

Columbian White-tailed Deer

(*Odocoileus virginianus leucurus*)

State Status: Endangered, 1980

Federal Status: Endangered (1967; Columbia River Distinct Population Segment-2003)

Recovery Plans: Federal, 1983

White-tailed deer are generally distinguished from mule or black-tailed deer by their longer tail that is brown rather than black on the dorsal surface, and in adult males, antlers with prongs arising from a single main beam. The Columbian white-tail is a large subspecies with antlers narrowly spreading and curving steeply upward (Figure 1). In a study in western Oregon, Columbian white-tailed and black-tailed deer had similar diets but maintained spatial separation during most seasons and tended to avoid each other (Whitney et al. 2011). The Columbia River population evolved as a riparian species, occupying the floodplain while black-tailed deer inhabited the forested foothills above the floodplain (Gavin 1984). Habitat changes over time affected the riparian habitat, and urban and agricultural areas now limit population expansion. Columbian white-tailed deer were once found in a contiguous area in southwestern Washington and western Oregon (Figure 2), but now exist in two distinct, geographically isolated populations: in Douglas County, Oregon, and along the lower Columbia River (USFWS 1983). The Douglas County population in Oregon recently achieved recovery objectives and was delisted from the federal Endangered Species Act in 2003 (USFWS 2003). The Columbia River population is found on islands in the Columbia and adjacent areas of Clark, Cowlitz, Pacific, Skamania, and Wahkiakum Counties, Washington, and Clatsop, Columbia, and Multnomah Counties, Oregon (Figure 3).

Population status. Recovery objectives for the Columbia River population are to have a minimum of 400 deer, with at least three subpopulations of 50 or more individuals in secure habitat (USFWS 1983). Secure habitat is that which is free from adverse human activities. Currently, two subpopulations of ≥ 50 individuals qualify as secure, the Julia Butler Hansen National Wildlife Refuge (JBH) mainland unit and Tenasillahe Island. Two additional subpopulations of at least 50 individuals exist (USFWS and WDFW 2011) at Westport, Oregon, and Puget Island, Washington, but these occur predominately on private ownership that is not considered secure habitat.

The JBH mainland subpopulation has experienced a significant decrease in size since a peak of an estimated 500 deer in 1986 and 1987. The drop was initially welcomed, as the population probably exceeded the refuge's carrying capacity. Numbers subsequently fell below the desired goal of 125 deer, to a low of 59 in 2007. Current total numbers of the Columbia River population are estimated at roughly 582 deer (Table 1). Overall, the population still needs to attain a third subpopulation of ≥ 50 to reach recovery plan goals. However, compounding factors, including high predation on fawns, vehicle



Figure 1. Columbian white-tailed deer (photo by Joseph V. Higbee).



Figure 2. Historical range of the Columbian white-tailed deer (USFWS 1983).

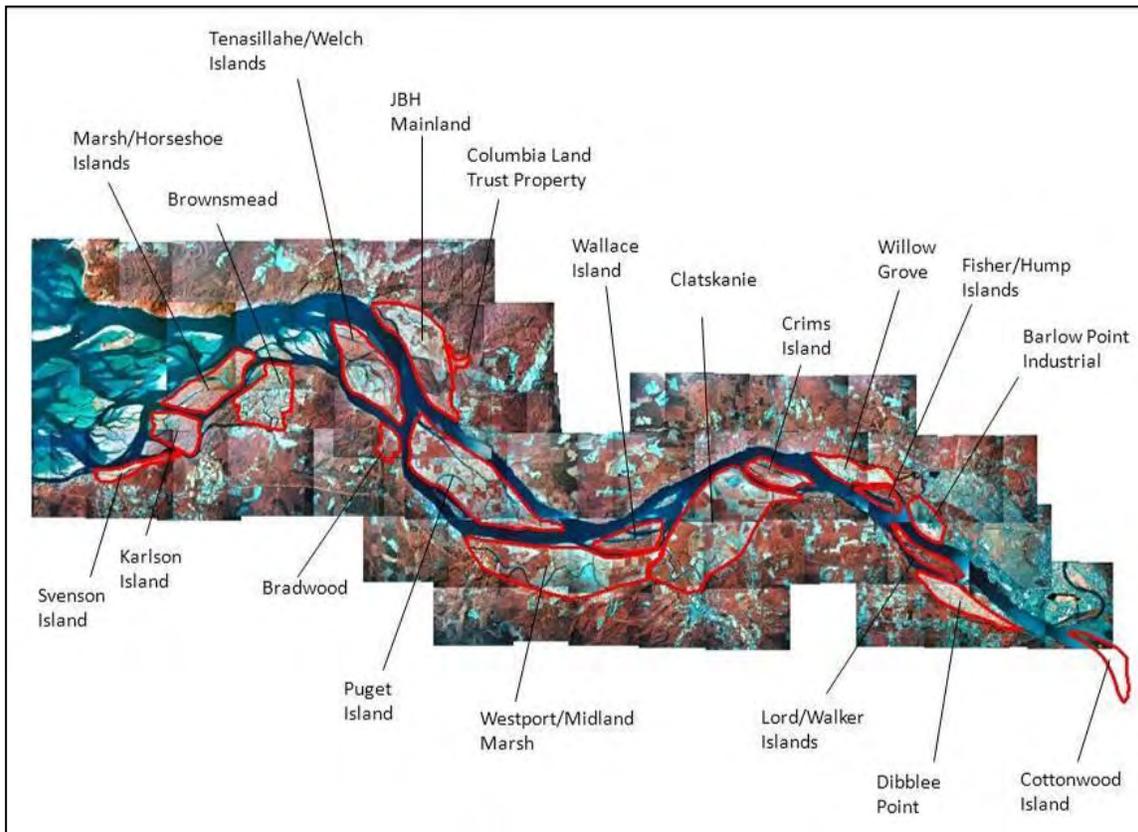


Figure 3. Current range of the Columbian white-tailed deer along the lower Columbia River (USFWS and WDFW 2011).

collisions, disease, flooding events, and hybridization with black-tailed deer, affect the population and have continued to limit recovery (Clark et al 2010, USFWS and WDFW 2011).

Translocations. Recovery actions have involved securing habitat through acquisitions, translocations to augment existing populations and establish new populations, and habitat enhancement on the JBH.

The USFWS identified a series of islands near Longview, Washington, for a third secure subpopulation. These islands include Fisher (225 ac), Hump (100 ac), Lord (500 ac), and Walker (109 ac). A total of 66 deer have been translocated there to date. Since translocation, these islands have supported 10–14 animals, with the most current estimate at 10. Sixty-one deer were translocated to Crims Island between 1999-2006 (Table 2). This site has supported between 8 and 33 deer since 2000, with the 2011 estimate at 18 animals. The upper estuary islands (Lord/Walker, Fisher/Hump, and Crims) have so far failed to

Table 1. Most recent estimates of Columbia River subpopulations of Columbian white-tailed deer.

Site	Population estimate	Year of estimate
Julia Butler Hansen NWR mainland ^a	72±32	2012
Tenasillahe Island	91±48	2012
Wallace Island/	22	2011
Crims Island	18	2011
Lord/Walker and Fisher/Hump islands	10	2011
Puget Island	171	2011
Westport	132	2010
Willow Grove	18	2011
Clatskanie Flats	21	2010
Dibblee and Longview Industrial	24	2011
Cottonwood Island	3	2011
Total	~582	

^aIncludes Hunting and Price islands.

maintain the target population of 50 deer. In 2010, the Cowlitz Indian Tribe moved 15 deer to Cottonwood Island, an area also listed in the Recovery Plan as a potential relocation site (USFWS 1983, Cowlitz Tribe of Indians 2010).

In 2006, translocation efforts began to augment the declining JBH mainland subpopulation. Deer were relocated from Puget Island in 2006, Westport, Oregon, in 2009, and Tenasillahe Island and Roseburg, Oregon, in 2010. Consistent coyote predation and significant flooding events in 1996, 2006, and 2009 have been partially implicated in the decline of the JBH mainland subpopulation, which currently supports about 83 deer. Of these translocation efforts, Tenasillahe, Crims, and the JBH mainland have shown the most success (Table 2). The USFWS is also actively restoring refuge habitat to establish cover and provide forage for deer.

Table 2. Summary of land acquisitions and translocation activity for secured Columbian white-tailed deer habitat.

Site Name	Acres	Year Secured	Translocations	
			Year	No. of deer
Julia Butler Hanson NWR mainland ^a	2,823	1972	2006	5
			2009	20
			2010	8
Tenasillahe Island	1,919	1972	1986	19
			1987	19
			1988	21
Crims Island	730	1999	1999	27
			2000	29
			2006	5
Lord/Walker Island	609		2003	16
			2004	8
			2006	9
Fisher/Hump Island	325		2003	12
			2004	11
			2006	10
Cottonwood Island	650		2010	15
Wallace Island/Westport	725	1995	NA	
Willow Grove	304	2008	NA	
Nelson Creek	423	2008-2011	NA	
Total	8,508			234

^aIncludes Hunting and Price islands.

In March 2011, it was learned that the Steamboat Slough Road dike that prevents tidal flooding on the JBH refuge mainland unit was eroding and in danger of failing. Regular flooding would be expected to substantially reduce the Columbian white-tailed deer numbers present. In 2012, USFWS proposed to translocate up to 50 Columbian white-tailed deer from JBH mainland to Ridgefield NWR (Figure 4, *after Lit. Cited*), and 15 Columbian white-tailed deer from Puget Island to Cottonwood Island during Jan-April 2013 (USFWS 2012).

Partners and cooperators: USFWS-Julia Butler Hansen National Wildlife Refuge, Cowlitz Tribe of Indians, Oregon Department of Fish and Wildlife, Oregon State University.

Literature Cited

- Clark, A., G. Phillips, K. Kilbride, and T. Kollasch. 2010. Factors affecting Columbian white-tailed deer fawns in the lower Columbia River. Unpublished manuscript. 21 pp.
- Cowlitz Tribe of Indians. 2010. Columbian white-tailed deer summary report. 7 pp.
- Gavin, T. A. 1984. Pacific Northwest. Pages 487–496 in L. K. Halls, ed. White-tailed deer: ecology and management. Stackpole, Harrisburg, Pennsylvania.
- Piaggio, A. and M. Hopken. 2009. Evolutionary relationships and population genetic assessment of Oregon white-tailed deer. Unpublished manuscript. 37 pp.

- Piaggio, A. and M. Hopken. 2010. Genetic assessment of Columbian white-tailed deer (*Odocoileus virginianus leucurus*) and Columbian black-tailed deer (*Odocoileus hemionus columbianus*) hybridization on the Julia Butler Hansen Refuge. Unpublished manuscript. 34 pp.
- USFWS (U.S. Fish and Wildlife Service). 1983. Revised Columbian white-tailed deer recovery plan. U.S. Fish and Wildlife Service, Portland, Oregon. 86 pp.
- USFWS (U.S. Fish and Wildlife Service). 2003. Final Rule To Remove the Douglas County Distinct Population Segment of Columbian White-Tailed Deer From the Federal List of Endangered and Threatened Wildlife. Federal Register 68(142):4364 -43659.
- USFWS (U.S. Fish and Wildlife Service). 2012. Draft environmental assessment for a Proposed Translocation of Deer from the Julia Butler Hansen Refuge for the Columbian White-tailed Deer and Puget Island to Ridgefield National Wildlife Refuge and Cottonwood Island. Julia Butler Hansen Refuge for the Columbian White-tailed Deer and Ridgefield National Wildlife Refuge, Wahkiakum and Clark County, WA. 32 pp.
- USFWS & WDFW (U.S. Fish and Wildlife Service and Washington Department of Fish and Wildlife). 2011. Columbia River Distinct Population Segment of the Columbian white-tailed deer (*Odocoileus virginianus leucurus*) 5-Year Review: Summary and Evaluation DRAFT. 44 pp.
- Whitney, L. W., R. G. Anthony, and D. H. Jackson. 2011. Resource partitioning between sympatric Columbian white-tailed and black-tailed Deer in western Oregon. Journal of Wildlife Management 75:631–645.

Figure 4. Location of Julia Butler Hanson NWR Mainland Unit, Cottonwood Island (arrow), and Ridgefield NWR.

