

## Applegate's milkvetch (*Astragalus applegatei*)



### ENDANGERED



Flowers (left), habit (center), and habitat (right) of Applegate's milkvetch. Photos by Melissa Carr (left) and ODA staff (center and right). If downloading images from this website, please credit the photographer.

### Family

Fabaceae

### Plant description

Applegate's milkvetch is a perennial species with clustered, slender, spreading or procumbent stems 25–40 (-90) cm long. Stems are simple or with few branches and are glabrous or minutely strigose above. Leaves are ascending, 3.5–8 cm long, with a very slender petiole and rachis. Leaflets number 7-13 per leaf, are linear or linear-oblong, 0.8–2 cm long, glabrous above and sparsely strigose beneath, with mucronate, truncate, or retuse apices. Flowers are arranged in loose groups of 10-18 in racemes borne on incurved-ascending peduncles 3-6 cm long. Racemes reach up to 7 cm in length, with flowers ultimately nodding. The calyx is campanulate, approximately 0.3 cm long, with triangular teeth less than half as long as the tube, and strigillose with black and partly white or gray-brown hairs. Petals are whitish to light lavender, with the openly notched banner bent upward at an almost right angle and reaching up to 0.7 cm in length. Pods are horizontally spreading or declined, stipitate, narrowly oblong, and slightly laterally compressed, with an abruptly pointed apex. The nearly straight body is 0.8–1.3 cm long and 0.24–0.28 cm in diameter; the slender, straight stipe is 0.4–0.5 cm long. Valves are thin-cartilaginous, green or purplish-mottled, and strigillose. Pod dehiscence starts at the apex and continues downward through the ventral suture. Flowers produce 8-10 ovules each.

### Distinguishing characteristics

*Astragalus lemmonii* is the only other *Astragalus* species that occurs in the same moist habitat as Applegate's milkvetch within the range of the endangered taxon. *Astragalus lemmonii* is distinguished by its short, crowded racemes on peduncles that are paired in all or most axils, and by its pods, which are sessile, fully bilocular, and grooved along the back.

### When to survey

Surveys for Applegate's milkvetch should be completed from June through August

when the species is in flower.

### **Habitat**

Applegate's milkvetch occurs in seasonally moist alkaline soils in meadows and along wayside ditches at approximately 1250 m (4100 ft) in elevation. Although sites occupied by Applegate's milkvetch are currently dominated by non-native grasses and other weedy species, they were historically characterized by native bunch grasses and patches of bare soil. Study results indicate that Applegate's milkvetch likely depends upon specific species or strains of symbionts that occur within its native soils.

The two native species that occur with the greatest frequency at all Applegate's milkvetch sites are *Ericameria nauseosa* and *E. viscidiflora*. Other native associated species include *Sarcobatus vermiculatus*, *Elymus elymoides*, *Epilobium brachycarpum*, *Distichlis stricta*, *Achillea millefolium*, and *Juncus balticus*. Weedy associates include *Elytrigia repens*, *E. intermedia*, *Lactuca serriola*, *Apera interrupta*, *Bromus secalinus*, *B. tectorum*, *Cirsium* spp., *Hordeum murinum*, and many more.

### **Range**

Applegate's milkvetch is a narrow endemic restricted to the Lower Klamath Basin of southern Oregon, near the city of Klamath Falls. Although historically there were more sites, currently only six known occurrences remain, three of which are quite small. Two of the occurrences (one large and one small) are on State-protected lands. The other four are under private ownership, although one of the large, albeit apparently declining, private occurrences is managed by The Nature Conservancy for the preservation of Applegate's milkvetch.

### **Oregon counties**

Klamath

### **Federal status**

Endangered

### **Threats**

Habitat loss and alteration due to urban and commercial development in and around the growing city of Klamath Falls are the most significant threats to Applegate's milkvetch. Planned expansion and development of the Klamath Falls Airport, the site of the largest occurrence of Applegate's milkvetch, will likely impact the species. Habitat loss due to competitive exclusion by non-native weeds is a further threat to the species, as is herbivory from insects, livestock, and rabbits, and seed predation by insects. The low number of occurrences of Applegate's milkvetch and the small number of plants at each occurrence put the species at risk from stochastic events like floods and fires. The species' limited gene pool may result in depressed reproduction. Hydrologic alteration may negatively impact the species, as well.

### **Conservation planning**

A U.S. Fish and Wildlife Service [Recovery Plan](#) (pdf document, 3.04MB) was released for Applegate's milkvetch in 1998.

A U.S. Fish and Wildlife Service [5-Year Review](#) (pdf document, 1.20 MB) addressing updated conservation needs for Applegate's milkvetch was released in 2009.

### **Did you know?**

Applegate's milkvetch was thought to be extinct until it was rediscovered in 1983.

## References

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