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

Williamson River Delta Preserve
BCS number: 48-33

Site description author(s)
Heather A. Hendrixson, Director, Williamson River Delta Preserve, The Nature Conservancy of Oregon
Kate Halstead, Field Technician, Klamath Bird Observatory

Primary contact for this site
Heather A. Hendrixson, Director, Williamson River Delta Preserve, The Nature Conservancy of Oregon. Phone: (541) 273-0789. Email: hhendrixson@tnc.org

Site location (UTM)
Datum: NAD 83, Zone: 10, Easting: 585508, Northing: 4701376.

General description

The Williamson River Delta is a large floodplain wetland where the Williamson River flows into Upper Klamath Lake. The Nature Conservancy (TNC) acquired the 7,500 acre delta for the purpose of restoring the historical wetlands to benefit endangered fish, waterfowl, and improve water quality in Upper Klamath Lake. Approximately 1460 acres will continue to be farmed on both halves of the Delta. Restoration has been occurring since 1999, and by fall 2008, restoration to a mixture of wetlands and upland habitat was completed over the entire Delta. The majority of the Delta is held under a NRCS Wetlands Reserve Program easement.

Boundaries and ownership

Boundaries: The Williamson River Delta is bounded by Agency Lake to the north, Agency Straits to the west, Upper Klamath Lake to the southwest, south, and south east. The eastern boundary ends close to Modoc Point Road. The Delta comprises the former Tulana Farms and Goose Bay Farms, and the Williamson River bisects the property in half. The lower four miles of the Williamson River flows through the property. Total acreage is approximately 7,500 acres, with about 1460 acres in agriculture.

Township 36S R7 East Sections 8, 9, 16, 17

Township 35S R7 East Section 31

Ownership: The Delta is completely owned by The Nature Conservancy. Prior permission and a signed consent form are necessary before accessing the property. Call The WRD Preserve Director at (541) 273-0789 x 3. See Figure 1 for BLM Lakeview District ownership map.

Water level

Water level on the Williamson River Delta Preserve is the same as Upper Klamath Lake - highest levels occur in spring, and gradually drop as irrigation progresses from May 15 - Oct 15. After October 15, water levels increase slightly depending on rain events, but usually the lake and delta don't fill again until the following spring. Current water levels can be accessed from the United States Geological Survey (USGS) water resources web site (http://waterdata.usgs.gov/or/nwis/uv/?site_no=11507001&PARAmeter_cd=00062,72020). From around the mid 1950's to mid 1990's, the entire delta was farmed. Water was pumped off in the spring and pumped on in the summer and the only standing open water existed in toe drains and ditches around and inside the delta. Starting in late 1990's, part of the property was allowed to flood to promote marsh vegetation establishment. In October 2007, levees were breached along Agency and Upper Klamath Lake west of the Williamson River and approximately 3500 acres were flooded. In October 2008, an additional 2000 acres will be flooded east of the Williamson River by breaching levees along the river and in Upper Klamath Lake. Uplands, transitional marsh, emergent marsh, deep water wetlands, and open water habitats are expected to develop, with classifications based on water depth and predicted vegetation at a given depth.

Focal species use and timing

Focal Guild/Species	Wintering	Breeding	Migration
Secretive Marsh Birds*		Present	Present
Colonial Nesting Waterbirds		Present	Present
Ground-based Aquatic Birds		Present	Present
Migrating Shorebirds		Present	Present
American White Pelican			Present
Barrow's Goldeneye	Present		Present
Black-necked Stilt		Present	
Bufflehead			Present
Dusky Canada Goose	Absent	Absent	Absent
Franklin's Gull			Present
Greater Sandhill Crane		Present	Present
Long-billed Curlew			
Snowy Egret			Present
Red-Necked Grebe	Unknown	Unknown	Unknown
Upland Sandpiper	Absent	Absent	Absent
Western Snowy Plover	Absent	Absent	Absent
Yellow Rail	Unknown	Unknown	Unknown

*The focal species for Oregon's aquatic secretive marsh bird monitoring are PBGR, LEBI, AMBI, VIRA, SORA, YERA. In general focal species above are present from late March through November.

Secretive marsh birds (American Bittern, Least Bittern, Sora, Pied-billed Grebe, Yellow Rail, Virgina Rail). These birds are all present on the Delta and lower reaches of the Williamson River. With developing wetlands, all are likely to breed onsite in spring – early summer. It is unclear if restoration will provide habitat for Yellow Rails, it may be too much lake-fringe and not enough meadow habitat.

Colonial nesters (gulls, terns, grebes, cormorants, herons, egrets, ibis). These types of birds are present spring through late fall and winter; breeding status unknown but likely to occur as wetlands and offshore island features develop.

Ground based aquatic birds (coots, cranes, loons). Cranes are present March-October; presumed to be nesting; American Coot is an abundant nester; loons are strictly migrant if present at all.

Migrating and breeding shorebirds (phalaropes, American Avocets, curlew, stilts, sandpipers). All present – black-necked silts and American Avocets appear to be breeding currently, but this may change as wetlands develop and fill in; other species present as early spring and summer-fall migrants.

Note: The Long-billed Curlew is probably present pre and post breeding; remains to be seen but probably not right habitat for breeding – too much lake fringe, not enough meadow.

Location of Type 1 and 2 habitat within the site

Functional Group	**Type 1 Habitat**	**Type 2 Habitat**
Secretive marsh birds	Transitional/emergent	Uplands
Colonial nesters	Transitional/emergent	Uplands
Migrating shorebirds	Transitional/emergent	Uplands
Ground based aquatic birds	Upland/transitional	Agricultural fields

Due to the recent restoration activities at the Delta, habitat types will change as wetlands mature and develop. Areas surveyed in the past (prior to 2006) will be completely different habitat now due to the recent flooding of the property. New patterns of bird use areas will need to be identified.

See Figure 2 for acreage of each habitat type and location of each type (provided by TNC), and Figure 3 for USFWS National Wetlands Inventory (2008) layer in Google Earth (2008).

Access to the Type 1 and 2 habitat and visibility/audibility of the birds

Roads are snowy from December to late March, and can be very muddy until mid to late April. In the spring when water levels are high, most of the access will be by boat or by several levees still existing (see map). The upland areas and upland/riparian interface are all accessible by vehicle and hiking. Most of the emergent habitat will have standing water during April and May. There is one boat launch area on the Williamson River and another centrally located on an old levee. The emergent marsh area is extensive and therefore visibility may be limited to areas close to roads/water/access points. Extensive stands of tule and cattails exist on the delta and are expected to increase in size as the wetlands age. There should not be any detection problems based on visibility or audibility unless looking through dense stands of vegetation. See Figure 4 for general road map of the area (Google Maps 2009).

Past and current surveys

In conjunction with PRBO basin-wide survey, we inventoried the 7,000 acre preserve 3 times annually between April and August in 2003 and 2004. Species seen and approximate numbers of each were noted. Aerial surveys for waterfowl over Tulana Farms by USFWS have been conducted monthly since 1999. Random bird lists have been generated by groups touring the Delta. Yellow Rails have not been observed in the project area. It has been noted that Sandhill Cranes use the delta in late fall as a staging area and a few pairs may nest during spring and summer. Snowy Egrets have been observed since 2003 surveys took place. Because of extensive habitat modification due to recent restoration activities, anticipated use of site by avian species will likely be much different in the future than in the past.

Conservation issues

- Potential impacts of recreation on breeding birds
- Development of wetland vegetation
- Waterfowl hunting
- Water level drawdown
- Burning and spraying for upland weed management

Conservation measures taken, in progress, or proposed

- Breaching of levees leading to hydrologic reconnection of Tulana Farms (western half of Delta) to Agency Lake, Upper Klamath Lake, and Williamson River (October 2007)
- Breaching of levees leading to hydrologic reconnection of Goose Bay Farms (eastern half of Delta) to Williamson River and Upper Klamath Lake (October 2008)
- Planting of emergent marsh vegetation and willows, native seed planting in uplands, weed management in upland areas and on riverbanks

Potential survey methods

a. Description:

- Night time surveys for Yellow Rails from strategic vantage points
- Combination aerial surveys and boat surveys for colonial species, especially on Off-shore islands
- Continuation of aerial surveys by USFWS for spring and fall migration

b. Selection Bias:

- Large area
- Only possible to sample from levees.
- Difficulty determining distance to a bird due to thick patches of emergent vegetation.
- Novice surveyors

c. Measurement error and bias:

- Different surveyors
- Different times of year (vegetation can be thick or thin)

Manning and Hartley (2006) suggest determining whether a ground-based waterbird survey, a secretive marshbird survey, and/or a colony survey would be beneficial.

Potential pilot studies

Literature cited

Bureau of Land Management, Lakeview District ownership map. http://www.blm.gov/or/districts/lakeview/images/LakeviewDetailedMap.jpg . Accessed October 10, 2008.

Google Earth version 4.3. 2008. Image: Williamson River Delta, Oregon. Accessed October 10, 2008.

Google Map. 2009. Map of Williamson River Delta, Oregon. http://maps.google.com/maps?ll=42.491569,-121.93823&z=12&t=h&hl=en . Accessed March 20, 2009.

Manning, Ann and Laura Hartley. March 2006. Important sites for aquatic birds in Eastern Oregon. Version 2.0.

United States Fish and Wildlife Service. National Wetlands Inventory. http://www.fws.gov/nwi/WetlandsData/GoogleEarth.htm. Accessed October 10, 2008.

Figure 1: BLM Lakeview District ownership map. The red box indicates Williamson River Delta.

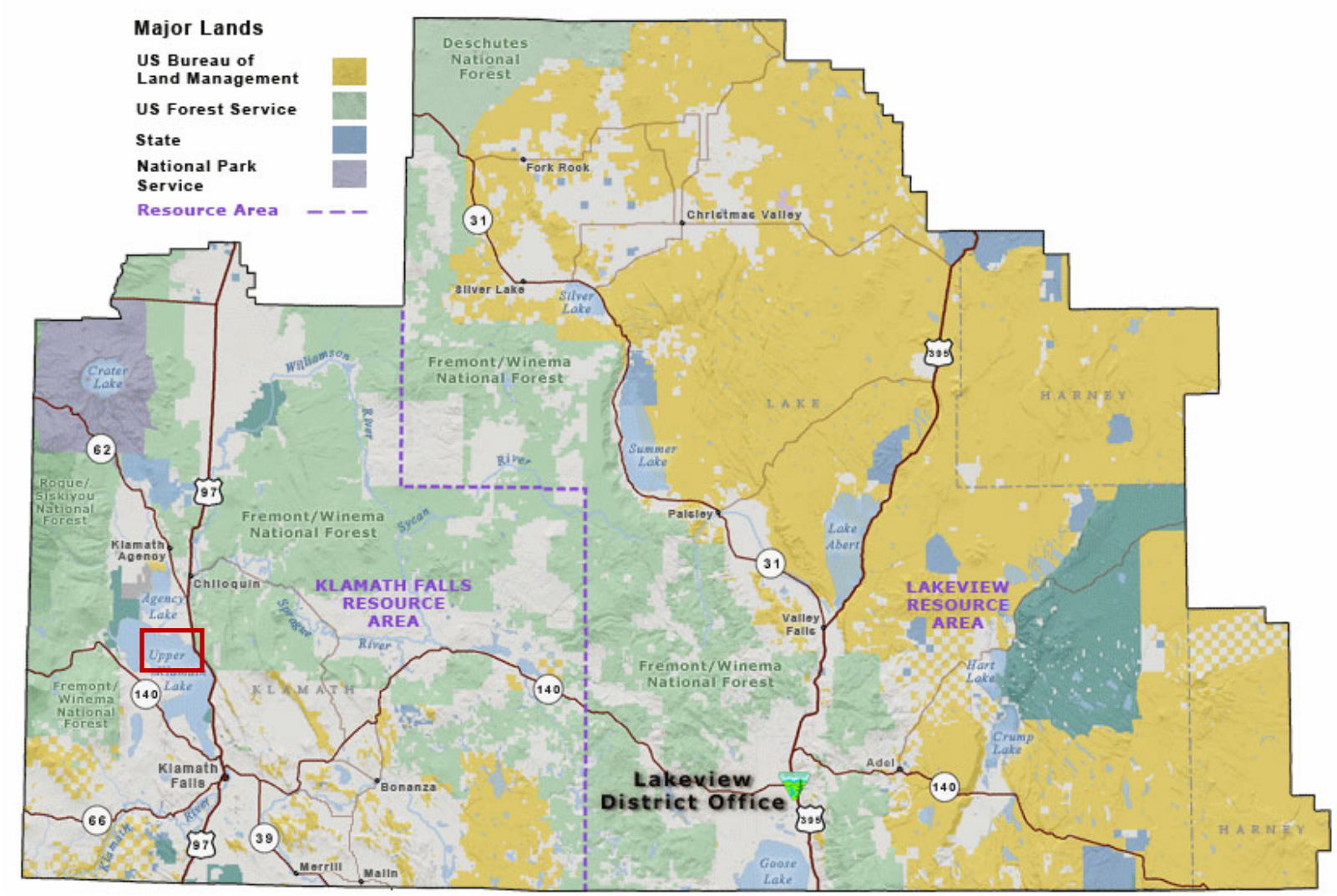

Figure 2: Acreage and location of each habitat type at the Williamson River Delta Preserve (provided by TNC).

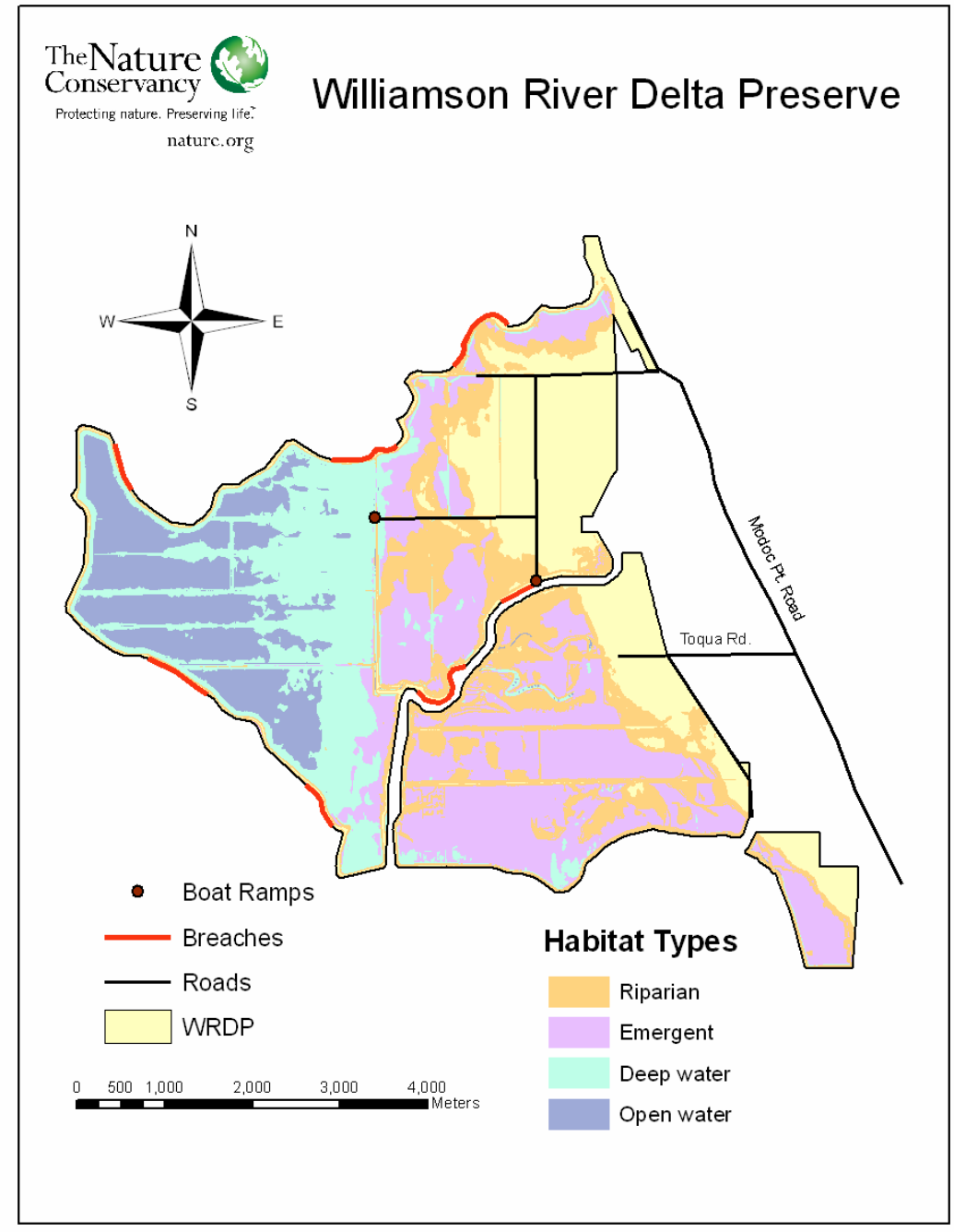

Figure 3: Google Earth (2008) map of the Williamson River Delta Preserve with the USFWS National Wetlands Inventory (2008) layer.

Figure 4: Google Map (2009) of the Williamson River Delta.