ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract **Element Code:** PDBOR0A2R0
Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Cryptantha semiglabra* Barneby
COMMON NAME: Fredonia catseye, Pipe Springs cryptantha, smooth catseye, smooth cryptantha
SYNONYMS: *Cryptantha semiglabrata* Barneby (in McDougall 1973)
FAMILY: Boraginaceae

AUTHOR, PLACE OF PUBLICATION: R.C. Barneby, Leaflets of Western Botany 3(9): 197-199. 1943.

TYPE LOCALITY: On detrital clay hills about 2 miles east of Fredonia, Coconino County, Arizona, United States of America.

TYPE SPECIMEN: HT: CAS 300408. Ripley and Barneby 4363, 6 May 1942. T: CAS 300409. Ripley and Barneby 4829, 5 June 1942. Syntype: GH (for locality and both dates by Ripley and Barneby).

TAXONOMIC UNIQUENESS: There are around 100 species in the genus *Cryptantha*, which is restricted to North and South America; 35 species of this genus occur in Arizona. Most species in this genus are found in the western United States. USDA, NRCS (2004) reports 115 species in genus.

DESCRIPTION:

Non-technical: A coarse perennial herb that has large white flowers with yellow centers. Inflorescences can be up to 12 cm (5 in) long. The floral tube considerably surpasses the calyx. The seeds are in the form of nutlets, which are smooth and shiny. The stems toward the base are densely covered in straight, silky hairs, which lay flat against the stems. The upper stems have stiff hairs, which are spreading or straight and lying flat against the stems. The upper surface of the leaves is hairless and shiny green, though the margins may be ciliate. The lower leaf surface is pubescent (Phillips et al. 1982).

Technical: Coarse perennial herb about 30 cm (12 in) tall with a woody root; base of stem and upper caudex subtomentose with long, fine, silky hairs; stems stigose to setose in inflorescence. Basal leaves oblanceolate, 3-7 cm (1.2-2.8 in) long and 3-6 mm wide; cauline leaves lanceolate, 3-5 cm (1.2-2.0 in) long and 3-6 mm wide, lower surface strigose, trichomes with pustular

bases, upper surface glabrous or with a few appressed filiform hairs near hispid-ciliate margins. Inflorescence a long narrow thyrsus of pedunculate, few-flowered scorpioid racemes, greater than 10 cm (4 in) at maturity, leafy-bracted in lower half. Flowers white with yellow fornices, tube 9-12 mm, surpassing calyx, anther position on tube dimorphic. Nutlets are smooth and shiny, the margins thin and knife-like; style surpassing nutlets by 5-8 cm (Barneby 1943, Cronquist et al. 1984, Phillips et al 1982).

AIDS TO IDENTIFICATION: *Cryptantha semiglabra* is most similar to *Cryptantha flava* (Plateau yellow cat's-eye) and *Cryptantha capitata* (Capitate cat's-eye). The flowers of all three species are white with yellow fornices. *C. semiglabra* can be easily distinguished from *C. flava* by nutlet shape and the amount of hair present on the leaves. *C. semiglabra* nutlets are broadly ovate, while those of *C. flava* are lanceolate to narrowly ovate. Both sides of the leaves of *C. flava* are hairy, while those of *C. semiglabra* are hairless on the upper surface and pubescent on the lower surface. *C. semiglabra* can be distinguished from *C. capitata* by the amount of hair on stems and leaves and by the habit of the inflorescence. The stems and leaves of *C. capitata* have more hair overall than *C. semiglabra* and the upper surface of the leaves of *C. capitata* is not glabrous, as in *C. semiglabra*. The inflorescence of *C. capitata* is often strongly capitate, unlike that of *C. semiglabra*. Another similar species that occurs in the area, *C. confertiflora* (Basin yellow cat's-eye) has yellow flowers (Cronquist et al. 1984, Phillips et al. 1982).

ILLUSTRATIONS:

Color slide (Frank W. Reichenbacher 1984, deposited at AGFD, HDMS).
Line drawing (Cronquist et al. 1984: 233).
Line drawing (USFWS).
Color photo (James L. Reveal *in* http://plants.usda.gov/cgi_bin/plant_profile.cgi?symbol=CRSE4)

TOTAL RANGE: Coconino and Mohave counties, Arizona, and southeast Washington County, Utah.

RANGE WITHIN ARIZONA: Extreme northwestern Coconino County and adjacent extreme northeastern Mohave County, in the area surrounding the town of Fredonia.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Perennial herb subshrub/shrub.

PHENOLOGY: Flowers and sets seed from May to June.

BIOLOGY: During the 1981 status survey field research, seedlings, non-reproductive, pre-reproductive, and reproductive plants were observed. The number of reproductive flowering stalks per plant varied from 1 to 9. An average of 27.5% were seedlings, 35% were non-reproductive, and 37.5% were reproductive (Phillips et al. 1982).

HABITAT: Arid red detrital clay soils and gray shale's of the Moenkopi Formation, in the Great Basin Desertscrub biotic community.

ELEVATION: 4,600 - 4,900 ft (1402-1495 m) in Arizona (Phillips et al. 1982), and 4,920 - 5,674 ft (1500-1730 m) in Utah (Welsh et al. 1993).

EXPOSURE: All.

SUBSTRATE: Red detrital clay soils and gray shale's of the Moenkopi Formation. Loose or non-compacted soils with 10-20% rock content (Phillips et al. 1982).

PLANT COMMUNITY: Great Basin Desertscrub community (in Arizona). Associated species (in Arizona) include: *Abronia nana* (Dwarf sandverbena), *Achnatherum* (=*Oryzopsis*) *hymenoides* (Indian Mountain-ricegrass), *Amelanchier utahensis* (Utah serviceberry), *Artemisia bigelovii* (Flat sagebrush), *Asclepias latifolia* (Broad-leaf milkweed), *Atriplex confertifolia* (Shadscale), *Bromus rubens* (Foxtail brome), *Bromus tectorum* (Cheat grass), *Chrysothamnus greenei* (Green rabbit-bush), *Chrysothamnus nauseosus* (=*Ericameria nauseosa*, rabbit-bush), *Comandra umbellate* ssp. *pallida* (Toad-flax), *Cryptantha confertiflora* (Basin yellow cat's-eye), *Cryptantha flava* (Plateau yellow cat's-eye), *Ephedra torreyana* (Torrey's Mormon-tea), *Eriogonum corymbosum* (Crispleaf wild-buckwheat), *Eriogonum fasciculatum* (California wild buckwheat), *Gutierrezia sarothrae* (Broom snakeweed), *Lepidium fremontii* (Fremont's pepper-grass), *Pediocactus sileri* (Siler pincushion cactus), *Pleuraphis* (=*Hilaria*) *jamesii* (James' galleta), *Purshia mexicana* (Mexican cliff-rose), *Rhus trilobata* (sumac), *Salsola iberica* (=*S. kali*, Russian thistle), *Salvia dorrii* (Gray bell sage), *Stanleya pinnata* (Desert prince-plume), and *Yucca angustissima* (Fine-leaf yucca). In Utah this species is found in Great Basin Desertscrub (including Sagebrush series) communities and Great Basin Conifer Woodland (Pinyon-Juniper) communities (Brown 1994, Phillips et al. 1982, Welsh et al. 1993).

POPULATION TRENDS: Trends in populations are unknown. This species appears to be tolerant of disturbance (Phillips et al. 1982).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1996)
[3C USDI, FWS 1985]
[C2 USDI, FWS 1980]

STATE STATUS: None

OTHER STATUS: Bureau of Land Management Sensitive (USDI, BLM AZ 2010)

MANAGEMENT FACTORS: Disturbance to the habitat of this species currently occurs in the form of garbage dumping, off-road vehicle recreation, and trampling (Phillips et al 1982).

PROTECTIVE MEASURES TAKEN: None

SUGGESTED PROJECTS: Verify the presence of populations in areas where collections have been made. Search for additional populations in suitable habitats on the Moenkopi Formation.

LAND MANAGEMENT/OWNERSHIP: BIA – Kaibab Paiute Reservation; BLM - Arizona Strip Field Office; State Land Department; Private.

SOURCES OF FURTHER INFORMATION

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

Rupert H. Barneby - New York Botanical Gardens, Bronx, New York.

Art Phillips III - Private Consultant, Colorado.

Dr. Barbara Phillips - Coconino National Forest, U.S. Forest Service, Flagstaff, Arizona.

Stanley Welsh - Department of Botany and Range Science, Brigham Young University, Provo, Utah.

ADDITIONAL INFORMATION:

In August of 1991, the Arizona Plant Recovery Team, recommended (during their meeting) to resurrect this species from Category 3C and place it in Category 2. All Arizona localities are within 7 miles of Fredonia. Only 1 collection was cited in A Utah Flora. The Brigham Young Science Bulletin, 16(3): 48-49, cites 1 specimen collected by J. W. Harrison (s.n.) DIX. This specimen was collected in the Galagers Hill area along the Hurricane-Kanab Road. Cronquist et al. (1984) state that this species is related to *Cryptantha capitata* and *C. pustulosa.*

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