



Missouri Bladderpod Population Size at Wilson's Creek National Battlefield

Importance: *A threatened species*

The Missouri bladderpod (*Lesquerella filiformis*), listed as a threatened plant under the Endangered Species Act of 1973, lives on limestone or dolomite glades of Southwestern Missouri and Northwestern Arkansas. The plant occurs at five sites in Wilson's Creek National Battlefield with the largest population at Bloody Hill Glade. The battlefield continues to adapt landscape management practices to meet needs of cultural and natural resources, while protecting the Missouri bladderpod populations.



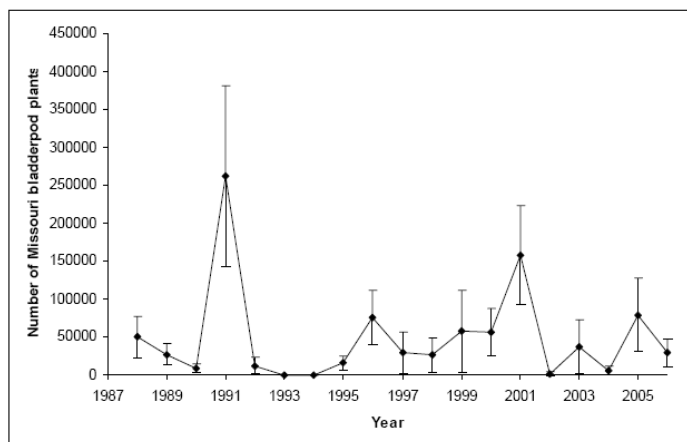
HTLN file photo

Long Term Monitoring: *Habitat assessment and population monitoring at Bloody Hill Glade¹*

The Heartland Network, Inventory and Monitoring Program, has used various methods to estimate the number and density of bladderpods at Bloody Hill Glade since 1988. These methods included counting plants and/or estimating density within study plots. In 2006, scientists examined indicators of bladderpod habitat quality, including cover of Eastern red cedar (*Juniperus virginiana*) and three species of herbaceous invasive plants. They then attempted to find correlations between bladderpod density and invasive species cover.

Status and Trends: *Population size increases following habitat improvement*

Scientists saw an increase in bladderpod population size after battlefield managers thinned cedars to improve the cultural landscape and the savannah-type habitat in Bloody Hill Glade. Thinning occurred in 2004 and population increases were seen in 2005 (figure). Additionally, scientists made several other observations:



Missouri bladderpod population size in the core area at Bloody Hill Glade, Wilson's Creek National Battlefield, for 1988-2006. For 1988-2005, error bars represent 95% confidence intervals. For 2006, error bars represent density class range.

1. Population size varied among years, but generally remained stable since 1988.
2. Factors other than or in addition to cedar basal area and invasive plant cover affected bladderpod population size.
3. Examination of the various population estimation methods allowed scientists to select the best methodology for monitoring bladderpod at Bloody Hill Glade.

Heartland Network Inventory and Monitoring
Program of the National Park Service. Visit
www1.nature.nps.gov/im/units/htln/index.htm.



¹ Young, C.C., L.W. Morrison, and H.J. Eltheridge. 2006. Missouri Bladderpod Population Size and Initial Habitat Assessment for the Bloody Hill Glade Population at Wilson's Creek National Battlefield. Natural Resource Technical Report NPS/MWR/HTLN/NRTR—2006/004. National Park Service, Omaha, Nebraska.