

County, MO, and determined that insect predation and fungal infection damaged seed set. Although there may be a concern for such impacts during low population levels, it is likely that Missouri bladderpod has adapted to such natural influences and the species is probably well buffered against these natural occurrences at more robust population levels. To date, there is no evidence that these agents are exotic to the species' habitat, or that naturally occurring incidents of disease or predation have contributed to a recent decline in any of the known extant populations.

#### *D. The Inadequacy of Existing Regulatory Mechanisms*

The MDC recently adopted the conservation status ranking system developed by NatureServe, TNC, and the Natural Heritage Network for global (G ranks) and State (S ranks) rankings for all State and federally listed species in Missouri (Missouri Natural Heritage Program 2003). *Lesquerella filiformis* is officially listed in Missouri as rare and uncommon, with a ranking of S3 (rare and uncommon in the State; 21 to 100 occurrences), and G2 (imperiled globally because of extreme rarity or because of some factor(s) making it especially vulnerable to extinction; typically 5 or fewer occurrences or very few remaining individuals or acres). This species is also listed in the Wildlife Code of Missouri (MDC 2002b). Species listed in the Wildlife Code of Missouri under 3CSR10-4.111 are protected by State Endangered Species Law 252.240. Missouri regulations prohibit the exportation, transportation, or sale of plants on the State or Federal lists. A small percentage of Missouri's populations of Missouri bladderpod occur on lands either administered by MDC, MDNR, NPS, or TNC. These agencies prohibit the removal of this plant from their properties without a collector's permit.

Currently, *Lesquerella filiformis* is State-listed in Arkansas as S1 (critically imperiled in the State because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation from the State; typically five or fewer occurrences or very few remaining individuals; Theo Witsell, *in litt.* 2002) but receives no additional protection other than those specified under the Act (John Logan, pers. comm. 1998).

#### *E. Other Natural or Manmade Factors Affecting Its Continued Existence*

Various human disturbances were considered as threats to the species at the time *Lesquerella filiformis* was listed

in 1987 (52 FR 679, January 8, 1987). Thomas and Willson (1992) examined the potential impact of trampling on a population at Wilson's Creek National Battlefield and noted that the species' survival decreased by 42 percent when subjected to the highest level of trampling intensity. Although populations of *L. filiformis* on public areas that receive high levels of trampling are few in number, precautions will need to be taken in the future to protect Missouri bladderpod habitat at such locations. Other studies and observations, however, suggest that this species actually benefits from low to moderate levels of human-induced disturbance that reduce woody encroachment and stimulate seed bank germination through soil disturbance (MDC 1997; Jerry Conley, MDC, *in litt.* 1998). Excessive disturbance from trampling, overgrazing by livestock, and significant alterations of glade habitat through the use of ground-moving equipment could become increased threats to the species in the future and should be closely monitored.

#### **Summary of Status**

Under the Act, an endangered species is defined as one that is in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as one that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Given that (1) *Lesquerella filiformis* now occurs at 61 sites in Missouri and 2 sites in Arkansas (an increase of 54 sites since listing); (2) 6 sites in Missouri are under public ownership or under a long-term conservation agreement and are managed to benefit the species; (3) 9 additional sites in Missouri receive some degree of protection as part of TNC's Registry Program; (4) the species responds well to the proper management of its habitat, especially cedar tree removal and controlled burning; (5) minor levels of disturbance may actually benefit rather than hinder the species; and (6) significant knowledge has been gained regarding the life history requirements and population dynamics of the species, we no longer believe that this species meets the definition of an endangered species.

Although there has been a considerable increase in the number of known populations, an expansion of the known range of the species, and a sizeable increase in the number of known individual plants, the Missouri bladderpod has not recovered to the point that it can be removed (delisted) from the Federal List of Endangered and Threatened Plants (50 CFR 17.12). These

numerical increases are encouraging, and they provide evidence suggesting the species has exceeded the first delisting criterion, which requires 30 self-sustaining populations. However, the delisting criteria also require that 15 of the populations must be in secure ownership, be at least one-half acre in size, and show self-sustaining populations for at least 7 years. At this time, fewer than 10 populations can be considered to be in secure ownership, and only 3 of these populations have been monitored for at least 7 years. Although acreage of these secured populations is large, because of the year-to-year population fluctuations demonstrated by this species, at this time we can document that only one of these three populations is viable and self-sustaining for at least 7 years. Therefore, we believe delisting this species would be premature.

Consequently, on the basis of our review of the best available scientific and commercial data, we are reclassifying the Missouri bladderpod from endangered to threatened under the Act.

#### **Available Conservation Measures**

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain activities. Recognition through listing results in public awareness and conservation actions by Federal, State, tribal, and local agencies, private organizations, and individuals. The Act provides for possible land acquisition and cooperation with the States and requires that recovery plans be developed for all listed species. The protection required of Federal agencies and the prohibitions against certain activities involving listed plants are discussed below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened, and with respect to its critical habitat if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into consultation with us.