

In a further effort to promote conservation of populations occurring on private land, TPWD initiated a voluntary conservation agreement in 1995 that was designed to protect *Frankenia johnstonii* from mechanical and chemical habitat alteration and overstocking of cattle. These agreements have been signed by 10 landowners controlling 19 of the largest populations and will endure for 10 years from the date of signature (Janssen 1999).

Protection for *Frankenia johnstonii* on public land is assured for the portion of the one population that extends onto a Lower Rio Grande Valley National Wildlife Refuge tract. The refuge monitors the status of these plants and considers protection of that part of the population whenever activities are being planned for that tract. At the TDOT's Highway 83 right-of-way population site, installation of reflector stakes is used to protect the plants from mowing and from Border Patrol maintenance activities (Janssen, pers. comm. 2001).

We used a Geographic Information System (GIS)-based analysis of the distribution of *Frankenia johnstonii* populations in relation to locations of existing and proposed highways, and residential developments (Shelley and Pulich 2000), to pinpoint the U.S. populations most likely to be threatened by these types of activities, as well as those populations furthest removed from them. The results of this analysis showed that 18 of the intermediate-sized and largest populations remain in remote locations on rangeland, where threats from road and residential construction activities are diminished (Janssen 1999, Shelley and Pulich 2000). Portions of 10 of the intermediate-sized and largest populations occur within 1 mile of State Highway 83, State Highway 16, or State Highway 359, 3 of the main transportation arteries in this region.

Thirteen of the smallest (less than 2,000 individuals) *Frankenia johnstonii* populations occur on remote rangeland, removed from road and residential construction threats. Of the remaining 10 smaller populations, 3 occur within 1 mile of State Highway 83 while 4 others are found in close proximity to Falcon Reservoir where residential construction is likely to remain a threat.

Oil and gas exploration and production activities, which can pose threats to portions of populations via road or well-pad construction or clearing of seismic lines, were nearly impossible to quantify or to project in terms of future geographic sitings. The TPWD did offer to search for populations and delineate perimeters,

thereby helping companies to avoid *Frankenia johnstonii*, but no companies have signed any type of agreements to date. However, the landowner conservation agreements include provisions for landowners to contact TPWD whenever damage, including that caused by oil and gas activities, accidentally occurs or is anticipated so that TPWD can inspect populations and make recommendations for avoidance or recovery.

Rare species can be vulnerable to reproductive failure, and low reproductive potential was considered a potential threat to *Frankenia johnstonii* (Turner 1980, USFWS 1988). Among the factors that can contribute to the risk of reproductive failure in plants are high dependence on specialized pollinators, absence of back-up reproductive mechanisms such as self-fertilization and vegetative reproduction, and poor ability to compete for pollinators (Janssen 1999). The results of reproductive biology studies for *Frankenia johnstonii*, as reported in Janssen and Williamson (1996) and Janssen (1999), show that this species is a generalist rather than a specialist with regard to insect pollinators, hosting a variety of bees and flies. This reduces the danger associated with declines in any specific pollinator species. The high rates of floral visitation at *Frankenia johnstonii* by these insects shows the plant to be competing successfully for pollinators, and it is readily cross pollinated (Janssen 1999).

#### Previous Federal Action

Federal government actions on this species began with section 12 of the Act, which directed the Secretary of the Smithsonian Institution to prepare a report on those plants considered to be endangered, threatened, or extinct. This report (House Document No. 94-51), which included *Frankenia johnstonii* in the endangered category, was presented to Congress on January 9, 1975. On July 1, 1975, we published a notice in the **Federal Register** (40 FR 27823) that formally accepted the Smithsonian report as a petition within the context of section 4(c)(20), now section 4(b)(3)(A), of the Act, and of our intention thereby to review the status of those plants. *Frankenia johnstonii* was included as endangered in this notice. On June 16, 1976, we published a notice in the **Federal Register** (41 FR 24524) soliciting comments on the Smithsonian report in order for the finally adopted rule to be as accurate and effective as possible. *Frankenia johnstonii* was proposed for listing as an endangered species on July 8, 1983 (48 FR 31414). The final rule listing *Frankenia*

*johnstonii* as an endangered species was published August 7, 1984 (49 FR 31418). The Johnston's *Frankenia* Recovery Plan was completed in 1988 (USFWS 1988).

Federal involvement with *Frankenia johnstonii* subsequent to listing has included funding for activities such as surveys for new locations, monitoring of known and new populations, and collection and analysis of ecological and biological data. A GIS-based approach for analyzing threats to the continued existence of the species was contracted by us to Southwest Texas State University (Shelley and Pulich 2000). The species has been included in all informal section 7 consultations over Federal projects occurring in suitable habitat in Starr and Zapata Counties, and more recently in Webb County, Texas, as new populations were delimited. This species has not been included in any formal consultations.

On February 8, 1997, we received a petition dated February 3, 1997, from the National Wilderness Institute. The petitioner requested that the Service remove *Frankenia johnstonii* from the List of Endangered and Threatened Wildlife and Plants on the basis of original data error. We were not able to act on this petition upon receipt due to the low priority assigned to delisting activities in our Fiscal Year 1997 Listing Priority Guidance which was published in the **Federal Register** on December 5, 1996 (61 FR 64475). That guidance clarified the order in which the Service would process rulemakings following two related events—(1) the lifting on April 26, 1996, of the moratorium on final listings imposed on April 10, 1995 (Pub. L. 104-6), and (2) the restoration of significant funding for listing through the passage of the omnibus budget reconciliation law on April 26, 1996, following severe funding constraints imposed by a number of continuing resolutions between November 1995 and April 1996.

The Fiscal Year 1997 Listing Priority Guidance identified delisting activities as the lowest priority (Tier 4). Due to the large backlog of higher priority listing actions, we did not conduct any delisting activities during Fiscal Year 1997. In Fiscal Year 1998, with a reduced backlog of higher priority listing actions, we were able to return to a more balanced listing program. We also placed delisting activities within Tier 2 in our Fiscal Years 1998 and 1999 Listing Priority Guidance, published in the **Federal Register** on May 8, 1998 (63 FR 25502).

We began to process the *Frankenia johnstonii* petition under the 1998 guidance. At that time we believed that