ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract **Element Code:** PDAST530A0
Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Hymenoxys helenioides*
COMMON NAME: Intermountain Bitterweed, Intermountain Rubberweed
SYNONYMS: *Picradenia helenioides, Actinea helenioides, Dugaldia helenioides*
FAMILY: Asteraceae

AUTHOR, PLACE OF PUBLICATION: Cockerell, Theodore Dru Alison. Bull. Torrey Bot. Club 31(9): 481. 1904.

TYPE LOCALITY: Colorado: Sangre de Cristo Creek, 2400-2700m.

TYPE SPECIMEN: NY 231227 (holotype). P.A. Rydberg, F.K. Freeland, #5495. July 2, 1900.

TAXONOMIC UNIQUENESS: There are 17 species of *Hymenoxys* in North America (only) and another nine varieties. Eleven of these species and six of these varieties are found in Arizona (NatureServe 2015).

DESCRIPTION: Perennials, 20-50 cm (polycarpic; usually with moderately branched, woody caudices). Stems 1-5(-10+), green throughout or lightly purple-red-tinted proximally, branched distally, ± hairy. Leaves: blades simple or lobed (lobes 3), glabrous or sparsely hairy, gland-dotted (basal leaf bases sparsely, if at all, long-villous-woolly); mid leaves usually lobed (lobes 3, terminal lobes 2-5.5 mm wide), sometimes simple. Heads 5-50+ per plant, in paniculiform to corymbiform arrays. Peduncles (2.5-)4-7.5 cm, ± hairy. Involucres subhemispheric to hemispheric, 9-12 × 12-18 mm. Phyllaries in 2 series, unequal; outer 10-15, basally connate 1/4-1/3 their lengths (weakly keeled), lanceolate, 7.5-11 mm, apices acuminate; inner 13(-17), obovate, 5-8 mm, apices acuminate to mucronate. Ray florets 10-16; corollas yellow to yellow-orange, 17-31 × 5-11 mm. Disc florets 50-150+; corollas 3.5-5.5 mm. Cypselae narrowly obpyramidal, 2.5-3.5 mm; pappi of 5-7 obovate to lanceolate, aristate scales 2.5-4 mm (Flora of N America 2015).

AIDS TO IDENTIFICATION:

ILLUSTRATIONS:
Herbarium Mounts:
http://swbiodiversity.org/seinet/taxa/index.php?taxon=Hymenoxys%20helenioides.

TOTAL RANGE: Central and south-central Colorado; south-central Utah; north-east Arizona and north-central Arizona around Flagstaff (based on SEINet collections and Flora of North America 2015). NatureServe (2015) also reports the species is found in southeast Nevada (rare) and New Mexico.

RANGE WITHIN ARIZONA: Coconino County: N of Flagstaff; Apache County: Tunitcha Mountains and near Ganado Lake.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Perennial forb.

PHENOLOGY: Flowering: June to August (Flora of N. Amer. 2015), but one Arizona collection notes flowers on October 19.

BIOLOGY:

HABITAT: Roadsides, open areas, edges of forests or forest openings. Also collected along a power line right-of-way. The plant is evidently a mesophyte (Cockerell 1904).

ELEVATION: 7215 – 9840 feet (2200-3000m), Flora of N Amer. 2015. A collection near Ganado Lake in Arizona was at 6420 feet (1960m).

EXPOSURE: Seems to definitely prefer open sites, but one Arizona collection noted a north facing slope.

SUBSTRATE: Collected from sites with "good soil, moist" and "basalt outcrops."

PLANT COMMUNITY: Mountain brush, sagebrush and aspen communities. Ponderosa pine, Douglass fir, Gambel's oak, snowberry and *Helenium hoopesii* also noted on collection records.

POPULATION HISTORY AND TRENDS: Unknown for Arizona. There are only four known collection sites in the State, and three are historical. There is no data recorded on population sizes, and no re-visits to evaluate trends. Anderson et al (1995) states that there are few and widely scattered populations in the four corner states, and these tend to consist of 20 or fewer individuals. He also considers the plant a hybrid (see Additional Information, below).

SPECIES PROTECTION AND CONSERVATION

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

MANAGEMENT FACTORS: None specified.

PROTECTIVE MEASURES TAKEN: None.

SUGGESTED PROJECTS: Re-visit the Tunitcha Mountain area collections sites to determine if the species is still extant. The other sites (near Ganado Lake and Flagstaff) are all historical records.

LAND MANAGEMENT/OWNERSHIP: U.S.D.I. Bureau of Indian Affairs, Navajo Nation; U.S.D.A. Forest Service, Coconino National Forest; and private land holdings.

SOURCES OF FURTHER INFORMATION

REFERENCES:

Anderson, J.L., J.M. Porter and M.K. Debacon. 1995. Is Hymenoxys helenioides (Rydb.)Ckll. a Species or Hybrid? Morphological and Molecular Evidence. In: Southwestern Rare and Endangerd Plants: Proceedings of the Second Conference. Sept. 11-14, 1995, Flagstaff AZ. USDA Forest Service, Rocky Mountain Forest and Range Experiment Station, General Technical Report RM – GTR-283. pp. 113-124.

Cockerell, T.D.A. 1904. The North American species of Hymenoxys. In: Bulletin of the Torrey Botanical Club. 31(9): 46-522.

Flora of North America (eFloras.org), accessed 9/10/2015, http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=250066989.

JStor| Global Plants, accessed 9/10/2015, http://plants.jstor.org/stable/10.5555/al.ap.specimen.ny00231227.

NatureServe Explorer, accessed 9/10/2015, http://explorer.natureserve.org/index.htm.

Tropicos, accessed 9/10/2015, http://www.tropicos.org/Name/2710555.

Welsh, Stanley L., N, Duane Atwood, Sherel Goodrich, and Larry Higgins, eds. 1993. A Utah Flora. 2nd edition, revised. Brigham Young University, Provo, UT. p. 233.

MAJOR KNOWLEDGEABLE INDIVIDUALS:
J. Mark Porter, Rancho Santa Ana Botanic Garden, Claremont, CA.

ADDITIONAL INFORMATION: According to J.L. Anderson et al (1995), this is a poorly known taxon occurring in widely scattered, small (<20 individuals) populations in the

mountains of Colorado, Utah, New Mexico and Arizona. These populations always co-occur with large populations of related *H. richardsonii* and *H. hoopesii*. These two species only infrequently occur together, usually growing in different habitats and elevations. Chromosome number, morphological intermediacy, pollen sterility, and an additive pattern in nuclear molecular markers show that *H. helenioides* is a largely sterile hybrid of independent origin at each locality. It should be referred to as *H. **x**helenioides*. Because taxonomic recognition of this species is unjustified, federal protection is unwarranted [at the time of this publication, *H. helenioides* was a category 2 candidate for federal listing under the Endangered Species Act].

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