

ARIZONA GAME AND FISH DEPARTMENT  
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract

Element Code: PDAST4V0Q0

Data Sensitivity: No

**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Heterotheca zionensis*

**COMMON NAME:** Zion Goldenaster

**SYNONYMS:** *Chrysopsis zionensis*

**FAMILY:** Asteraceae

**AUTHOR, PLACE OF PUBLICATION:** John Cameron Semple, *Brittonia* 39(3): 384-385, f. 4. 1987.

**TYPE LOCALITY:** Utah, Washington County; west of Leeds on Silver Reef Road, 3.2 km. into Dixie National Forest.

**TYPE SPECIMEN:** New York Botanical Garden. NY00179299. J.C. Semple and S. Heard (7859), September 11, 1985.

**TAXONOMIC UNIQUENESS:** NatureServe (2013) lists 18 species of *Heterotheca* in the U.S., and 30 subspecies and/or varieties. Eight species, including *H. zionensis*, and another eight subspecies, are found in Arizona.

**DESCRIPTION:**

**Perennials**, 17–55(–70) cm; taprooted. **Stems** 1–20+, ascending to erect (sometimes ± brittle, green to light-green proximally, greenish to whitish distally), moderately to densely hispid and short-strigose, abundantly long-hispid, sometimes becoming moderately hairy and densely stipitate-glandular distally. **Leaves:** proximal cauline petiolate to sessile, blades (whitish when fresh, drying grayish to whitish green) narrowly to broadly oblanceolate, 15–45 × 5–8 mm, bases attenuate, margins flat, entire, strigoso-ciliate, proximally long-hispido-strigose, apices acute, faces densely hispido-strigose, sparsely to moderately stipitate-glandular; distal sessile, blades narrowly to broadly ovate or lanceolate to oblong, 10–20(–30) × 2.5–7.3 mm, reduced distally, densely to very densely hispido-strigose, moderately to densely stipitate-glandular beneath hairs. **Heads** 7–27(–46) in corymbiform arrays, branches ascending. **Peduncles** 9–41 mm, moderately to densely hispido-strigose, moderately to densely stipitate-glandular; bracts 0–5, proximal lanceolate, much reduced distally; linear to oblanceolate, leaflike bracts sometimes subtending heads. **Involucres** cylindro-turbinate to narrowly campanulate, (4.3–)5–7.5(–8) mm. **Phyllaries** in 5–6 series, lanceolate, unequal (outer lengths  $1/5 - 1/4$  inner), margins scarios, faces either sparsely hispido-strigose and densely stipitate-glandular or moderately hispido-strigose and sparsely to moderately stipitate-glandular. **Ray florets** 8–18(–23); laminae 6.5–13 × 1–1.7 mm. **Disc florets** (11–)16–44(–62);

corollas  $\pm$  ampliate, (3.5–)4.5–7 mm, lobes 0.4–0.7 mm, sparsely pilose (hairs on lobes 0.1–0.3 mm). **Cypselae** monomorphic, obconic, compressed, 1.5–3(–4) mm, ribs ca. 10, faces moderately strigose; **pappi** off-white, outer of linear scales 0.25–0.5 mm, inner of 25–40 weakly clavate bristles 4–7 mm. **2n** = 18, 36. Flora of North America, 2013.

**AIDS TO IDENTIFICATION:** Whitish-appearing stems and leaves readily distinguish *H. zionensis* from *H. villosa* var. *scabra*, which frequently occurs sympatrically in southern Utah and northern Arizona. The species could be confused also with *H. villosa* var. *pedunculata* which has more hairs/mm<sup>2</sup> on its leaves and few or no glands on its phyllaries. It could also be confused with narrow, smaller-leaved forms of *H. fulcrata* var. *amplifolia*, which has a few petiolate-ovate bracts subtending the heads. Flora of North America, 2013.

**ILLUSTRATIONS:**

Herbarium Mount:

[http://swbiodiversity.org/imglib/seinet/Asteraceae/herbarium\\_sheets/Astera\\_Heterotheca\\_zionensis40720.jpg](http://swbiodiversity.org/imglib/seinet/Asteraceae/herbarium_sheets/Astera_Heterotheca_zionensis40720.jpg)

Photo by Patrick Alexander:

<http://swbiodiversity.org/seinet/imagelib/imgdetails.php?imgid=251089>.

**TOTAL RANGE:** Arizona and Utah; species has been introduced and established near Las Cruces, NM; chance (likely ephemeral) introductions have been found in Moffat County, CO, and Franklin County, ID. Flora of North America, 2013.

**RANGE WITHIN ARIZONA:** *H. zionensis* has been collected in Arizona from Mohave, Coconino, Apache, Graham and Gila counties. It is also likely found in Navajo County.

**SPECIES BIOLOGY AND POPULATION TRENDS**

**GROWTH FORM:** Perennial herb, from a stout ligneous root-crown and taproot,

**PHENOLOGY:** Flowers: June-August, and into October, rangewide. Flowers and fruits have been noted in Arizona collections in both August and mid-September.

**BIOLOGY:**

**HABITAT:** Rocky, sandy, or sandy loam soils, deep sand, open places, sand dunes, sandy ledges of rock outcrops, margins of hot springs, edges of washes, cottonwood-lined washes and flood plains, grasslands, dry waste ground in juniper-pinyon scrub, roadsides.

**ELEVATION:** Rangewide, 2950 – 8850 feet (900-2700 m). Actual collections in Arizona range from 4600 – 6440 feet (1400-1960 m).

**EXPOSURE:** Not specified, but collections from roadside habitats, floodplains and margins of hot springs and washes suggest an open aspect.

**SUBSTRATE:** Sandy or sandy loam soils, deep sand.

**PLANT COMMUNITY:** Pinyon-Juniper, oak and sagebrush. One collection in Arizona noted an open Ponderosa Pine community. Other species noted on Arizona collection records include: *Eriogonum leptocladum*, *Machaeranthera*, *Artemisia*, *Senecio*, *Atriplex*, *Chrysothamnus nauseosus* and *C. viscidiflorus*, *Gutierrezia sarothrae*, *Quercus turbinella*, *Archostaphylos*, *Yucca baccata*, *Amelanchier*, *Pinus*, *Juniperus*, Ponderosa Pine, *Fallugia*, *Amorpha*, *Achnatherum hymenoides*, *Ephedra cutleri*, *Hilaria jamesii*, *Muhlenbergia pungens*, *Penstemon angustifolius*, and *Poliomintha incana*.

**POPULATION HISTORY AND TRENDS:** Unknown. *H. zionensis* has been collected continuously in Arizona from the mid-1930s to 2011. Most records do not include any information on population. From the few records that did, the plant was noted as rare, infrequent, or common. Species is considered by NatureServe to be imperiled.

## **SPECIES PROTECTION AND CONSERVATION**

**ENDANGERED SPECIES ACT STATUS:** None.

**STATE STATUS:** None.

**OTHER STATUS:** None.

**MANAGEMENT FACTORS:** Unknown.

**PROTECTIVE MEASURES TAKEN:** None.

**SUGGESTED PROJECTS:** Continue field collections to better ascertain frequency and distribution of the species.

**LAND MANAGEMENT/OWNERSHIP:** Majority of collection were made on BLM Arizona Strip lands in northern Arizona, near the Utah border. Other collections came from the USFS Coconino and Coronado National Forests, and the BIA Fort Apache Reservation, Navajo Nation and Navajo-Hopi Joint Use Lands.

## **SOURCES OF FURTHER INFORMATION**

**REFERENCES:**

Flora of North America.

[http://www.efloras.org/florataxon.aspx?flora\\_id=1&taxon\\_id=250066932](http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=250066932), accessed 8/1/2013.

JSTOR. <http://plants.jstor.org/search?plantName=%22Heterotheca+zionensis%22&syn=1>,  
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NatureServe.

[http://www.natureserve.org/explorer/servlet/NatureServe?loadTemplate=tabular\\_report.wmt&paging=home&save=all&sourceTemplate=reviewMiddle.wmt](http://www.natureserve.org/explorer/servlet/NatureServe?loadTemplate=tabular_report.wmt&paging=home&save=all&sourceTemplate=reviewMiddle.wmt), accessed 8/1/2013.

Semple, John. C. 1987. New names, combinations, and lectotypifications in *Heterotheca* (Compositae: Astereae). *Brittonia* 39(3) pp. 379-386.

Tropicos. <http://www.tropicos.org/Name/2726915>, accessed 4/30/2013.

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**ADDITIONAL INFORMATION:**

**Revised:** 2013-08-01 BDT

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