ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract **Element Code:** PDAST8H411
Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Senecio multidentatus* var. *huachucanus* A. Gray
COMMON NAME: Huachuca groundsel; Huachuca Mountain ragwort
SYNONYMS: *Senecio multidentatus* Schultz-Bip. ex Hemsl. *S. huachucanus* (A. Gray) T.M. Barkley
FAMILY: Asteraceae

AUTHOR, PLACE OF PUBLICATION: A. Gray, Proc. Amer. Acad. Arts Sci. 19: 54. 1883.

TYPE LOCALITY: Near Fort Huachuca, Arizona, United States of America.

TYPE SPECIMEN: HT: GH 11957. J.G. Lemmon 2784, 1882.

TAXONOMIC UNIQUENESS: The genus *Senecio* contains over 1,000 species and is distributed worldwide (Barkley 1978). Approximately 26 species of *Senecio* occur in Arizona (Lehr 1978, Lehr and Pinkava 1980). In his treatment for the Flora of North America, Barkley reduced this species to a variety of *S. multidentatus*, a widespread but rare species (Barkley 2006). In 2012, Turner elevated it back to species rank after a careful review of specimens (Turner 2012).

DESCRIPTION: Herbaceous perennial, 60-80(-115) cm (24-32[-45] in) tall, with branching erect stem (usually single) arising from a fibrous rooted caudex; plants glabrous or sparingly floccose-tomentose. Large lower leaves lanceolate to ovate-lanceolate, glabrous or sparingly floccose-tomentose, 4-6 cm (1.6-2.4 in) wide, 10-20 cm (4-8 in) long, with dentate to denticulate margins; petioles 3-12 cm (1.2-4.7 in) long. Upper leaves gradually reduced in size, becoming sessile, the bases clasping. Inflorescence of one to (usually) several cymes with 4-12 flowering heads each, with up to 150 flowering heads per plant; narrow flowering heads cylindrical. Phyllaries about 13, 6-7 mm long, each black-tipped. Ray and disc flowers yellow, small; rays about 8, 5-8 mm long. Dry, single-seeded, glabrous achenes, with bristly tips. (Barkley 1978; Toolin 1982; Falk, Jenkins et al. 2001).

AIDS TO IDENTIFICATION: Distinctive characteristics include large leaves with numerous, somewhat irregular teeth on the margins, and black-tipped phyllaries. *S. lemmoni* of southern Arizona, is often somewhat shrubby, with woody stems, and shorter leaves with well-spaced prominent teeth. *S. multidentatus* var. *huachucanus* is not woody, and has longer leaves which are more closely and finely toothed.

ILLUSTRATIONS: Line drawing (USFWS).
Color photo (Peter Warren, *in* ADA 1994).

Color photos (Jennifer Anderson 2001, *in* USDA, NRCS)
Color photo (Utah State University)
Line drawing (M.S., *in* Falk, Jenkins et al. 2001)
Color photos of plant and habitat (Sue Rutman USFWS, *in* Falk, Jenkins et al. 2001)

TOTAL RANGE: Disjunct distribution, occurring on Fraile Mountain in Mexico, and in two mountain ranges in southeast Arizona. Turner (2012) states that this species is known from Sonora, Mexico, but SEINet searches do not reveal any specimens from Sonora (SEINet 2020).

RANGE WITHIN ARIZONA: The Huachuca Mountains in Cochise County, and the Santa Rita Mountains in Santa Cruz County.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Herbaceous perennial.

PHENOLOGY: Flowers and sets fruit in September and October; August to October according to Kearney and Peebles (1951).

BIOLOGY: Above ground parts of plant die back to ground level every winter, and new stems grow from the perennial root. This species could be expected to be somewhat volatile in population behavior, given its preference for sites with intermediate disturbance and its ability to both re-sprout from persistent underground roots and germinate from seed.

HABITAT: In habitats with intermediate disturbance on steep, rocky high elevation mountain slopes and in canyon bottoms within pine-oak or mixed-conifer dominated forests. They prefer moist loam soils associated with granite rock outcroppings and/or stabilized talus (Falk, Jenkins et al. 2001). This species typically occurs in areas with a patchy matrix of moderate canopy cover and small openings (Falk and Warren 1994).

ELEVATION: Approximately 7,000 - 9,500 feet (2135 - 2898 m).

EXPOSURE: Typically shady north-facing or northwest-facing slopes; slopes 20-30%.

SUBSTRATE: Stabilized talus of granite or metamorphic rock with relatively poor soil development (Warren et al. 1989). All sites apparently have in common a loose unconsolidated soil structure composed of recently deposited litter (Falk and Warren 1994). Reported by CPC (2004) as growing in moist, loamy soils.

PLANT COMMUNITY: This species occurs in Madrean Montane Conifer Forest communities and the upper margins of Madrean Evergreen Woodland communities, as

defined by Brown (1994). The forests where this species occurs are typically pine-oak or mixed conifer forests. Associated overstory species vary but include: *Pinus discolor* (border pinyon), *Pinus ponderosa* (ponderosa pine), *Populus tremuloides* (quaking aspen), *Pseudotsuga menziesii* (Douglas-fir), *Quercus gambelii* (Gambel oak), *Q. hypoleucoides* (silver-leaf oak), and *Q. reticulata* (=*Q. rugosa*, net-leaf oak). Other associated species include: *Achillea lanulosa* (=*A. millefolium*), *Ceanothus* sp. (whitethorn), *Fraxinus pennsylvanica* (green ash), *Geranium* sp., *Gutierrezia wrightii*, *Holodiscus dumosus* (glandular oceanspray), *Juglans major* (Arizona black walnut), *Robinia neomexicana* (New Mexico locust), *Senecio bigelovii* (Bigelow's groundsel), *S. eremophilus* var. *macdougalii*, *Silene laciniata* (Mexican catchfly), *Symphiocarpos* sp., *Viquiera multiflora* (golden eye), and several grasses.

POPULATION TRENDS: The population trend is stable in the Santa Ritas and Huachucas, exhibiting high reproduction and recruitment (Falk, Jenkins et al. 2001). Monitoring plots were established in two populations by The Nature Conservancy (Conservancy), one in the Huachuca Mts. and another in the Santa Rita Mts. These plots were studied by Conservancy personnel between 1988 and 1993. The results of their monitoring showed that this species was successfully reproducing at both plots, however, the results also showed a decline in population size, survival rates, and reproductive rates. Recruitment apparently increased during this time period, with new individuals in the way of seedlings, making up a higher percentage of the total number of plants. Despite these declines, Falk and Warren felt that these two populations appeared healthy and showed no immediate evidence of loss of vigor (Falk and Warren 1994). A population that was extant in 1945 between Carr Canyon and Ramsey Canyon in the Huachuca Mountains has not been re-discovered and has apparently been extirpated. Specimens identified as *S. huachucanus* from the Chiricahua Mountains may be misidentified; Turner did not cite these specimens in his review. However, a specimen collected nearby was determined by Turner to represent *S. multidentatus* (Turner 2012, SEINet 2020).

This species was removed from the USFWS C1 list because 5 additional populations have been found since 1991, indicating that it is more widespread than previously believed (NatureServe 2004). According to the USFWS (1996), the only known Santa Rita population likely contains thousands of plants on many acres of remote wilderness land.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1996)
[Category 1 USDI, FWS 1990, 1993]
[Category 2 USDI, FWS 1985]
[Category 1 USDI, FWS 1980]

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

OTHER STATUS: Forest Service Sensitive (USDA, FS Region 3 2013)

[Forest Service Sensitive USDA, FS Region 3 1990, 1999]

MANAGEMENT FACTORS: This species is currently known from only about 8 locations. The fact that *S. huachucanus* has disappeared from at least one area and the drops in survival, reproductive rates and overall numbers observed by Falk and Warren on the two monitoring plots are causes for concern (Falk and Warren 1994). Apparently the plants are easily broken if stepped on, and hikers not following the trails could impact some populations.

CONSERVATION MEASURES TAKEN: Monitoring of two populations has occurred to some degree. This species has been listed as "Forest Service Sensitive" since 1990. The Santa Rita Mountain population occurs on many acres of remote wilderness land.

SUGGESTED PROJECTS: Monitoring of known populations and surveys for new populations should be conducted. Determine if specimens labeled as *S. huachucensis* from Chiricahua Mountains represent *S. huachucensis* or *S. multidentatus*--Turner wrote that the ranges of these species did not overlap (Turner 2012, SEINet 2020). Additionally, Turner recommended that *S. multidentatus* be given special status in Arizona, as it is only known from a single location within the United States.

LAND MANAGEMENT/OWNERSHIP: DOD - Fort Huachuca Military Reservation; USFS - Coronado National Forest.

SOURCES OF FURTHER INFORMATION

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ADDITIONAL INFORMATION:

Toolin: Carr Canyon, Huachuca Mountains: population may have been extirpated by 1977 forest fire. Mt. Wrightson, Santa Rita Mountains population: ca. 1000 plants observed in 1981 survey.

Barclay (1978) "Infrequently collected and poorly understood species."

Toolin (1982) Recommended dropping from consideration for federal listing.

Until 1988, this plant had not been found in the Huachuca Mountains since 1945.

Revised: 1981-xx-xx (ANHP)
1991-11-14 (SR)
1998-01-09 (SSS)
2000-01-03 (DJG)
2004-05-06 (SMS)
2020-07-20 (TME)

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