The Effects of Glade Area and Presence of Fire on Plant Diversity in the Ozark Mountain Glades of Southern Missouri

Amelia Snyder

WUURD, the Washington University Undergraduate Research Digest, is published by the Office of Undergraduate Research once a semester each academic year. Applications for submission and Statement of Editorial Policy may be found online.

Follow this and additional works at: http://openscholarship.wustl.edu/vol8_iss1

Recommended Citation

http://openscholarship.wustl.edu/vol8_iss1/137

This publication is brought to you for free and open access by the Office of Undergraduate Research through Washington University Open Scholarship. For more information, please contact digital@wumail.wustl.edu
In order to determine the effects of varying area, perimeter length, and the presence or absence of fire on glades in the Missouri Ozark Mountains, we sampled fourteen glades over twelve days in early June of 2012. Glades are fragmented desert ecosystems that historically burned at least once a decade. They have thinner soils and higher median temperatures than the surrounding forest. At each glade we recorded the name and quantity of flowering species present along each of our five two-meter wide transects. We used these to determine diversity. We then recorded the flowers present in the entire glade and used this data for glade species richness. Finally we walked around the glade perimeter with Garmin Rino 650 GPS units to record glade area and perimeter. We used a One-Way Analysis of Variance to determine statistical significance and found that burning glades increased both the diversity (p = 0.00765) and species richness (p = 0.01057) of the flowering plants present, while varying the area and perimeter of glades showed no significant effect on either diversity or richness. These results show that land managers interested in preserving diversity should burn all glades, even small glades. This work also demonstrates the necessity of reexamining the United States’ governmental fire suppression policies, particularly in ecosystems that were historically fire dominated.