

ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract

Element Code: PDBUR01010

Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Bursera fagaroides*

COMMON NAME: Torchwood copal, fragrant bursera, elephant tree

SYNONYMS: *Elaphrium fagaroides* H.B. Kunth.

FAMILY: Burseraceae

AUTHOR, PLACE OF PUBLICATION: *Bursera fagaroides* (Kunth) Engl., Bot. Jahrb. Syst. 1: 41. 1881. *Elaphrium fagaroides* Kunth, Nova Genera et Species Plantarum 7: 27, t. 611. 1824.

TYPE LOCALITY: Crescit in calidis Regni Mexicani, prope Queretaro, alt. 1000 hex., fructificat Augusto, Humboldt & Bonpland s.n. (Missouri Botanical Garden, 2002).

TYPE SPECIMEN: HT: Humboldt & Bonpland 4200, Aug, Mexico: Querétaro: Querétaro (P).

TAXONOMIC UNIQUENESS: *Bursera fagaroides* is 1 of 3 species in the genus *Bursera*, and 1 of 2 species (the other *B. microphylla*) occurring in the southwestern deserts. Two varieties occur in *B. fagaroides*, one of which is known to occur in the U.S. and includes *B. f.* var. *elongata*. Historically, *B. f.* var. *elongata* occurred in Arizona, however, extant populations in the State are unknown. *B. f.* var. *purpusii* occurs in Mexico.

DESCRIPTION: Shrub or small deciduous tree up to 4-5 m (13-16 ft) high in the var. *elongata* (up to 10 m in the species). The bark of the swollen trunk is pale reddish-orange, exfoliating in parchment-like sheets. Stems are at first green, later turning reddish-orange to gray. Leaves are pinnate and glabrous, overall up to 5-7 cm (2-2.8 in) long, borne on short lateral stems. Leaflets number 5-11, are lanceolate, ovate-lanceolate, or narrowly elliptic, mostly 1.5-4 cm long and up to 1 cm wide. The lateral leaflets in var. *elongata* are lanceolate to elliptic-lanceolate, the apex often attenuate. Flowers and fruits are solitary or mostly in small, short-peduncled clusters below a tuft of new leaves at the end of a short branch. The tiny flowers are creamy white, with united sepals for the lower half of their length, and 3-4 mm long petals. The fruit is about 6 mm long, 3-angled, gray to brown, splitting open at maturity (late fall) to expose a single red seed. In the variety *elongata*, the corolla is yellow or greenish-white with the tips of the sepals reddish.

AIDS TO IDENTIFICATION: For *Bursera fagaroides*, lateral leaflets lanceolate or ovate-lanceolate, mostly 1.5-4 cm long; flowers several in a cluster below a tuft of new leaves at the end of a short branch. For *B. microphylla*, lateral leaflets ovate to oblong, mostly 0.5-1 cm long; flowers solitary or mostly in small, short-peduncled clusters. (Benson and Darrow, 1981).

ILLUSTRATIONS: Color photo (in <http://www.charlies-web.com/caudiciform/text55.html>).
Color photos (in <http://www.desert-tropicals.com/Plants.html>)
Color photos of seeds, seedlings, and trunk (in <http://www.gpdessert.com>).
Color photo of var. *elongata* type (NYBG 52354, in

http://scisun.nybg.org:8890/searchdb/owa/wwwcatalog.detail_list?this_id=4359777=)

Color photo (J.S. Peterson 2003, in

http://plants.usda.gov/cgi_bin/large_image_rpt.cgi?imageID=bufa_001_ahp.jpg)

Color photos of plant and flower (D. Post 2004, Moody Demonstration Garden, in http://cals.arizona.edu/yuma/urbanhorticulture/moody_gardens/)

TOTAL RANGE: In northwest Mexico from Baja California and Sonora to Puebla, to southwestern U.S. in southern Arizona (Pima County).

RANGE WITHIN ARIZONA: Baboquivari Mountains, Pima County.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Perennial deciduous tree/shrub.

PHENOLOGY: Flowers July – August. In Mexico, flowers June – July.

BIOLOGY: *Bursera fagaroides* develops a swollen trunk, which makes it an attractive specimen among collectors. The leaves yield copal, which is burned in the Indian churches in Mexico as incense; was used similarly by the Mayas and Aztecs. They are frost tolerant to 24° F (-4° C). In cultivation, they can be container grown for the patio, and can be trained as a bonsai plant.

HABITAT: Semiarid limestone hills, slopes, cliffs, and canyon bottoms. In Mexico, in thorn forests among rocks on shade slope or on hillsides and arroyos with peeling paper boils. (SEINet).

ELEVATION: 3,935-4,590 ft (1200-1400 m). In Mexico, elevation ranges from 738 – 6,000 ft (225-1830 m).

EXPOSURE: South- and east-facing slopes (Mexico).

SUBSTRATE: Limestone; shallow soil or rock slopes; alluvial.

PLANT COMMUNITY: Sonoran Desert scrub; Subtropical scrub in arroyo (Mexico). In Mexico, found with *Lysiloma divariacata* (Mauto) etc., and many Sonoran Desert species (ARIZ 361813 & 361786). Also found in Mexico associated with: *Acacia willardiana* (Palo blanco),

Encelia farinosa (white brittlebush), *Ferocactus* (barrel cactus), *Fouquieria macdougalii* (Tort spinosa), *Jatropha cardiophylla* (Sangre de cristo), *J. cuneata* (limberbush), *Lophocereus* (= *Pachycereus*) *schottii* (senita cactus), *Lycium* (desert-thorn), *Mammillaria* (fishhook cactus), *Mimosa laxiflora* (Arizona mimosa), *Olneya tesota* (desert ironwood), *Opuntia fulgida* (jumping cholla), *Stenocereus thurberi* (Organ Pipe-cactus), and *Tecoma stans* (yellow trumpetbush). (ARIZ s.n. in SEINet).

POPULATION HISTORY AND TRENDS: The var. *elongata* has not been recollected since 1947 (Salywon 1999).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE STATUS: Highly Safeguarded (ARS, ANPL 1999)
OTHER STATUS:

MANAGEMENT FACTORS: Highly sought by collectors, and use in cultivation.

PROTECTIVE MEASURES TAKEN:

SUGGESTED PROJECTS: Surveys to determine if population has been extirpated from state.

LAND MANAGEMENT/OWNERSHIP: Unknown

SOURCES OF FURTHER INFORMATION

REFERENCES:

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ADDITIONAL INFORMATION:

The genus name *Bursera* was named for the German botanist Joachim Burser. The species name *fagaroides* is like Fagara.

Revised: 2002-08-08 (SMS)
2004-09-23 (SMS)

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Arizona Game and Fish Department. 20XX (= **year of last revision as indicated at end of abstract**). X...X (= **taxon of animal or plant**). Unpublished abstract compiled and edited by the Heritage Data Management System, Arizona Game and Fish Department, Phoenix, AZ. X pp.