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Abstract

Monitoring an ecosystem at risk: What is the degree of grassland fragmentation in the Canadian Prairies?

Increasing fragmentation of grassland habitats by human activities is a major threat to biodiversity and landscape quality. Monitoring their degree of fragmentation has been identified as an urgent need. This study quantifies for the first time the current degree of grassland fragmentation in the Canadian Prairies using four fragmentation geometries (FGs) of increasing specificity (i.e. more restrictive grassland classification). The grassland area remaining amounts to 87,568.592 km² in FG4 (strict grassland definition) and 183,241.176 km² in FG1 (broad grassland definition), out of 461,503.97 km² (entire Prairie Ecozone area). The very low values of m_{eff} of 14.23 km² in FG4 and 25.44 km² in FG1 indicate an extremely high level of grassland fragmentation. The m_{eff} method is supported in this study as highly suitable and recommended for long-term monitoring of grasslands in the Canadian Prairies; it can help set measurable targets and/or limits for regions to guide management efforts and as a tool for performance review of protection efforts, for increasing awareness, and for guiding efforts to minimize grassland fragmentation.

Bio

My name is Laura Roch and I am doing my MSc in Geography, Urban and Environmental Studies at Concordia University under the supervision of Dr. Jochen Jaeger. My main research interests include studying landscape ecology and road ecology. I am interested in looking at the relationships and interactions between ecological and social processes and particular ecosystems and landscapes, at various spatial and temporal scales. The main tools I use to visually and statistically analyze these aspects are models (e.g. habitat suitability and landscape connectivity models) and Geographic Information Systems (GIS), which uses software to format and compare spatial information, and run various analyses. I hope that my research will be able to help contribute towards creating better monitoring and management systems and aid overall in conservation efforts. I am also the VP Finance for Geograds, the geography, planning and environment graduate student association. One aspect of Geograds is to organize and help support many academic and social events ranging from speakers and documentary screenings to wine and cheeses and trivia nights. Aside from academics, what there is to know about me is that I am a very outdoorsy person, and have always been in love with exploring various environments, be it through snowboarding, hiking or biking. I love being active and being outside. I am also very much into group sports, I play soccer and basketball on a regular basis.

