



Missouri Bladderpod Status at Wilson's Creek National Battlefield

Importance: *A threatened species*

The Missouri bladderpod (*Lesquerella filiformis*), listed as threatened under the Endangered Species Act, grows in southwestern Missouri and northwestern Arkansas. It occurs at several locations at Wilson's Creek NB, where staff continues to adapt landscape management practices to meet needs of cultural and natural resources, while protecting bladderpod populations. Scientists have a limited understanding of how interaction of various management actions and naturally occurring variables in the environment impact population size of this species. Continued monitoring helps to find the relationships between environmental conditions and changes in population size.

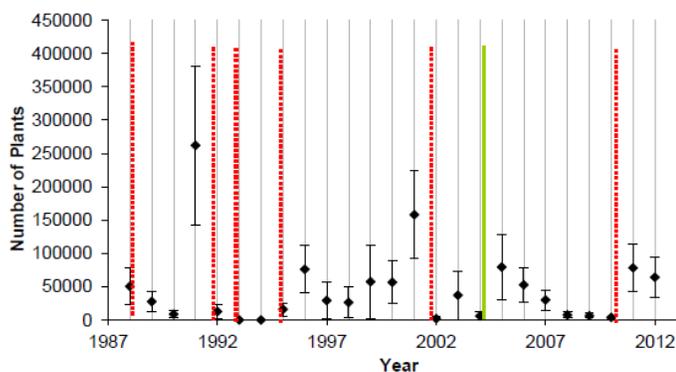


Long Term Monitoring: *Population monitoring using cover classes¹*

The Heartland Inventory and Monitoring Network has used various methods to estimate the number and density of bladderpods at Wilson's Creek NB over 25 years. Scientists currently use a grid-based approach to estimate abundance in each glade. They tally plant abundance estimates using cover classes, such that cover class 1 represents 1 to 19 plants in the sample through cover class 7, which represents between 5,000 to 9,999 plants. Scientists then combine sample tallies to estimate total bladderpod abundance in each glade.

Status and Trends: *Population size linked to environmental factors*

Scientists have documented relatively large variability in population sizes at each sample site during the years. Some data suggest a relationship between bladderpod population size and prescribed fire events, but response varied too greatly to say that fire consistently increases population size. Reducing competition from eastern red cedars appears to be beneficial to bladderpod, but here again, response varied too much to find a consistent relationship with population size. Additionally, scientists found:



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- Fire intensity may determine the degree and type of change in population size. Fire timing and frequency may affect population size also.
- In some cases precipitation, temperature, and microhabitat conditions may have influenced population size more strongly than fire alone.

Missouri bladderpod population size at one site shows variability over time. Data points are taken from the median of each cover class estimate. Error bars represent highs and lows of the cover classes. Red lines represent prescribed fire events. Green lines represent eastern red cedar clearing events.



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¹ C. C. Young. 2012. Annual status report: Missouri bladderpod monitoring for Wilson's Creek National Battlefield, 1988-2012. Natural Resource Data Series NPS/HTLN/NRDS—2012/316. National Park Service, Fort Collins, Colorado.