

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

Plant Abstract

Element Code: PDCAC08081

Data Sensitivity: Yes

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Ferocactus cylindraceus* var. *cylindraceus*

COMMON NAME: California barrel cactus, Desert barrel cactus

SYNONYMS: *Echinocactus viridescens* Torr. & A. Gray var. *cylindraceus* Engelm.,
Echinocactus cylindraceus Engelm., *Echinocactus acanthodes* Lem.;
Ferocactus acanthodes (Lem.) Britt. & Rose

FAMILY: Cactaceae

AUTHOR, PLACE OF PUBLICATION: *Ferocactus cylindraceus* (Engelm.) Orcutt,
Cactography 1926(1): 5. 1926. MBG (accessed 2005) list citation as "Proc. Amer. Acad. Arts
Sci. 3: 275. 1856," which is the citation for *Echinocactus cylindraceus*.

TYPE LOCALITY: Found near San Felipe, on the eastern slope of the California Mountains, San
Diego County, California.

TYPE SPECIMEN: HT: MO. C.C. Parry in 1849 or 1850.

TAXONOMIC UNIQUENESS: *Ferocactus cylindraceus* is 1 of 5 species in the genus, and
variety *cylindraceus* is 1 of 3 in the species. All 3 varieties occur in Arizona and also include *F.*
c. var. *eastwoodiae* and *F. c.* var. *lecontei*. "The name *Ferocactus acanthodes* has been widely
applied to this species but was based on a small plant of unknown origin (and the specimen was
lost), and is therefore ambiguous (N.P. Taylor 1979). The vernacular name "compass barrel" is
sometimes misapplied to *Ferocactus cylindraceus*, which grows straight up in its old age, instead
of leaning as would *F. wislizeni*." (FNA 1993+).

DESCRIPTION: Perennial stem succulent (nearly always single stemmed): stem straight, erect
or nearly so (or leaning), and cylindric. It grows up to 10 feet (3 m) tall, but is generally less than
half that, measuring 4.5-15.0 x 2.5-4.0 dm [1.5-5 x 0.8-1.3 ft]. The ribs, (18-)21-31, are
shallowly notched immediately above each areole. There are (12-)10-18(-32) spines per areole,
with the central spines and the larger radial spines whitish, yellow, pink, dull red, or brown. The
spines are erect and spreading, with the longest recurved, generally with some red, becoming
gray. Central spines are 7.5-17 cm (3-7 in) long, with 4 per areole. FNA (1993+) reports length
of 3.6-14 cm. Crowns of flowers are crowded among the dense spines at the stem tips. Flowers
3-6 x 4-6 cm (1.2-2.4 x 1.6-2.4 in), maroon on the outside, and yellow on the inside; the inner
tepals are commonly yellow; stigma lobes yellow (to red). The ovary is 9-12 mm long, scales
fringed; the style is 12-20 mm long. The fruit is yellow, egg shaped, readily dehiscent through

basal pore, about 1.5 inches long and 1 inch wide, leathery or fleshy, locule dry, hollow except for seeds. Seeds are 2-3 mm long, pitted. (Benson 1982; FNA 1993+; ASDM 2000).

AIDS TO IDENTIFICATION: Varieties *lecontei* and *eastwoodiae* occur at higher elevations (750-1500 m and 390-1140 m respectively) than variety *cylindraceus* (60-600 m). The central spine of var. *lecontei* is shorter, while the central spine of var. *eastwoodiae* is conspicuously yellow or straw-yellow. The central spine of var. *cylindraceus* is much longer and more twisted on the lower part of the plant. The Southwestern Barrel Cactus (*Ferocactus wislizenii*) is larger, has yellow-orange or red-orange flowers, and is found in the Sonoran and Chihuahuan deserts. If one fails to notice the hooked spines, this species could be confused with a young saguaro.

ILLUSTRATIONS: Color photo (USDA, NRCS. 2002).
Color photo (<http://www.clunet.edu/wf/des/flowers/fwr-34.htm>)
Color photo (Robert Potts 2001, CalPhotos, <http://elib.cs.berkeley.edu/>)
Color photos (Gerald and Buff Corsi 1999, CalPhotos, <http://elib.cs.berkeley.edu>)
Color photo (<http://azwww.az.blm.gov/lhfo/plants/Redbarrel.html>)
Color photo of species and habitat (Taylor, 1998: p. 49)
Line drawing (Hickman, 1993: p. 453)
Line drawing (FNA 1993+, in <http://www.efloras.org>)
Color photo (Jane Villa-Lobos, in <http://plants.usda.gov/>)

TOTAL RANGE: Southeast California, southern Arizona, and Baja California and Sonora, Mexico.

RANGE WITHIN ARIZONA: Yuma County (near the northwest end of the Gila Mountains, and near the south end of the Kofa Mountains). Also from Gila County, Graham, Maricopa County (White Tank Mountains), Pima County (N base of Coyote Mountains).

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Perennial shrub/subshrub (stem succulent).

PHENOLOGY: Flowers during late spring to early summer following winter rains (April-June), but sometimes flowers sporadically after summer rains (where these occur). FNA (1993+) reports flowering from early spring-early summer.

BIOLOGY: Unlike some barrel cactus such as *F. wislizeni*, which leans toward the south as they age (a result of faster growth on the south side), *F. cylindraceus* grows straight up in its old age (FNA 1993+). They are columnar in the wild, but remain barrel-shaped in cultivation. The spines become denser as the species ages. Plants secrete a sugary solution in the summer and autumn, which is thought to attract pollinating ants. The odds that seeds or seedlings reach

maturity is slim, since most seeds never germinate, and the heavy rains required for germination happen about once or twice in a decade. Also, many seedlings and young plants die during drought or are eaten by rabbits and rodents. (Bowers, 1999). The fruit and seeds of genus *Ferocactus* are eaten by rodents, birds, mule deer, bighorn sheep, and javelina. The plant itself is eaten by cactus beetles (*Moneilema gigas* and other species), jackrabbits, packrats, and javelina. Life spans of most barrel cacti are less than a century. (ASDM 2000).

HABITAT: Gravelly or rocky hillsides, canyon walls, alluvial fans, and wash margins in the Mohave and Sonoran deserts, on igneous and limestone substrates. Collected on *Lycium*, *Larrea* flat.

ELEVATION: 200 to 2,900 ft (61-885 m). FNA (1993+) reports the elevation for the species between 0-1500 m.

EXPOSURE: All.

SUBSTRATE: While it will grow on sandy alluvial plains, it also utilizes slopes and Acid Igneous rock lands.

PLANT COMMUNITY: For the species, Interior chaparral, Mohave desertscrub, and Sonoran desertscrub; creosotebush desertscrub, and Joshua tree woodland. Associated species include: *Larrea tridentata* (creosotebush), *Lycium* (desert-thorn).

POPULATION HISTORY AND TRENDS: Widely scattered over its range, but only locally abundant.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: Salvage Restricted (ARS, ANPL 1999)
[Salvage Restricted (ARS, ANPL 1993)]
OTHER STATUS: Determined Subject to Special Protection in Mexico (Proyecto de Norma Oficial Mexicana, 2000)

MANAGEMENT FACTORS: Subject to collection for commercial trade.

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS:

LAND MANAGEMENT/OWNERSHIP: FWS – Cabeza Prieta National Wildlife Refuge; NPS – Tonto National Monument; White Tanks Mountain Regional Park (Maricopa County).

SOURCES OF FURTHER INFORMATION

REFERENCES:

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION:

Variety *cylindraceus* is often found in same habitat has variety *lecontei* (Warren and Laurenzi 1987).

According to FNA (1993+), "The varieties recognized by L.D. Benson (1982) are not consistently distinguishable."

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