Restoring Prairie Grasslands

with PhD student Jenna LeBlanc in Glenbow Ranch Provincial Park and in other sites in Southern Alberta

I am a graduate student…

and the first person in my family to go to university. My family and friends have encouraged and supported me to follow my passion for Alberta's plants and flowers.

I did an undergraduate Bachelor of Science degree in Biology at St. Mary's University in Calgary. After that I went to the University of Toronto and earned a Masters of Environmental Science.

…with a passion for plants

Growing up in Alberta, I loved exploring the foothills and visiting our provincial parks.

From 2017 to 2018, I worked with Alberta Parks and the Glenbow Ranch Park Foundation managing the vegetation. I learned a lot about Alberta's native plants. I also learned about native prairie habitats, and how to manage and restore them.

I learned that it can be very difficult to bring back native rough fescue grasses. My PhD research investigates the ecology of Rough Fescue grasslands to find ways of improving seed germination and seedling survival.

Glenbow Ranch Park has patches of surviving rough fescue grass that I am studying to discover if they contain microscopic organisms called **fungal endophytes**. Studying these fungi will improve our understanding of when and how rough fescue thrives. My research will help to protect and restore fescue grasslands for years to come.

Do you have questions?

Please ask either me or my PhD supervisor, Professor Dawn Bazely…

Dawn is a botanist and ecologist in the Biology Department of York University, Toronto
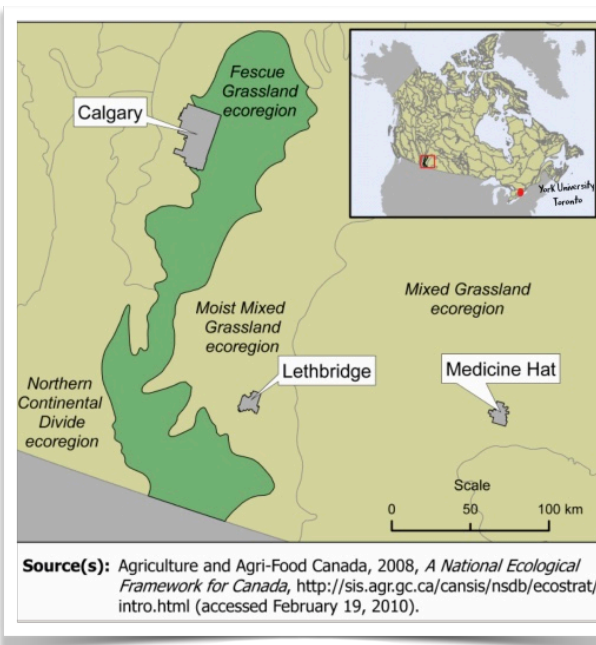
Dawn has studied grass biology across Canada, Europe and Asia for forty years. She welcomed a chance to host a study centred on the Rough Fescue grasslands of Glenbow Ranch Park. Contact her at:
- cell phone: 1 416 917 4239
- email: dbazely@yorku.ca

Jenna's research is supported by…
- York University
- Glenbow Ranch Provincial Park
- Glenbow Ranch Park Foundation
contact: FescuePrairieProject@gmail.com

Source(s): Agriculture and Agri-Food Canada, 2008, *A National Ecological Framework for Canada*, http://sis.agr.gc.ca/cansis/nsdb/ecostrat/intro.html (accessed February 19, 2010).

My research will bring back more rough fescue grass plants to Alberta landscapes

Prairies Then and Now

Native prairie grasslands once covered 615,000 square kilometres of western Canada.

Today, 1.25% of Alberta's native grasslands are protected. The rest have been altered by agriculture, ranching, and urban development.

Grasslands and Grazers are Global

Perennial grasslands throughout the world are hotspots of biodiversity, supporting thousands of species of plants, birds, pollinators and other fauna. Grasslands have evolved with grazing animals such as buffalo (bison). These habitats tolerate drought and fire, while capturing huge amounts of carbon underground.

Photo Credit: Edward S. Curtis/Library and Archives Canada/PA-039714

Rough fescue natural history

Festuca campestris and *Festuca hallii*, are the Latin names of two species of Rough Fescue grasses. These prairie species strongly influence how this ecosystem functions. They are slow-growing and can live for hundreds of years. They are very difficult to restore once they are lost from the landscape.

My research explores the role that microscopic fungi living entirely within these grasses may be playing in helping to restore rough fescue grasslands.

Restoration Ecology

…increases habitat resilience by bringing back native biodiversity that was lost when agriculture and ranching favoured non-native plant species over native prairie plants.

Plant Defences

Plants can't run away from grazers. Some have partnered with microscopic organisms called **fungal endophytes** that produce toxins to defend themselves.

Adapting my research to a pandemic lockdown

I cancelled my 2020 field season due to the pandemic lockdown. Instead, I grew hundreds of rough fescue plants, studied them up-close, and developed new research questions to ask in the field, all from the comfort of my home kitchen.