

CANDIDATE ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: *Hibiscus dasycalyx*

COMMON NAME: Neches River rose-mallow

LEAD REGION: Region 2

INFORMATION CURRENT AS OF: Feb. 2003

STATUS/ACTION Check all that apply):

New candidate

Continuing candidate

Non-petitioned

Petitioned - Date petition received: ____

90-day positive - FR date: ____

12-month warranted but precluded - FR date: ____

Is the petition requesting a reclassification of a listed species?

Listing priority change

 Former LP: ____

 New LP: ____

Latest Date species first became a Candidate: 3/14/97

Candidate removal: Former LP: ____ (Check only one reason)

A - Taxon more abundant or widespread than previously believed or not subject to a degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status.

F - Range is no longer a U.S. territory.

M - Taxon mistakenly included in past notice of review.

N - Taxon may not meet the Act=s definition of Aspecies.@

X - Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: Plant, Malvaceae

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Texas / USA

CURRENT STATES/COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE:

Cherokee, Houston, Trinity counties, Texas, USA

LEAD REGION CONTACT: Susan Jacobsen, 505-248-6641

LEAD FIELD OFFICE CONTACT: Clear Lake Field Office, Texas, Carlos Mendoza, 281-286-8282

BIOLOGICAL INFORMATION (Describe habitat, historic vs. current range, historic vs. current population estimates (# populations, #individuals/population), etc.):

The Neches River rose-mallow, a perennial woody herb growing 3-7 feet tall with one or more stems per clump, bears large and showy white flowers about 3-6 inches wide, each with five 2-4 inch-long petals that are deep red or purple at the base. The five sepals and 12 bracteoles of the calyx are densely covered with long hairs, distinguishing it from other rose-mallow species. The 2-4 inch long leaves are deeply 3-lobed and arrowhead-shaped, with each lobe linear and slenderly tapering. Leaf margins are irregular or saw-toothed. It blooms in the summer, generally June to September. The fruit is a rounded capsule generally present July to November. Mature seeds are densely pubescent (hairy) and buoyant in water for several hours.

The Neches River rose-mallow is found only in three east Texas counties. It appears to be restricted to wetland areas that are exposed to open sun. It is generally found growing in open, marshy areas (ponds, sloughs, oxbows) within the immediate floodplain of a permanent stream or river. Areas supporting the plant normally hold standing water early in the growing season, with water levels dropping, but never drying completely until very late in the growing season. This species appears to have community dominance within the narrow band between high and low water levels in wetlands exposed to the open sun.

A 1995 status survey covering 10 counties resulted in confirmation or discovery of the species in only three sites, but in three separate counties and three different watersheds, suggesting a relatively wide historical range. These three sites, relatively low in population number, were all located in highway right-of-way (ROW) and are monitored by Texas Parks and Wildlife Department (TPWD). Three more populations, two of them near or adjacent to the existing ROW sites, were discovered in 1996 and 1997. As of 2002, the various populations included:

1) Lovelady site (Highway 230 ROW near Tantabogue Creek southwest of Lovelady in Houston County): supported an average of 3 plants during years 1993-1997, 13 - 1998, 14 - 1999, 8 - 2000, 4 - 2001. Number of stems have ranged from 5 to 73, but averaged 33 for years 1993-1999. Number of fruits/flowers averaged 132 for years 1993-1999. (TPWD data).

2) Maxwell population (on private land adjacent to Highway 230 ROW site in Houston County): supports about 400 plants (year 2002) along a wide drainage-way.

3) Champion site (on private land owned previously by Champion International near White Rock Creek in west Trinity County): supported more than 300 individuals as of year 2001, but status is currently unknown due to change in ownership.

4) Highway 94 ROW and roadside park site (near Neches River in east Trinity County): supported an average of 35 plants for years 1993-1995, 15 in 1996-1998, 49 - 1999, 17 - 2000, 15 - 2001. Number of stems ranged from 25 to 200, but averaged 103 for years 1993-1999. Number of flowers/fruits averaged 176 for years 1993-1999. The species has begun successfully colonizing an area left un-mowed by maintenance personnel at TPWD's request. In 2001, five hybrids, along with 10 *H. moscheutos* plants and four *H. laevis* plants, were observed at this site. By request, Texas Department of Transportation has removed these plants, and has also completed an experimental mowing of one section of the ROW to gauge the rose-mallow's response.

5) Temple-Inland site (on private land owned by Temple-Inland Corporation near Highway 94 park site in east Trinity County): supports more than 300 plants within a large, managed wetland. This site continues to be productive and show no evidence of hybridization.

6) Ponta site (Highway 204 ROW on Mud Creek in Cherokee County): only one plant within ROW monitored regularly during years 1993-2000; number of stems averaged 6 and number of flowers/fruits averaged 100 for 1993-1998. 5 plants were seen in 2001. Some 75-100 plants lying beneath the Mud Creek bridge (but in open sun) have been inaccessible due to high water. Active hybridization is evident.

7/8) In spring 2000, the recovery team received permission to introduce propagated plants onto two areas of Davy Crockett National Forest. A total of nearly 800 plants were placed within Compartments 16 and 20 (new Sites 7 and 8).

THREATS:

A. The present or threatened destruction, modification, or curtailment of its habitat or range.

Historical habitat has been affected by drainage and filling of floodplain depressions and oxbows, stream channelization, road construction, timber harvesting, agricultural activities (primarily mowing and grazing), and herbicide use. Threats to current potential habitat include wetland alteration, herbicide use on private lands and along powerline rights-of-way, grazing, and mowing. Although the three highway right-of-way populations are protected by management agreements which establish herbicide and mowing restrictions, they remain vulnerable to agricultural activities (herbiciding and mowing) occurring on adjacent areas, and appear to be declining in number as a result. Populations in Houston and Cherokee counties have been seriously impacted in recent years by heavy herbicide use. Populations on private lands generally receive no protection. Another severe threat is potential hybridization with more weedy mallow species, which are invading *H. dasycalyx* sites due to habitat alteration.

B. Overutilization for commercial, recreational, scientific, or educational purposes.

Members of the *Hibiscus* genus are of high horticultural interest, but no overutilization threats to this species are currently known.

C. Disease or predation.

Although the first foliage of the year is often consumed by insects before mid-summer, rose-mallow plants regularly produce a second crop of leaves which are not eaten, so predation is not generally seen as a major threat. However, in 2001, about 90% of rose-mallow leaves at the Lovelady site showed evidence of insect herbivory. The potential effect on reproductive success at this site is unknown.

D. The inadequacy of existing regulatory mechanisms.

With the exception of two recent introductions onto National Forest land, all known populations are on private land or within State (Texas Department of Transportation) highway right-of-way. Management agreements have been developed for right-of-way sites, with mixed results. Plants on private lands receive little protection unless the landowner is willing to establish such restrictions. Protection measures for all plants are limited in Texas because of the large proportion (97 percent) of private land. Currently, there are no restrictions on use of herbicides near populations on private land, and only limited review of federally-funded wetland projects that could affect the species.

E. Other natural or manmade factors affecting its continued existence.

All populations of this plant are currently at high risk of genetic swamping by invasion of other *Hibiscus* species that appear to be better adapted to human disturbance. In 2001, TPWD and FWS recorded signs of active hybridization at the highway 94 site. Five hybrids, along with 10 *H. moscheutos* plants and 4 *H. laevis* plants were observed in areas of frequent mowing and possible exposure to herbicides. Hybridization is also evident at the Ponta site.

Extreme drought (the worst ever recorded in Texas) in east TX during years 1998-2001 resulted in stunted plants and erratic flowering and fruiting. Most sites that supported flowering held some water in the beginning of the season, but soon dried, probably resulting in poor fruiting success. Rainfall returned in 2002, resulting in improved survival and reproduction.

BRIEF SUMMARY OF REASONS FOR REMOVAL, OR LISTING PRIORITY CHANGE:

N/A

FOR RECYCLED PETITIONS: N/A

- a. Is listing still warranted? ___
- b. To date, has publication of a proposal to list been precluded by other higher priority listing actions? ___
- c. Is a proposal to list the species as threatened or endangered in preparation? ___
- d. If the answer to c. above is no, provide an explanation of why the action is still precluded.

LAND OWNERSHIP (Estimate proportion Federal/state/local government/private, identify non-private owners): Approximately 20% of known sites lie within Texas Department of Transportation rights-of-way. Approximately 80% occur on private lands, to which FWS

currently has limited access. Two new populations have been established on National Forest land, and their survival is being monitored.

PRELISTING (Describe status of conservation agreements or other conservation activities):

A recovery team is in place that includes FWS, Texas Parks and Wildlife Department (TPWD), U.S. Forest Service (USFS), The Nature Conservancy of Texas (TNC), Stephen F. Austin State University, and private industry.

With partial funding from National Fish and Wildlife Foundation, Stephen F. Austin State University (SFASU) is conducting a genetic analysis of the Neches River rose-mallow and its related species, based on plant tissue collected from known sites in summer 1998. They are also determining the species' habitat needs based on experimental plantings at a site on Mill Creek in Nacogdoches County. Finally, they have propagated more than 2000 plants that are available for introduction efforts.

TPWD has management agreements in place with Texas Department of Transportation to protect the three right-of-way populations (Lovelady, Ponta, Highway 94).

Davy Crockett National Forest (DCNF) represents the only public land within the range of the rose-mallow. Using aerial photos and site visits, FWS-Clear Lake identified two wetland sites that supported favorable wetland habitat. DCNF Ranger Raoul Gagne and Forest Supervisor Ronnie Raum gave permission for an introduction project. In April 2000, nearly 800 plants from SFASU's facilities were placed within DCNF, with the help of SFASU, FWS, TPWD, USFS, and TNC. These plants are being monitored and are displaying relatively high survival and reproduction. If the project is successful, DCNF has located up to 10 additional areas that might be suitable for reintroduction.

FWS-Clear Lake has developed a Conservation Agreement with Temple-Inland Forest Products Corporation (east Trinity County) for the population found on its land. The agreement allows for future protection for the current population and the possibility of reintroductions of the species in additional sections of their property.

In January of 1998, FWS-Clear Lake entered into a Conservation Agreement with Champion International to protect the population found on their land in west Trinity County. However, in mid-2000 Champion was bought and absorbed by the International Paper Corporation (IP) (world's largest paper and forest products company). This site was listed for sale by IP and the current status of this population is unknown.

The Maxwell (William Earl Maxwell) site has also been made available for sale, and funds are needed for direct purchase or conservation easement. A recent call for proposals offered funds for land acquisition for listed species only, rather than candidate species. This eliminated the best option we had for protection and recovery of this species. However, the Natural Areas Preservation Association, with help and support from FWS-Clear Lake, is currently seeking funding to support purchase of this site.

REFERENCES:

- Carr, W.R., S.L. Orzell, and J.M. Poole. 1990-1999. Texas Natural Heritage Program element occurrence records. Texas Parks and Wildlife Department, Endangered Resources Branch, Austin, TX.
- Klips, R.A. 1995. Genetic affinity of the rare eastern Texas endemic *Hibiscus dasycalyx* (Malvaceae). *American Journal of Botany* 82(11):1463-1472.
- Scott, S. 1997. The horticultural treatment and introduction of a rare wetland plant - Neches River rose-mallow (*Hibiscus dasycalyx*). M.S. thesis, Stephen F. Austin State University. 57 pp.
- Scott, S. and D. Creech. 1997. Saving the rare Neches River rose-mallow *Hibiscus dasycalyx*. *Native Plant Society of Texas News* 15(1):10.
- Warnock, M.J. 1995. Status report on *Hibiscus dasycalyx*. Prepared for the U.S. Fish and Wildlife Service. 40 pp.

LISTING PRIORITY (place * after number)

THREAT

Magnitude	Immediacy	Taxonomy	Priority
High	Imminent	Monotypic genus	1
		Species	2
		Subspecies/population	3
	Non-imminent	Monotypic genus	4
		Species	5*
		Subspecies/population	6
Moderate to Low	Imminent	Monotypic genus	7
		Species	8
		Subspecies/population	9
	Non-imminent	Monotypic genus	10
		Species	11
		Subspecies/population	12

Rationale for listing priority number:

Magnitude: One population that had been considered to be protected for the future is in peril due to a change in land ownership. Another population is on private land that is currently for sale. With these changes in land status, only two populations remain in place and protected for the time being. We are still determining the success of two reintroduction efforts on USFS land. Rose-mallow numbers at two ROW sites are declining in number and are not contributing to recovery.

Imminence: The populations of the species are now isolated, occurring in three counties in east Texas. Two of the eight populations are currently protected under Conservation Agreements. Two populations that were reintroduced by the recovery team, on Forest Service land, are still being monitored for success, but plants are present and producing seed. Greenhouse plants at Stephen F. Austin State University are available in sufficient numbers to allow introductions as more sites are secured. Therefore, we conclude that extinction is not imminent at this time.

APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes to the candidate list, including listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all additions of species to the candidate list, removal of candidates, and listing priority changes.

Approve: Tom Bauer March 14, 2003
Acting Regional Director, Fish and Wildlife Service Date

Concur: _____
Director, Fish and Wildlife Service Date

Do not concur: _____
Director, Fish and Wildlife Service Date

Director's Remarks:

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Date of annual review: Feb. 14, 2003

Conducted by: Kathy Nemecek - Clear Lake (Houston) Field Office, Region 2

Comments: _____

