

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

**Plant Abstract**

**Element Code:** PMAGA010R1

**Data Sensitivity:** Yes

**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Agave toumeyana* var. *bella* Breitung

**COMMON NAME:** Toumey's Agave, Toumey Agave, Toumey's century plant, fairy-ring agave, miniature century plant

**SYNONYMS:** *Agave toumeyana* ssp. *bella* (Breitung) Gentry

**FAMILY:** Agavaceae

**AUTHOR, PLACE OF PUBLICATION:** Breitung, Cactus and Succulent J. (Los Angeles) 32(3): 81, f. 41. 1960.

**TYPE LOCALITY:** Indian Coral Mesa near Parker Creek, Sierra Ancha, Gila County, Arizona, USA.

**TYPE SPECIMEN:** HT: CAS. Breitung & Gibbons 18153.

**TAXONOMIC UNIQUENESS:** There are 10 genera in Agavaceae. The species *toumeyana* is 1 of 36 in the genus *Agave* and var. *bella* is 1 of 2 varieties in *A. toumeyana*. The other variety *A. t.* var. *toumeyana* is also an endemic to central Arizona. (USDA PLANTS 2008).

**DESCRIPTION:** In the genus *Agave*, plants are monocarpic, perennial scapose herbs, frequently suckering at the base. The caudex is thick, usually short, simple or branched, and the roots are fibrous and hard. The species *Agave toumeyana* have rosettes of leaves that are firm and spin tipped, densely caespitose, (3-)10-50 cm [(1.18-)4-20 in] high and 15-60 cm [6-24 in] wide. Leaves in the variety *A. t.* var. *bella* are numerous, 100 or more, of equal length giving a flat-topped appearance, (3-)9-20(-27) cm long, 0.6-1.2 cm wide. The margins of the leaves have a brown border that is replaced by small teeth 1/2 to 2/3 down the leaf to the base. Leaves are linear to linear-lanceolate, strait, falcate, or upcurving, planar towards the apex, and thickly convex towards the base, and rather rigid; whitish threads run along the leaf margins. Color ranges from light green to yellowish-green to dark green, with bud-imprint above and below. In var. *bella* the inflorescence is a scape about 1.5-3 m (5-10 ft) tall, subspicate, laxly or densely flowered in the upper 1/3 of the flowering stalk; the slender stalk is green or red. The funnelform flowers are generally in pairs (of 4-12 flowers) on short pedicels, 16-21 mm long, flexed downward, the fragrance not discernable. Tepals are subequal, 6.5-7 mm long and 2.5-3 mm wide, cream to light chartreuse green, clasping the filaments; filaments are 11-13 mm long, inserted 1-3.5 mm above the base of the tube, white, while the anthers are 7-13 mm long and yellow-cream in color. The ovary is 8-12 mm long with a 2-6 mm long neck that is constricted, the style is 18-24 mm long when the stigma is

receptive; the cream-green floral tube is 3-4.5 mm high and 6-10 mm wide and angled. Seed capsules are ovoid to oblong, 9-15 mm long and 9-10 mm wide, sessile and short-beaked; seeds are thick, 2-4 mm long and 3-4 mm wide. (Hodgson 1999; eFloras 2008).

**AIDS TO IDENTIFICATION:** The leaves of *Agave toumeyana* var. *bella* are 100-200 per mature rosette, 9-20 x 0.5-1.2 cm in size with margins denticulate below mid leaf, making up an equal length rosette. Leaves of *A. t.* var. *toumeyana* are 40-70 per mature rosette, 19-46 x 1.2-2 cm in size with margins dentate, or denticulate only near the base, making up an uneven and looser rosette. (eFloras, 2008). In addition, variety *toumeyana* is found at slightly lower elevations from 600-1500m, compared to var. *bella*'s elevation range of 800-1700m. *A.t.* var. *toumeyana* can be found in Gila, Graham, Maricopa and Pinal counties, where as *A.t.* var. *bella* is found in Gila, Maricopa, and Yavapai counties.

#### **ILLUSTRATIONS:**

Line drawing of distribution map (eFloras at

[http://flora.huh.harvard.edu/FloraData/001/Map/26/agave\\_toumeyana\\_var\\_bella.jpg](http://flora.huh.harvard.edu/FloraData/001/Map/26/agave_toumeyana_var_bella.jpg))

Line drawing of plant & parts (eFloras at

[http://www.efloras.org/object\\_page.aspx?object\\_id=8022&flora\\_id=1](http://www.efloras.org/object_page.aspx?object_id=8022&flora_id=1))

Color photo of specimen (M. Butterwick 3990, ASU 101132 in

<http://seinet.asu.edu/seinet/collections/> accessed 2008)

Color photo (L.E. Epple, in A. Orth Epple's Plants of Arizona 1995: Pl. 145)

Line drawing (Regena Hughes, in H.S. Gentry's Agaves of Continental North America, 1982: Fig. 8.13.)

Photos (In H.S. Gentry's Agaves of Cont. N. Amer., 1982: Fig. 8.14.)

Color photos (In Cactus Art Nursery at <Http://www.cactys-art.biz>)

Color photo (by Growin 2008, See

[http://pics.davesgarden.com/pics/growin\\_1203310212\\_941.jpg](http://pics.davesgarden.com/pics/growin_1203310212_941.jpg))

Color photos (Julia Etter & Martin Kristen, in Globetrotters Website-Botanical Databases-Data of Species, <http://www.globetrotter.ch/>)

Color photo (Stan Shebs, July 2006 In

[http://commons.wikimedia.org/wiki/image:Agave\\_toumeyana\\_var\\_bella\\_1.jpg](http://commons.wikimedia.org/wiki/image:Agave_toumeyana_var_bella_1.jpg))

**TOTAL RANGE:** Endemic to the counties of Gila, Maricopa, Pinal, and Yavapai counties in Arizona, where individuals are scattered in known populations.

**RANGE WITHIN ARIZONA:** Commonly known populations include the Sierra Ancha (Gila County), north of Camp Verde (Yavapai Co.), east and northeast of Cordes Junction (Yavapai Co.), New River Mountains (Maricopa/Yavapai counties), southwest of Bloody Basin and also the eastern slopes of the Bradshaw Mts. (Yavapai Co.).

#### **SPECIES BIOLOGY AND POPULATION TRENDS**

**GROWTH FORM:** Succulent perennial shrub.

**PHENOLOGY:** Flowers May-June(-July; also reported as mid spring to early summer). eFloras (2008) reports flowering period as late spring.

**BIOLOGY:** Reproduction occurs by suckers and seed. No sexual reproduction is taking place (1999 Diversity Review Team).

**HABITAT:** Open rocky, limestone or basalt slopes (often above cliffs) of desert scrub, chaparral, and pinyon-juniper woodland. Based on several collections (In SEINet, accessed 2008), the various habitats include woodland/desertshrub transition, chaparral-woodland transition (on slopes/ledges above cliff).

**ELEVATION:** Between 800-1700 m (2623-5574 ft). (Hodgson 1999, eFloras 2008).

**EXPOSURE:** Open slopes.

**SUBSTRATE:** Gravelly to open rocky, limestone or basalt slopes (Hodgson 1999; eFloras 2008). A collection of var. *bella* was made in 1991, by J McAuliffe on deep clayey, reddish-brown, non-calcareous soil developed on basaltic and andesitic alluvium (SEINet 2008).

**PLANT COMMUNITY:** Mostly found with desert scrub, chaparral, juniper grassland, juniper-oak grassland, and pinyon-juniper woodlands. Associated species include: *Abutilon incanum* (pelotazo), *Acacia greggii* (catclaw acacia), *Acourtia wrightii* (brownfoot), *Agave chrysantha* (goldenflower century plant), *Baccharis pteronioides* (yerba de pasmo), *Berberis* (=Mahonia) *haematocarpa* (red barberry), *Bothriochloa* (beargrass), *Bouteloua* (grama), *Bouteloua curtipendula* (sideoats grama), *Bromus rubens* (red brome), *Dodonaea* (hopbush), *Echinocereus fasciculatus* (pink-flower hedgehog cactus), *Ericameria* (goldenbush), *Evolvulus arizonicus* (wild dwarf morning-glory), *Fouquieria* (ocotillo), *Gutierrezia sarothrae* (broom snakeweed), *Hilaria* (=Pleuraphis) *mutica* (Tobosagrass), *Hilaria* (=Pleuraphis) *rigida* (big galleta), *Juniperus* (juniper), *J. deppeana* (alligator juniper), *Nolina* (beargrass), *Opuntia phaeacantha* (tulip pricklypear), *Pinus edulis* (twoneedle pinyon), *Quercus* (oak), *Q. emoryi* (Emory oak), *Q. turbinella* (Sonoran scrub oak), *Selaginella* (spikegrass), *Yucca baccata* (banana yucca), and *Ziziphus obtusifolia* (lotebush). (SEINet, accessed 2008).

**POPULATION TRENDS:** Unknown.

## **SPECIES PROTECTION AND CONSERVATION**

**ENDANGERED SPECIES ACT STATUS:** None  
**STATE STATUS:** Salvage Restricted (ARS, ANPL 1999)  
[Salvage Restricted (ARS, ANPL 1993)]  
**OTHER STATUS:** Appendix 2, CITES

**MANAGEMENT FACTORS:** This variety is used in cultivation, thus special attention should be made to known sites to protect against illegal collection. On many herbarium vouchers in SEINet it was commonly noted that the “area heavily grazed by cattle.” (ASU Data Dump from SEINet, 2008).

**PROTECTIVE MEASURES:**

**SUGGESTED PROJECTS:**

**LAND MANAGEMENT/OWNERSHIP:** USFS – Tonto National Forest.

### **SOURCES OF FURTHER INFORMATION**

#### **REFERENCES:**

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USDA, NRCS. 2008. The PLANTS Database (<http://plants.usda.gov>, 9 July 2008). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.

**MAJOR KNOWLEDGEABLE INDIVIDUALS:**

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**ADDITIONAL INFORMATION:**

*Agave* is from the Greek word meaning **noble**. The species name *toumeyana* is for **J. W. Toumey**, while the variety name *bella* means “**pretty**.”

*Agave toumeyana* var. *bella* hybridizes with *A. chrysantha* in Gila, Maricopa, and Yavapai counties (Hodgson 1999).

This relatively easy-to-grow variety is very cold hardy, theoretically hardy to -12°C (or more) particularly when dry. It does well in full sun or lightly shaded areas, and is drought tolerant which makes it desirable landscape companion plant.

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