

SPECIES EVALUATION

*Salix arizonica*, Priority 1. *Salix arizonica* Dorn (SAAR14). Arizona willow. CNHP G2G3 / S1, Track A  
 FS: R1,R3,R4. -- G2G3. CO S1. Sensitive by means of interagency agreement.

Criteria	Rank	Confidence	Rationale	Sources of Information
1 Distribution within R2	<b>A</b>	<b>L</b>	Only one site known in R2; but terminology does not apply to plants, hence low confidence. Ranked S1 in Colorado, Sa in New Mexico, S2 in Utah, S2 in Arizona.	My observations, specimens at COLO and RM, Arizona Willow Interagency Technical Team 1995, Arizona Game and Fish Department 2002.
2 Distribution outside R2	<b>B</b>	<b>H</b>	More abundant in Arizona and Utah and New Mexico, but nowhere common.	Specimens at COLO and RM, Arizona Willow Interagency Technical Team 1995, Arizona Game and Fish Department 2002.
3 Dispersal Capability	<b>D</b>	<b>M</b>	Dispersal mechanisms unknown.	
4 Abundance in R2	<b>A</b>	<b>M</b>	There are not many botanists that can correctly identify <i>Salix arizonica</i> . A small fraction of potential sites have been checked by qualified botanists. One occurrence in CO, with few plants at the first observation.	My observations, CNHP records.
5 Population Trend in R2	<b>A</b>	<b>L</b>	There are few plants at the one R2 site, and they have all been browsed, probably by a combination of cattle, mule deer, and elk. My inference is that there are fewer plants at the one Colorado site, but we obviously have no monitoring data, since the discovery is so recent (hence the low confidence). This rank must also be tempered by the fact that so few potential sites have been searched for this species. Across the whole distribution of <i>Salix arizonica</i> , populations are mostly small (< 50 individuals), but there are a few larger ones, and some of these have been protected by exclosures (Dorn, personal communication). <i>Salix arizonica</i> is apparently highly palatable to cattle, elk, and deer; somewhat higher palatability than other Subalpine willows such as planeleaf willow and Wolf willow.	My observations.
6 Habitat Trend in R2	<b>C</b>	<b>L</b>	“High elevation wet meadows, streamsides, and cienegas” (AZGFD 2002). “Sedge meadows and wet drainage ways, 3,050–3,400 m [10,000–11,150 ft]” (Mygatt 1999). Clearly Subalpine, from the low subalpine to just below treeline, usually mixed with other short (< 2 m) willows (Dorn, personal communication). Apparently, the one site in R2 has taken moderate to heavy use by big game and livestock for some time, probably about 12 decades, which is typical for many sites across the whole distribution of the species. As is typical with many rangelands, site conditions of riparian areas such as at this site continue to improve as livestock numbers continue to be more closely regulated on public lands. The habitat for <i>Salix arizonica</i> in R2 is probably gradually improving from a low in riparian condition in the middle 20th century, as it is in most riparian sites like this one in Colorado.	My observations, Arizona Fish and Game Department 2002, Mygatt 1999, Johnston and others 2001.

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Criteria	Rank	Confidence	Rationale	Sources of Information
7 Habitat Vulnerability or Modification	A	M	The habitat at the one R2 site is vulnerable to grazing and browsing by large herbivores, as <i>Salix arizonica</i> sites are across its distribution. In recent years, sites like this one have been increasingly used by elk, and to a lesser extent mule deer, as the pressure from livestock is progressively decreased by public land managers. Looking at habitats across the whole range of <i>Salix arizonica</i> , many of them are now being actively managed to protect them from browsing, as part of the interagency agreement on Arizona willow – but some of them are not being protected. At most sites, cattle grazing is a much bigger problem than we often see in R2.	Dorn personal communication, Arizona Game and Fish Department 2002, Mygatt 1999.
8 Life History and Demographics	D	M	Reproduces both sexually and asexually. Otherwise, life history and demographics unknown.	Arizona Game and Fish Department 2002.

National Forests in the Rocky Mountain Region where species is KNOWN (K) or LIKELY (L)\* to occur:

\*. Likely is defined as more likely to occur than not occur on the National Forest or Grassland. This generally can be thought of as having a 50% chance or greater of appearing on NFS lands.

COLORADO NF/NG	K	L	NEBRASKA NF/NG	K	L	WYOMING NF/NG	K	L
Arapaho-Roosevelt NF			Samuel R. McKelvie NF			Shoshone NF		
White River NF			Halsey NF			Bighorn NF		
Routt NF			Nebraska NF			Black Hills NF		
Grand Mesa Uncompahgre Gunnison NF			Ogallala NG			Medicine Bow NF		
San Juan NF			SOUTH DAKOTA NF/NG			Thunder Basin NG		
Rio Grande NF	K		Black Hills NF			KANSAS NF/NG		
Pike-San Isabel NF			Buffalo Gap NG			Cimarron NG		
Comanche NG			Ft. Pierre NG					
Pawnee NG								

**Taxonomy.** Accepted by Argus (1995, 1999, 2002) as a valid species from Arizona, New Mexico, and Utah; recently discovered (2001) in far southern Colorado. Strangely, not mentioned in lists of rare plants from Utah (Utah Division of Wildlife Resources 1998), even though it has been known from Utah since 1994.

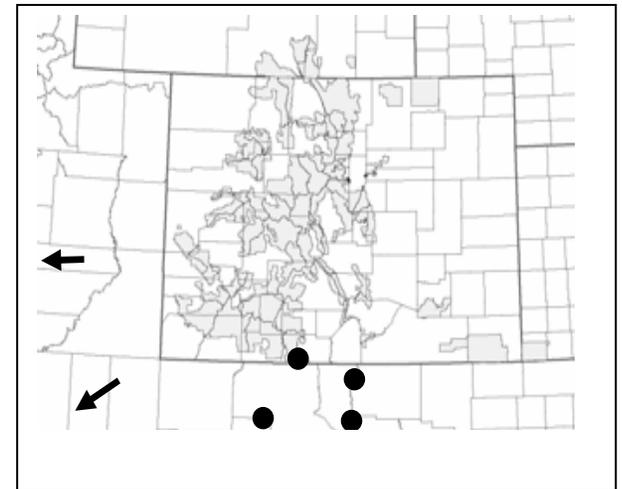
**Discussion.** *Salix arizonica* closely resembles the more widespread *S. boothii* Dorn, but *S. arizonica* has “broader leaves with rounded to cordate leaf bases, and more teeth/glands per cm” (Mygatt 1999). Mature, unbrowsed *Salix arizonica* is mostly < 2 m (but up to 3 m), shorter than *S. boothii*, is darker in color, and less pubescent. These are not clear-cut characters, and so there are not many botanists who can easily identify *S. arizonica*. This has undoubtedly made it more difficult to find new sites.

From the habitat given in the various reports cited, *Salix arizonica* is not apparently limited by habitat. There are not very specific habitat indications: other than a continuous supply of water, the cold temperatures that go with the Subalpine Zone, and an unshaded position, not much has been suggested that might limit habitat. We can add from the distribution that *Salix arizonica* favors a climate in the south, where temperatures are warmer at some time – probably the summer nights (Dorn, personal communication).

Bob Dorn (personal communication) is of the opinion that *Salix arizonica* as a species is “very much imperiled.” The populations are generally not in a good position to survive, except in a few areas, mostly as a result of grazing pressure from cattle and elk. However, there are some notable exceptions – populations protected in ski areas, and there are several key enclosures around.

Certainly, since so many of the plants of *Salix arizonica* are browsed yearly and therefore under stress, understanding what a typical population is and how it behaves is difficult. Also, as is true of other plants, browsed plants are more difficult to identify than open-grown, unbrowsed ones – which leads to further difficulty in identification, searching for new sites, and inventory.

*Salix arizonica* seems to have viability concerns in R2. The usual interpretation of the Interagency Agreement is that the species is “automatically” included on the sensitive species list in any Forest Service Region in which it occurs.



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