



ARIZONA GAME AND FISH DEPARTMENT  
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract

Element Code: PDASC02290

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**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Asclepias welshii* N. & P. Holmgren

**COMMON NAME:** Welsh's Milkweed

**SYNONYMS:**

**FAMILY:** Asclepiadaceae

**AUTHOR, PLACE OF PUBLICATION:** N.H. Holmgren and P.K. Holmgren, Brittonia 31(1): 110-114, f. 1-2. 1979.

**TYPE LOCALITY:** North end of Coral Pink Sand Dunes, Kane County, Utah, U.S.A.

**TYPE SPECIMEN:** HT: NY. N. Holmgren and P. Holmgren 9009, 20 June 1978. IT: BRY, UT, UTC.

**TAXONOMIC UNIQUENESS:** Asclepiadaceae has approximately 250 genera and 2000 species (18 genera and 75 species in North America), chiefly of tropical and subtropical regions of both hemispheres. *A. welshii* is a very distinctive species with no obvious close relatives (Sundell 1993).

**DESCRIPTION:** Herbaceous perennial with a root system of vertical taproots and horizontal runners connecting clusters of stems 2.5-10 dm (10-40 in) tall, erect or ascending; few to several in a cluster. Leaves opposite, densely white-woolly pubescent at first, becoming glabrous especially beneath. Upper leaves broadly elliptic to ovate or obovate with short petioles, 7.0-9.0 cm (2.8-3.6 in) long, 3.5-6.0 cm (1.4-2.4 in) broad. Lower leaves are smaller, sessile, with acuminate tips. Foliage and stems with dense white-woolly tomentum. Inflorescence spherical, 7 cm (2.8 in) in diameter on a short pedicel, compactly many-flowered with the flowers so crowded as to prevent the corolla lobes from becoming truly reflexed. Pedicels 8-13 mm long, cottony-pubescent. Peduncles 2-4 cm (0.8-1.6 in) long. Corolla 6-7 mm long, ovate, cream colored with rose-tinged center, reflexed at base with lobes usually forced upward in the thick-lacked umbel, tomentulose beneath. Large broadly oval seeds 20+ mm long, with rudimentary tuft of hairs. Few fruits develop; propagates mostly from rhizomes.

**AIDS TO IDENTIFICATION:** “*A. welshii* is distinguished by its anther wings, which are broadest near the middle rather than at the base, by its warty rather than smooth follicles, and by its sepals, which are subequal to the corolla lobes rather than obviously shorter”

(Holmgren and Holmgren 1979). According to Falk and Jenkins et al. (2001), “*A. welshii* is distinguished from other milkweeds by its large seeds, spreading to pendulous follicles and cottony-pubescent pedicles. Juvenile resembles *A. cutleri* Woodson.”

Two other growth forms are known to exist. What is designated as the “primary” growth form has narrow linear leaves and looks very similar to *A. subverticillata*. A second form exhibits intermediate leaf traits of the “primary” form and the first description (the “mature” form described above) and is called the “secondary” form. (CPC accessed 2003).

**ILLUSTRATIONS:** Line drawing (Holmgren and Holmgren 1979:111)  
Color photos of plant and habitat (Joyce Maschinski, *in* [http://ridgwaydb.mobot.org/cpweb/CPC\\_ProfileImage.asp?FN=312](http://ridgwaydb.mobot.org/cpweb/CPC_ProfileImage.asp?FN=312))  
Color photo (Ben Franklin, *in* Utah Div. of Wildlife Res., <http://www.utahcdc.usu.edu/rsgis2/Search/Display.asp?FINm=asclwels>)  
Line drawing (KHT *in* Falk and Jenkins et al. 2001)  
Color photo of plant in habitat (Joyce Maschinski, *in* Falk and Jenkins et al. 2001)  
Color photo of plants in habitat (Ben Franklin, *in* Falk and Jenkins et al. 2001)

**TOTAL RANGE:** Near the Utah-Arizona state line, from the Coral Pink Sand Dunes and Sand Hills, in Kane County Utah, and from Coconino, Navajo and Apache counties, in Arizona. NatureServe (2005), reports “The known range is in Coconino County, Arizona and Kane County, Utah,” however, it has been recently (2002) collected in Navajo County, Arizona (D. Roth, *in* SEINet accessed 2005).

**RANGE WITHIN ARIZONA:** From the Paria Plateau and Hwy 160 north of Wildrose Spring, Coconino County, and in Little Capitan Valley in Navajo County east into Apache County.

## **SPECIES BIOLOGY AND POPULATION TRENDS**

**GROWTH FORM:** Perennial forb/herb.

**PHENOLOGY:** Flowers May to June, with seed dispersal from July to early September. Utah Div. of Wildlife Res. (UDWR) reports flowering from June to August.

**BIOLOGY:** Plants produce milky juice. They reproduce mainly by rhizomes, but by seed when conditions are right. Pollinated by insects. The dense tomentum on the young parts of *A. welshii* may serve to protect the tender growing tissues from the abrasive wind-blown sand and may be important in reducing transpirational water loss (Cronquist et al. 1984).

**HABITAT:** Found on open, sparsely vegetated semi-stabilized coral pink sand dunes, in sagebrush, juniper, pine and oak communities of the Great Basin desertscrub, at 1700-1900 meters. Occupies both the crest and lee slopes of dunes (derived from Navajo Sandstone), adjusting readily to changes in depth of the sand. (Welsh et al. 1993, *in* NatureServe 2003).

**ELEVATION:** 4,700 - 6,250 ft. (1434 - 1906 m). UDWR reports elevation range of 1542 to 1993 meters (5,056 – 6,534 ft).

**EXPOSURE:**

**SUBSTRATE:** Sand dunes

**PLANT COMMUNITY:** Sagebrush, juniper, pine and oak communities of the Great Basin desertscrub. Associated species include: *Calamovilfa gigantea* (giant reed-grass), *Ericameria nauseosa* (rabbit-bush), *Nama retrorsum* (Betatakin nama), *Penstemon ambiguus* (Gilia beardtongue), *Poliomintha incana* (rosemary mint), *Quercus* (oak), *Redfieldia flexuosa* (blowout grass), *Reverchonia arenaria* (sand reverchonia), *Sophora stenophylla* (fringe-leaf necklace), and *Wyethia scabra* (rough mule's ears). (SEINet accessed 2005).

**POPULATION TRENDS:** Welsh's milkweed is a rare plant due to its small geographic range, narrow habitat specificity, and small number of small populations. Its rareness appears to be naturally caused but makes the species more vulnerable to both natural and human-induced extinction. (Meyer, accessed 2003). Known from 4 location with a total of approximately 20,000 above-ground stems; the number of genetic individuals is unknown (NatureServe 2003). Based on collections in SEINet (accessed 2005), often described as locally abundant, regionally rare.

CPC (2003) reports that there are now three Utah populations: Coral Pink Sand Dunes (ca. 10,000 individuals), 2.) Sand Hills (ca. 500 individuals), and 3.) Sand Cove (ca. 600 individuals). At least two others are known to exist in Navajo County, Arizona and in the Paria-Vermillion Cliffs Wilderness area near the Utah/Arizona border in Kane County, Utah and Coconino County, Arizona (Palmer and Armstrong 2000, *in* CPC 2003).

## **SPECIES PROTECTION AND CONSERVATION**

**ENDANGERED SPECIES ACT STATUS:** LT with Critical Habitat (USDI, FWS 1987)  
**STATE STATUS:** Highly Safeguarded (ARS, ANPL 1999)  
[Highly Safeguarded (ARS, ANPL 1993)]  
**OTHER STATUS:** Group 3 (NNDFW, NESL 2005)  
[Group 4 (NNFWD, NESL 2000)]

**MANAGEMENT FACTORS:** The species' sand dune habitat is very fragile and is threatened by off-road vehicle (ORV) activity, drought, and to a lesser extent herbivory and trampling by livestock.

**PROTECTIVE MEASURES TAKEN:** BLM has monitored the species for the past 12 years and has been enforcing ORV regulations to protect dunes (Palmer and Armstrong 2000, in CPC 2003).

**SUGGESTED PROJECTS:** Seed germination protocol has been determined, but cultivation for more than 2 years has been problematic. Further cultivation trials are needed. In addition, the possibility of creating new dune habitat adjacent to occupied habitat could be explored.

**LAND MANAGEMENT/OWNERSHIP:** BIA – Navajo Nation; BLM – Arizona Strip Field Office; and Utah State Parks.

## **SOURCES OF FURTHER INFORMATION**

### **REFERENCES:**

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Arizona Revised Statutes, Chapter 7. 1999. Arizona Native Plant Law. Appendix A.  
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**ADDITIONAL INFORMATION:**

The Utah Endangered Threatened and Sensitive Plant Field Guide states ... “Recognized by the large seeds 20 mm long...” This is in contradiction to Holmgren and Holmgren who give the size of the seed as 1.2 mm.

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