ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract **Element Code:** PDCAC0X060
Data Sensitivity: Yes

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Escobaria alversonii* (J.M. Coult.) N.P. Taylor, comb. nov. ined.
COMMON NAME: Alverson's Pincushion Cactus, Cushion Foxtail Cactus, Foxtail Cactus, Foxtail Beehive
SYNONYMS: *Coryphantha alversonii* (Coult.) Orcutt, *Coryphantha vivipara* var. *alversonii* (Coult.) L. Benson, *Escobaria vivipara* var. *alversonii* (Coult.) D.R. Hunt, *Mammillaria alversonii* (Coult.) Coult. ex Zeissold, *Mammillaria radiosa* var. *alversonii* (Coult.) K. Schum., *Cactus radiosus* var. *alversonii* J.M. Coult.
FAMILY: Cactaceae

AUTHOR, PLACE OF PUBLICATION: *Escobaria alversonii* (J.M. Coult.) N.P. Taylor, Cactaceae Consensus Initiatives, 3: 10, 1997. *Cactus radiosus* var. *alversonii* J.M. Coult., Contributions from the United States National Herbarium 3(2): 122, 1894.

TYPE LOCALITY: Lectotype (Benson, loc. Cit., 1969): "Mojave Desert, Calif., A.H. Alverson…McHaney's Mine near 29 Palms. S.B.P. [Parish]," UC 205017.

TYPE SPECIMEN: Lectotype (Benson, loc. Cit., 1969): UC 205017. See Above.

TAXONOMIC UNIQUENESS: Species *alversonii* is 1 of 16 species in the genus *Escobaria*. It was treated as *Escobaria vivipara* var. *alversonii* in Hickman (1993). The species-level combination in *Escobaria* was published in 1997 by Taylor, and is accepted by Kartesz (1999), and is followed by NatureServe (2001, 2004). (See **Additional Information** for expanded discussion of taxonomic history).

DESCRIPTION: A small cactus with unbranched cylindric stems, 8-15 cm (3-6 in) long and 6-8 cm (2.5-3 in) in diameter. Clusters of up to 20-30 stems sprout from the base, are densely and uniformly clothed by spines, and usually with more than ½ protruding above ground level. Stems are not ribbed, but have up to 13 mm long tubercles with a line-like groove on the upper surface; areolar glands are absent. Spines 30-51 per areole; straight central spines 8-10, 13-16 mm long, white with a dark red or black tip; 12-18 radial spines are similar to central spines in size and color, but lack the dark tip. Flowers are nearly apical, 20-30 x 25-39 mm, vary from magenta to pink in color; outer tepals densely fringed; outer filaments white to pink with white bases; anthers bright dark yellow; stigma lobes 5-9, widely spreading, pure white, 3-4 mm. Pitted seeds are reniform, black or brown in color, 1.3-1.6 mm.

AIDS TO IDENTIFICATION: *Escobaria alversonii* differs from other species due to its large number (8-10) of dark tipped central spines, giving the plant a very densely spiny appearance. Unlike other species in *Escobaria*, which have one layer, *E. alversonii* has two layers of hypodermis, probably reflecting its unusually xeric habitat.

ILLUSTRATIONS: Color photo (Joseph Dougherty (2000) *in* CalFlora 2001, http://www.calflora.org)
Color photos of plants and flowers (http://www.clunet.edu/wf/des/flowers)
Color photo (Brother Alfred Brousseau, courtesy of St. Mary's College of California, *in* http://plants.usda.gov/cgi_bin/plant_search.cgi)
Color photos (*In* http://www.cactiguide.com/cactus/?genus=Escobaria&species=alversonii)

TOTAL RANGE: Found in many mountains of the Mohave Desert in California, from the Little San Bernardino Mountains on the northwest to the Big Santa Maria Mountains in the southeast. It potentially occurs in western Arizona.

RANGE WITHIN ARIZONA: Reported from northwest Arizona, at Pagumpa, Mohave County, but has not been confirmed. If it occurs in Arizona, it is most likely to occur in the southwestern part of the State. According to FNA Editorial Committee (1993+), "Persistent reports of *C. alversonii* for Arizona (L.D. Benson 1969, 1982) are based on a misidentified fragment of either *C. vivipara* var. *rosea* or *C. chlorantha*, depending on its original tepal color."

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Perennial stem succulent.

PHENOLOGY: Day bloomer flowering from May – June; fruit June-July.

BIOLOGY:

HABITAT: Found on rocky slopes over a relatively broad elevational range, from 2,000 to 5,000 feet, and as a result occurs in a variety of plant communities from the higher, colder Mohave desert associations of joshua trees and blackbrush down to the warmer Lower Colorado creosotebush associations (Warren and Laurenzi, 1987).

ELEVATION: 2,000 – 5,000 feet (610-1525 m).

EXPOSURE: Does well in full sun to light shade.

SUBSTRATE: Desert pavement or among stones, sandy or gravelly soils, alluvial fans, coarse alluvial deposits containing granite, gneiss, schist, and quartzite.

PLANT COMMUNITY: It is found in communities ranging from Joshua tree woodland at higher elevations down to creosotebush desertscrub at lower elevations (Warren and Laurenzi, 1987).

POPULATION HISTORY AND TRENDS: Unknown

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: SC (USDI, FWS 1996)
[C2 USDI, FWS 1993]
[C2 USDI, FWS 1990]
[C2 USDI, FWS 1980]
[PTN-T USDI, FWS 1975]

STATE STATUS: Salvage Restricted under *Coryphantha vivipara* var. *alversonii* (ARS, ANPL 1999)

OTHER STATUS: None

MANAGEMENT FACTORS: Although this species is in cultivation, collecting for succulent trade remains a threat to this species.

PROTECTIVE MEASURES TAKEN: A reasonably secure population occurs in the Big Santa Maria Wilderness Study Area (in California), where disturbance is unlikely.

SUGGESTED PROJECTS:

LAND MANAGEMENT/OWNERSHIP: NPS - Joshua Tree National Monument in California.

SOURCES OF FURTHER INFORMATION

REFERENCES:

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION:

Per Warren and Laurenzi (1987), "The genus *Coryphantha* was until recently considered as part of the genus *Mammillaria*. The var. *alversonii* has been treated as a distinct species (Munz and Keck, 1970), but was combined with *C. vivipara* by Benson (1969). It was segregated by Benson based on the presence of the tubercle groove, straight spines, and the position of the flower at the base of young tubercles. It has been suggested that var. *alversonii* should be retrained as a distinct species (Benson 1972, Fischer 1980, Zimmerman 1985)."

Allan Zimmerman has treated *C. alversonii* as a distinct species in his revision of the *C. vivipara* group. His treatment is based in part on the morphology of the hypodermis, which consists of two layers in the rest of the *C. vivipara* group. "This thick skin feature, which contributes to the drought tolerance of the species, may also help explain why *C. alversonii* is found in more arid habitats than other members of the *C. vivipara* group."

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