ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract **Element Code:** PDCAC0J0T0
Data Sensitivity: Yes

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Sclerocactus sileri* (L.D. Benson) K.D. Heil and J.M. Porter
COMMON NAME: Siler Fishhook Cactus, Siler's Fish-Hook Cactus, House Rock Fishhook Cactus
SYNONYMS: *Sclerocactus pubispinus* var. *sileri* L.D. Benson; *Pediocactus pubispinus* ssp. *sileri* (L.D. Benson) Halda; *P. whipplei* ssp. *busekii* (Hochstätter) Halda; *S. whipplei* ssp. *busekii* Hochstätter
FAMILY: Cactaceae

AUTHOR, PLACE OF PUBLICATION: *Sclerocactus pubispinus* (Engelm.) D. Woodruff & L. Benson var. *sileri* L. Benson, The Cacti of Arizona, ed. 3. 23:179. 1969. *Sclerocactus sileri* (L. Benson) K.D. Heil & J.M. Porter, nom. et stat. nov., Haseltonia, 2:39. 1994.

TYPE LOCALITY: Southern Utah, 1888, P.H. Siler. See "**Total Range**" for comments.

TYPE SPECIMEN: IT: US, P.H. Siler s.n. (F). 1888.

TAXONOMIC UNIQUENESS: "J. Busek (1983) applies the name *S. pubispinus* var. *sileri* to those cacti in southwestern Utah and Nevada; however, *S. pubispinus, S. spinosior,* and *S. blainei* of the Great Basin are not the same species as *S. sileri*, which is found on the Arizona strip" (Heil and Porter 1994). According to Heil and Porter (1994, in FNA 2003[2004]), based on field investigations and herbarium collections, *Sclerocactus sileri* is restricted to northeast Coconino County, Arizona. It is an enigmatic cactus sharing morphological characteristics with *S. pubispinus* and *S. whipplei* (F. Hochstätter 1996, in FNA 2003[2004]). Though the floral color and morphology is reminiscent of *S. whipplei*, the fruit dehiscence and adaxial central spine morphology is much like that found in *S. pubispinus* and *S. spinosior*. "Phylogenetic analyses of chloroplast DNA sequences (J.M. Porter et al. 2000) provided evidence that *S. sileri* is the sister taxon to a clade including *S. brevispinus*, *S. whipplei*, *S. cloverae*, *S. glaucus*, *S. parviflorus*, *S. wetlandicus*, and *S. wrightiae*. Therefore, there is no support for immediate links between *S. sileri* and either *S. whipplei* or *S. pubispinus*." (FNA 2003[2004]). "*S. pubispinus* var. *sileri* included in *S. spinosior* in Kartesz (1994), but recognized as distinct, at the species level in Kartesz (1999)." (NatureServe 2002, 2011). *Sclerocactus spinosior* is restricted to Utah.

DESCRIPTION: A perennial succulent, generally 2(1-branched) green unbranched stems, depressed globose, 4-8.5 cm (1.6-3.35 in) x 3-5.5 cm (1.18-2.2 in). Ribs usually 13, not well-developed, with 7-12 mm long tubercles protruding on low ribs. The Spines obscure the stems or nearly so; radial spines 6-8(-12) per areole, needle shaped, elliptic in cross section 5-15 x 0.5-0.8

mm. Central spines 4-5 per areole, spines 12-35 x 0.5-1 mm, turned or curving somewhat downward. The lower spine (abaxial) white, gray or purplish tinged, angled, strongly hooked and slightly contorted 1-2 per areole. The adaxial central spines 1-2 per areole, erect, recurved, white to tan, strongly flattened, conspicuous, 13-40 x 0.8-2 mm. Flowers funnelform to campanulate (cup-shaped with a flaring rim), 2.5-3 x 2-3 cm, with a glabrous exterior tube. The outer tepals have brownish and yellowish margins, larger oblanceolate, 10-17 x 5-8 mm; apex mucronate, marginally membranous, crisped or minutely toothed. Inner tepals yellow, sometimes suffused with brown, largest tepals oblanceolate, 15-25 x 5-7 mm, apex mucronate; filaments are white to greenish white, 7-10 mm long; anthers yellow, about 1 mm long; styles minutely but densely papillate, yellowish-green, 14-20 mm long. Fruits dehiscent along 2-4 vertical slits, green, turning red to tan, ovoid, 8-25 x 8-14(-22) mm, dry; ovary 3-7 mm long at anthesis. Black to light brown seeds 2.7-3 x 2.2-2.5 mm; testa with rounded papillae. (FNA 2002[2004]).

AIDS TO IDENTIFICATION: *Sclerocactus sileri* has "characteristics similar to both *S. whipplei* and *S. spinosior*. The spination and flower color is reminiscent of *S. whipplei*; however, the fruit dehisces (by 2-4 longitudinal slits) as in *S. spinosior*." (Heil and Porter 1994). It is distinguished from *S. whipplei* and *S. parviflorus* which have fruits with basal dehiscence.

ILLUSTRATIONS:

Color photo (Heil and Porter 1994: Fig. 18)
Color photo of plant and habitat (ARPC 2001)
B&W drawing (ARPC 2001)
Color photo (Rakkasan Barnett, 2008 in CalPhoto)

TOTAL RANGE: Northeast Coconino County, Arizona based on Heil and Porter's treatment in FNA (2003[2004]).

Inconsistencies exist to the range of this species, mainly due to the confusion of the taxonomy over the years. Even the 1994 (Heil and Porter) revision of *Sclerocactus*, provides conflicting information on the range. They state that the distribution is Coconino County, Arizona and Clark County, Nevada. However they list the type locality as "Southern Utah", and then provide a range map (Fig. 25, based on herbarium collections), showing that it only occurs in northern Coconino County, Arizona. Future distribution studies may be in order.

RANGE WITHIN ARIZONA: Northeast Coconino County, House Rock Valley and Paria Plateau.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Perennial succulent.

PHENOLOGY: Flowers late April-May, with fruits May-June.

BIOLOGY:

HABITAT: Pinyon-juniper woodlands and grama grasslands, often on mesa tops.

ELEVATION: In Arizona: 4,200-7,040 ft (1280-2146 m). Elevation reported by FNA (2003[2004]) ranges from 1600-1700 m (5249-5577 ft).

EXPOSURE:

SUBSTRATE: Silty sand or clay soils, often with gravel, in Moenave, Chinle and Navajo Formations.

PLANT COMMUNITY: Pinyon-juniper woodlands, and grama (*Bouteloua*) grasslands with dropseed (*Sporobolus*), yucca (*Yucca*), hedgehog cactus (*Echinocereus*), sagebrush (*Artemisia*), and snakeweed (*Gutierrezia*). (FNA 2003[2004]).

POPULATION HISTORY AND TRENDS: Not well known. It is difficult to locate in the field, and appears to be quite rare and potentially in need of protection.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1990)
[3C Full Sp. Syn. *S. pubispinus* USDI, FWS 1985]
[C1 Full Sp. Syn. *S. pubispinus* USDI, FWS 1980]

STATE STATUS: Salvage Restricted under *S. spinosior* syn. *S. pubispinus var. sileri* (ARS, ANPL 1999, accessed 2011)

OTHER STATUS: Bureau of Land Management Sensitive (USDI, BLM AZ 2008, 2010)

MANAGEMENT FACTORS:

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Ecological studies needed including biology, trend and threat information, along with distribution studies, which is needed to solve conflicting confusion of this species range.

LAND MANAGEMENT/OWNERSHIP: BLM – Arizona Strip Field Office; Private; State Land Department.

SOURCES OF FURTHER INFORMATION

REFERENCES:

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ADDITIONAL INFORMATION:

Revised: 2003-02-21 (AMS)
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