ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract **Element Code:** PDONA0B0H0

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Ludwigia palustris*
COMMON NAME: Marsh Purslane
SYNONYMS: *Isnardia palustris, Dantia palustris, Tiphogeton palustre*
FAMILY: Onagraceae

AUTHOR, PLACE OF PUBLICATION: Elliott, Stephen. A Sketch of the Botany of South-Carolina and Georgia 1(3): 211. 1817.

TYPE LOCALITY: Sweden (earliest JStor record, see Type Specimen).

TYPE SPECIMEN:
S (Sweden) S09-36132. Osbeck, P. (SN). 1752/9. Filed as *Isnardia palustris*.

TAXONOMIC UNIQUENESS: *Ludwigia* is a large genus with over 80 species worldwide and 31 species with eight subspecies found in the US and Canada. *L. palustris* is the most widely distributed, and one of three species in Arizona. The other two are *L. peploides* and *L. repens.*

DESCRIPTION: This perennial plant is about 3-12" long and branches occasionally. When it is out of the water, its stems and leaves sprawl across the ground; within shallow water, it ascends toward the surface, where its upper stems and leaves usually poke above the water. The stems are light green to bright red, glabrous, and somewhat succulent. The opposite leaves are up to 1½" long and ¾" across; they are lanceolate to ovate, medium green to dark reddish green, glabrous, and smooth along the margins. Each leaf tapers into a short petiole and has a blunt tip. When the stems are above the water surface, sessile flowers develop from the axils of the middle to upper leaves; there is only one flower per leaf axil. Each flower has a short tubular calyx with 4 teeth, 4 short stamens, and a very short style above the developing ovary. The petals are absent or very small and insignificant. The calyx is green and glabrous, while its teeth are triangular-ovate. The non-showy flowers are probably self-fertile. The seed capsule develops within the persistent calyx; it is a little less than ¼" long, 4-angled and flat-topped. Each 4-chambered seed capsule contains many tiny seeds. The root system is shallow and fibrous. (Encyclopedia of Life, 2014.)

AIDS TO IDENTIFICATION: From Munz 1974:

Stamens in 2 series, mostly 8-10 in number, petals 10-20 mm long. Bracteoles at base of ovary deltoid; caps. mostly 2-3 mm thick……*L. peploides*

Stamens in 1 series, 4-5 in number, petals none or small and quickly shed:

Ovary with 4 evident longitudinal bands; basal bracteoles from not evident to ca. 1 mm long; petals none……*L. palustris*
Ovary lacking green bands; bracteoles above the base and 1-5 mm long; petals present, but easily shed……*L. repens*

ILLUSTRATIONS:
Photo, Herbarium Mounts: http://swbiodiversity.org/seinet/taxa/index.php?taxon=Ludwigia palustris.
Photo, Line Drawings, Herbarium Mounts: http://eol.org/pages/583009/media.

TOTAL RANGE: *L. palustris* is widespread in western, central and southern Europe, occurring from the United Kingdom, France and Spain to Poland and the Ukraine, the Balkans and Turkey. It also occurs in North Africa and west Asia, as well as North America, and has apparently been introduced to New Zealand, Hawaii and Australia. Because the plant spreads easily and becomes naturalized, its native distribution has become unclear. (Encyclopedia of Life, 2014.)

RANGE WITHIN ARIZONA: There are nine collection sites in Arizona. Four in north-central Maricopa County; two in northeast Pima and one in southwest Graham Counties, and two in Santa Cruz County.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Perennial aquatic herb.

PHENOLOGY: In general, the blooming period occurs from mid-summer into the fall. From Arizona collections, both flowers and fruits were noted in late August and September.

BIOLOGY: This plant can reproduce vegetatively by forming rootlets near the axils of the lower leaves.

HABITAT: *L. palustris* typically occurs in mesotrophic to eutrophic conditions in springs, streams and swamps, often in shallow pools and very slow flowing permanent waters.

ELEVATION: Based on actual collections made in Arizona: 1015-4425 feet (310-1350m).

EXPOSURE: Not specified, but certainly open in some desert water point settings, and likely shaded in some riparian settings.

SUBSTRATE: Not specified, but presumably saturated or seasonally saturated soils.

PLANT COMMUNITY: Mid to lower elevation communities associated with desert water points and riparian communities. Specific plants noted at collection sites include: *Populus fremontii, Salix gooddingii, Xanthium strumarium, Typha* spp, and *Washingtonia filifera.*

POPULATION HISTORY AND TRENDS: There is no information available on population sizes or trends for this species. It was first collected in Arizona in 1908, but more than half of the collections have been made since 2004. Given its obligatory association with water sources and riparian settings, which are valued and generally protected in Arizona, it may be presumed that its habitat is somewhat stable, so the species may be as well. It is considered by NatureServe to be critically imperiled in the State, primarily due to the limited number of known localities.

SPECIES PROTECTION AND CONSERVATION

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

MANAGEMENT FACTORS: None specified.

PROTECTIVE MEASURES TAKEN: None known.

SUGGESTED PROJECTS: Expand surveys at other appropriate waters in southern Arizona to better define the presence and distribution of *L. palustris*.

LAND MANAGEMENT/OWNERSHIP: The majority of collections have been made on private lands (this would not be uncommon in Arizona where water assets are highly valued). One site along the Salt River was on the BIA-Salt River Pima Indian Reservation, and there were two collections made on US Forest Service lands in Coronado National Forest.

SOURCES OF FURTHER INFORMATION

REFERENCES:

Encyclopedia of Life, accessed 06/06/2014, http://eol.org/pages/583009/details.
JStor| Global Plants, accessed 06/06/2014, http://plants.jstor.org/specimen/s09-36132?s=t.
Munz. Phillip A. 1974. A flora of southern California. Univ. of CA Press, Berkeley. p. 612.
Tropicos, accessed 06/06/2014, http://www.tropicos.org/Name/23200104.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION: The plant is cultivated for aquariums. A bluish black flea beetle, *Altica litigata*, feeds on the foliage of Marsh Purslane and other *Ludwigia spp.* The tiny seeds of this species can probably cling to the feathers or muddy feet of ducks and geese; these waterfowl probably spread the seeds to new wetlands.

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