A Conservation Concept Map for the Mid-Willamette Valley

August 12, 2015

Background and Purpose

The *Conservation Concept* depicted on the attached map highlights some of the higher priority conservation opportunities present in the mid-Willamette Valley portion of the Willamette Valley Ecoregion, an area of approximately 1.5 million acres. The map is conceptual and intended to help focus and coordinate future on-the-ground conservation efforts in the region. The geographic extent of these areas may shift through time depending on new or improved conservation data, partner priorities, and emerging threats to conservation values. Additional conservation opportunities are undoubtedly present beyond the areas depicted on the map. The concept is non-regulatory and subject to voluntary landowner participation and will be implemented through the efforts of multiple conservation partners and interested land owners.

Conservation Visioning Process

The priority areas shown on the map were identified based on:

- Interpretation of available conservation data provided by The Nature Conservancy (TNC), U.S. Fish and Wildlife Service (USFWS), USDA Natural Resource Conservation Service, Oregon Department of Fish and Wildlife, and various watershed councils;
- Aerial photo interpretation; and
- Input offered by numerous mid-valley conservation partners.

To support this effort, two day-long work-sessions were conducted to bring conservation partners together to review and interpret data and to work together to highlight high priority conservation opportunities based on their expertise and on-the-ground knowledge of the Willamette Valley Ecoregion. The first work-session was held on May 16, 2014 and focused on the area to the east of the Willamette River in the Calapooia and Santiam watersheds. A second work-session was held on June 11, 2015 with a focus mainly on the Willamette River and the area to the west in Benton and Polk counties. Over twenty organizations including federal, tribal, state, local, and non-profit entities collaborated on these efforts. These work-sessions were sponsored by The Nature Conservancy and Greenbelt Land Trust and facilitated by planning consultant Jeff Krueger. Key conservation data used at these work-sessions included TNC's *Synthesis Conservation Opportunity Areas* map,

2015 conservation planning work-session in Corvallis

which is a union portfolio of the geographies identified in several major Willamette Basin planning efforts (last updated in 2014), and the USFWS's *Willamette Valley Conservation Study* data sets (developed in 2014/2015), which used a *conservation network design optimization algorithm* known as 'Marxan' to identify potential conservation areas based on presence of target wildlife species.

Implementation

The conservation concept presented on the map will be implemented over time through the combined efforts of the many active conservation partners in the mid-Willamette Valley and through voluntary actions by private land owners. Much of the land that falls within these defined priority conservation areas is privately owned, so establishment of partnerships with landowners for management, protection, and enhancements of the habitats will be essential for achieving the conservation vision.

Community Benefits of Conserved Lands

In addition to the preservation of important habitat for native plants and animals, many conservation efforts will provide additional benefits to the community:

- Public Access: Providing public access to natural areas for recreational and educational purposes will promote awareness and appreciation of this unique landscape and support for conservation efforts.
- Scenic Quality: The natural and cultural landscape of the mid-Willamette Valley gives the region its uniqueness and sense of place. Rolling hills and oak covered buttes provide a unique scenic backdrop for area residents and visitors alike. The picturesque valley bottom contains a mosaic of highly managed agricultural lands, grassland and pasture, and riparian forests.
- Ecosystem Services: Conserved lands help protect drinking water, provide floodwater storage, allow nutrient recycling to occur, and provide groundwater recharge.

Conservation Targets in the Mid-Willamette Valley

The target systems and associated native plant and animal species listed below have been highlighted in the *Oregon Conservation Strategy* (ODFW, 2006) and by other conservation partners as being high priority for preservation and restoration within the Willamette Valley Ecoregion. The target systems (priority habitats) include oak woodland, riparian forest, wetland, aquatic, and grasslands, all of which have declined significantly in extent and quality in the valley since the mid-1800s. The *priority conservation areas* shown on the map are intended to represent some of the best opportunities to protect and restore these target systems, with the ultimate goal of creating a system of interconnected natural areas that provide viable habitats for many at-risk native species.

Conservation Targets and Threats for the Mid-Willamette Valley

Primary Targets	Nested Targets (Threatened or Endangered ESA species in bold)		Primary Threats
Systems	**Plants**	**Animals**	
Oak Woodland	Thin-leaved Peavine Wayside Aster White-topped Aster White Rock Larkspur Willamette Valley Larkspur Dominant System Vegetation: Oregon white oak Douglas-fir Pacific madrone ponderosa pine snowberry	Acorn Woodpecker Chipping Sparrow Pileated Woodpecker Western Bluebird Western Gray Squirrel Western Wood-Pewee Slender-billed Nuthatch Townsend's Big-eared Bat	• Habitat fragmentation • Conifer encroachment • Change from historic fire management regimes • Aggregate mining (isolated buttes) • Invasive plant species • Conversion to agricultural uses including vineyards and orchards • Urban and exurban development pressure
Riparian Forest, Wetland and Aquatic (Rivers, streams, and associate riparian forest and floodplains)	Tall Bugbane Dominant System Vegetation: alder big-leaf maple black cottonwood creek dogwood Douglas' spiraea Douglas-fir Oregon ash slough sedge valley Ponderosa pine willow	American Beaver American Dipper Bald Eagle Cutthroat Trout Foothill Yellow-legged Frog Northern Red-legged Frog Northwestern Pond Turtle **Spring Chinook Salmon** Oregon Chub Pacific and Brook Lamprey River Otter **Winter Steelhead** Yellow-billed Cuckoo Yellow-breasted chat Yellow Warbler	• Habitat fragmentation • Lack of riparian vegetation • Altered floodplain (lack of river/floodplain connectivity and constraints to river migration) • Limited backwater/side channel habitat • Limited flood regime due to upstream dams • Limited in-stream habitat features (large woody debris, basking logs) • Barriers to fish passage • Aggregate mining • Invasive plant and animal species including non-native fish, reptiles, and amphibians • Climate change (river flows)
Grasslands (Upland prairie, wetland prairie, herbaceous balds, and savanna)	**Bradshaw's lomatium** **golden paintbrush** Hitchcock's blue-eyed grass **Kincaid's lupine** **Nelson's checkermallow** white-topped aster **Willamette daisy** Dominant System Vegetation: camas popcorn flower Roemer's fescue tufted hairgrass	**Fender's Blue Butterfly** Northern Harrier Oregon Vesper Sparrow Short-Eared Owl **Streaked Horned Lark** **Taylor's Checkerspot Butterfly** Western Bluebird Western Meadowlark Native pollinators (bumblebees, solitary bees, butterflies, moths, and hummingbirds)	• Habitat fragmentation • Conversion of remnant grasslands to intensive agriculture • Elimination of surface waterways and vernal pools • Change from historic fire management regime • Invasive plant species

Oak woodland and savanna in Linn County (Ward Butte)

Riparian and aquatic habitat along the Santiam River

Oak and prairie habitat at Bald Hill Farm in Benton County (Source RaptorViews)

Cross-Valley Habitat Connectivity

Although most conservation efforts in the Willamette Valley are appropriately focused on preservation of remnant habitats, long-term conservation benefits could potentially be realized with improved cross-valley habitat connectivity, particularly within the valley bottoms that are mostly highly managed agricultural lands. This connectivity could be improved over time through targeted habitat restoration efforts that help form corridors or stepping stones across the agricultural landscape of the valley bottom to facilitate the movement of mammals and prairie species such as grassland birds and native pollinators. Additionally, establishing functional habitat features such as vegetated buffers along agricultural drainages and integration of nectar producing native vegetation within agricultural lands such as orchards and vineyards could potentially be implemented with minimal impacts to agricultural production. These measures would be applied through voluntary participation of property owners and farmers. Determining how best to achieve cross-valley habitat connectivity would make an excellent topic for future academic research projects.

Priority Oak and Grassland Conservation Areas

Oak and prairie conservation areas identified on the map contain large contiguous areas of grassland (prairie, savanna, herbaceous balds) and oak woodland habitats and/or have significant potential for restoration or enhancement of these target systems. Targeted acquisition could be used to preserve key parcels, particularly in proximity to other protected lands. In other areas, outreach and technical assistance geared towards encouraging and assisting private landowners in managing oak and grassland habitats will be an important factor in achieving the proposed conservation goals. Combined, these priority oak and prairie conservation areas cover approximately 180,000 acres, or 8 percent of the total planning area of 1.5 million acres. Each unit is briefly described below with the geographic extent shown on the *Conservation Concept Map*:

Priority Oak and Prairie Conservation Areas (Major Areas Shown on Conservation Concept Map)

#	Unit Name	Acres*	Description
1	Noble	7,200	Includes oak and grassland habitats; Builds upon TNC's 700-acre Noble Oaks Preserve; Creates a habitat corridor between Noble Oaks and Basket Slough NWR; In proximity to Slender-billed Nuthatch, Western Meadowlark, Vesper Sparrow, Western Bluebird, and Northern Red-Legged Frog observations.
2	Basket Slough	12,400	Includes oak, grassland, and wetland habitats; Builds upon the 2,500-acre Basket Slough NWR; Creates a habitat corridor toward TNC's Noble Oaks and the Eola Hills; In proximity to know Fender's Blue Butterfly, Western Meadowlark, Western Bluebird, Slender-billed Nuthatch, and Vesper Sparrow observations.
3	Eola Hills	12,700	Includes oak and grassland habitats in proximity to Salem; Creates a connection between Basket Slough NWR and the Willamette River; In proximity to Slender-billed Nuthatch and Vesper Sparrow observations; Includes the 1,400-acre Zena Forest conservation easement and Oregon 4H Center.
4	Habeck Oaks	7,800	Includes oak and grassland habitats in the vicinity of Dallas, Monmouth, and Independence; In proximity to know Western Meadowlark, Vesper Sparrow, and Western Bluebird observations.
5	Luckiamute Grasslands	1,100	Includes grassland habitat above the confluence of the Luckiamute and Little Luckiamute Rivers; In proximity to Vesper Sparrow observations.
6	Airlie Oaks	3,600	Includes oak and grassland habitats; In proximity to Vesper Sparrow observations.
7	Silverton Hills	5,800	Includes oak and grassland habitats to the south of Silverton; In proximity to Western Meadowlark and Slender-billed Nuthatch observations.
8	Ankeny	18,500	Builds upon the 2,800-acre Ankeny National Wildlife Refuge and includes lands on and around Looney Butte and Miller Butte and presents opportunities for management and restoration of oak, wetland, and grassland habitats; In proximity to Oregon Chub, Western Meadowlark, Western Bluebird, and Slender-billed Nuthatch

#	Unit Name	Acres*	Description
			observations.
9	Kinston Prairie	3,000	Builds upon the 150-acre TNC Kingston Prairie and includes opportunities for oak and grassland habitat management near the North Santiam River; In proximity to Western Meadowlark and Slender-billed Nuthatch observations
10	E.E. Wilson	11,000	Includes oak, grassland, and wetland habitats; Builds upon and connects the 1,800-acre E.E. Wilson Wildlife Management Area and 11,000-acre McDonald State Forest; Opportunity for connections between existing trail networks; In proximity to Yellow Warbler, Western Bluebird, Western Meadowlark, Slender-billed Nuthatch, Vesper Sparrow, Western Gary Squirrel, and Red-Legged Frog observations.
11	Kings Valley	2,900	Includes oak and grassland habitats; Creates habitat connectivity between the 600-acre Benton County Beazell Memorial Forest and the 220-acre GLT Kings Valley site; In proximity to Yellow Warbler and Vesper Sparrow observations.
12	Bald Hill	16,500	Builds upon nearly 1,800 acres of conserved lands including Bald Hill Farm, Bald Hill Natural Area, Fitton Green, Lone Star, McDowell, and Philomath Prairie; Provides connectivity between these sites and the 11,000-acre McDonald State Forest for habitat and trails; In proximity to Fender's Blue Butterfly, Taylor's Checkerspot Butterfly, Acorn Woodpecker, Chipping Sparrow, Western Meadowlark, Vesper Sparrow, Western Bluebird, Slender-billed Nuthatch, Northern Red-Legged Frog, Western Pond Turtle, and Western Gray Squirrel observations.
13	Franklin Butte	1,800	Includes oak and grassland habitat to the south of Scio on Franklin Butte and the surrounding area; In proximity to known Western Meadowlark observations.
14	Buttes	16,000	Includes oak and grassland habitat on and around four major buttes (Peterson, Ward, Lone Pine, and Washburn) in the area between Lebanon and Brownsville; In proximity to Western Meadowlark and Vesper Sparrow observations; Highly visible scenic landmarks which could offer excellent vantage points of the valley below.
15	Finley	4,900	Includes oak, grassland, and wetland habitats to the south of the 5,300-acre Finley NWR; In proximity to Western Meadowlark, Western Bluebird, Yellow Warbler, Slender-billed Nuthatch, and Red-Legged Frog observations.
16	Coburg Hills	40,500	Includes oak and grassland habitat on the slopes of the south and west facing slopes of the Coburg Hills extending from the 1,400-acre Coburg Ridge Preserve near the McKenzie River to Courtney Creek and Brush Creek; In proximity to Western Meadowlark, Western Bluebird, and Slender-billed Nuthatch observations; Highly visible scenic landmarks which could offer excellent vantage points of the valley below.
17	Willamina Oaks	12,000	Includes oak and grassland habitat in the South Yamhill River watershed; In proximity to Slender-billed Nuthatch and Western Meadowlark observations.
18	Amity Oaks	1,600	Includes oak habitat in the Amity Hills to the northeast of Amity; In proximity to Slender-billed Nuthatch observations.
19	Win Ridge	1,800	Includes oak and prairie habitats around the Confederated Tribes of the Grand Ronde 271-acre Rattlesnake Butte. A significant Western Rattlesnake population is present on Rattlesnake Butte at the core of this area.
20	Jackson-Frazier Wetlands	500	Area includes a mix of vegetation communities and a variety of wetland types and is a local hot spot for native wetland plants and birds. The GLT owned Owens Farm and the Benton County Jackson-Frazier Wetland Park form a 230-acre core of conservation land in this area and includes public trails.
21	Evergreen	500	The 222-acre GLT owned Evergreen site forms the core of this area and contains wetlands and prairies along Evergreen Creek. The Evergreen site has been used extensively for outdoor education for middle school students. Focal species in this area include Vesper Sparrow, Red-Legged Frog, Western Bluebird, Acorn Woodpecker, and Yellow Breasted Chat.

**acreage shown is approximate and does not include land already having permanent conservation status.*

Priority Riparian and Aquatic Conservation Areas

These river and stream reaches within the planning area were identified as being high priority for future conservation and habitat restoration. They have potential to provide high quality aquatic habitat for native species such as Chinook Salmon, Steelhead, Cutthroat Trout, Oregon Chub, and Lamprey or could provide connectivity between high quality conservation areas if restored. Future actions in these areas include restoration of riparian forest and reestablishment of dynamic floodplain areas. Seven major floodplain conservation opportunities, totaling 74,500 acres (5 percent of total planning area), were identified along the Main Stem Willamette River corridor (numbered W1 – W7), plus an additional 350 miles of tributary rivers and streams.

Willamette River (source: RaptorViews)

Priority Willamette River Riparian and Aquatic Conservation Areas (See Conservation Concept Map)

#	Unit Name	Acres*	Description
W1	Grand Island	14,000	Willamette River floodplain area between Willamette Mission State Park and the confluence with the Yamhill River.
W2	Windsor Island	4,000	Willamette River floodplain to the north of Salem (Mission Bottoms)
W3	Luckiamut-Santiam-Confluence	15,500	Willamette River floodplain area at the confluence of the Luckiamute River (west side) and Santiam River (east side) from the area north of Albany to American Bottom, building on the Willamette Bluffs site (GLT) and Luckiamute State Natural Area.
W4	Bowers Rock	5,500	Willamette River floodplain area to the south of Albany including the confluence with the Calapooia River and Owl Creek, Bowers Rock State Park, Little Willamette (GLT), and Horseshoe Lake (GLT).
W5	Willamette Islands	9,000	Willamette River floodplain south and east of Corvallis including McBee, John Smith, Horseshoe, Kiger, and Stahlbusch Islands, the Marys River confluence, and associated side channels, alcoves, sloughs, and oxbow lakes.
W6	Harkens Lake	16,500	Willamette River floodplain north of Harrisburg including Harkens Lake (GLT), Finley Snagboat Bend NWR, and the Long Tom River confluence.
W7	Harper's Bend-McKenzie Confluence	10,000	Willamette River floodplain from the McKenzie River confluence to Harrisburg including the 1,100-acre Green Island (MRT).

**acreage shown is approximate and does not include land already having permanent conservation status.*

Riparian and Priority Riparian and Aquatic Conservation Areas on Willamette River Tributaries

(See Conservation Concept Map)

Segment Name	Length	Description
Brush Creek	10 miles	This creek is the coldest tributary to the Calapooia River.
Calapooia River (lower reach)	45 miles	This lower 25 miles of the Calapooia River between the Courtney Creek and the Willamette River contains significant areas of floodplain and riparian forest. Restoration efforts have occurred on private lands in the middle and upper reaches of the Calapooia River.
Courtney Creek	13 miles	This reach of Courtney Creek is a key tributary to the Calapooia River and offers special opportunities to connect oak savanna and wetland prairie areas with riparian and aquatic habitats and builds upon previous watershed council projects.
Crabtree Creek	30 miles	This large tributary to the South Santiam River supports runs of Spring Chinook Salmon, Pacific Lamprey, and Winter Steelhead.
Hamilton and McDowell Creeks	11 miles	These two tributaries to the South Santiam have been the focus of numerous watershed council sponsored habitat restoration projects over the past decade.
Lower Long Tom River	20 miles	Significant conservation and restoration efforts have been focused on the Long Tom River floodplain immediately below Fern Ridge Reservoir. Restoration opportunities exist from the dam to the confluence with the Willamette River.
Luckiamute River	40 miles	The Luckiamute River and the lower portion of the Little Luckiamute River provide riparian and aquatic habitat for species including Winter Steelhead and Pacific Lamprey.
Marys River	24 miles	The Marys River is a key undammed tributary to the Willamette River and provides connectivity between conservation areas in and around Corvallis.
Mill Creek	22 miles	Passing through the heart of Salem, Mill Creek is an undammed tributary of the Willamette River with occasional runs of Chinook Salmon and Winter Steelhead. This creek offers public access to a natural area within an urban setting.
Muddy Creek	21 miles	This tributary of the Marys River passes through Finley NWR and presents significant opportunities for floodplain and wetland restoration, both above and below the Refuge.
North Santiam River	12 miles	Covering the area between Stayton and the confluence with the South Santiam River, this reach includes relatively dynamic and complex channels that provides important backwater habitats for a large diversity of native species and the 420-acre Confederated Tribes of the Grand Ronde Chahalpam conservation area.
Oak Creek	19 miles	Extending from Lebanon to the confluence with the Calapooia River, this reach includes significant wetlands, intact riparian forest, and oak savanna. The lower reach of the creek passes through Albany, offering public access to a natural area within an urban setting.
Owl Creek	8 miles	This small tributary to the Willamette River offers opportunities to preserve intact riparian forests and significant wetland and slough habitats to support native fish, diverse avian populations, and large turtle populations.
South Santiam River	36 miles	This river reach from Sweet Home to the confluence with the North Santiam River supports anadromous fish species, with the majority of the current spring Chinook spawning in the South Santiam occurring in Sweet Home area. This river also provides drinking water for Sweet Home, Lebanon, and Albany.
South Yamhill River	12 miles	The South Yamhill River contains significant opportunities for floodplain and wetland restoration, particularly in the area upstream from McMinnville.
Thomas Creek	30 miles	This large tributary to the South Santiam River supports runs of Spring Chinook Salmon, Pacific Lamprey, and Winter Steelhead.