

**PETITION TO LIST PARISH'S ALKALI GRASS  
Puccinellia parishii  
AS A FEDERALLY ENDANGERED SPECIES**

(graphic)

**December 13, 1993**

Mr. Bruce Babbitt  
 Secretary of the Interior  
 Office of the Secretary  
 Department of the Interior  
 18th and "C" Street, N.W.  
 Washington, D.C. 20240

Peter Galvin, Kieran Suckling, the Greater Gila Biodiversity Project, and the Southwest Center for Biological Diversity hereby formally petition to list Parish's Alkali Grass (*Puccinellia parishii*) as endangered pursuant to the Endangered Species Act, 16 U.S.C. 1531 et. seq. (hereafter referred to as "ESA"). This petition is filed under 5 U.S.C. 553(e) and 50 CFR 424.14 (1990), which grants interested parties the right to petition for issue of a rule from the Assistant Secretary of the Interior.

Petitioners also request that Critical Habitat be designated for Parish's Alkali Grass concurrent with the listing, pursuant to 50 CFR 424.12, and pursuant to the Administrative Procedures Act (5 U.S.C. 553).

Petitioners understand that this petition action sets in motion a specific process placing definite response requirements and timelines on the U.S. Fish and Wildlife Service. The 90 Day Finding on this petition will be due approximately March 15, 1994.

#### PETITIONERS

**Peter Galvin is an endangered species researcher and resides in Silver City, New Mexico.**

**Kieran Suckling is a Doctoral Candidate and endangered species researcher. He serves as the Director of the Greater Gila Biodiversity Project.**

**The Greater Gila Biodiversity Project is a non-profit public interest organization created to protect imperiled species and habitats within the Greater Gila Ecosystem of Southwest New Mexico and Eastern Arizona. Through public education, Endangered Species Act Petitions, appeals and litigation, it seeks to restore and protect the integrity of the Greater Gila Ecosystem.**

**The Southwest Center for Biological Diversity is a non-profit public interest organization dedicated to protecting the diverse life-forms of the American Southwest and Northern Mexico.**

## METHODS

Much of the information in this petition was obtained from Status Report Puccinellia parish Hitchc. 1991 Phillips, Arthur M III., Phillips, Barbara G. Museum of Northern Arizona.

This document is incorporated by reference into the petition.

## ABSTRACT

*Puccinellia parishii* is known to occur in only three places in the world. The only known viable population occurs on Grant County, New Mexico on lands owned by Chino Mines, a subsidiary of the Phelps-Dodge Corporation.

The plant has been verified from three? (call Anne Cully) widely separated locations where it occurs adjacent to alkali seeps or small springs. The sites range from interior southern California to southwestern New Mexico. (Phillips and Phillips 1991)

Phillips and Phillips (1991) concluded that "parishii is a rare plant in an unusual and vulnerable habitat. Its' small widely disjunct populations are subject to natural climactic and hydrologic variations and human habitat disturbance which have apparently caused the loss of several populations and wide fluctuations in local numbers in others".

### Population Biology

#### A. Summary:

"This rare species appears to have declined in the past 40 years due to loss of habitat. Only one healthy location remains without serious habitat alteration or disturbance, covering less than 8 ha. Numbers of plants of up to a few thousand are possible, depending on favorable springflow; seeds may survive for an undetermined number of years in the seedbed if dry conditions prevail".

#### B. Demography:

Recently its presence has been confirmed only at near Faywood Hot Springs, N.M. and at Rabbit Springs, California. "Soreng 1986 (in Phillips 1991) reported "at least 5,000 plants;" several hundred plants appeared to be present in May, 1987 under dry conditions (Phillips and Phillips 1991)

(call A. Cully (others) for more recent pop. info and ca. site pop. info.)

## TAXONOMY

Scientific Name: *Puchinellia parishii* Hitchc.

Common Name: Parish's Alkali Grass

Family: Gramineae, the Grass family

Plant Group Monocotyledonae (the Monocots)

## DESCRIPTION:

Non-technical: "Annual, bluish-green grass with flowering stems 1-8 inches tall and numbering 1-25 per plant. Leaves 0.5 to 1.5 inches long, firm upright, very narrow. Inflorescence 0.5 to 1.5 (-4) inches long, narrow, few-flowered, each division with 2-6 flowers, glumes much shorter than the lemmas, lemmas hairy on the mid and lateral veins nearly to the tips.

Technical: "Annual; culms 3-10 cm. tall; blades flat to subinvolute, less than 1 mm. wide; panicle narrow, few-flowered, 1-4 cm long; spikelets 3-6 flowered, 3-5 mm. long; lemmas about 2mm. long, obtuse to truncate, scarious and somewhat erose at the tip, pubescent on the mid and lateral nerves nearly to the apex and on the intermediate nerves about half way. (Hitchcock 1928 in Phillips and Phillips 1991)

## NATURAL HISTORY

### Table One (From Phillips and Phillips 1991)

#### Habitat Description

##### A. General

##### Grant Co., NM:

Open saline area below about 300 m below a perennially flowing spring, moist soils with salty crust and without dense vegetation cover, downstream from willows (*Salix goodingii*) which are present at the point of outflow of the spring. After about 200 m the flow goes underground and the trees stop; downstream a few meters moisture re-emerges to the surface, perhaps enhanced by additional seepage at the site, evaporating and leaving a very saline microhabitat. It is in these moist saline areas that the plants are found. The suitable habitat is less than 8 ha and the plants are abundant over less than half this area (Soreng 1986 in Phillips 1991).

##### Tuba City, Arizona:

Canyon bottom, perennially wet from spring adjacent; large cottonwoods occasional, area grazed, plants growing in the moist footprints of cattle.

### Table 2. Biological Characteristics (From Phillips and Phillips 1991)

#### 1. Vegetation:

Local moist alkaline saltgrass community in riparian zone, surrounded by degraded desert grassland.

#### 2. Biotic Community:

##### Grant Co., NM (Brown 1982):

Wetland: Saltgrass Series of Chihuahuan Interior Marshland.

Adjacent Habitats: Grama Grass-Scrub series of Scrub-Grassland (Semidesert Grassland) surrounding immediate site.

Parish's Alkali Grass has been verified at locations ranging from 2900 feet (Rabbit Springs) to 5-6000 feet (Shonto) (Phillips and Phillips 1991).

GEOGRAPHIC RANGE (Phillips and Phillips 1991) reported that "The plant has been verified from five small, widely disjunct sites where it is restricted to alkali seeps or small springs ranging from interior southern California to southwestern New Mexico".

These same authors speculate that Parish's Alkali Grass may have once been more common when wetland habitat was more extensive in the Southwest:

"*Puccinellia parishii* has an unusually disjunct distribution pattern. This may represent relictual occurrences of a once more widespread species and habitat. In the late Pleistocene there were many lakes in the now arid southwestern United States and Northern Mexico. These were both spring fed and fed by seasonal runoff. As the climate warmed and dried in the Holocene, these shrinking and increasingly saline lakes may have harbored large populations of *Puccinellia*. Today very few of those lakes, which now are seasonally dry, have moisture for sufficiently long periods for the plants to grow and reproduce; however such sites have been systematically developed as water sources for livestock, farming and other domestic human activities in the past hundred years, accelerating their loss or modification" (Phillips and Phillips 1991).

### **PRESENT LEGAL STATUS**

A. Federal: USFWS Category 1 (citation)

B: State: CA: Calif. Native Plant Society List 1B (plants rare, threatened or endangered in CA and elsewhere) (CNPS), not state listed.

AZ: not protected under Arizona Native Plant Law, ARS 3-901.

NM: not state protected.

There is no state protection for Parish's Alkali Grass in any of the states with known sites.

### **Land Ownership and Management Responsibilities**

Grant Co., NM site: Land is owned by Chino Mines Co. of Hurley-NM, a subsidiary of Phelps-Dodge.

Tuba City and Shonto, AZ: land owned by Navajo Nation.

Rabbit Springs, CA: ownership unknown.

Habitat Management: Chino Mines (P-D) has a cattle grazing lease on area, access is restricted.

THREATS TO THE SPECIES: The present or threatened destruction, modification or curtailment of its habitat or range:

"It is a rare plant in an unusual and vulnerable habitat. Its small widely disjunct populations are subject to natural climactic and hydrologic variations and human habitat disturbance which have apparently caused the loss of several populations and wide fluctuations in local numbers in others".

### **Limited Distribution/Small Population Size**

There has been considerable effort in searching for this species in the past few years, both by botanists

concerned about endangered species and those who are taxonomic specialists..."there is only one viable population known to exist, and that is on private land owned by a copper mining company".

Survival of species is strictly dependent upon continued free flow from spring at Grant Co., NM site. Other historic sites have apparently been lost due to habitat loss or modification.

#### OVERUTILIZATION FOR COMMERCIAL, RECREATIONAL SCIENTIFIC OR EDUCATIONAL PURPOSES

Phillips and Phillips (1991) reported "none evident". As noted above however, the strong likelihood increasing human utilization of the area concurrent with the adjacent hot spring resort development poses potential threats from overcollection, mishandling, and/or trampling by curiosity seekers, botany enthusiasts, anti-botany vandals, and researchers.

#### DISEASE OR PREDATION

"Known sites are not protected from grazing, which may be concentrated at sites due to water source. Tuba City site heavily grazed by cattle. A local rancher has a permit to graze cattle at the Grant Co., NM site."

#### INADEQUACY OF EXISTING REGULATORY MECHANISMS

"Threats include livestock grazing, farming water diversions and impoundments, surface water loss and groundwater pumping. (USFWS Handbook of Arizona's Rare Plants, Summer 1992).

Faywood Hot Springs has recently been sold from P-D to a private landowner who is planning to open a commercial hot springs business, including camping and RV hookups eventually (see attached article). The only known viable population of Parish's Alkali Grass occurs immediately adjacent to the Faywood Hot Springs property. The increase in human usage of the area (currently access is restricted and no trespassing signs are posted) there will likely be much more human usage of the general area. The potential negative impacts of this increased human recreational usage of the area to Parish's Alkali Grass could include: increased trampling, potential for increased collection for scientific purposes as more people become aware of the species presence, groundwater pumping by the adjacent Hot Springs Business could change the hydraulics of the springs. Most importantly is that currently P-D has no legal responsibilities to protect this species and the sole entire known viable population of this species exists on private land with no legal protective status.

The USFWS itself recognizes the current inadequate protective status: Parish's Alkali Grass was included on the anticipated listing activities in New Mexico for Fiscal Year 1994 (FY94). The FWS anticipated that it would publish a proposed rule to list as endangered in FY94. (10/13/93 FWS NM ECo. Serv. Let to Dr. Robin Silver FY 94 anticipated listings).

#### **Other Natural or manmade factors affecting its continued existence:**

**Plants are extremely variable in their abundance from year to year, apparently depending on moisture** availability. Seeds may remain dormant in soil during drought periods; number of years they will survive is unknown.

## LITERATURE REFERENCED

Status Report **Puccinellia parishii** Hitchc. 1991. Phillips, Barbara G., Phillips, III M. Arthur Museum of Northern Arizona report to USFWS.

Let to Dr. R. Silver (FY 94) anticipated listings 10/13/93 FWS NM Ecological Services.

APPENDIX A (from Phillips and Phillips 1991)

PARISH'S ALKALI GRASS OCCURANCES

(include pages verbatim from Stat. Rev w/notes)





**CRITICAL HABITAT DESIGNATION RECOMMENDED**

Petitioners strongly recommend the designation of Critical Habitat for Parish's Alkali Grass concurrent with its listing. Its' extreme rarity and subsequent extremely high vulnerability to extinction makes designation of adequate Critical Habitat essential. Critical Habitat Designation should includ sites where the plant is currently known to occur, at historic locations, and currently unnoccpied suitable habitat.

Please respond to: Peter Galvin, POB 742, Silver City, NM 88062  
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Respectfully submitted,

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Dated this 13th Day of December 1993.