

BENTON COUNTY

**Voluntary Stewardship Program**

**Shrub-Steppe Conservation & Management**



**Goals**

- Protect shrub-steppe habitat and connectivity without restricting ongoing or new agricultural activities.
- Maintain native plant community diversity in shrub-steppe habitats in areas of agricultural intersect.
- Encourage voluntary enhancement of shrub-steppe habitat and connectivity without restricting ongoing or new agricultural activities.
- Encourage voluntary enhancement of shrub-steppe habitat to improve resiliency to fire in areas of agricultural intersect.

**Agricultural Viability Aims**

- Protect agriculture from unmanaged fire.
- Support actions that protect and enhance soil health and land productivity.

Benchmarks	Example Conservation Practices		
<p>In areas of critical area intersect with agricultural activities: <b>Maintain</b> shrub steppe habitat through voluntary management and protection measures.</p> <p>Implementation focus will be in areas identified as having high or very high habitat concentration areas, linkage centrality areas or pinch points protected, or as directed by the Work Group.</p>	<ul style="list-style-type: none"> <li>• Timed/less intense grazing at appropriate times (NRCS #528).</li> <li>• Native vegetation propagation (NRCS #342).</li> <li>• Advanced fire protection strategies, including managed grazing and maintaining firebreaks (NRCS #394).</li> <li>• Voluntary protection or set-asides (easements, acquisition, CREP, and other strategies).</li> </ul>		
<p>In areas of critical area intersect with agricultural activities: <b>Manage</b> invasive species on agricultural lands and maintain native species diversity.</p>	<ul style="list-style-type: none"> <li>• Brush Management (NRCS #314).</li> <li>• Integrated Pest Management (NRCS #595).</li> </ul>		
<p>In areas of critical area intersect with agricultural activities: <b>Promote</b> voluntary measures to enhance shrub steppe habitat and shrub steppe corridors with the first priority as areas where the benchmark of shrub steppe protection of functions and values is at risk of degrading compared to baseline. Enhancement opportunities should include first current blocks and currently utilized corridors and second historical or likely suitable corridors that could be established or renewed or other priorities as directed by the Work Group.</p>	<ul style="list-style-type: none"> <li>• Areas having very high/high habitat concentration areas, linkage, or pinch point enhanced or restored.</li> </ul> <table border="1" data-bbox="899 1612 1484 1789"> <tr> <td data-bbox="899 1612 1321 1789"></td> <td data-bbox="1321 1612 1484 1789" style="text-align: center;">Pinch Point</td> </tr> </table>		Pinch Point
	Pinch Point		
<p>In areas of critical area intersect with agricultural activities: <b>Encourage</b> diversity of native grasses in place of cheatgrass to promote resiliency.</p>	<ul style="list-style-type: none"> <li>• Prescribed grazing (NRCW #528)</li> <li>• Plant native vegetation (NRCS #342).</li> <li>• Integrated Pest Management (NRCS #595).</li> <li>• Avoid disturbance of seedbank, stockpile removed soils to reapply following disturbance.</li> </ul>		

## What is Shrub-Steppe?

### Shrub-Steppe Conservation Areas

The Washington Department of Fish and Wildlife describes shrub-steppe habitat as follows: “A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs.”

Shrub-steppe habitat is identified as a state-designated priority habitat, meaning that it is a habitat type with unique or significant value to a diverse assemblage of species. Shrub-steppe habitat is critical to supporting a number of priority species in the county, including, but not limited to elk, burrowing owl, chukar, mule deer, sagebrush sparrow, Townsend’s ground squirrel, jackrabbit, black-tailed jackrabbit, desert nightsnake, prairie falcon, Swainson’s hawk, breeding areas for state-threatened ferruginous hawk, and habitat for other sagebrush-obligate species. Shrub-steppe habitat areas also include several plant species and communities identified through the Department of Natural Resources Natural Heritage Program.

## Examples of Conservation Practices



Left: Firebreak

Right Top: Native vegetation propagation

Right Bottom: Grazing

Sources: Benton Conservation District, KEPR

BENTON COUNTY

**Voluntary Stewardship Program**

# Aquifers Conservation & Management

## Goals

- Protect groundwater quality in areas of agricultural interest.
- Encourage voluntary enhancement of groundwater recharge in areas of declining water tables or where recharge can help maintain base flows for rivers and streams.
- Encourage voluntary enhancement of groundwater quality in areas of agricultural interest.

## Agricultural Viability Aim

- Maintain and increase reliability and availability of irrigation water.
- Support actions that protect and enhance soil health and land productivity.

Benchmarks	Example Conservation Practices
<p>In areas of critical area intersect with agricultural activities, and at the watershed level: <b>Maintain</b> practices that limit leaching of nitrogen and other contaminants into groundwater.</p>	<ul style="list-style-type: none"> <li>• Limit leaching of nutrients and pesticides (NRCS #521).</li> <li>• Other measures per the Groundwater Plan.</li> </ul>
<p>In areas of critical area intersect with agricultural activities, and at the watershed level: <b>Promote</b> voluntary conservation practices that minimize leaching of nitrogen and other contaminants into groundwater.</p> <p>Support development and implementation of Benton County Groundwater Community Action Plan.</p>	<ul style="list-style-type: none"> <li>• On-farm irrigation efficiencies installed (acre-feet conserved) (NRCS #s 441, 442).</li> <li>• Wetlands enhanced (NRCS #659)..</li> </ul>
<p>At the watershed level: <b>Promote</b> voluntary on-farm water conservation practices, such as irrigation water management and efficient irrigation systems in areas with agricultural wells.</p> <p>At the watershed level: <b>Encourage</b> implementation of groundwater recharge by passive infiltration or direct injection.</p>	<ul style="list-style-type: none"> <li>• On-farm irrigation efficiencies installed (acre-feet conserved) (NRCS #s 441, 442).</li> <li>• County Groundwater Plan implementation.</li> </ul>

## What are Aquifers?

### Critical Aquifer Recharge Areas

Areas with a critical recharging effect on aquifers used for potable water, including areas where an aquifer that is a source of drinking water is vulnerable to contamination that would affect the potability of the water, or is susceptible to reduced recharge.

The Columbia River basalts of the Columbia Plateau provide a locally important aquifer system. In a Critical Aquifer Recharge Area there are some the following components:

- Wells (large, small, and public)
- Wellhead protection zones and potential zones
- Streams
- Aqueducts, canals, and siphons
- Waterbodies

Within the lower Yakima basin, from the western county border east to Horn Rapids, the mainstem channel of the river flows through a relatively narrow inner valley of basalt bedrock covered with an unknown thickness of coarse alluvium. Downstream from Horn Rapids, the river flows through broad alluvial fill of the Columbia River (Kinnison and Sceva 1963).

Within Benton County, the majority of wells and wellhead protection areas are concentrated along the Yakima River Valley and in the incorporated cities of Richland and Kennewick. Other class A wells are located near well-draining irrigated lands in the southern portion of the county near Paterson. Studies have found nitrate concentrations exceeding drinking water quality standards in shallow wells in eastern and southern Benton County (Washington State Interagency Groundwater Committee 1996, Ecology 2016). Based on the number of wells and the percentage of wells exceeding 10 mg/L of nitrate, Ecology identified eastern Benton County as one of the top ten nitrate priority area candidates within Washington.

## Examples of Conservation Practices



Left: Microirrigation, Prosser

Middle: Barker Ranch, Wetland and Floodplain Conservation

Right: Soil Testing

Sources: Benton County Conservation District, WSU, BERK

BENTON COUNTY

**Voluntary Stewardship Program**

**Wetlands and Riparian Areas Conservation & Management**

**Goals**

- Protect surface water quality in streams, wetlands, and agricultural drains in hydrologic study areas.
- Protect the functions and values of wetlands in areas of agricultural intersect.

**Agricultural Viability Aim**

- Maintain existing agricultural areas and accommodate future expansion of agriculture.

Benchmarks	Example Conservation Practices
At the watershed level: <b>Maintain</b> riparian vegetation to support biofiltration and bank stability in areas of agricultural intersect through voluntary practices.	<ul style="list-style-type: none"> <li>• Access control (NRCS #472).</li> <li>• Riparian cover (NRCS #390).</li> <li>• Prescribed grazing (NRCS #528).</li> </ul>
At the watershed level: <b>Promote</b> voluntary practices to <b>enhance</b> riparian vegetation to support biofiltration and bank stability in areas of agricultural intersect.	<ul style="list-style-type: none"> <li>• Access control (NRCS #472).</li> <li>• Riparian cover (NRCS #390).</li> <li>• Riparian forest buffer (NRCS #391)</li> </ul>
In areas of critical area intersect with agricultural activities, and at the watershed level: <b>Maintain</b> wetland functions and values, with a priority for protecting wetlands with high habitat functions and floodplain wetlands along the Yakima and Columbia Rivers.	<ul style="list-style-type: none"> <li>• Wetland enhancement (NRCS #659).</li> <li>• Wetland restoration (NRCS #657).</li> <li>• Wetland wildlife habitat management (NRCS #644).</li> </ul>
In areas of critical area intersect with agricultural activities, and at the watershed level: <b>Manage</b> invasive species in and around wetlands, and <b>maintain native</b> species diversity.	<ul style="list-style-type: none"> <li>• Integrated Pest Management (NRCS #595).</li> <li>• Prescribed grazing (NRCS #528).</li> </ul>
In areas of critical area intersect with agricultural activities, and at the watershed level: <b>Promote</b> voluntary practices to reduce invasive species in and around wetlands, and <b>enhance</b> native species diversity.	<ul style="list-style-type: none"> <li>• Integrated Pest Management (NRCS #595).</li> <li>• Plant native vegetation (NRCS #342).</li> </ul>
In areas of critical area intersect with agricultural activities, and at the watershed level: Promote voluntary practices to <b>enhance</b> natural wetlands in the county, with a priority towards floodplain wetland functions along the Yakima and Columbia Rivers.	<ul style="list-style-type: none"> <li>• Wetland restoration, enhancement, and creation projects (NRCS #s 658, 659, 657)..</li> <li>• Where irrigation efficiencies result in wetlands drying up, voluntary enhancement measures could be implemented to help maintain habitat features.</li> </ul>

## What are Wetlands?

### Wetland Conservation Areas

Areas inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands do not include those artificial wetlands intentionally created from non-wetland sites.

Wetlands in Benton County are concentrated within the floodplain of the Yakima and Columbia rivers. Similar to stream flows, irrigation drainage may contribute to wetland conditions in some areas where wetland conditions did not historically occur. Many wetlands have formed adjacent to irrigation conveyance systems and in low-lying areas where irrigation occurs. A wetland is considered artificial, and not subject to state or local regulation as a wetland, only if it meets both of the following characteristics:

- a. It was intentionally created; and
- b. It is in a formerly non-wetland (upland) site.

Where irrigation efficiencies result in wetlands drying up, voluntary enhancement measures could be implemented to help maintain habitat features, although these voluntary enhancements would not be necessary to meet the wetland protection standard.

## What are Riparian areas?

Riparian area refers to land next to streams, and includes vegetation that helps contribute to shade, cover, wood, and nutrients into the river system. Riparian areas are considered part of Fish and Wildlife Habitat Conservation Areas. Healthy riparian areas help cool water temperatures and provide cover and concealment to fish species. Anadromous fish migrate through, spawn, and breed in the Yakima and Columbia rivers, and anadromous salmon breeding is documented in the lowermost reaches of Spring Creek and Snipes Creek, tributaries to the Yakima River, and Glade Creek, a tributary to the Columbia River.

## Examples of Conservation Practices



Left: Riparian Cover

Middle: Fish Screen

Right: Access Control

Sources: Benton County Conservation District