



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



Big Marsh Basin

BCS Number: 48-4

Site description author(s)

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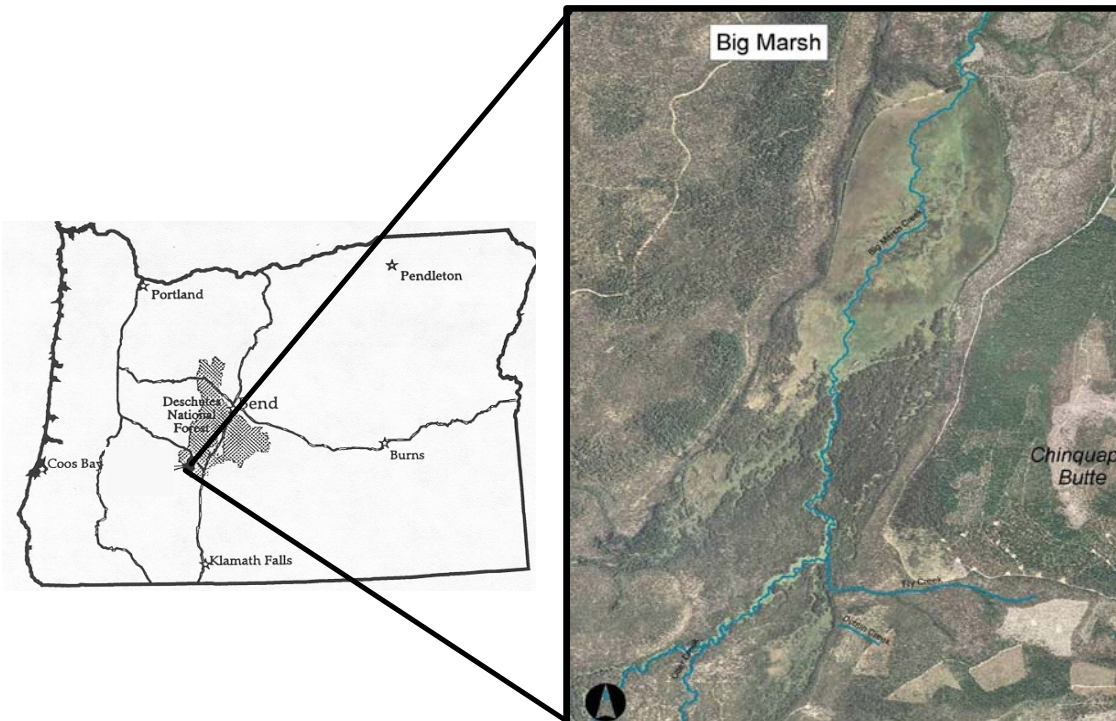
Primary contact for this site

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General description of site

Big Marsh is a 2,250 acre marsh/wetland/meadow/wet lodgepole pine complex located within the Crescent Watershed on the Crescent Ranger District on the Deschutes National Forest. The Big Marsh subwatershed drains approximately 29,827 acres. It is a part of a large, glacially created complex including a steep headwater area, a deep glacial valley, and a sediment-filled lake. The marsh is the only high elevation marsh within the geographical region.

Big Marsh is unique due to its large size, high elevation (4,730 feet), and diversity and richness of vegetation and wildlife that it sustains. The largest contiguous open wet meadow/marsh portion of Big Marsh is approximately 650 acres.



Site location (UTM)

Zone: 10, Easting: 585080, Northing: 4805185

Boundaries and ownership

Boundaries: Big marsh is located in the Crescent Watershed in the western portion of the Crescent Ranger District, approximately 50 miles south of Bend, Oregon. The Big Marsh basin consists of meadows, marsh and lodgepole pine forest, seated between two ridges.

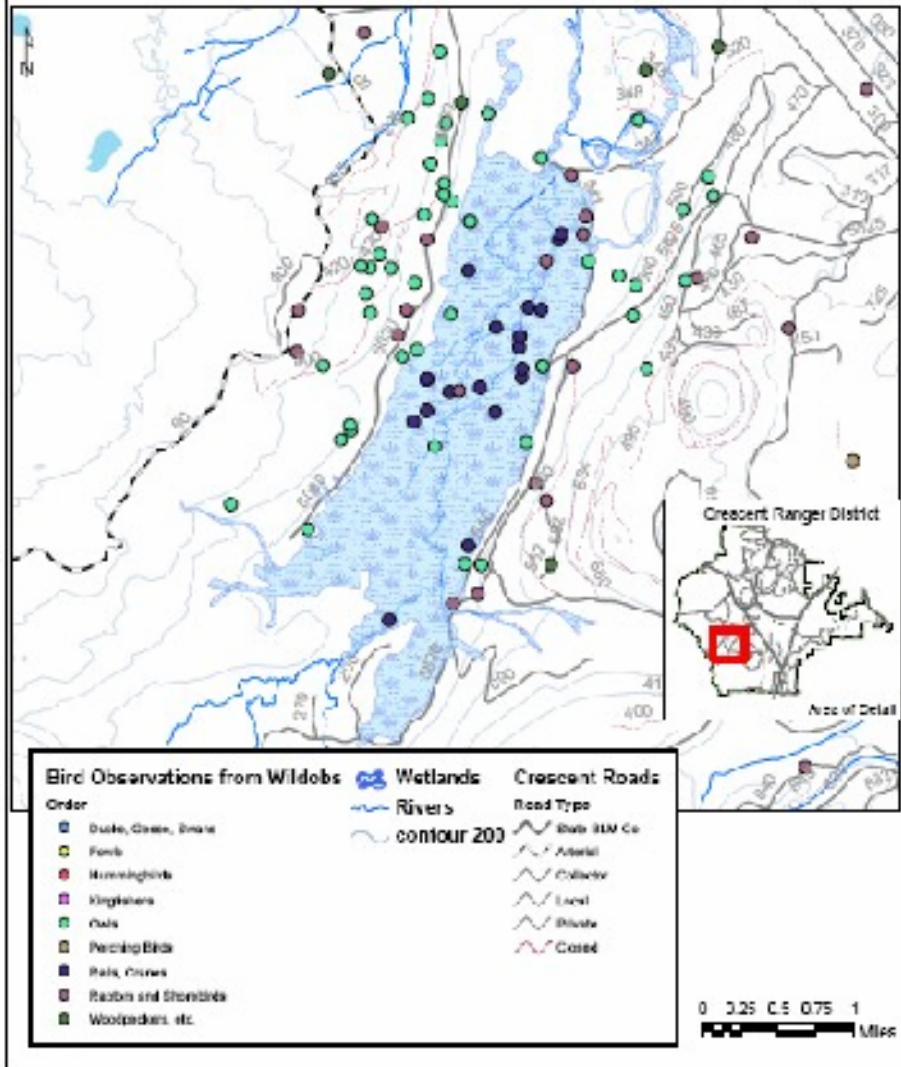
Ownership: Big Marsh is completely within the Deschutes National Forest ownership. See also Appendix A for BLM Prineville District ownership map.

Focal species use and timing

Focal Guild/Species	Winter	Breeding	Migration
Secretive Marsh Birds	None	Present	Present
Migrating Shore Birds	None	Present	Present
Waterfowl	None	Present	Present
Passerines	Present	Present	Present
Yellow Rail	None	Present	Present
Wilson's Phalarope	None	Present	Present
Sora	None	Present	Present
Eared Grebe	None	Present	Present
Sandhill Crane	None	Present	Present

Bird Observations in Big Marsh

Crescent Ranger District





Sandhill Crane and chick in Big Marsh

Location of type 1 and 2 habitat within the site:

Focal Guild/Species	Type 1 Habitat	Type 2 Habitat
Secretive Marsh Birds	Tall Emergent (Garrett and McFarland properties)	Unknown
Migrating Shore Birds	Shoreline of marsh and short vegetation near it	Unknown
Waterfowl	Open water, edges during breeding season	Unknown
Passerines	All Areas	None

*See Appendix B for USFWS National Wetlands Inventory (2009) layer in Google Earth (2009).

Potential survey methods:

Focal Guild/Species	Survey Method
Secretive Marsh Birds	5-minute passive survey segment followed immediately by a call-broadcast segment
Waterfowl	Census
Passerines	Point counts

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

Access to the north and west edges of Big Marsh are by Forest Service gravel roads. The east and southern edges are accessible by gravel roads and foot travel. The southern area is accessible by canoe. During winter months, snow levels dictate the use of snowmobiles or skis for the northern, eastern and western edges of the marsh. See also Appendix C for general road view of Big Marsh area (Google Map 2009).



Big Marsh, April 2008

Water levels:

When first seen by David P. Thompson, Byron Pengra and William Odell in 1865, a series of beaver dams at the northern end of the marsh resulted in a water depth ranging from 12 and 20 inches across the marsh. In 1946, the marsh was drained by construction ditches around the east and west sides of the marsh to increase cattle forage. The marsh was grazed intermittently from the late 1800s to 1985.

In 1982, the Forest Service acquired Big Marsh from Diamond International. From 1989 to 2001, breaches and dams in the ditch channels returned approximately 90% of the water had been returned to the historical channel of Big Marsh Creek through Big Marsh.

Water levels in Big Marsh naturally fluctuate depending on the season, snow depth, and the timing of snowmelt each spring and early summer. Snow melt in the marsh in early spring provides the first flush of water and raises the water level. A second flush occurs as the high country snow melts and creates a depth that can reach 12-36 inches across the marsh. During the summer months, the water level recedes although the northern end of the marsh retains a water depth that ranges from 6 -16 inches. Water levels tend to decrease in a southerly direction of the marsh. Normally the very southern end of the marsh has water levels 0-4 inches deep from June through September. In the fall months, the lodgepole pine trees reduce their water intake and water levels in the marsh begin to increase again. During the winter months, the snow pack in the marsh ranges from 3-6 feet in depth (Miller, unpub. 2008).



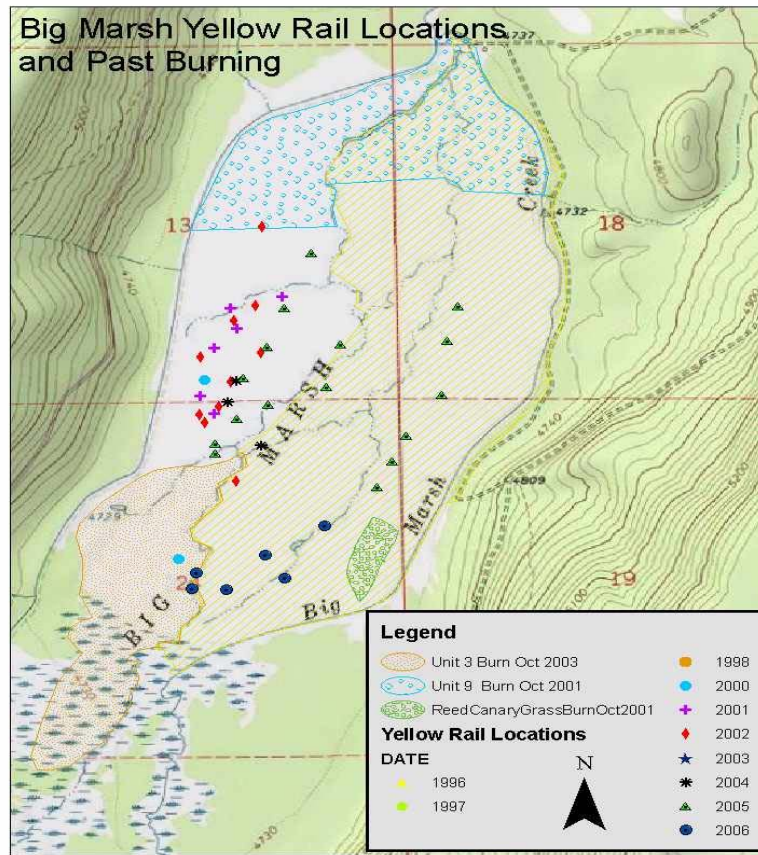
Canoe Trip in Big Marsh 2006

Past and current surveys:

- 1992: Yellow Rail surveys through Oregon State University (Stern et. al., in Stafford et.al., 1996).
- 1996-1997: Neotropical bird surveys through Oregon State University (Stafford et.al., 1996 unpublished).
- 1998: Bird census grant from US Fish and Wildlife given to US Forest Service.
- 2000-2001: Yellow Rail survey with the Natural Heritage Program.
- 1995-1996: Oregon Spotted Frogs by Marc Hayes, co-sponsored by BLM, ODFW, PacifiCorp, Weyerhaeuser Company and Winema and Deschutes NF.
- 1996: Vegetation Surveys of Big Marsh by Jonathan Titus and John Christy.

Conservation issues:

- Lodgepole removal to maintain meadowland around the marsh.
- Reed Canary Grass control/removal to limit the encroachment of introduced plant species.
- Continue efforts to return water levels to pre-agricultural levels.
- Harvest timber to meet wildlife and recreational objectives, or in response to catastrophic situations such as insects, disease or fire.



History of Big Marsh burning and night responses of male yellow rails

History of Management Activities, Restoration Efforts and Accomplishments in Big Marsh, as implemented in the Big Marsh Oregon Spotted Frog Site Management Plan.

Date	Personnel	Management Action	Results of Observations	Additional Comments
1989-1990	Federal, State, and Private groups	Removal of grazing allotment fences and head-gate installation on the east ditch	Flow was returned to portions of the marsh	
1992	District	72 acre prescribed burn	Reduced lodgepole	Cost-share with RMEF
1997	District - Contractors	East ditch head-gate removed, not functioning properly	Original stream channel had sediment and not functional	
1998	District	10 acre human caused fire near snowmobile bridge and dispersed campsite		
	District	2.5 mile nature trail constructed		

1998	District	5 acre lightning fire southwest side of the marsh	Fire burned the peat deep beneath the roots of trees in that area	These pocket ponds now provide habitat for frogs
2000	District - Contractors	Modified berms in the east ditch and constructed side channels	Water flowed into the marsh	Lightning fire green up was tremendous with the added water
2001	District	65 acres of lodgepole pine felling		Cost share with RMEF
	District	Prescribed fire to 155 acres at the north end of the marsh and 10 acre reed canarygrass experimental plot		
	District – Contractors	Closure of the west ditch	More water into the marsh and trees felled increase sunlight to portions of ditch left intact	More egg masses found on west side then historically
	District - Contractors	2 acres of ditch relief ponds created		
	District	Closed 25 miles of road in Big Marsh and Hemlock subwatershed		Engineering 10% fund
2002	District – OHA - RMEF	Planting of willow cuttings		
2002	District	Burned 83 acres on west side		
2003	District OHA	Cut and piled lodgepole under 8" dbh 30 acres south of the main marsh		Cost-share with RMEF
	District contract	Thinned lodgepole 72 acres on SW side, and 50 acres N of main marsh	Portion SW released spruce in boggy area	
2004	District	260 acres prescribed burn east-side	This burn overlapped a small portion of the 2001 burn	There appears to be increased reed canarygrass in the overlapped burn area
2006	District - Contractors	More closures of the east ditch		More egg masses found in these areas then historically
2007	District - Contractors	More closures of the east ditch		
	District - Contractors	Snowmobile bridge removal and placement of log jam		
2008	District – County Corrections Crew	Felling of lodgepole pine encroachment east-side		

Potential Pilot Studies

- Bryological surveys
- Vegetative surveys for potential habitat for TES species (secretive marsh birds, migrating shorebirds, etc.)
- Winter bird surveys
- Spring/fall waterfowl surveys
- Spring/fall Neotropical surveys
- Continued monitoring/surveys of the Yellow Rail
- Botanical plots to determine changes in vegetation (encroachment of other species) in various marsh/meadow habitats

Bird species list for Big Marsh

SPECIES	Big Marsh?	BM NESTING CONF?
American Bittern	Y	
American Coot	Y	Y
American Kestrel	Y	
American Robin	Y	
Bald Eagle	Y	
Barn Swallow	Y	
Belted Kingfisher	Y	
Black-backed Woodpecker	Y	
Black-capped Chickadee	Y	
Black-throated Gray Warbler	Y	
Blue Grouse	Y	Y
Blue-winged Teal	Y	
Brewer's Blackbird	Y	
Brown Creeper	Y	Y
Brown-headed Cowbird	Y	Y
California Gull	Y	
Canada Goose	Y	
Cassin's Finch	Y	
Cassin's Vireo	Y	
Chipping Sparrow	Y	
Cinnamon Teal	Y	
Clark's Nutcracker	Y	
Cliff Swallow	Y	
Common Goldeneye	Y	
Common Merganser	Y	
Common Nighthawk	Y	
Common Raven	Y	
Common Snipe	Y	
Common Yellowthroat	Y	
Dark-eyed Junco	Y	Y
Double-crested Cormorant	Y	
Eared Grebe	Y	

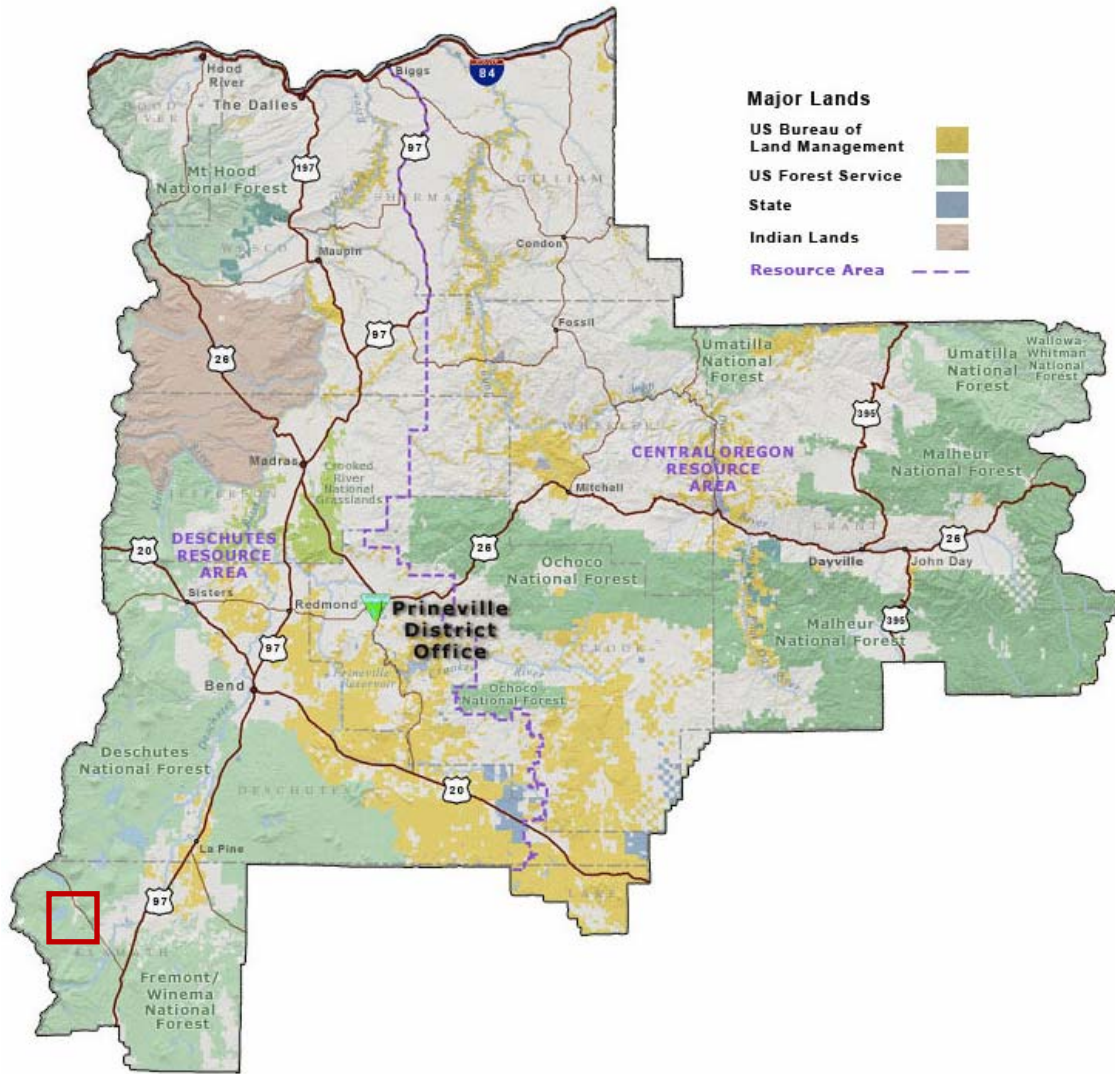
European Starling	Y	
Evening Grosbeak	Y	
Flammulated Owl*	Y	
Golden-crowned Kinglet	Y	
Gray Jay	Y	
Great Blue Heron	Y	
Great Gray Owl	Y	
Great Horned Owl	Y	
Greater White-fronted Goose	Y	
Green-winged Teal	Y	
Hairy Woodpecker	Y	
Hermit Thrush	Y	
House Wren	Y	
Killdeer	Y	
Least Sandpiper	Y	
Lewis' Woodpecker	Y	
MacGillivray's Warbler	Y	
Mallard	Y	
Marsh Wren	Y	
Mountain Bluebird	Y	
Mountain Chickadee	Y	
Mourning Dove	Y	
Northern Flicker	Y	
Northern Goshawk	Y	
Northern Pintail	Y	
Northern Pygmy-Owl	Y	
Northern Rough-winged Swallow	Y	
Northern Saw-whet Owl*	Y	
Olive-sided Flycatcher	Y	
Pied-billed Grebe	Y	
Pine Siskin	Y	
Purple Finch	Y	
Pygmy Nuthatch	Y	
Red Crossbill	Y	
Red-breasted Nuthatch	Y	
Red-tailed Hawk	Y	
Red-winged Blackbird	Y	Y
Ring-necked Duck	Y	
Ruby-crowned Kinglet	Y	
Ruffed Grouse	Y	
Rufous Hummingbird	Y	
Sandhill Crane	Y	Y
Savannah Sparrow	Y	
Sharp-shinned Hawk	Y	
Song Sparrow	Y	
Sora	Y	
Spotted Owl*	Y	
Spotted Sandpiper	Y	

Steller's Jay	Y	
Townsend's Solitaire	Y	
Townsend's Warbler	Y	
Tree Swallow	Y	
Turkey Vulture	Y	
Vaux's Swift	Y	
Violet-green Swallow	Y	
Virginia Rail	Y	
Warbling Vireo	Y	
Western Flycatcher	Y	
Western Kingbird	Y	
Western Meadowlark	Y	
Western Sandpiper	Y	
Western Tanager	Y	
Western Wood-Pewee	Y	Y
White-breasted Nuthatch	Y	
Wilson's Phalarope	Y	
Wilson's Warbler	Y	
Wood Duck	Y	
Yellow Rail*	Y	Y
Yellow-headed Blackbird	Y	
Yellow-rumped Warbler	Y	Y
Canvasback	?	
Herring Gull*	?	

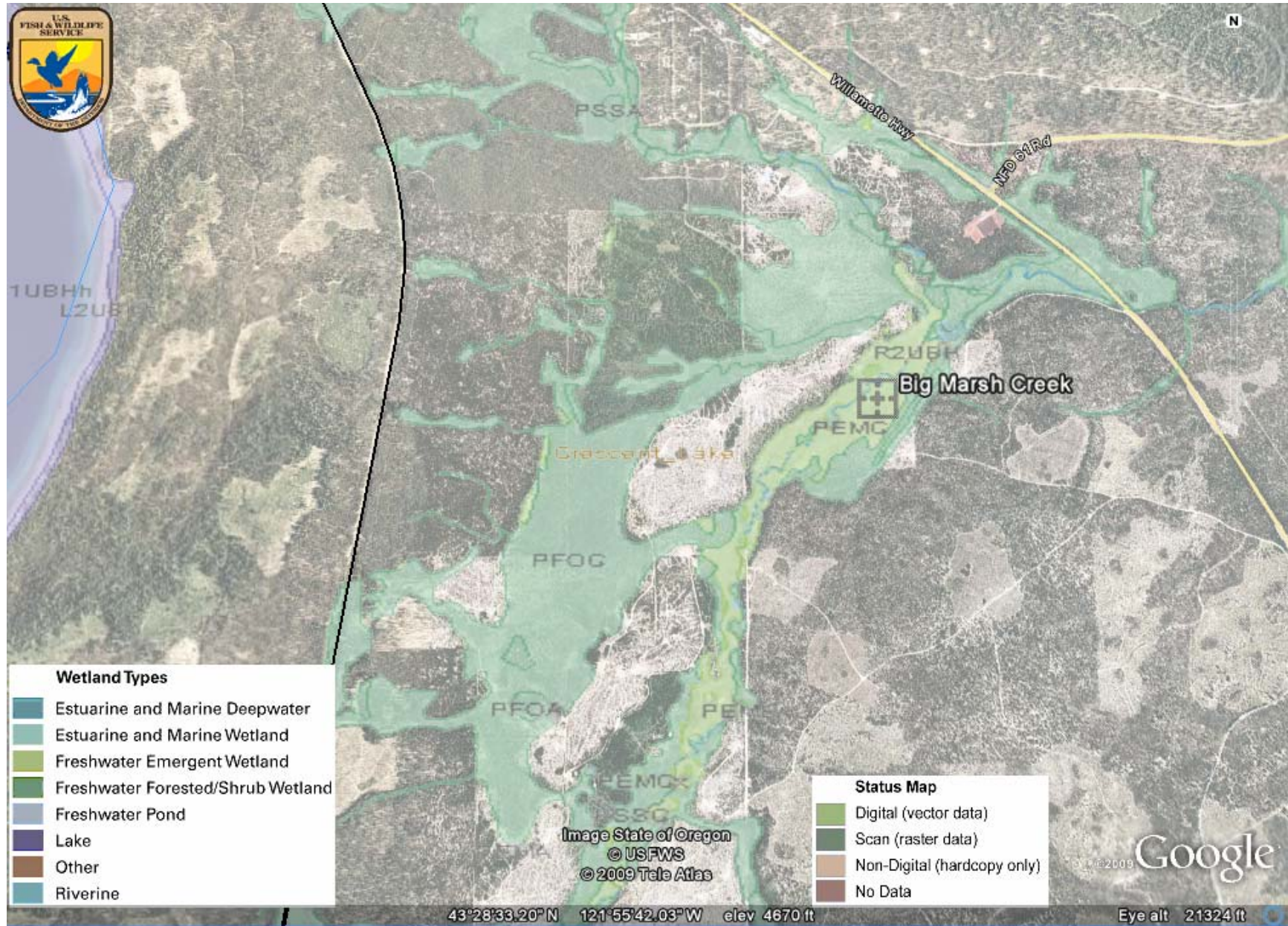
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Appendix A: BLM Prineville District ownership map. The red box indicates Big Marsh area.



Appendix B: Google Earth (2009) map of Aspen Lake with the USFWS National Wetlands Inventory (2009) layer.



Appendix C: Google Map (2009) road view of Big Marsh.

