

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

**Plant Abstract**

**Element Code:** PDRHA0C0D0

**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Rhamnus serrata*  
**COMMON NAME:** Serrate Buckbrush, Saw-leaf Buckthorn  
**SYNONYMS:** *Rhamnus serrulata* (HT), *R. fasciculata*, *R. smithii* ssp. *fasciculata*.  
**FAMILY:** Rhamnaceae

**AUTHOR, PLACE OF PUBLICATION:** Schultes, Josef (Joseph) August. In: Roemer, Johann Jakob, Systema Vegetabilium 5: 295. 1819.

**TYPE LOCALITY:** Mexico: S. Augustin [Nov. gen. sp.: Crescit in planitie Mexicana, prope San Augustin de las Cuevas, alt. 1190 hex]

**TYPE SPECIMEN:** Museum Natl. d'Histoire Naturelle: P 660060 (holotype of *Rhamnus serrulata*). F.W.H.A. von Humbolt and A.J.A. Bonpland, #4126. Notes: Nov. Gen. Sp [H.B.K.] 7:51. 1824.

**TAXONOMIC UNIQUENESS:** There are nine species of *Rhamnus* in the U.S. (some extend into Canada) and seven subspecies. Two species, *R. crocea* (and all three of its subspecies) and *R. serrata* occur in Arizona. *R. smithii*, which at one time included *R. serrata*, is only found in Colorado and New Mexico.

**DESCRIPTION:** **PLANT:** Shrubs to small trees, 2-5 m tall. **STEMS:** erect, gray-brown, slender, young stems pubescent becoming glabrous, often smooth and lustrous. **LEAVES:** deciduous, alternate to nearly opposite; petioles 3-4 mm long; blades oblong, lanceolate or elliptic; 2-5 (5.8) cm long, 1.0-1.6 cm wide, serrulate to crenulate, yellowish-brown and pubescent below; apex obtuse. **INFLORESCENCE:** of 1-5 flowers. **FLOWERS:** with pedicels 2-5 mm long; petals 4, greenish-yellow, ca. 2 mm long. **FRUITS:** 4-6 mm long, black at maturity.

**AIDS TO IDENTIFICATION:** To distinguish from other Genera in family Rhamnaceae: Plants without thorns; leaves pinnately veined or veins obscure; leaves alternate or fascicled; fruit a drupe; flowers 4-merous, imperfect; stigma branched; seeds grooved; bud scales present. To distinguish from other species in the genus *Rhamnus*: Leaves deciduous; blades oblong to lanceolate; petals present; drupes black at maturity. (Christie et al 2006.)

**ILLUSTRATIONS:**

Line Drawing: [http://canotia.org/volumes/CANOTIA\\_2006\\_Vol2\\_1\\_Christie\\_et\\_al\\_Rhamnaceae.pdf](http://canotia.org/volumes/CANOTIA_2006_Vol2_1_Christie_et_al_Rhamnaceae.pdf).  
Herbarium Mounts: [http://swbiodiversity.org/seinet/taxa/index.php?taxon=Rhamnus\\_serrata](http://swbiodiversity.org/seinet/taxa/index.php?taxon=Rhamnus_serrata).

**TOTAL RANGE:** Found in the US from Arizona through New Mexico and southwestern Texas (Big Bend locality) into the Mexican states of Chihuahua, Coahuila, Nuevo Leon and Tamaulipas southward through central Mexico and into the Guatemalan province of Huehuetenango.

**RANGE WITHIN ARIZONA:** Although there are only six mapped collection sites in Arizona, they range from northwest Coconino County (Mohawk Canyon western side of the Colorado Plateau) diagonally towards the southeast and include Yavapai (Juniper Mountains), Pima (Rose Canyon in the Santa Catalina Mountains), Santa Cruz (Monkey Canyon northwest of the Canelo Hills) and Cochise (Chiricahua Mountains) Counties. There is also a 1938 collection record from the White Mountains locality in Apache County that had insufficient information to be precisely mapped.

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

**GROWTH FORM:** Shrubs to small trees (2 – 5 m. tall).

**PHENOLOGY:** Range-wide: flowers April through June. Arizona collections noted both flowers and fruits in May and July.

#### **BIOLOGY:**

**HABITAT:** Mountain canyons, open hillsides and stream banks, both open and dense woods and forests, also brushy or scrubby areas.

**ELEVATION:** Range-wide: 5000-7500 feet (1520-2300m). Arizona collections ranged from 4760 – 7000 feet (1450-2135m).

**EXPOSURE:** Not specified, but grows in open forests, woodlands and brush, as well as dense forests and canyons.

**SUBSTRATE:** Mostly on limestone substrates, but also igneous rock. Notes from Arizona collections mentioned whitish shaly soil, mixed alluvium, and at the edge of a spring (moist soils?).

**PLANT COMMUNITY:** Frequently associated with oaks. Plant species associated with Arizona collections include: *Quercus hypoleucoides*, *Q. grisea*, *Pinus edulis*, *P. ponderosa*, *P. cembroides*, *P. leiophylla*, *Fraxinus*, *Juniperus deppeana*, *Fallugia paradoxa*, *Rhus trilobata*, *Vitis arizonicus*, *Garrya*, *Philadelphus*, *Cupressus*, *Gutierrezia*, *Lesquerella arizonica*, *Piptochaetium pringlei*, *P. fimbriatum*.

**POPULATION HISTORY AND TRENDS:** Unknown. There are few (only six) collections from Arizona and all but one are historical. There are no multi-dated collections

from the same site, and there were no noted indications as to whether the plant was common or rare. Due to the very limited number of collections, the species is ranked as critically imperiled by NatureServe. The rather wide distributional range of the collections in Arizona should be noted, however. Given this distribution, it is conceivable that additional locations will be identified.

## **SPECIES PROTECTION AND CONSERVATION**

**ENDANGERED SPECIES ACT STATUS:** None.  
**STATE STATUS:** None.  
**OTHER STATUS:** None.

**MANAGEMENT FACTORS:** None specified.

**PROTECTIVE MEASURES TAKEN:** None known, although 2/3s of the known collections are on US National Park Service or National Forest lands.

**SUGGESTED PROJECTS:** Revisit known collection sites to determine if species is still extant, and if so, collect information on population size, extent and/or relative abundance. Expand field collections to similar habitats to determine if range can be extended.

**LAND MANAGEMENT/OWNERSHIP:** Arizona collections were made on lands administered by the USNPS Chiricahua National Monument, the BIA Hualapai Indian Reservation, USDA US Forest Service (Prescott NF and Coronado NF) and a private holding.

## **SOURCES OF FURTHER INFORMATION**

### **REFERENCES:**

Christie, K., M. Currie, L. Smith Davis, M-E Hill, S. Neal, and T. Ayers. 2006. Vascular Plants of Arizona: Rhamnaceae: Buckthorn Family. *Canotia* 2(1): 23-46.  
JSTOR| Global Plants, accessed 7/21/2014, <http://plants.jstor.org/specimen/p00660060?s=t>.  
Tropicos, accessed 7/21/2014, <http://www.tropicos.org/Name/27500872>.

### **MAJOR KNOWLEDGEABLE INDIVIDUALS:**

### **ADDITIONAL INFORMATION:**

**Revised:** 2014-07-21 BDT

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