Missouri Bladderpod

Physaria filiformis

Guidelines for Landowners Using Conservation Practices

Missouri Department of Conservation

Common name ▪ Missouri Bladderpod
Scientific name ▪ *Physaria filiformis*
State status ▪ Endangered
Federal status ▪ Threatened

Ecology

Missouri bladderpod is a small yellow-flowered plant in the mustard family found in southwest Missouri and in northern and western Arkansas. It gets its name from the spherical fruits or "bladders" that contain seeds. Missouri bladderpods live on limestone glades and rocky outcroppings and can be locally abundant in rocky pastures. Missouri bladderpod is a herbaceous, annual plant growing 4 to 8 inches tall, producing numerous slender stems from its base. Missouri bladderpods flower from April to May, producing showy, 4-petaled, bright yellow blossoms clustered at the tops of the stems. Distinctive spherical fruiting “pods” form in mid-May and are located near the top of the stem. The seeds drop to the ground in late May and early June, lie dormant through the hot summer, and germinate in the fall. After germination, the plant spends the winter as a rosette (a cluster of leaves near the ground).

Reasons for Decline

Missouri bladderpod occurs primarily in limestone glades and rocky open areas. Many populations have persisted in grazed pastures, rocky open woods and limestone outcrops along roadsides. Missouri bladderpod populations are threatened by loss of habitat, mostly from competition with exotic grasses and woody vegetation and from human development in this rapidly growing part of the state. Missouri bladderpod is presently found in the following Missouri counties: Dade, Greene, Christian, and Lawrence. Historically, populations of bladderpod were restricted to limestone glades and rocky, open areas. Encroachment of woody vegetation and introduced grasses such as tall fescue into these habitats, along with large fluctuations in bladderpod populations and urban development were the reasons for the concern and listing of this species.

Photo Credit: Missouri Department of Conservation

Recommendations

Managing Missouri bladderpod requires protecting and restoring glade communities. Promote land management activities that reduce woody vegetation and reduce competition from invasive plants. Areas adjacent to existing Missouri bladderpod sites should be managed in such a way as to prevent the introduction of nonnative species or possible degradation of the native plant community. Protect glade habitat from ground disturbing activities such as highway construction and urban development by avoiding glades for these activities.

A survey of the project area should be conducted by a trained biologist in order to identify occurring populations of this species.

Consider the balance between adverse and beneficial practices when determining the overall effect of a conservation practice.

Beneficial Practices

- Use prescribed fire to remove accumulated plant material and to set back woody vegetation. Fires should be conducted between July 15 and September 15. If burning is not possible, mowing will temporarily help keep woody vegetation in check.

- Graze livestock in a manner that promotes Missouri bladderpod but does not promote invasive plants, nor degrade or destroy the glade itself. Bladderpods benefit from some degree of soil disturbance, and regular grazing can increase bladderpod populations.
- Control invasive plants such as fescue and cheat grass on glades and dry, rocky pastures with bladderpod populations. Do not use a nonselective or broadleaf herbicide between October 1 and June 1. Fall applications with a selective grass herbicide are most effective and least harmful to bladderpod.
- Reduce encroachment of woody vegetation on limestone glades and dry, rocky pastures that support bladderpod populations. Glades overgrown with cedars shade out the ground flora, including Missouri bladderpod.

Adverse Practices

- Establishing invasive vegetation, such as tall fescue or sericea lespedeza on or near sites where the species is located.
- Allowing continuous, heavy grazing or grazing during flowering and fruiting periods (March-July).
- Repeatedly conducting a prescribed burn between March and July during the flowering and fruiting period.
- Applying a nonselective or a broadleaf herbicide in areas where species is located between October and July.
- Heavy foot traffic, vehicle traffic, or use of heavy machinery in areas with bladderpod populations.
- Conducting earthmoving practices or causing erosion that destroys or degrades glades and dry, rocky pastures with bladderpod populations.
- Unmanaged application of pesticides, animal waste or fertilizers that destroys or degrades glades and dry, rocky pastures that support bladderpod populations.

Information Contacts

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Policy Coordination Section
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http://www.mdc.mo.gov/nathis/endangered/

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Ecological Services Field Office
101 Park DeVille Dr., Suite A
Columbia, MO 65203
Telephone: 573-234-2132
http://www.fws.gov/midwest/partners/missouri.html

Legal

The Missouri Department of Conservation prepared these guidelines for conservation practices with assistance from other state agencies, contractors, and others to provide guidance to those people who wish to voluntarily act to protect wildlife and habitat.

Compliance with these management guidelines is not required by the Missouri wildlife and forestry law or by any regulation of the Missouri Conservation Commission. Other federal, state or local laws may affect construction practices.

"State Endangered Status" is determined by the Missouri Conservation Commission under constitutional authority, and specific requirements for impacts to such species are expressed in the Missouri Wildlife Code, rule 3 CSR 10-4.111.

Species listed under the Federal Endangered Species Act must be considered in projects receiving federal funds or requiring permits under the Clean Water Act, with compliance issues resolved in consultation with the U.S. Fish and Wildlife Service.