

WINKLER'S PINCUSHION CACTUS *Pediocactus winkleri* Barneby Plant Symbol = PEWI2

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Winkler's pincushion cactus (*Pediocactus winkleri*). Photo by E. Neese

Alternate Names

Winkler's footcactus

Uses

There are no known human or wildlife uses for Winkler's pincushion cactus. Plants are collected illegally by cactus enthusiasts.

Status

Winkler's pincushion cactus was listed as a threatened species by the USDI Fish and Wildlife Service in 1998 (USDI-FWS, 1998). Monitoring data indicate that populations are in decline (USDI-FWS, 2007).

Consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g., threatened or endangered species, state noxious status, and wetland indicator values).

Description

General: Cactus family (Cactus). Winkler's pincushion cactus is a solitary or sometimes colonial, spherical or depressed-hemispheric cactus growing 4 to 7 cm (1.6 to 2.8 in) tall and 3 to 5 cm (1.2 to 2.0 in) wide. The tubercles are 4 to 7 mm (0.16 to 0.28 in) long and 5 to 7 mm (0.20 to 0.28 in) wide. The

areoles are white-wooly with no central spine. There are 8 to 14 white radial spines, 1.5 to 4 mm (0.06 to 0.16 in) long. The flowers are peach to pink with petals and sepals looking similar. The fruit is a smooth green oval-shaped berry drying reddish brown, 7 to 10 mm (0.28 to 0.39 in) long and 8 to 11 mm (0.31 to 0.43 in) wide. The seeds are 2.5 to 3 mm (0.10 to 0.12 in) long and shiny black (Welsh et al., 2003).

In 1995, Hochstatter proposed that Winkler's pincushion cactus and San Rafael cactus (*P. despainii*) be considered subspecies of Brady's pincushion cactus (*P. bradyi*), a federally listed species from northern Arizona. However; Heil and Porter (2004) showed through DNA analysis that *P. winkleri* and *P. despainii* were more closely allied to, but distinct species from mountain ball cactus (*P. simpsonii*).

Distribution:

There are four known populations of Winkler's pincushion cactus located in north central Wayne County, Utah on the eastern boundary of Capitol Reef National Park to extreme southwest Emery County, Utah. There are approximately 4,500 documented individuals of Winkler's pincushion cactus in known populations and an additional 20,000 individuals estimated in unsurveyed available habitat (USDI-FWS, 2007). The majority of Winkler's pincushion cactus habitat is located on Federal lands managed by USDI-BLM and USDI-NPS.

For current distribution, consult the Plant Profile page for this species on the PLANTS Web site.

Habitat:

Winkler's pincushion cactus occurs in the galleta-three awn shrub steppe and salt desert shrub plant communities in association with saltbush (*Atriplex* spp.) galleta (*Hilaria* sp.) and purple three awn (*Aristida purpurea*) (USDI-FWS, 2007).

Adaptation

This species is adapted to poor quality, saline, fine-textured substrates of the Dakota, Mancos and Morrison Formations from 1,460 to 1,590 m (4,790 to 5,220 ft) (Welsh et al., 2003). Average annual precipitation for the area is 15 to 25 cm (6 to 10 in) (USDI-FWS, 2007).

Management

Threats to Winkler's pincushion cactus include illegal plant collecting, off road vehicle (ORV) use and livestock trampling, mineral exploration, insect infestations, and climate change (USDI-FWS, 2007). Conservation measures for this species include mitigating the effects of human land use activities on known populations, and preventing the illegal collection of plants from natural populations. Further work surveying suitable habitat and determining biological and ecological factors for the species distribution are also indicated (USDI-FWS, 2007).

Pests and Potential Problems

Winkler's pincushion is known to be susceptible to infestations of insect larvae including the cactus borer beetle (*Moneilema semipunctatum*) (USDI-FWS, 2007).

Environmental Concerns

There are no known environmental concerns associated with Holmgren milkvetch.

Seed and Plant Production

Cuttings of Winkler's pincushion cactus were successfully rooted spontaneously on hormone-free media and were subsequently re-established in the greenhouse (Clayton et al., 1990).

References

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