Geocarpon

Geocarpon minimum

Guidelines for Landowners Using Conservation Practices

Missouri Department of Conservation

Common name ▪ Geocarpon
Scientific name ▪ *Geocarpon minimum*
State status ▪ Endangered
Federal status ▪ Threatened

Ecology

Geocarpon is a small succulent plant that grows to about 1.5" tall. It is an annual that germinates in November and overwinters as a tiny rosette. Plants bloom the following spring from mid-March to early May, and die 4 to 6 weeks later, after seed set. As the fruits mature, the plant turns from green to a striking magenta or "red wine" color. Geocarpon grows on Channel sandstone glades and outcrops in shallow sandy depressions, where not crowded out by deeper-rooted plants. In Missouri, geocarpon is found in Cedar, Dade, Polk, Greene, Lawrence, Henry and St. Clair Counties. Geocarpon can also be found in Arkansas, Louisiana, and Texas.

Reasons for Decline

Geocarpon is threatened by conversion of glade habitat to non-native species such as cool season pasture grasses. Grazing may lead to nitrification of the sandy depressions and crowding out by other species. Woody invasion of glades and accumulation of leaf litter, moss or lichens can also have detrimental effects on geocarpon. Excessive off-road vehicle use is also a threat, causing destruction of plants during the early spring growing season.

Recommendations

Projects planned within the seven-county Missouri range of geocarpon should include a review of affected areas for the presence of Channel sandstone exposure. If found, these habitats should be surveyed for geocarpon between March 1 and June 1.

Managing geocarpon requires restoring the native glade natural community. Promote land management activities that reduce woody vegetation and reduce competition from invasive plants. Areas adjacent to existing geocarpon sites should be managed in such a way as to prevent the introduction of non-native species or possible degradation of the native plant community.

A survey of the project area should be conducted by a trained biologist between March and June in order to identify occurring populations of this species. Limit construction activities to deeper soil areas, away from sandstone outcrops.

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

Photo Credit: Missouri Department of Conservation

Beneficial Practices

- Using prescribed fire to remove accumulated plant material and to set back woody vegetation. If burning is not possible, mowing will temporarily help keep woody vegetation in check.
- Control invasive plants such as fescue and cheat grass on glades with geocarpon populations. Do not use nonselective or broadleaf herbicides between October 1 and June 1. Fall applications of selective grass herbicides are most effective and least harmful to geocarpon populations.
- Reduce encroachment of woody vegetation on limestone glades and dry, rocky pastures that support geocarpon populations. Glades

overgrown with cedars shade out the ground flora, including geocarpon.
- Minimal disturbance is necessary to help control moss/lichen that can dominate suitable goecarpon habitat. Light grazing may be beneficial.

Adverse Practices

- Establishing nonnative vegetation, such as tall fescue, sericea lespedeza, Bermuda grass or Caucasian bluestem on sites or nearby where it could spread into the native plant community, and thus degrade or destroy habitat for this species.
- Excessive livestock grazing.
- 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 from Mach through June in areas with geocarpon populations.
- Conducting earthmoving practices or causing erosion that destroys or degrades glades and dry, rocky pastures with geocarpon populations.
- Unmanaged application of pesticides, animal waste or fertilizers that destroys or degrades glades and dry, rocky pastures that support geocarpon populations.

Information Contacts

Missouri Department of Conservation
Policy Coordination Section
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2901 W. Truman Blvd
Jefferson City, MO 65102-0180
Telephone: 573-751-4115
http://www.mdc.mo.gov/nathis/endangered/

U.S. Army Corps of Engineers
Regulatory Branch
700 Federal Building
601 E. 12th Street
Kansas City, MO 64106-2896
Telephone: 816-389-3990
http://www.nwk.usace.army.mil/

U.S. Fish and Wildlife Service
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.