

MONITORING OF *CRYPTANTHA LEUCOPHAEA* IN THE JUNIPER DUNES WILDERNESS, FRANKLIN COUNTY, WA

Report to the Interagency Special Status/Sensitive Species Program for FY08

**Barbara Benner and Diane Stutzman
Spokane Field Office
Bureau of Land Management
Spokane, WA**

INTRODUCTION AND BACKGROUND

Cryptantha leucophaea (gray cryptantha) is a regional endemic, known from the Columbia and lower Yakima Rivers in the western Columbia Basin, from Wenatchee, WA to The Dalles, OR. In WA, the species is currently known from Benton, Franklin, Grant, Kittitas, Walla Walla, and Yakima counties and historically Douglas County. It occurs in the Columbia Basin physiographic province. The taxon is basically restricted to sand dunes that have not been completely stabilized, i.e., areas where there is still some movement of sand. It would appear to be dependent on the strong winds of the region and the availability of open sand. The narrow habitat requirements and the loss of habitat (including the potential future loss) are primary factors in the status of this species. The plant is currently listed as State Sensitive by the Washington Natural Heritage Program.

Estimates of the abundance of *C. leucophaea* in the Juniper Dunes have varied. A report in April-May 1978 described it as “locally abundant”, occurring “sporadically over most of the Juniper Forest exclosure and on adjacent land outside the exclosure” (Stockdale 1978). Three years later, a survey by a BLM botanist resulted in sightings of fewer than 100 plants (Camp and Burwell 1981). However, in 1991, a survey reported that the plant “occurs in small isolated groups of 20-100 plants and also in large groups of several hundred plants” (Mastrogiuseppe 1992). Our own surveys in 2003 found fewer than 100 plants, generally in groups of 1-4, with occasional patches of 6-11. In addition, most populations were associated with “skeletons” recognizable as dead gray cryptantha plants.

The 2006 inventory was prompted by concerns that the plant might be declining in the Juniper Dunes Wilderness, one of the few (if not the only) places that it receives some protection. The Wilderness is fenced, and disturbances by livestock and OHVs (Off-Highway Vehicles), common outside the Wilderness, are largely absent within its boundaries. Our objectives for the 2006 study were to attempt to locate as many of the historic (1981 and 1991) records as possible, revisit the sites recorded in 2003, and permanently mark sites for an ongoing monitoring program. During our May 2006 visits, we marked 41 locations, including 13 previously unrecorded sites, and found a total of 110 living gray cryptantha plants at those locations. Our objectives in 2008 were to revisit the sites marked in 2006 and record living and dead plants for comparison with the 2006 data.

METHODS

Thirty-nine of the 41 marked sites were visited during May 12 through 14, 2008. One of the sites was not visited because of time and distance constraints, and another site

apparently had incorrect GPS information recorded, as our GPS values indicated a location that was not marked and was in unsuitable habitat.

At each site, we flagged and counted all living plants and all skeletons, and photographed the site, attempting to repeat the orientation of the 2006 photograph by using compass direction and landmark information. If the site had expanded to a greater extent than what was recorded in 2006, we recorded GPS information for a new polygon.

RESULTS

Plant Census

In 2008, a total of 87 living gray cryptantha plants (not counting seedlings) were found at the marked sites, a decrease of 23 plants compared with 2006. Of the 30 sites visited at which live plants were present in 2006, nine had the same number of live plants in 2008 as in 2006, 18 sites showed a decrease in the number of live plants (four of those decreased to zero live plants), and three sites showed an increase in the number of live plants. One of those three sites increased from two to fifteen live plants, and from four to twelve skeletons, suggesting that the full range of the site may not have been observed in 2006. The likelihood of a decrease in the number of live plants was not related to vegetation cover class at the site.

New Sites

Three new sites were located in the course of hiking to the monitor sites. Two of those sites had a single flowering plant; the other site had one flowering plant and two skeletons. GPS values were recorded for those locations.

Growth and Reproduction Observations

At one site, there were six seedlings that appeared likely to be *C. leucophaea*, based on leaf shape and vestiture (Fig. 1). Two of those were among the remains of a dead *C. leucophaea* plant. At a couple of sites, green branches were observed to be sprouting from “old” branches at a point well above the ground surface, rather than from the underground portion of the plant (Figs. 2, 3, 4), suggesting that aboveground growing points may overwinter and initiate growth the following year.

DISCUSSION

The 2008 data suggest that the Juniper Dunes Wilderness population of *C. leucophaea* is continuing to decline. However, there are no long term data for this or any other *C. leucophaea* population. Anecdotal reports of “groups of several hundred plants” (e.g. Mastrogiuseppe 1992) may indicate that the plant was once considerably more abundant in the area than it is now, or they may represent episodic population spikes within a background of normally low population size. Prolonged dormancy (Lesica and Steele 1994) has not been documented in this species; detection of this behavior would require long term studies in which individual plants are followed over a period of years. More data over a longer period of time are needed to determine what is occurring in this population, and data from other populations could also contribute to the understanding of *C. leucophaea* population dynamics. In the meantime, we recommend that the Washington Natural Heritage Program consider upgrading the plant’s status from Sensitive to Threatened in the state of Washington.

Current management practices in the Juniper Dunes Wilderness are to maintain fencing along the wilderness boundary to exclude livestock and motorized vehicles. Livestock grazing and motorized recreation (off-highway vehicle travel) occur on BLM lands adjacent to the Wilderness, and there are extensive OHV trails throughout this adjacent area. No occurrences of *C. leucophaea* have been found in the adjacent area for over 25 years. Although a site could become unsuitable for *C. leucophaea* because of stabilization of sandy blowout areas by more dense vegetation, it does not appear likely that opening up the area to disturbance by livestock and/or OHV's would improve the habitat for *C. leucophaea*. Those activities would be more likely to result in increased invasion of exotic species, and destruction of vegetation in areas where OHV traffic is concentrated. Natural disturbances such as wind movement of substrate are a more likely source of creation of suitable habitat.

LITERATURE CITED

Camp, P. and Burwell, R. 1981. Bureau of Land Management Plant Taxon Field Report, April 28, 1981. Submitted to the Bureau of Land Management, Spokane District, Spokane, WA.

Lesica, P. and B. M. Steele. 1994. Prolonged dormancy in vascular plants and implications for monitoring studies. *Natural Areas Journal* 14:209-212.

Mastrogiuseppe, Joy. 1992. Rare plant survey in areas where *Chondrilla juncea* occurs; Juniper Dunes; Franklin County, Washington. Submitted to the Bureau of Land Management, Spokane District, Spokane, WA.

Stockdale, D. 1978. Bureau of Land Management Plant Taxon Field Data Report, April-May 1978. Submitted to the Bureau of Land Management, Spokane District, Spokane, WA.



Figure 1. Presumptive *Cryptantha leucophaea* seedlings, Juniper Dunes Wilderness, May 13, 2008.



Figure 2. *Cryptantha leucophaea* new growth on previous year's shoots, Juniper Dunes Wilderness, May 13, 2008.



Figure 3. *Cryptantha leucophaea* new growth on previous year's shoots, Juniper Dunes Wilderness, May 13, 2008.



Figure 4. *Cryptantha leucophaea* new growth on previous year's shoots, Juniper Dunes Wilderness, May 13, 2008.