



**ARIZONA GAME AND FISH DEPARTMENT  
HERITAGE DATA MANAGEMENT SYSTEM**

**Plant Abstract**

**Element Code:** PMAGA010N2

**Data Sensitivity:** YES

**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Agave schottii* var. *treleasei* (Toumey) Kearney & Peebles  
**COMMON NAME:** Trelease Agave, Schott Agave, Trelease Shindagger, Trelease's century plant  
**SYNONYMS:** *Agave treleasei* Toumey  
**FAMILY:** Agavaceae

**AUTHOR, PLACE OF PUBLICATION:** *Agave schottii* var. *treleasei* (Toumey) T.H. Kearney, and R.H. Peebles, Jour. Wash. Acad. Sciences 29(11): 474. 1939. *Agave treleasei* Toumey, Annual Rep. Missouri Bot. Gard. 12: 75-76, pl. 32-33. 1901.

**TYPE LOCALITY:** USA: Arizona: Pima County: Castle Rock, SW slope of Santa Catalina Mt.

**TYPE SPECIMEN:** HT: Toumey s.n. ("in herb. Toumey"); possibly IT at: ARIZ, MO, US. "Present location of specimen unknown" (Phillips and Hodgson 1991). What appears to be an isotype found at MO (Hodgson, 1995).

**TAXONOMIC UNIQUENESS:** The variety *treleasei* is 1 of 2 in the species *Agave schottii*; the other is var. *schottii*. In North America, the species *schottii* is 1 of 34 in the genus *Agave*. There are more than 200 species recognized from the southern USA to northern South America, and throughout the Caribbean. The variety *treleasei* is very rare and poorly known. In the Santa Catalina Mountains, it is possibly a polyploid form of *schottii*, or another case of hybridization between *A. chrysantha* or *A. palmeri* and *A. schottii* var. *schottii* (Hodgson 1987 Pers. Comm.). Formerly, a population in the Ajo Mountains was thought to be a disjunct population of var. *treleasei*, but through genetic testing, it was determined to be of hybrid origin between *Agave s. var. schottii* and *Agave deserti* var. *simplex*, and was assigned the name *Agave x ajoensis* (Ajo Agave). (Flora of North America 1993+; Hodgson 2001).

**DESCRIPTION:** Perennial succulent with dark green leaves without bud imprints, 1.2-2.5 cm wide, 20-50 cm (8-20 in) long, inwardly curved, with little or no fibers on the margins (nonfiliferous); short rootstock. The apical spine is brown, stout and firm, 1.2-1.9 cm long. Flowering stalk (scape) is 2-4 m (6.6-13.1 ft) tall. The inflorescence is subspicate to narrowly racemose-paniculate; peduncle 0.4-4 cm long. Flowers are deep yellow, paired, 2(-6) per cluster, 3.5-5.0 cm (1.4-2.0 in.) long, and a quarter to a third as wide. Petals curved inward at top of flower slightly zygomorphic; perianth tube 11 x 13 mm; filaments (bearing anthers) inserted 8 mm above the perianth base. The ovary is 1.6 cm, the capsules of the fruit breaking into three sections when dry; seeds are rarely produced. Vegetative reproduction occurs by offsetting. (Falk et al. 2001; Flora of North America 1993+).

**AIDS TO IDENTIFICATION:** *Agave schottii* var. *treleasei* differs from *A. schottii* var. *schottii* by its larger, wider, thicker and darker green leaves, and no marginal fibers. The inflorescence has short lateral branches. Flowers differ from *A. s.* var. *schottii* by being larger, less zygomorphic, a deeper yellow, and with a tube that is less deep. *Agave schottii* var. *treleasei* is not conspecific with *A. x ajoensis* (found in Organ Pipe Cactus NM), from which it differs by its distribution, curved, dark green leaves (vs. leaves mainly straight, light green), and paired flowers (vs. 4-6 per cluster). (Falk et al. 2001; Flora of North America 1993+).

**ILLUSTRATIONS:** Black and white drawing (Benson and Darrow 1981: Fig. 3.40.)  
Color photo (USFWS, in Kelly and McGinnis 1994)  
Black and white drawing (M. Chamberland, in Kelly and McGinnis 1994)  
Color photos of species and flowers (Epple, 1995: Pl. 139A, 139B)  
Black and white line drawing (Falk et al. 2001).  
Color photos of plant and habitat (USFS, in Falk et al. 2001).  
Color photo (DBG 1999, in [http://www.dbg.org/Collections/agave\\_schottii.html](http://www.dbg.org/Collections/agave_schottii.html)).  
Color photo (Lynda Pritchett-Kozak, in Center for Plant Conservation web site, <http://ridgwaydb.mobot.org/cpcweb/>).  
Color photo (P. Faucon 1998-2003, in Desert Tropicals, [http://www.desert-tropicals.com/Plants/Agavaceae/Agave\\_treleasei.html](http://www.desert-tropicals.com/Plants/Agavaceae/Agave_treleasei.html)).  
Color photo (Dr. E.F. Gilman, in 2001 Hortipix, Inc., <http://www.hortpix.com/pc258.htm>).

**TOTAL RANGE:** Santa Catalina Mountains, Pima County, Arizona.

**RANGE WITHIN ARIZONA:** Santa Catalina Mountains, Pima County, and Pinal County (large-leaved clone of 9 plants in 1987). Possibly in Cochise County (DBG 1999).

## **SPECIES BIOLOGY AND POPULATION TRENDS**

**GROWTH FORM:** Succulent perennial shrub/subshrub.

**PHENOLOGY:** Flowering late spring to summer (May-July). Hodgson (1994) reports flowering from May to June. In Phillips and Hodgson (1991), "Flowers late April-May, but is rarely successful due to herbivore predation of the scapes and stems of flowering rosettes. Offsetting prolongs the longevity of clones, potentially indefinitely' clones observed had from 1-50 offsets."

**BIOLOGY:** The population in the Santa Catalina Mts., on gneiss substrate, may be a polyploid of *A. schottii* var. *schottii*, or, more likely, of hybrid origin between *A. s.* var. *schottii* and *A. chrysantha* or *A. palmeri*. For a complete discussion of the taxonomic issues for this variety, see Phillips and Hodgson, 1991.

This species likely has its flower pollinated by bats and/or hawk moths, like most *Agave* species. It grows in full sun, has an excellent tolerance to heat, requires little water, and prefers a minimum average temperature of 50°F (10°C).

**HABITAT:** Gravelly to rocky places, mostly in desert scrub, grasslands, juniper and oak woodlands.

**ELEVATION:** 3,600 – 6,557 feet (1098-2000 m).

**EXPOSURE:** All aspects with slope of 0-20°; somewhat open.

**SUBSTRATE:** Santa Catalinas: gneisses.

**PLANT COMMUNITY:** Semi-desert grassland, lower oak woodland. For a full discussion of vegetation, and biotic community, see Phillips and Hodgson 1991. Associated species may include: *Agave chrysantha* (Golden flower agave), *A. palmeri* (Palmer agave), *A. schottii* (Schott agave), *Calliandra* sp. (Stickpea), *Cercidium* sp. (= *Parkinsonia*, paloverde), *Cereus giganteus* (= *Carnegiea gigantea*, Saguaro cactus), *Coursetia* sp. (Babybonnets), *Dasyilirion wheeleri* (Spoonflower), *Dodonea viscosa* (Hopbush, native of Australia and New Zealand), *Ericameria* sp. (Goldenweed), *Eriogonum* sp. (Wild-buckwheat), *Eysenhardtia* sp. (Kidneywood), *Ferocactus wislizeni* (Southwestern Barrel-cactus), *Fouquieria splendens* (Ocotillo), *Gutierrezia* sp. (Snakeweed), *Opuntia engelmannii* (Prickly-pear), *Opuntia phaeacantha* (New Mexican Prickly-pear), *Prosopis* sp. (Mesquite), *Quercus* sp. (Oak), *Rhamnus crocea* (Red-berry Buckthorn), *Selaginella* sp. (Spike-moss), and *Yucca schottii* (Schott's Yucca).

**POPULATION TRENDS:** Not well known. *Agave schottii* var. *treleasei* is known with certainty from less than a dozen clones in south-central Arizona (Pima County). (Falk et al. 2001). Phillips and Hodgson (1991) report that there is only a single occurrence of *A. s.* var. *treleasei* in habitat, located in the Santa Catalina Mountains. When the type locality was revisited in 1940, only a few plants were found (Benson and Darrow 1981).

## **SPECIES PROTECTION AND CONSERVATION**

**ENDANGERED SPECIES ACT STATUS:** None (USDI, FWS 1996)  
 [C2 USDI, FWS 1993]  
 [C2 USDI, FWS 1990]  
 [C2 USDI, FWS 1985]  
 [C2 USDI, FWS 1980]  
 [PE USDI, FWS 1976]  
 [PTN-E USDI, FWS 1975]

**STATE STATUS:** Highly safeguarded (ARS, ANPL 1999)  
 [Highly Safeguarded (ARS, ANPL 1993)]

**OTHER STATUS:** Forest Service Sensitive (USDA, FS Region  
 3 1999)

[Forest Service Sensitive USDA, FS Region  
3 1990]

**MANAGEMENT FACTORS:** The main threat is its inherent rarity. It occurs in isolated, relatively secure locations. However, direct site impacts should be avoided.

**CONSERVATION MEASURES TAKEN:**

**SUGGESTED PROJECTS:** Taxonomic clarification is needed, along with additional surveys and monitoring. Hodgson (1991) suggests that this species should be looked for wherever *A. chrysantha*, *A. schottii schottii*, *A. palmeri* and *A. parryi* are sympatric. Naturally flowering plants should be looked for. Fence construction around single clones of agaves with affinities to var. *treleasei* showing signs of flowering may be needed to 1) collect pollen for breeding experiments and storage, 2) collect buds for chromosome counts, 3) conduct breeding experiments, and 4) obtain data on flower morphology and its pollinators (Hodgson 1989).

**LAND MANAGEMENT/OWNERSHIP:** USFS - Coronado National Forest.

## **SOURCES OF FURTHER INFORMATION**

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#### ADDITIONAL INFORMATION:

The name *Agave* is derived from the Greek word *agaue*, meaning “noble,” referring to their tall flower stalk. The species name *schottii*, is in honor of Arthur Schott, who assisted Major William H. Emory on the United States-Mexico boundary survey in 1854.

Cloning species. Toumey planted them on University of Arizona campus where they were since destroyed. Not recollected for almost 100 years.

<b>Revised:</b>	1991-11-10 (PLW)
	1991-10-18 (BKP)
	1991-12-04 (SR)
	1995-02-28 (WCH)
	1997-07-21 (SMS)
	2003-05-15 (SMS)
	2005-02-17 (SMS)

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