ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract **Element Code:** PDFAB0F9U2
Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Astragalus zionis* var. *zionis*
COMMON NAME: Zion Milkvetch
SYNONYMS: *Xylophacos zionis*
FAMILY: Fabaceae

AUTHOR, PLACE OF PUBLICATION: Jones, Marcus Eugene. Proceedings of the California Academy of Sciences, Series 2, 5(18): 652–653. 1895.

TYPE LOCALITY: Utah: Springdale. [From paratype specimen: elevation 4000 feet.]

TYPE SPECIMEN: Rancho Santa Ana Botanic Garden: RSA 3158. ME Jones, #5239. May 16, 1984.

TAXONOMIC UNIQUENESS: *Astragalus* is believed to be the largest genus of flowering plants in the world, with over 2500 species worldwide and over 400 species in North America, primarily in arid regions of the western U.S. There are an additional 200 plus varieties found in the U.S. and Canada as well.

Not all taxonomies recognize the two varieties of *Astragalus zionis*. When *A.z*. var. *vigulus* was published by S.L. Welsh in 1993 in Rhodora, the typic variety *zionis* was created by default. In Welsh et al 1993 (A Utah Flora), this variety is distinguished from *A.z. vigulus* and is referenced to the same type specimen used to describe the species, *A. zionis*, in 1895. It is also referred to as a "phase."

DESCRIPTION: Perennial, Herbs, **Stems** woody below, or from woody crown or caudex, Taproot present, Nodules present, Stems very short, acaulescent or subacaulescent, Stems prostrate, trailing, or mat forming, Stems less than 1 m tall, Stems solid, Stems or young twigs sparsely to densely hairy, **Leaves** alternate, Leaves petiolate, **Stipules** conspicuous, Stipules membranous or chartaceous, Stipules persistent, Stipules clasping stem at the base, Stipules connate to each other, forming a tuber or sheath, Leaves compound, Leaves odd pinnate, Leaf or leaflet margins entire, Leaflets opposite, Leaflets 10-many, Leaves hairy on one or both surfaces, **Flowers** in axillary clusters or few-floweredracemes, 2-6 flowers, Inflorescences racemes, Inflorescence umbel-like or subumbellate, Inflorescence axillary, Bracts very small, absent or caducous, Flowers zygomorphic, Calyx 5-lobed, Calyx hairy, Petals separate, Corolla papilionaceous, Petals clawed, Petals blue, lavander to purple, or violet, Banner petal narrow or oblanceolate, Wing petals narrow, oblanceolate to oblong, Wing tips obtuse or

rounded, Keel petals auriculate, spurred, or gibbous, Keel tips obtuse or rounded, not beaked, Stamens 9-10, Stamens diadelphous, 9 united, 1 free, Filaments glabrous, Style terete, Style persistent in fruit, **Fruit** a legume, Fruit unilocular, Fruit humistrate, lying on the ground, Fruit freely dehiscent, Fruit oblong or ellipsoidal, Fruit or valves persistent on stem, Fruit fleshy, Fruit coriaceous or becoming woody, Fruit exserted from calyx, Fruit beaked, Fruit glabrous or glabrate, Fruit hairy, Fruit 11-many seeded, **Seeds** cordiform, mit-shaped, notched at one end, Seed surface smooth, Seeds olive, brown, or black. (EOL 2016).

AIDS TO IDENTIFICATION: The two varieties can be distinguished by the following (Welsh et al 1993):

Mature pods 25-35 mm long, 9-12mm wide; plants often very large, mat-forming up to 1 meter across; endemic to the Pine Valley Mountains……...*A. zionis* var. *vigulus*

Mature pods 15-25(28) mm long, 5.5-9mm wide; plants mat-forming or tufted, seldom over 2.5 dm across; rather broadly distributed in southern Utah…… *A. zionis* var. *zionis*

Welsh et al 1993 also states that this widespread phase of the Zion Milkvetch is easily distinguished from most of the Argophylli by its acute leaflets in combination with the bright pink-purple flowers and mottled pods.

The Arizona plants, as compared with typical Utah specimens, tend to have more copious pubescence, shorter and less acute leaflets, shorter peduncles and less arcuate pods (Kearney and Peebles 1951).

ILLUSTRATIONS:

Photos and Herbarium Mounts: http://eol.org/pages/639472/media.

TOTAL RANGE: Reported in NatureServe to occur in southern Utah, northern Arizona and New Mexico. SEINet does not list any specimens from New Mexico.

RANGE WITHIN ARIZONA: Known from two collections: Vermillion Cliffs locality, Coconino County; and the Chuska Mountains, Apache County.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Perennial herb.

PHENOLOGY: Flowering: Mid-April to early June.

BIOLOGY:

HABITAT: On sandstone and in sandy and gravelly soils; talus under cliffs; dunes.

ELEVATION: 4400 – 7970 feet (1340-2430m) from Welsh et al 1993.

EXPOSURE: Not specified.

SUBSTRATE: Sandy and gravelly soils, talus; from sandstone.

PLANT COMMUNITY: Blackbrush, sagebrush, Ephedra and other mixed desert shrub (sometimes salt desert shrub), mountain brush, pinyon-juniper, ponderosa pine and riparian communities.

POPULATION HISTORY AND TRENDS: Unknown for Arizona. There are only two known historical collections. Although the plant is questionably critically imperiled in Arizona according to NatureServe, its global status is apparently secure because it is locally abundant along the Zion Escarpment in Kane and Washington Counties, UT, and in scattered stations along the Colorado and San Juan Rivers and their tributary creeks from Cococino County, AZ into southern San Juan Co., UT.

SPECIES PROTECTION AND CONSERVATION

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

MANAGEMENT FACTORS: None specified.

PROTECTIVE MEASURES TAKEN: None specified, although one of the known collections was from within the Paria Canyon Wilderness Area.

SUGGESTED PROJECTS: Surveys should be conducted, probably in the Vermillion Cliffs locality, to determine if the variety is still extant in Arizona.

LAND MANAGEMENT/OWNERSHIP: USDI Bureau of Land Management, Arizona Strip Field Office and Paria Canyon Wilderness Area; USDI Bureau of Indian Affairs, Navajo Nation.

SOURCES OF FURTHER INFORMATION

REFERENCES:

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION:

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