Inventory of High Probability Habitat for *Potentilla villosa* on Middle Fork District, Willamette NF

Interagency Special Status/Sensitive Species Program
FY 2008

Species List and Ranks: *Potentilla villosa* (Villous cinquefoil) Oregon: G4S1

Background

The range of this species is the northwestern Cascades in Oregon. An unrelocated, presumed extirpated, site occurs on the east side of Mt. Hood in Hood River County (Marty Stein, pers. comm.) and a recently located site (2003) is found on the Willamette National Forest in Lane County on Fuji Mountain near Waldo Lake. These are the only known locations in the state. The species is also found in Washington State where it is more abundant (not listed as Sensitive).

The species grows in rock outcrops on high peaks; sites where we often do not have a chance to survey for projects. The benefits of the proposal would be to potential expand the range and distribution of the species. The population on Fuji Mountain is small (12 plants) and a stochastic event could easily wipe it out. This is the reason it is critical for us to determine if other populations exist on the Forest.

Statement of Work

Project Area: Surveys took place on the Middle Fork Ranger District on Mt. Ray, Mt. David Douglas, Verdun Rock/Hell's Half Acre and Wolf Rock. These sites represent the closest high elevation, cliff/ rock face-type habitat (high probability habitat) in the vicinity of the known population on the Willamette NF.

Project Design and Methods/Data Analysis: An intuitive controlled survey was conducted in the rock outcrops of the peaks described above. A crew of 2 conducted surveys (for safety).

Results

No new sites of *Potentilla villosa* were detected. Three areas were surveyed in 2008. A heavy and late snow year made areas inaccessible until August and two fires prevented staff from surveying the other two in 2008. The remaining two sites were surveyed in the summer of 2009.

Although one site was similar in habitat to Fuji Mountain, none of the sites seemed appropriate for this species to occur. Diamond Peak is at a similar elevation to Fuji Mountain and has similar habitat and might be a good place to survey.

Descriptions of each site visited follow. Plant lists for each location are included at the end of the report.

Fuji Mountain (elevation 7144 feet): The known site of *Potentilla villosa* on Fuji Mtn was visited on August 18, 2008. Three of the plants in the population were flowering. Visiting the site gave us a good search image of the plant and a reference for the type of habitat where we might find more populations.

Potentilla villosa on Mt. Fuji

Mt Ray (elevation 7022 feet): Intuitive controlled surveys were conducted on Mt. Ray on August 19, 2008. This peak had the most similar habitat to Mt. Fuji of all the peaks surveyed. The aspect, flora and the substrate (similar rock types) are similar to Fuji Mountain. The long, jagged rocky ridge was searched for *P. villosa*.

Mt Ray looking towards Waldo Lake

Mt. David Douglas (elevation 6255 feet): Surveys were conducted September 11, 2008. Mt. David Douglas is made up of a long series of steep cliffs, some with no good vantage point. We climbed to the top of the ridge and surveyed where we could access. The habitat that we could access was mainly on the North side and was wetter and more vegetated than the reference site.

Mt. David Douglas

Verdun Rock/Hell's Half Acre (elevation 5645 feet): Surveys were conducted here on July 21, 2009. Verdun Rock has the lowest elevation of all of the survey sites. The peak area was a sloping, mesic meadow to the very top. Meadow species persisted up to the rocks. The best *P. villosa* habitat was a vertical chute that was difficult to see. Binoculars were used to view the overhanging cliffs for possible sites. Overall this site did not seem to have the right habitat for the target species. We did find a population of *Orobanche uniflora*. This extended the known range of this species in Lane County to the north.

Verdun Rock

Wolf Mountain (elevation 6462 feet): Surveys were conducted here July 29, 2009. This area is accessible by car. This area has a steep rocky outcropping and some rocky piles of small boulders. Vegetation is patchy and consists mainly of *Arctostaphylos nevadensis*, manzanita, thimbleberry, and *Sedum* species. The slope did not look like good habitat for *P. villosa* but it was also difficult to see down.

Species List for All Survey Sites

Species	Fuji Mtn	Mt Ray	David Douglas	Verdun Rock	Wolf Mtn.
Abies amabilis	x	x	x	x	x
Abies grandis		x	x	x	x
Abies lasiocarpa	x	x	x		
Acer glabrum var. douglasii	x	x	x	x	
Achlys triphylla				x	
Agoseris aurantiaca	x	x	x	x	
Anaphalis margaritcea					
Anemone drummondii	x	x	x		
Antennaria rosea	x	x	x	x	
Aquilegia formosa	x	x	x	x	
Arabis platysperma	x	x	x		
Arabis xdivaricarpa	x	x	x		
Archtostaphylos nevadensis		x	x	x	x
Arnica ovata	x	x	x		
	x	x	x		
Calochortus subalpinus				x	
Cardamine bellidifolia	x	x	x		
Carex halliana	x	x	x		
Carex nigracans	x	x	x		
Carex pachystachya	x	x	x		
Carex rossii	x	x	x		
Castilleja arachnoidea	x	x	x		
Castilleja hispida				x	
Castilleja rupicola	x	x	x		
Chamerion angustifolium	x	x	x		
Cheilanthes gracillima	x	x	x		
Chrysolepis chrysophylla			x	x	
Cryptogramma cascadensis	x	x	x	x	
Cystopteris fragilis	x	x	x	x	
Dicentra formosa	x	x	x	x	
Elymus elymoides	x	x	x		
Epilobium clavatum	x	x	x		
Epilobium lactiflorum	x	x	x	x	
Erigeron cascadensis	x	x	x		
Eriogonum marifolium	x	x	x		
Eriogonum pyrolifolium	x	x	x		
Eriogonum umbellatum				x	
Eriophyllum lanatum		x	x	x	
Eucephalus ledophyllus	x	x	x	x	
Festuca viride	x	x	x		
Galium bifolium				x	
Galium oreganum				x	
Galium trifolium				x	
Goodyera oblongifolia		x		x	
Heuchera merriamii	x	x	x	x	

Species	Fuji Mtn	Mt Ray	David Douglas	Verdun Rock	Wolf Mtn.
Hieracium albiflorum	x	x	x	x	
Hieracium bolanderi	x	x	x	x	
Hieracium gracile	x	x	x		
Holodiscus discolor	x	x	x	x	
Hulsea nana	x	x	x		
Juncus parryi	x	x	x		
Juniperus communis	x	x	x		
Koeleria macrantha	x	x	x		
Lathyrus nevadensis				x	
Ligusticum grayi	x	x	x		
Lilium washingtonianum				x	
Linnea borealis				x	
Lomatium halli				x	
Lomatium nudicale				x	
Luetkea pectinata	x	x	x		
Lupinus latifolius	x	x	x	x	
Luzula hitchcockii	x	x	x		
Luzula parviflora	x	x	x		
Maianthemum racemosum				x	
Micranthes rufidula	x	x	x		
Micranthes tolmiei	x	x	x		
Mimulus moschatus				x	
Minuartia obtusiloba	x	x	x		
Mitella breweri	x	x	x	x	
Moehringia macrophylla				x	
Monotropa hypopithys	x	x	x	x	
Navarretia divaricata				x	
Nemophila parviflora	x	x	x	x	
Nothochelone nemorosa	x	x	x	x	
Orobanche uniflora				x	
Orthilia secunda	x	x	x	x	
Orthocarpus imbricatus				x	
Oxyria digyna	x	x	x		
Packera bolanderi				x	
Paxistima myrsinites	x	x	x	x	
Pedicularis racemosa	x	x	x	x	
Penstemon davidsonii	x	x	x	x	
Penstemon rupicola	x	x	x	x	
Phacelia hastata	x	x	x	x	
Phlox diffusa				x	
Phlox gracilis				x	
Phyllodoce empetriformis	x	x	x		
Phyllodoce glanduliflora	x	x	x		
Pinus albicaulis	x	x	x		x
Pinus monticola				x	
Pinus ponderosa	x	x	x		
Poa sp.	x	x	x	x	

Species	Fuji Mtn	Mt Ray	David Douglas	Verdun Rock	Wolf Mtn.
Polemonium californicum	x	x	x		
Polemonium carenum				x	
Polemonium pulcherrimum ssp. pulcherrimum	x	x	x		
Polystichum imbricans		x	x	x	
Potentilla drummondii				x	
Potentilla glandulosa				x	
Potentilla villosa	x				
Prosartes hookeri				x	
Prunella vulgaris				x	
Rainiera stricta	x	x	x	x	
Ranunculus uncinatus				x	
Ranunculus suskdorfii	x	x	x		
Ribes cruentum var cruentum		x	x	x	
Ribes viscosissimum		x		x	
Rubus lasiococcus	x	x	x	x	
Rubus parviflorus				x	x
Sanicula graveolens	x	x	x		
Sedum oregonense	x	x	x	x	x
Sedum divergens			x	x	x
Sedum spathulifolium				x	x
Silene suksdorfii	x	x	x	x	
Sorbus sitchensis	x				
Stephanomeria lactucina	x	x	x		
Symphoricarpus albus			x	x	
Trillium ovatum	x	x	x	x	
Tsuga mertensiana	x	x	x		x
Vaccinium membranaceum	x	x	x	x	
Vaccinium scoparium	x	x	x	x	
Vicia amerciana				x	
Viola bakeri	x	x	x		
Viola glabella				x	
Viola mackloskeyi				x	