

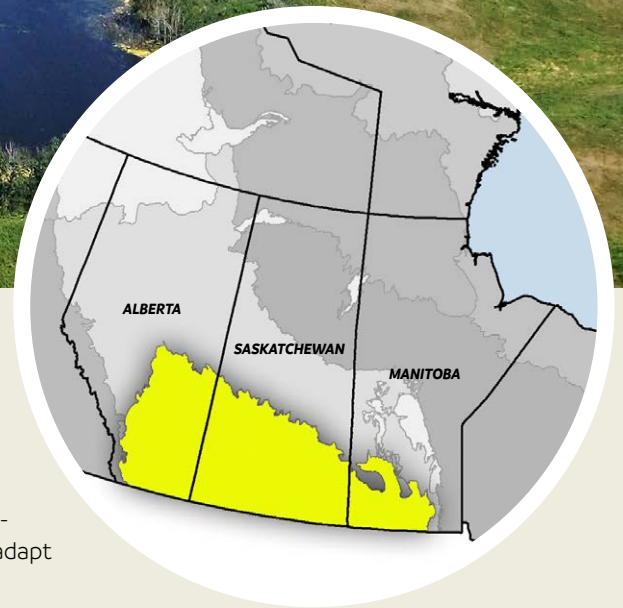
Welcome to the grasslands case study

This activity dives into a real-life example of developing a conservation strategy focused on protecting and enhancing biodiversity while also collaborating with local communities to address their need and gather input. For the simplicity of this case study, it is focused on creating a conservation plan for conserving biodiversity in Canada's temperate grasslands, but it can easily be adapted for different environmental studies, ecology, and geography classes. We encourage you to adapt it to meet your curriculum.

For more information on Canada's grassland ecosystems in Canada's Prairies, you can access our Grasslands Resource Pack here: <https://www.ducks.ca/resources/educators/grasslands-resource-pack>

At the end of the case study, students will have developed problem-solving skills and have learned about:

- + Biodiversity
- + Conservation
- + Temperate grasslands
- + Ecological succession in the prairies
- + Why Canada's grassland ecosystems are at risk
- + Keystone species and their role in the environment
- + Historical and evolving land use of the Canadian Prairies
- + Different conservation strategies and approaches specific to grasslands
- + Community engagement and balancing community needs with biodiversity goals
- + DUC's conservation work



Curriculum connections

Science/biology connections

- + Justify a point of view using effective communication.
- + Use properly cited information from multiple sources to support points of view.
- + Explain how biodiversity of an ecosystem contributes to its sustainability.
- + Identify and describe positive and negative examples of human interventions that have an impact on ecological succession or the makeup of ecosystems. Examples: positive — protecting habitats, reintroducing species; negative — preventing natural fires, introducing nonindigenous species, draining wetlands for agriculture or housing.
- + Evaluate the importance of a keystone species in a specific terrestrial ecosystem.
- + Investigate trends in land use from natural environments (e.g., forests, grasslands) to managed environments (e.g., farms, gardens, greenhouses) and describe changes.

Environmental science connections

- + Learners will explain levels of biodiversity and their importance to ecosystems.
- + Learners will describe ecosystem services and the result of human disruption to ecosystem services.
- + Endangered species.
- + Human impacts on biodiversity.
- + Ecosystem conservation and balance.
- + Explain how factors that lead to loss of diversity affect the sustainability of an ecosystem.
- + Analyse the role and activities of intergovernmental and non-governmental organizations in preserving and restoring ecosystems and biodiversity.
- + Recognize some widely held misconceptions related to sustainability.

Method

This case study should be done in two class sessions.

Session 1 (approx. 50 minutes)

Part 1: Students answer the questions about the history and importance of Canada's grassland ecosystems.

Part 2: Divide your class into three groups, so they can all focus on elements for consideration A, B, and C.

- + Group A: Analyse fire management
- + Group B: Analyze grazing management
- + Group C: Analyze community consultation

Session 2 (approx. 50 minutes)

Part 3: Create multiple groups – that each have at least one member of the groups A,B, and C – to work together to create a conservation plan for their matrix of land presented.

At the end (optional): Once students' plans are done, you can upload one to the WCE hub. You will then get access to the case study video explainer, highlighting DUC conservation staff and partner experts who will explain how they would approach the issue at hand.



Materials

- + Access to the internet
- + Library (optional)

Note: Talking about Canada's Colonial history, past and present with youth can be stressful and may give rise to uncomfortable feelings. It's important to approach the topic with sensitivity, accuracy, and a focus on promoting understanding and critical thinking so that students can gain a deeper understanding of Canada's colonial history and its impact on conservation in the prairies. The aim is to promote empathy, critical thinking and a commitment to building a more inclusive and sustainable future.

Suggested Resources

Note: These links vary in terms of media and depth of content. It also contains plain language articles and peer-reviewed articles. These are suggested readings and media to assist students' research. Because these links vary in complexity, make sure to direct your students to the most appropriate articles for their level.

Audio

- + Cattle grazing: Protecting native grasslands, Rural Roots Canada, 2021: <http://www.ruralrootscanada.com/cattle-grazing-protecting-native-grasslands>

Websites

- + Ducks Unlimited Canada: Conserving Canada's Grasslands: <https://www.ducks.ca/our-work/grasslands>
- + Hinterlands Who's Who: <https://www.hww.ca/en/wild-spaces/grasslands.html>
- + Livestock producers are powerful allies for grassland birds; Birds Canada: <https://www.birdscanada.org/livestock-producers-are-powerful-allies-for-grassland-birds>
- + Grasslands beneficial management practices; Commission for Environmental Cooperation: <http://www.nagrasslands.org/category/beneficial-management-practices>
- + Restoring fire to native grasslands; The Nature Conservancy: <https://www.nature.org/en-us/about-us/where-we-work/united-states/stories-in-mn-nd-sd/restoring-fire-to-native-grasslands>
- + Prescribed fires; Parks Canada: <https://parks.canada.ca/pn-np/sk/grasslands/nature/conservation/feu-fire>
- + Fire Management; Parks Canada: <https://parks.canada.ca/nature/science/conservation/feu-fire>
- + Through the fire and flames; Nature Conservancy of Canada: <https://www.natureconservancy.ca/en/where-we-work/alberta/stories/through-the-fire-and-flames.html>

Video

- + Meewasin Prescribed Fire Educational Video with Renny Grilz; Meewasin Valley Authority: <https://www.youtube.com/watch?v=rY8mSVbyGcw>
- + Guardians of the Grasslands; Raising Canadian Beef: https://www.youtube.com/watch?v=_CG4ROvCu0Y
- + The Nature of Things, Grasslands: A Hidden Wilderness, S59 E2, 44 minutes: <https://gem.cbc.ca/the-nature-of-things/s59e02?autoplay=1>



Suggested Resources

News Articles

- + The Narwhal, Meet the people saving Canada's native grasslands, 2020:
<https://thenarwhal.ca/carbon-cache-grasslands/>
- + The Narwhal, Meet the Canadian farmers fighting climate change, 2020:
<https://thenarwhal.ca/canadian-farmers-climate-change/>

Infographics

- + Nature Conservancy of Canada, Grasslands facts at a glance:
https://www.natureconservancy.ca/assets/documents/nat/FS_grasslands_FIN.PDF
- + Parks Canada, Grazing the Grasslands:
<http://parkscanadahistory.com/wildlife/sar-success-stories/grazing-e.pdf>

Toolkits

- + How to engage stakeholder and maintain biodiversity; Convention on Biological Diversity:
<https://www.cbd.int/cepa/toolkit/2008/doc/CBD-Toolkit-Section3.pdf>
- + Nature Canada, Grasslands Toolkit: <https://naturecanada.ca/defend-nature/how-you-help-us-take-action/nature-based-climate-solutions/toolkit/grasslands/>

Reports

- + The Canadian Agri-Food Policy Institute, The Benefits of Carbon Storage and Biodiversity in the Canadian Prairie, 2019:
https://capi-icpa.ca/wp-content/uploads/2019/03/2019-02-21-CAPI-land-use-dialogue_Carlyle-Paper_WEB.pdf

Journal Articles

- + Stakeholder analysis in Environmental and Conservation Planning; Center for Biodiversity and Conservation:
https://www.amnh.org/content/download/158575/2593966/file/LinC%207_Stakeholder%20Analysis

