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The pipeline easement in Section 16 (T21, R20E) of the Stemilt Basin was surveyed on September 3, 2019 to determine if habitat for the northern spotted owl occurred in the easement. A stand-level definition of spotted owl (SPOW) habitat in dry forests of the eastern Cascade Range was taken from Gaines et al. (2015)¹. That definition was developed by state (WA Dept. Fish & Wildlife) and federal (US Forest Service, US Fish and Wildlife Service) wildlife biologists, with input from private consulting biologists, during a 2012 workshop to develop silvicultural options for managing SPOW habitat in dry forests. According to Gaines et al., nesting/roosting/foraging (optimal) habitat in dry forests is defined by: canopy cover greater than 70%, dominance in the overstory by large (>20 inches diameter at breast height, DBH) Douglas-fir trees, multiple canopy layers, presence of large Douglas-fir mistletoe brooms, and abundant large snags and down wood.

METHODS

I did a survey to determine if SPOW habitat existed on the pipeline easement based on percentage canopy cover, canopy species composition, number of canopy layers, amount of large standing and down wood, and the occurrence of large mistletoe brooms. I recorded data at 16 points spaced 100 yards apart along the center of the entire pipeline easement (Figure 1). At each point, I estimated canopy cover using the CanopyApp application on an iPhone. I estimated basal area (BA) by species using a Cruz-All angle device with a basal area factor of 10. I measured the DBH of a sample of up to 4 trees of each species with a diameter tape. I noted the occurrence of multiple canopy layers, large dead wood, and large Douglas-fir mistletoe brooms. I took photos along the easement at representative locations. Data are reported for the western section of easement (about 0.7 miles) adjacent to the road on generally level ground, and for the eastern section (about 0.3 miles) of the easement that traverses denser forest on a gentle north-facing slope adjacent to section 9.

RESULTS & DISCUSSION

There is no spotted owl habitat on the pipeline easement in section 16. Canopy cover was too low (much less than 70%), small ponderosa pine dominated the single-story canopy, and there was little to no large mistletoe or dead wood. The primary determinant of non-habitat was low canopy cover that

¹ Gaines, WL, JB Buchanan, JF Lehmkuhl, K. Halupka, and P. Singleton. 2015. Chapter 3. Northern spotted owl issues and objectives. Pages 33-62 in JF Lehmkuhl, W Gaines, DW Peterson, J Bailey, and A Youngblood (tech eds.). Silviculture and monitoring guidelines for integrating restoration of dry mixed-conifer forest and spotted owl habitat in the eastern Cascade Range. US Forest Service General Technical Report PNW-GTR-916. US Forest Service, Pacific Northwest Research Station, Portland, Oregon.

averaged 11% on the western section and 25% on the eastern section of the easement (Figure 2). Two points had 58-63% canopy cover, but most (88%) points had <20% canopy cover.

The easement canopy was dominated by ponderosa pine. Ponderosa pine was the only species on the western section with 65 sq. ft./acre BA of trees averaging 13 inches DBH, with an occasional large (20-25 inches DBH) tree. The eastern section had a total of 80 sq. ft./acre of PIPO (46 BA) and Douglas-fir (34 BA) trees that averaged 7 in DBH and 8 inches DBH respectively, with some points having larger Douglas-fir up to 21 inches DBH (average 14 inches DBH).

All points had a single-story canopy. Large snags or down wood and large Douglas-fire mistletoe brooms were lacking at most all points along the easement. Only one point in the eastern section of the easement had large mistletoe brooms.

The survey outcome of non-habitat is consistent with the distribution of spotted owl “critical” habitat, which is officially designated habitat essential for the survival of the species under the Endangered Species Act. The Stemilt Basin has no officially designated critical habitat for the northern spotted owl². The closest critical habitat is located west and south of the Stemilt basin around Mission Ridge and Naneum Point, then south to include much of the upper Naneum Creek basin, then west to Reecer and Swauk Creeks. The location of section 16 at the dry end of the dry-forest spectrum at the interface with shrub-steppe suggests that it has little potential to grow significant amounts of spotted owl habitat, considering that spotted owl home ranges average about 5000 acres in eastern Cascades dry forests and nearly 50% of the home range needs to be nesting/roosting/foraging habitat (Gaines et al. 2015).

² Northern spotted owl critical habitat documents and maps accessed Sept. 6, 2019 at <https://www.fws.gov/pacific/ecoservices/nsofch.html>.

Figure 1. Location of 16 survey points for assessing the occurrence of spotted owl habitat on the western and eastern sections of the pipeline easement in Stemilt section 16.

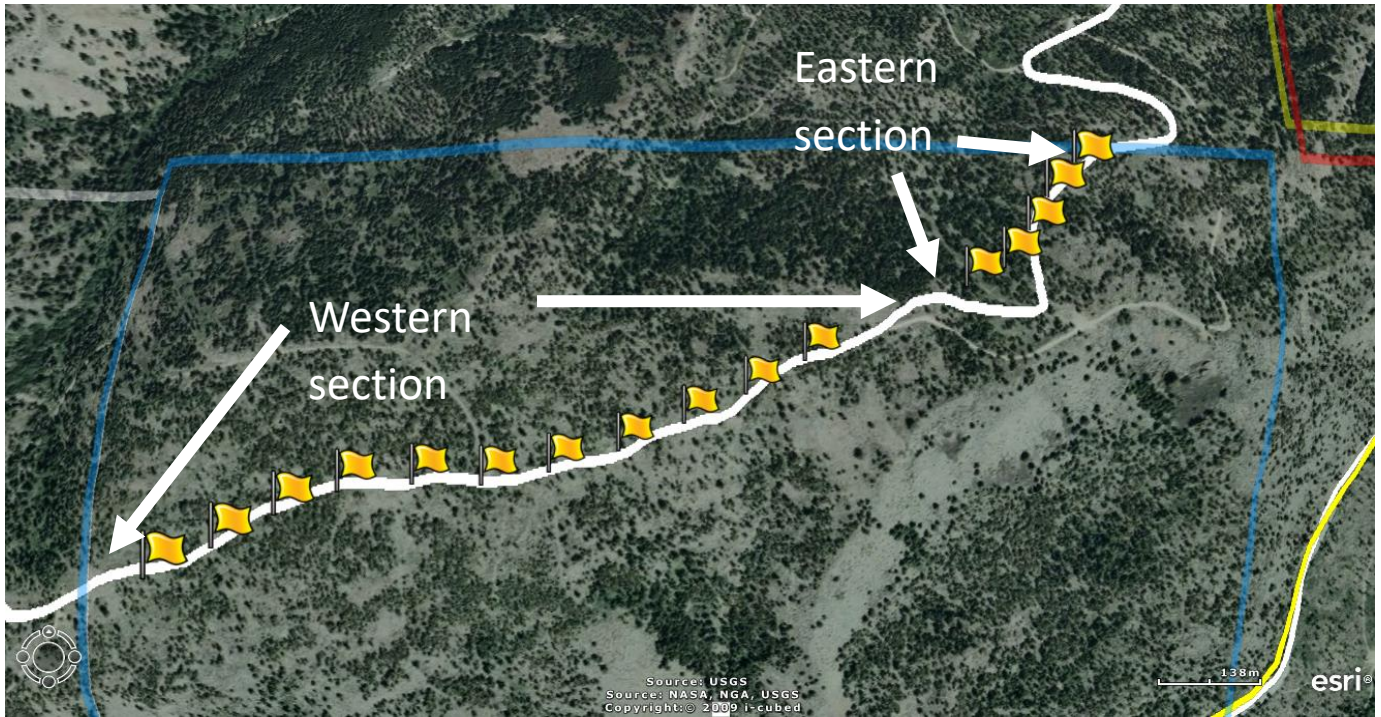


Figure 2. Examples of canopy closure at survey points along the center of the pipeline easement in section 16.

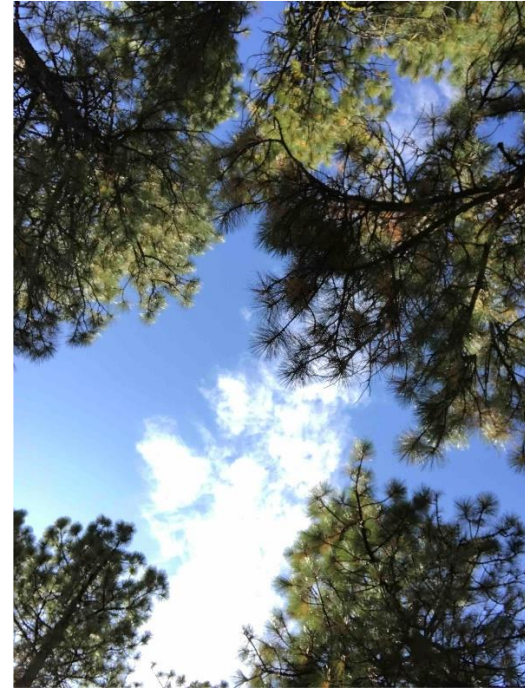


Figure 3. Examples of forested stands along the western and eastern sections of the section 16 pipeline easement.

