



Oregon Coordinated Aquatic Bird Monitoring:  
Description of Important Aquatic Bird Site

Fern Ridge Reservoir  
BCS number: 47-12

**\*\*\*NOTE:** *If you would like to contribute additional information to this description, please contact the Klamath Bird Observatory at [kbo@klamathbird.org](mailto:kbo@klamathbird.org).*

**Site description author(s)**

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**Site location (UTM)**

Datum: NAD 83, Zone: 10: Easting: 475881 Northing: 4882803

**General description**

Fern Ridge Dam and Reservoir is operated by the U.S. Army Corps of Engineers as part of a system of thirteen multipurpose dams and reservoirs that make up the Willamette Valley Project. These dams and reservoirs work together for the purposes of flood damage reduction, hydropower generation, irrigation, recreation, fish and wildlife enhancement, and downstream water quality improvement with the Willamette River drainage system (USACE 2010).

Fern Ridge Lake is a popular destination for fishing, boating, water skiing, swimming, camping, picnicking, hunting and bird watching. The upland prairies and extensive wetlands at Fern Ridge provide unique habitat for a great variety for plants and animals. Land and water throughout the area is managed by the Corps of Engineers and the Oregon Department of Fish and Wildlife to develop and maintain suitable habitat for many species of waterfowl, upland game and non-game wildlife (USACE 2010).

Fern Ridge Lake has expansive acres of wetlands including 1200 acres of constructed wetland impoundments that provide nesting habitat for many species of ducks, grebes, rails, bitterns, and more. Fern Ridge is well known for hosting uncommon Eastern Oregon breeders such as black-necked stilt, Wilson's phalarope, and yellow-headed blackbird. American white pelicans, not normally found in western Oregon, occur year round. In winter, Fern Ridge is known for its large waterfowl population of ducks, geese and swans (USACE 2009).

Several parcels of rare Willamette Valley Wet Prairie are managed as Research Natural Areas at Fern Ridge, protecting 375 acres and approximately one quarter of this unique ecosystem on public lands. Ground nesting birds that may nest within this

ecotype include Wilson’s phalarope, Wilson’s snipe, black-necked stilt and blue-winged teal.

**Boundaries and ownership**

*Boundaries:* The Fern Ridge Project and Fern Ridge Wildlife Area are bisected by Highway 126 between Veneta and Eugene, roughly bounded by Clear Lake Road to the north and Cantrell Road to the south.

*Ownership:* The Fern Ridge Project, which includes the lake bed and varied widths of the lake shore is owned by the U.S. Army Corps of Engineers (USACE). Forty-one percent of the project area is operated under license as Fern Ridge Wildlife Area by Oregon Department of Fish and Wildlife (ODFW). The area is managed cooperation by ODFW and the U.S. Army Corps of Engineers Terrestrial Stewardship Program.

**Water levels**

Fern Ridge Dam is an earthfill structure with a gated concrete spillway and outlet works for regulating lake levels. During flood season, the dams hold back water to regulate downstream flows. After the flood season passes, the water level in the reservoir is raised slowly for the summer recreation season. During the dry summer months, water is released into the river for irrigation and to improve downstream water quality (USACE 2010). Levels fluctuate considerably during the winter months based upon the intensity and duration of incoming winter rains. By early April the reservoir is filled to full pool. During the summer months the reservoir is maintained at "full pool" with a surface area covering approximately 9,000 acres with a shoreline length of 32 miles. During the winter months the reservoir is drawn down to "low pool" level to serve as a flood control reservoir. Beginning in early October the water level slowly recedes to expose an expansive mud flat surrounding small 900-acre pool. (ODFW 2009). Twelve hundred acres of constructed impoundments retain water year round to provide breeding and wintering habitat for marsh birds, waterbirds and waterfowl.

**Focal species use and timing**

Fern Ridge provides extensive breeding habitat for secretive marsh birds (Sora, Virginia rail, American bittern) colonial aquatic birds (black tern, Western grebe, Clarks’ grebe) waterfowl (mallard, redhead, wood duck, Western Canada goose, cinnamon teal, blue-winged teal) and a few shorebirds (black-necked stilt, Wilson’s phalarope) in the summer. In winter, the lakebed and wetland impoundments host up to 40,000 wintering waterfowl including dusky Canada geese, cackling geese, tundra swans and a variety of ducks. Fern ridge also provides a stopover for migrating shorebirds and migrating waterfowl such as greater white-fronted geese and the occasional sandhill crane.

*For a complete list of bird species and their occurrence, please see the Checklist of Fern Ridge Birds at: <http://www.nwp.usace.army.mil/op/v/docs/FRRchecklist.pdf>.*

<b>Focal Group/Species</b>	<b>Wintering</b>	<b>Breeding</b>	<b>Migration</b>
<b>Secretive Marsh Bird Group</b>	<b>Present</b>	<b>Present</b>	<b>Present</b>
<b>Colonial Nesting Bird Group</b>	<b>Present</b>	<b>Present</b>	<b>Present</b>

<b>Migrating Shorebird Group</b>	<b>Present</b>	<b>Absent</b>	<b>Present</b>
<b>Ground-based Waterbird Group</b>	<b>Present</b>	<b>Present</b>	<b>Present</b>
American Bittern <sup>3</sup>	Present	Present	Present
American White Pelican	Casual <sup>1</sup>	Present, not breeding	Casual
Barrow's Goldeneye	Vagrant <sup>2</sup>	Absent	Absent
Black Tern <sup>3</sup>	Absent	Present	Absent
Black-crowned Night Heron	Absent	Absent	Present
Black-necked Stilt <sup>3</sup>	Absent	Present	Absent
Bufflehead	Present	Casual, not breeding	Present
Cackling Goose	Present	Absent	Present
California Gull	Present	Present, not breeding	Present
Caspian Tern	Absent	Present, not breeding	Present
Clark's Grebe	Present	Present	Present
Common Loon	Casual	Vagrant, not breeding	Casual
Dusky Canada Goose	Present	Absent	Present
Eared Grebe	Absent	Casual, not breeding	Vagrant
Forster's Tern	Absent	Occasional, not breeding	Occasional
Franklin's Gull	Absent	Occasional, not breeding	Occasional
Great Blue Heron	Present	Present	Present
Greater Sandhill Crane	Absent	Absent	Vagrant
Green Heron	Casual	Present	Casual
Least Bittern	Absent	Vagrant	Absent
Lesser Sandhill Crane	Vagrant	Absent	Vagrant
Long-billed Curlew	Absent	Absent	Casual
Pied-billed Grebe <sup>3</sup>	Present	Present	Present
Red-necked Grebe	Vagrant	Absent	Casual
Snowy Egret	Absent	Absent	Vagrant
Sora <sup>3</sup>	Absent	Present	Present
Tundra Swan	Present	Absent	Absent
Upland Sandpiper	Absent	Absent	Absent
Virginia Rail <sup>3</sup>	Present	Present	Present
Western Grebe	Present	Present	Present
Western Snowy Plover	Absent	Absent	Vagrant
White-faced Ibis	Absent	Absent	Casual
Yellow-headed Blackbird <sup>3</sup>	Absent	Present	Absent

Yellow Rail	Absent	Absent	Absent
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<sup>1</sup>very few, not annual

<sup>2</sup>individual birds seen in one or multiple months

<sup>3</sup>Species surveyed during annual marsh bird monitoring

### Location of Type 1 and 2 habitat within the site

Functional Group	Type 1 Habitat	Type 2 Habitat
Secretive Marsh Birds	Wetland impoundments	Marsh Habitat
Colonial Nesters	Emergent Wetland Vegetation (Tule marsh)	
Migrating Shorebirds	Pond and impoundment edges	Exposed Mudflats

### Access to Type 1 and Type 2 habitats

Much of the emergent wetland habitat is accessible by foot or by vehicle via constructed dikes depending on the season. Some dikes are closed to the public seasonally to provide wildlife refuge and access is by permit only from ODFW. Areas not accessible from the dikes can be accessed by boat or canoe using many of the boat ramps and other access points at several points around the lake. Additionally, unimproved roads and trails provide access by foot to other points within the Fern Ridge Wildlife Area. The large size of the lake and expanse of open water, which is often rough due to wind, should be considered when planning any trip by boat. Roads and diketops are impassable in winter, spring and early summer due to saturated soils. Low water levels may make many areas inaccessible to boats during Fall, Winter and early Spring.

### Audibility/visibility of focal species

In limited areas, recreational activities such as motor boating and jet skies on the lake may compromise audibility during auditory surveys. More importantly, noise from vehicular traffic on Highway 126 can mask bird calls in adjacent units. Visibility factors may be an issue when surveying densely vegetated wetlands. Visually locating birds and their nests in tall emergent vegetation (*Scirpus* spp.) and dense reed canary grass (*Phalaris arundinaceae*) can be difficult.

### Conservation measures taken, in progress, or proposed

Restoration and management of wetland habitat at Fern Ridge is implemented mainly through construction of dikes and management of water levels within the resulting impoundments. Over 1200 acres of impoundments have been constructed to create wetland habitat which provides hunting opportunity and waterfowl refuge. Impoundments are regularly disked to control invasive reed canary grass. The water level in the main body of the lake is managed to provide flood control with some consideration to recreational functions. In addition to managing water levels in impoundments, ODFW also provides waterfowl forage by planting food crops. Conservation and management activities in Willamette Valley Wet Prairie parcels includes controlled burns, restoration seeding and woody vegetation removal.

### Conservation issues

Invasion of reed canary grass into wetlands and woody vegetation and other weedy species into prairie parcels is pervasive.

### **Past and current surveys**

- Annual winter morning fly-off goose counts as high as 40,000 Canada geese by USFWS personnel.
- “Winter waterfowl counts have been conducted regularly at Fern Ridge during the winter since 1989. Peak counts each winter reach 15,000 to 27,000 birds. This number excludes 8,000 to 20,000 Canada Geese and 100 to 1,500 Tundra Swans that roost on the lake during the night and fly out to the surrounding fields at daybreak.” (National Audubon Society 2010)
- Annual M.A.P.S. protocol (Monitoring Avian Productivity and Survivorship) songbird mistnetting since 2004 by USACE personnel
- Regular grassland bird monitoring by USACE personnel.
- Annual Marsh Bird Monitoring according to North American Marsh Bird Monitoring Protocols since 2004 by USACE personnel.
- Annual purple martin nest box management since the 1970’s and monitoring since 1998 by ODFW and USACE personnel.

### **Potential survey methods**

*a.Description:* Useful potential surveys would include colonial aquatic bird surveys.

*b.Selection bias:* Unknown

*c.Measurement error and bias:* Unknown

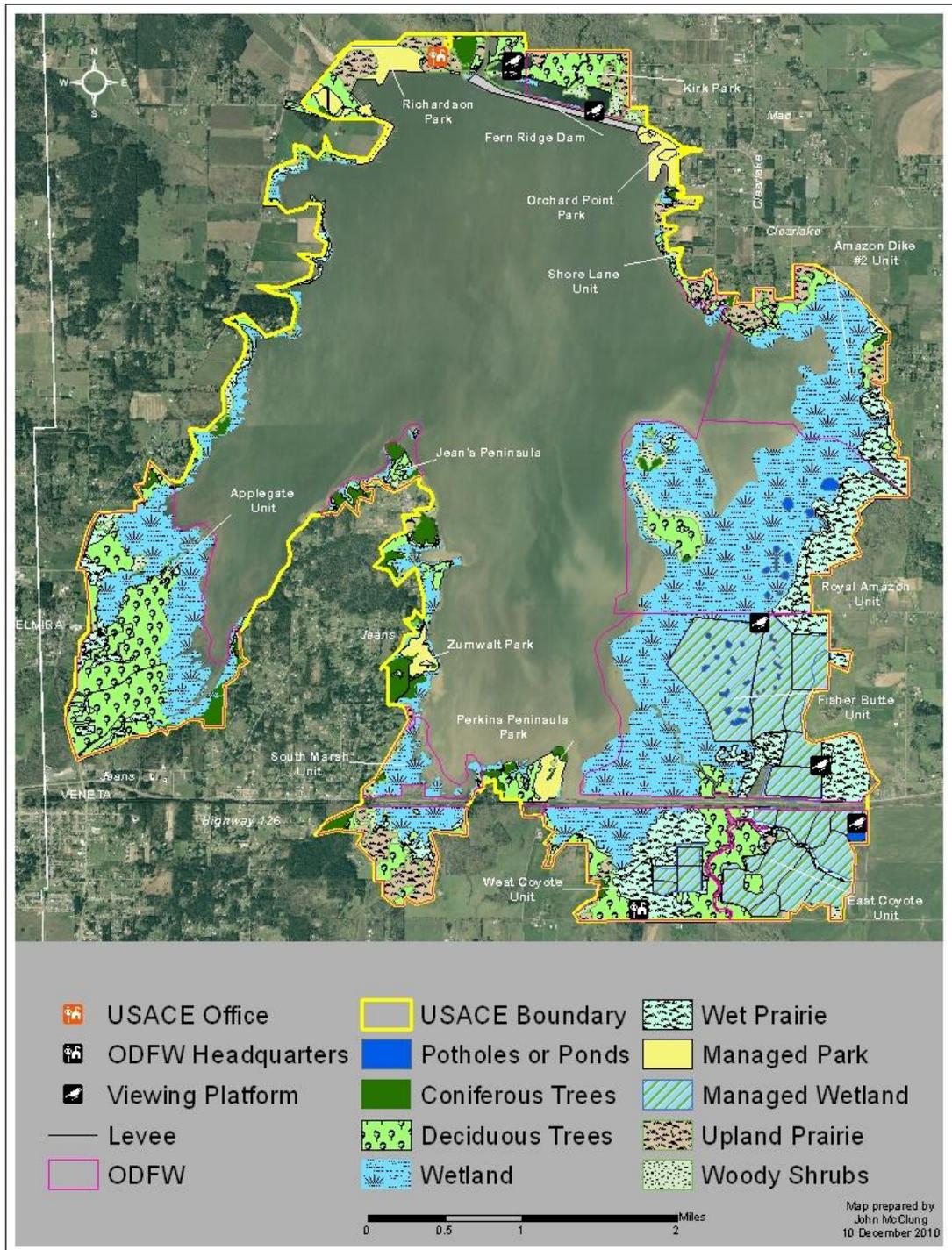
### **Potential pilot studies**

Unknown

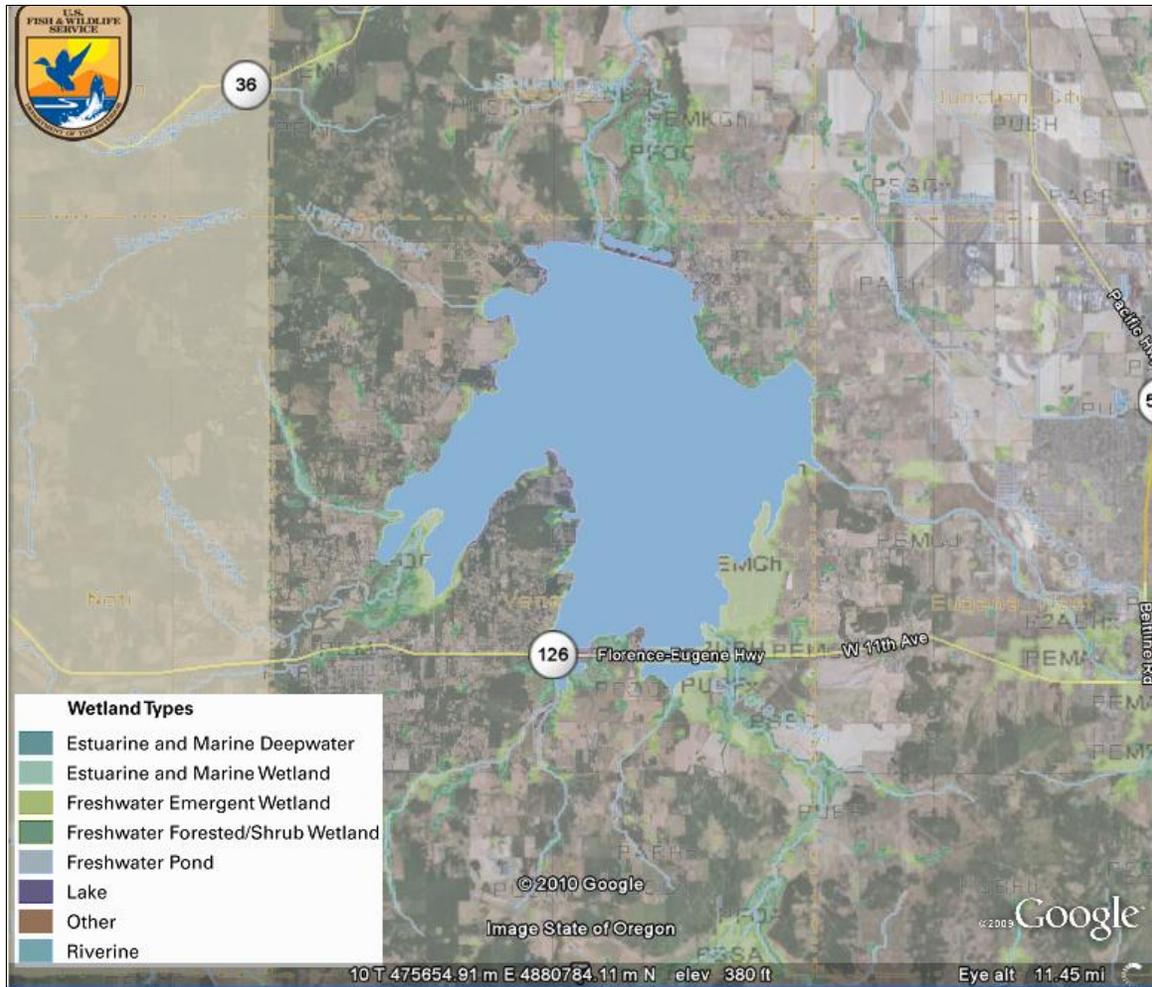
## Literature cited

- Google, Inc. 2010. Fern Ridge Reservoir. Google Earth (Version 5.1.3533.1731) [Software]. Available from <http://earth.google.com>. Accessed May 14, 2010.
- Google Map. 2010. Map of Fern Ridge Reservoir. <http://maps.google.com/>. Accessed May 13, 2010.
- National Audubon Society. 2010. Important Bird Areas in the U.S. Available at <http://www.audubon.org/bird/iba>. Accessed May 13, 2010.
- Oregon Department of Fish and Wildlife (ODFW). 2009. The ODFW Visitor's Guide – Northwest Region: Fern Ridge Wildlife Area – Fern Ridge Reservoir. [http://www.dfw.state.or.us/resources/visitors/fern\\_ridge\\_wildlife\\_area/index.asp](http://www.dfw.state.or.us/resources/visitors/fern_ridge_wildlife_area/index.asp). Accessed May 14, 2010.
- U.S. Army Corps of Engineers (USACE) Willamette Valley Projects. 2008. Birds of Fern Ridge Reservoir. A seasonal checklist. January 2008.
- U.S. Army Corps of Engineers Portland District web page. 2010. Fern Ridge Dam and Reservoir. [http://www.nwp.usace.army.mil/op/v/proj\\_fernridge.asp](http://www.nwp.usace.army.mil/op/v/proj_fernridge.asp). Accessed Sept. 1, 2010.
- U.S. Army Corps of Engineers Portland District web page. 2009. Birds of the Willamette Valley Project. <http://www.nwp.usace.army.mil/op/v/wvpbirds.asp>. Accessed Sept. 1, 2010.
- U. S. Fish and Wildlife Service (USFWS). 2010. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. <http://www.fws.gov/wetlands/>. Accessed May 13, 2010.

**Figure 1: Map of habitats and borders at Fern Ridge Reservoir.**



**Figure 2:** Google Earth (2010) map of Fern Ridge Reservoir with the USFWS National Wetlands Inventory (2010) layer.



**Figure 3:** Google Map (2010) road view of Fern Ridge Reservoir.

