservation Area would be the Cooperative's Primary Planning Area as shown on the 30-Year Conservation Concept Map (Figure 1). The Conservation Area covers approximately 2.4 million acres (3,750 square miles), is approximately 120 miles long (north to south) and 40 miles wide (east to west). The area is bound by the Coast Mountain Range to the west and Cascade Mountain Range to the east (WVOPC 2020).

3. Project Timeline

The Willamette Valley Conservation Area would remain in effect until the Service has permanently protected 22,600 acres of oak and prairie habitat including populations of listed terrestrial species within the Action Area. There is no projected end date.

4. Federally Listed Species and Critical Habitat

A. Listed species and/or their critical habitat

Streaked horned lark (*Eremophila alpestris strigatal*): Originally listed as a threatened species in November 2013 (USFWS 2013), the streaked horned lark remains listed as a threatened species. Critical habitat was designated in three areas of the Conservation Area. These occur on 1,729 acres all of which are within the boundaries of Baskett Slough, Ankeny, and W.L. Finley NWRs (USFWS 2013). A draft Recovery Plan for the streaked horned lark has been published (USFWS 2019)

Fender's blue butterfly (*Icaricia icarioides fenderi* syn. *Plebejus icarioides fenderi*): Originally listed as an endangered species in January 2000 (USFWS 2000), Fender's blue butterfly remains listed as an endangered species, but the Service has proposed reclassification of the species from endangered status to threatened status (USFWS 2021). Critical habitat for this species was designated in 2006 (USFWS 2006). Approximately 3,000 acres containing known populations of Fender's blue butterfly were designated as critical habitat. These occur on federal, state, and private lands in 13 distinct areas of the valley, all of which occur within the proposed Conservation Area. Fender's blue butterfly is one of the species addressed in the Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington (USFWS 2010).

Taylor's checkerspot butterfly (*Euphydryas editha taylori*): Originally listed as an endangered species in November 2013 (USFWS 2013), Taylor's checkerspot butterfly remains listed as an endangered species. Within the Conservation Area, one 20-acre area of private land near Corvallis has been designated as critical habitat (USFWS 2013a). A recovery plan has not been published for this species.

Willamette daisy (*Erigeron decumbens*): Originally listed as an endangered species in January 2000 (USFWS 2000), Willamette daisy remains listed as an endangered species. Critical habitat for this species was designated in 2006 (USFWS 2006). Approximately 718 acres containing known populations of Willamette daisy were designated as critical habitat. These occur on federal, state, and private lands in 9 distinct areas of the valley. Willamette daisy is one of the species addressed in the Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington (USFWS 2010).

Golden paintbrush (*Castilleja levisecta*): Originally listed as a threatened species in 1997 (USFWS 1997), golden paintbrush remains listed as a threatened species, but the Service has proposed to delist the species due to the success of recovery actions directed toward this species (USFWS 2021a). Critical habitat was never designated. Golden paintbrush is one of the species addressed in the Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington (USFWS 2010).

Kincaid's lupine (*Lupinus sulphureus* ssp. *kincaidii*): Originally listed as a threatened species in January 2000 (USFWS 2000), Kincaid's lupine remains listed as a threatened species. Critical habitat for this species was designated in 2006. Approximately 580 acres containing known populations of Kincaid's lupine were designated as critical habitat. These occur on federal, state, and private lands in 12 distinct

areas of the valley. Kincaid's lupine is one of the species addressed in the Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington (USFWS 2010).

Nelson's checker-mallow (*Sidalcea nelsoniana*): Originally listed as a threatened species in January 1993 (USFWS 1993), Kincaid's lupine remains listed as a threatened species, although the Service is proposing to delist the species based on the successful recovery actions taken for this species (2022). Critical habitat has not been designated. Nelson's checker-mallow is one of the species addressed in the Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington (USFWS 2010).

B. Proposed species and/or proposed critical habitat: None.

C. Candidate species: None.

II Effects Analysis

The Service would be authorized to work with private landowners to permanently protect populations of listed species when permanent protection of the population contributes to their recovery. The Service would be authorized to work with willing landowners with populations of listed species wherever they occur in the Conservation Area. Each protected population incrementally adds to the recovery of the listed species and addresses the number one priority recovery action – to identify and protect the remaining populations with the greatest potential for restoration.

The Prairie Species Recovery Plan (USFWS 2010) outlines recovery actions for the five listed prairie species at the time: Fender's blue butterfly, Willamette daisy, Kincaid's lupine, Bradshaw's lomatium, and Nelson's checker-mallow. Each of these species were threatened by the continued degradation, loss, and fragmentation of their native prairie ecosystems.

Each population offered for permanent protection would be checked against the recovery criteria and status to determine if permanent protection contributes to recovery. The degree to which listed species recovery would benefit from protection of a specific population would then be considered when making decisions about which lands to protect. On lands protected for listed species, the Service would restore the lands to a functional prairie ecosystem and maintain a diversity of native species typical of these prairie communities.

Appendix 2 of the Willamette Valley Land Protection Plan is conceptual management plan for new lands added to the Complex. It presents a general outline of how new refuge lands would be initially managed. The duration of this land protection plan will span decades, during which existing species may be delisted while new listings could occur, and new information could lead to different effects determinations than would be made today. Because it is impossible to predict which lands would be brought into the National Wildlife Refuge System, the conceptual management plan does not provide restoration or long-term management details, identify where facilities would be located, or where future public uses may be allowed. These activities would be addressed through an amendment to the Complex's Comprehensive Conservation Plan. The Service will address Section 7 compliance requirements as needed when conducting management actions at each site protected as necessary.

The Draft Recovery Plan for the Streaked Horned Lark (USFWS 2019) created three recovery zones in the Willamette Valley that intersect with the Conservation Area (north, west, and southeast), and

established population objectives for each zone. The north zone extends northward beyond the Conservation Area boundary.

Draft Recovery Plan Priority 1a actions for the Willamette Valley region are to implement conservation actions on core sites; identify and conserve current and potentially suitable sites; and “*where feasible, incorporate potential core sites into the [Refuge] System for management.*” Priority 1a actions are those actions that must be taken to prevent extinction or to prevent the species from declining irreversibly (USFWS 2019). The plan calls for three core sites in the north recovery zone, nine in the west zone, and nine in the southeast zone. The Service would evaluate each property being offered for its suitability as a new core site and consider whether the core site criteria described in the plan would be met. The Service expects to be able to contribute several new protected core sites to aid in the recovery of streaked horn lark.

Section 9.6.4 in the environmental assessment of the Land Protection Plan describes in greater detail potential beneficial effects to listed species.

III. Effects Determination and Response Requested

Implementing the Willamette Valley Land Protection Plan may affect, but is not likely to adversely affect the listed species and designated critical habitat within the Conservation Area. This determination is based on the primary purpose of the plan, which is to protect and facilitate restoration and enhancement of the prairie habitats on which the species listed above depend. The Service anticipates meeting specific population distribution and size criteria described in the Prairie Species of Western Oregon and Southwestern Washington (USFWS 2010) and developing new “core sites” for streaked horned lark recovery (USFWS 2019). The Service will address Section 7 compliance requirements as restoration and management activities are planned and implemented on newly protected lands supporting listed species populations.

Signature of Preparer, Date

Evaluation by Project Leader:

1. For A and B above: Concurrence Non-concurrence
2. For C above: Formal consultation required: Yes No
3. For D above: Conference required: Yes No

Signature of Project Leader, Date

Literature Cited

- U.S. Fish and Wildlife Service 1993. Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Plant "*Sidalcea nelsonianna*" (Nelson's checkermallow). 58 FR 8235. **(USFWS 1993)**
- U.S. Fish and Wildlife Service. 1997. Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for *Castilleja levisecta* (Golden Paintbrush). 62 FR 31740. **(USFWS 1997)**
- U.S. Fish and Wildlife Service (USFWS). 1998. Endangered and Threatened Wildlife and Plants; Final Endangered Status for *Lomatium bradshawii* (Bradshaw's lomatium). 53 FR 38448. **(USFWS 1998)**
- U.S. Fish and Wildlife Service. 2000. *Endangered and threatened wildlife and plants; Endangered Status for Erigeron decumbens var. decumbens (Willamette Daisy) and Fender's Blue Butterfly (Icaricia icarioides fenderi) and Threatened Status for Lupinus sulphureus ssp. kincaidii (Kincaid's Lupine)*. Federal Register 65:3875-3890. January 25, 2000. **(USFWS 2000)**
- U.S. Fish and Wildlife Service (USFWS). 2006. Endangered and threatened wildlife and plants: Designation of critical habitat for the Fender's blue butterfly (*Icaricia icarioides fenderi*), *Lupinus sulphureus* ssp. *kincaidii* (Kincaid's lupine), and *Erigeron decumbens* var. *decumbens* (Willamette daisy); final rule. Federal Register 71:63862-63977. October 31, 2006. **(USFWS 2006)**
- U.S. Fish and Wildlife Service. 2010. *Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington*. U.S. Fish and Wildlife Service, Portland, Oregon. xi + 241 pp. **(USFWS 2010)**
- U.S. Fish and Wildlife Service. 2013. Determination of Endangered Status for the Taylor's Checkerspot Butterfly and Threatened Status for the Streaked Horned Lark; Final Rule. 78 FR 61451. **(USFWS 2013)**
- U.S. Fish and Wildlife Service. 2013a. Designation of Critical Habitat for Taylor's Checkerspot Butterfly and Streaked Horned Lark; Final Rule 78 FR 61505 **(USFWS 2013a)**
- U.S. Fish and Wildlife Service. 2019. Draft Recovery Plan for the Streaked Horned Lark (*Eremophila alpestris strigata*). U.S. Fish and Wildlife Service, Portland, Oregon. 28pp. **(USFWS 2019)**
- U.S. Fish and Wildlife Service. 2021. Endangered and Threatened Wildlife and Plants; Reclassifying the Fender's Blue Butterfly from Endangered to Threatened with a Section 4(d) Rule. 86 FR 32859 **(USFWS 2021)**
- U.S. Fish and Wildlife Service. 2021a. Endangered and Threatened Wildlife and Plants; Removing Golden Paintbrush from the Federal List of Endangered and Threatened Plants. 86 FR 34695 **(USFWS 2021a)**
- U.S. Fish and Wildlife Service. 2022. Endangered and Threatened Wildlife and Plants; Removing Nelson's Checker-Mallow from the Federal List of Endangered and Threatened Plants 87 FR 25197. **(USFWS 2022)**
- Willamette Valley Oak and Prairie Cooperative. 2020. Strategic Action Plan. 70pp. **(WVOPC 2020)**

**U.S. Department of the Interior
U.S. Fish & Wildlife Service
National Wildlife Refuge System Lands Division
911 N.E. 11th Avenue
Portland, OR 97232-4181**

<http://www.fws.gov>

**National Wildlife Refuge System Information
1 800/344 WILD**

November 2022



The mission of the U.S. Fish & Wildlife Service is working with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people.

Cover Photo

Golden paintbrush at Baskett Slough. Golden paintbrush was once extirpated in the valley.

Chris Seal, USFWS