

the petitioners did not adequately present information about the status, distribution, and abundance of the species and that they did not address any of the potential threats to the species. The petition requested that we remove this plant from the List of Endangered and Threatened Wildlife and Plants on the basis of original data error and cited the Report to Congress on the Endangered and Threatened Species Recovery Program, USFWS, 1990, Washington DC, as stating that "New populations have been found in the lower Rio Grande Valley and this species now appears to be more abundant and widespread than previously thought." The petitioner also indicated that information already in our possession showed that this plant was significantly more abundant than known at the time of listing.

Although the petitioner referred to sufficient information being in our possession to validate their request for delisting, we did not have this level of data within our files at that time. We also did not have locality maps, size or viability information for all the known populations, or the data to analyze threats to these populations at the time of the draft administrative finding. We also anticipated extensive new information being made available in the near future from an ongoing study of the species by TPWD. Thus we did not go forward with a finding at that time.

We received the TPWD report, dated December 15, 1999, in the spring of 2000. Based upon information contained in the report, as discussed throughout this proposed rule, we made a determination to proceed with a proposed rule to delist *Frankenia johnstonii*. Thus, this proposed rule constitutes our 90-day and 12-month finding for the petition to delist *Frankenia johnstonii*.

#### Summary of Factors Affecting the Species

After a thorough review and consideration of all the available information, including the TPWD's 1999 status report, we have determined that *Frankenia johnstonii* (Correll) should be removed from the List of Endangered and Threatened Wildlife and Plants. Section 4(a)(1) of the Act and regulations (50 CFR part 424) issued to implement the listing provisions of the Act set forth the procedures for adding species to the Federal lists of threatened and endangered species. The same procedures apply to reclassifying species or removing them from these lists. A species may be determined to be an endangered or threatened species based on the best scientific and

commercial information available regarding one or more of the five factors described in section 4(a)(1). These factors and their application to *Frankenia johnstonii* (Correll) (Johnston's frankenia) are as follows:

#### A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

The extent of past land conversion activities across the range of *Frankenia johnstonii*, including brush control, planting of buffelgrass or other non-native grasses, or construction activities that may have resulted in the loss of this plant, has not been quantified (Janssen, pers. comm. 1998). In the 1990s, road construction proliferated across the South Texas landscape, concentrating in corridors along the Rio Grande with the growth of small towns and multiplication of international bridges. Oil and gas exploration and production activities have proceeded throughout the region, accompanied by associated pipeline construction, including extensions of pipelines into Mexico. Fiber optic lines and cellular communication towers are frequent additions to the landscape as we have seen from the increasingly visible presence of the towers and section 7 consultations for these structures. These types of construction activities have accelerated since the passage of the North American Free Trade Agreement and have the potential to fragment habitat and destroy portions of *Frankenia johnstonii* populations (Shelley and Pulich 2000).

*Frankenia johnstonii* is restricted to highly specialized habitats with high salt, and sometimes gypsum content, in the soils. Although the historical land use at these locations has primarily been livestock grazing, the recovery plan alludes to additional intensive land uses (e.g., road construction, oil and gas activities, and gypsum mining, as well as other widespread, non-specific habitat alterations such as residential development and reservoir construction) which can destroy these specialized habitats (USFWS 1988).

Across the South Texas Plain, the practice of woody brush eradication, frequently undertaken to improve pasture for grazing, has the potential to adversely affect *Frankenia johnstonii* populations or parts of populations. These brush removal efforts have generally been accomplished with mechanical means such as bulldozing, blading, root plowing and/or chaining, or by use of herbicides. After clearing, the land is often reseeded with highly competitive, non-native grasses, primarily buffelgrass in this region of

Texas. The practice of root plowing (pulling a plow equipped with 3 to 6-foot-long tines) has historically been the favored technique for brush clearing in this region of south Texas, although this practice has diminished in recent years as cost-share funding for brush clearing has declined. Fluctuating cattle markets and continuing drought in the area have provided impetus to south Texas ranchers to diversify their sources of income. As a result many ranchers have shown increased interest in retaining native brush habitat to enhance wildlife habitat and hunting opportunities, and this has also decreased brush clearing and pasture improvement activities (Arturo Ibarra, USDA NRCS, pers. comm. 2001).

Although the actual mechanical and chemical means of brush clearing can directly destroy individual plants (USFWS 1988), ecological research shows that long-term replacement of *Frankenia johnstonii* by buffelgrass or other improved range grass species is unlikely due to the extraordinarily harsh conditions of the soils underlying *Frankenia johnstonii* populations. Janssen (1999) reported soil analyses from within and outside of *Frankenia johnstonii* populations that showed soil salinity, sodium and sodium absorption ratios differed drastically between the two areas. Soil salinity within populations averaged 4,444 parts per million (ppm), ranging from 949 to 10,400 ppm. Outside populations, this parameter averaged 423 ppm, ranging from 123 to 1,430 ppm. Soil sodium averaged 4,429 ppm within populations (1,011 to 112,404 ppm), while outside of the populations, the average was 383 ppm (21 to 2,983 ppm). Sodium absorption ratios averaged 19.02 (5.84–55.52) within the populations, while 3.38 (0.34–10.05) was the average outside. Janssen (1999) found *Frankenia johnstonii* growing in and/or recolonizing areas that were root plowed 6, 10, or 15 years in the past. She observed regrowth of this plant in eight populations or subpopulations and described one subpopulation, still replowed annually, as having "pockets of *Frankenia johnstonii* hanging on."

*Frankenia johnstonii* has leaves with a number of structural features characteristic of both halophytes and xerophytes, enabling the plant to tolerate extremely saline soils. As a halophyte, the plant can absorb and accumulate salt. This salt accumulation within the plant changes the osmotic gradient, allowing the root cells to absorb water from the soil solution. Salt glands within the leaves then extrude the salt onto the leaf surface. These structural adaptations equip the species