



Ducks Unlimited  
Canada

A wide-angle landscape photograph showing a herd of black and white cows grazing in a lush green field. In the foreground, there is a body of water with tall green reeds. The background features a prominent, flat-topped mountain under a blue sky with scattered white clouds.

# AGRICULTURE AND GRASSLANDS: PARTNERS IN CONSERVATION





## Created in Partnership with:

**Dr. Kyle Bobiwash**; Faculty of Agricultural and Food Sciences, University of Manitoba

**Karli Reimer**; Communications Specialist, Ducks Unlimited Canada

**Kristine Tapley**; National Lead of Sustainability, Ducks Unlimited Canada

**Jim Devries**; Research Scientist, Institute for Wetland and Waterfowl Research

**Mary-Jane Orr**; General Manager, Manitoba Beef & Forage Initiatives



PART THREE

# GRASSLANDS AND SUSTAINBLE AGRICULTURE





# A QUICK REVIEW



The biggest threat to grasslands in the Prairie Pothole Region is **land conversion** for the use of agriculture and development.

We have looked at how the landscape across Canada has changed over time and how that has impacted these ecosystems.





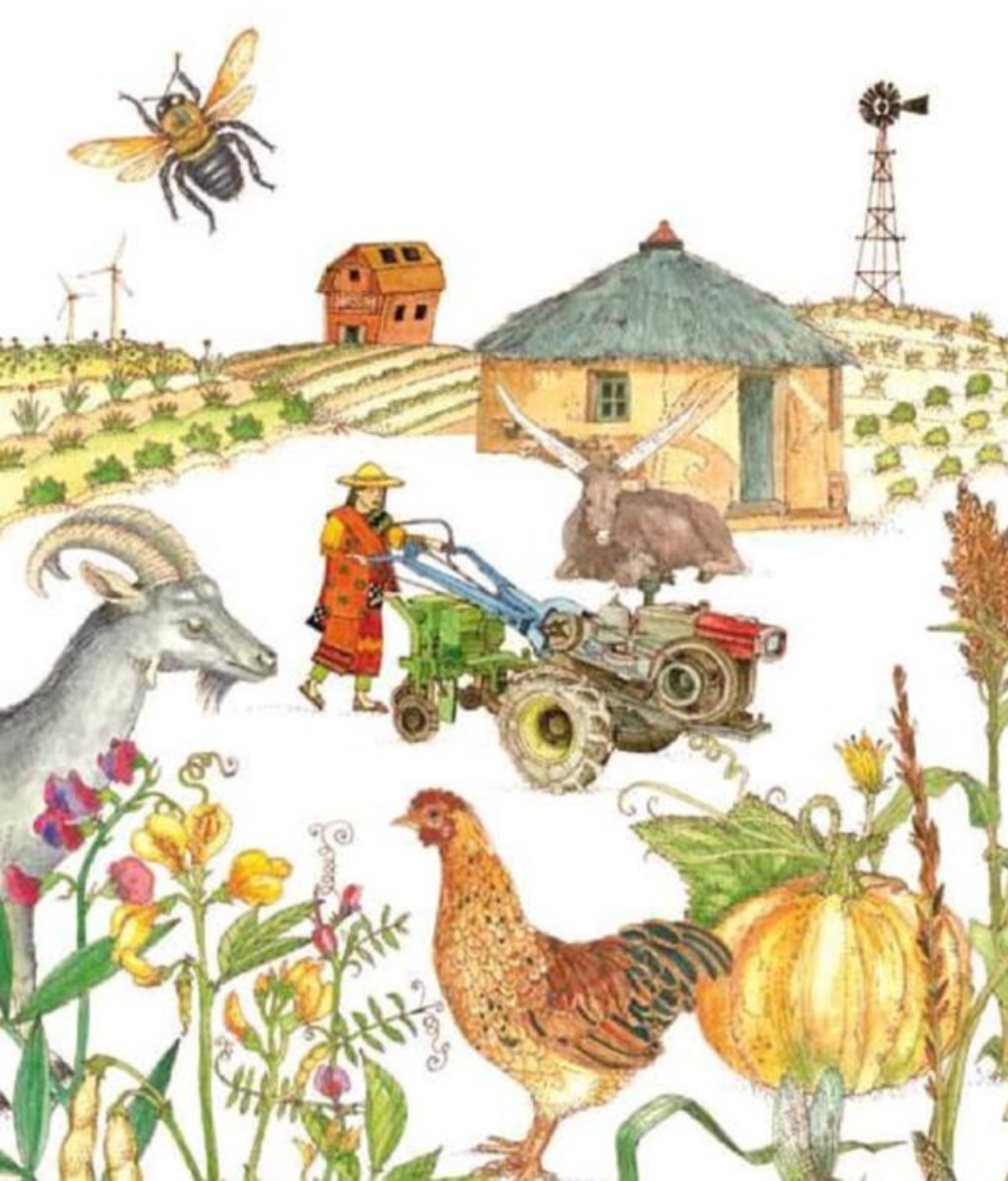
# RESTORING NATURE

How can agriculture continue to evolve to help restore nature and our grassland ecosystems?

Illustration by Claire Scully







# SUSTAINABLE & REGENERATIVE AGRICULTURE

## **Sustainable Agriculture:**

Methods that do not *deplete* our current resources or compromise the needs of future generations

## **Regenerative Agriculture:**

Methods which *improve* our resources

Illustration by Guida Joseph





# INTERTWINING ECOSYSTEMS





# GRASSLANDS TO THE RESCUE!

How our grasslands support agriculture

***Pollinate  
crops***

***Pest  
control***

***Feed for  
livestock***

***Maintain  
soil stability***

***Reduce  
invasive species***





# **WETLANDS TO THE RESCUE!**

How our wetlands support agriculture

***Source  
of water***

***Increase  
moisture***

***Prevent  
flooding***

***Reduce  
runoff***





# GRASSLAND HEROES TO THE RESCUE!

Explore the people and practices that can help to improve our ecosystems

**INDIGENOUS-LED  
MANAGEMENT**

**CATTLE FARMERS**

**CROP FARMERS**

**DUCKS UNLIMITED  
CANADA**





# INDIGENOUS-LED MANAGEMENT





# TRUE OR FALSE?

Lands managed by Indigenous communities hold more biodiversity than national parks.

**TRUE**





# RESTORING INDIGENOUS- MANAGED LANDS

20%

of the Earth's  
territory is  
**Indigenous-  
managed lands,**  
which contain

80%

of the world's  
remaining  
**biodiversity.**





# HOW INDIGENOUS-LED MANAGEMENT IS **HELPING**

## 1. Restoring Grasslands

- Restoring cultivated lands
- Fire management
- Saving and preserving seeds

Photo: Amber Bracken / The Narwhal





1. RESTORING GRASSLANDS

# RESTORATION & FIRE MANAGEMENT



REDUCES THE NEED  
OF PESTICIDES

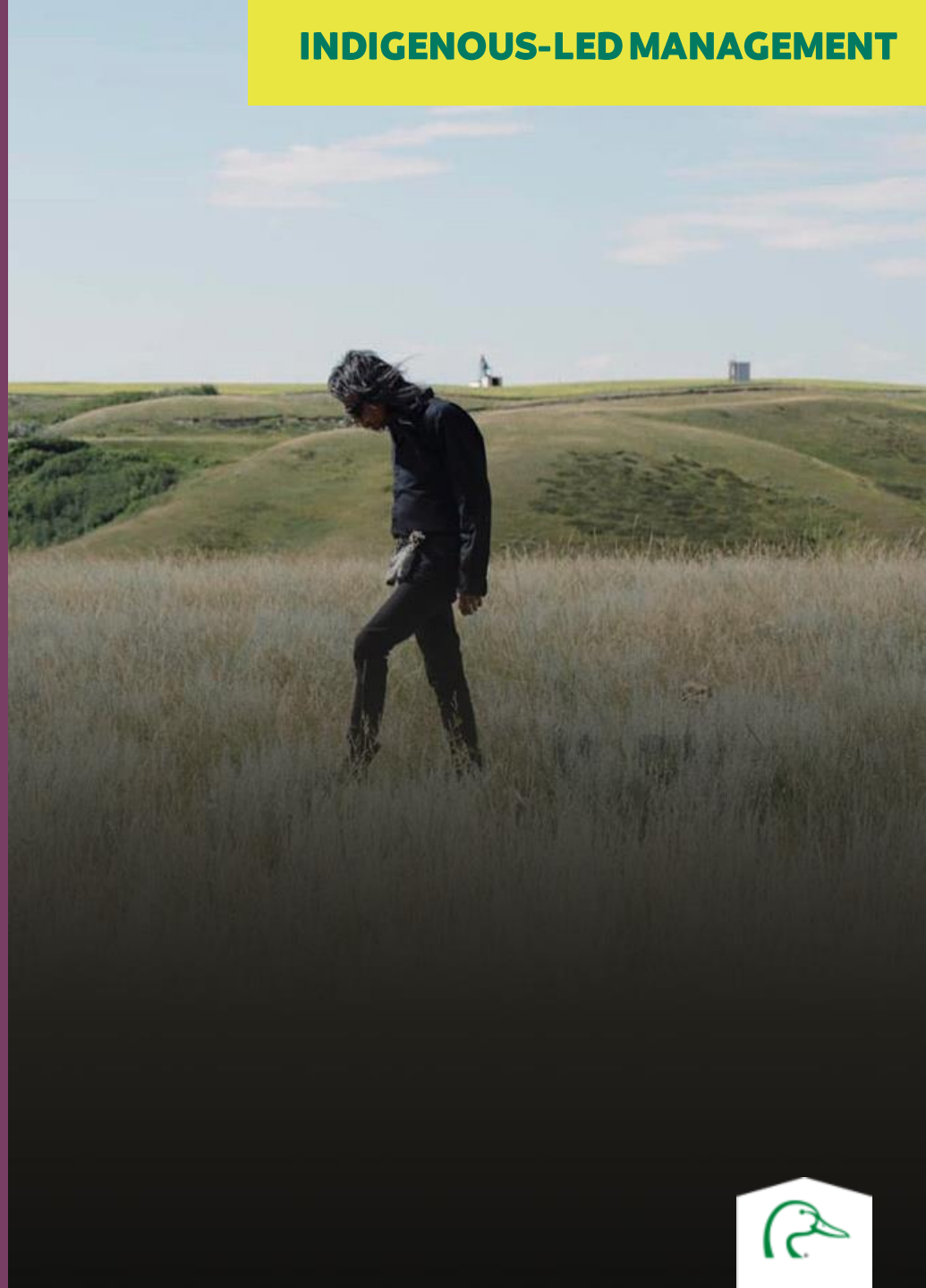


CONTROLS  
INVASIVE SPECIES



IMPROVES  
BIODIVERSITY

Photo: Sara Hylton/The Narwhal





## 1. RESTORING GRASSLANDS

# SAVING SEEDS

In Canada, three-quarters of all the crop varieties we used to grow before the 20<sup>th</sup> century are extinct.

Of the one-quarter that remains, only **10%** of that is available from Canadian seed companies.

Photo: CMU Farm, 2014





# CATTLE FARMERS





# TRUE OR FALSE?

Cattle and cattle ranchers damage grasslands.

**FALSE**





# HOW CATTLE FARMERS ARE **HELPING**

## 1. Protecting existing habitat

- Support for grass-based agriculture
- Manage riparian areas

## 2. Managing grasslands with cattle



1. PROTECT EXISTING HABITAT

# SUPPORT FOR GRASS-BASED AGRICULTURE

Having a beef industry in Canada is one way to protect our temperate grassland ecosystem!



CONSERVES  
HABITAT



IMPROVES  
BIODIVERSITY





# 1. PROTECT EXISTING HABITAT

## RIPARIAN AREA MANAGEMENT

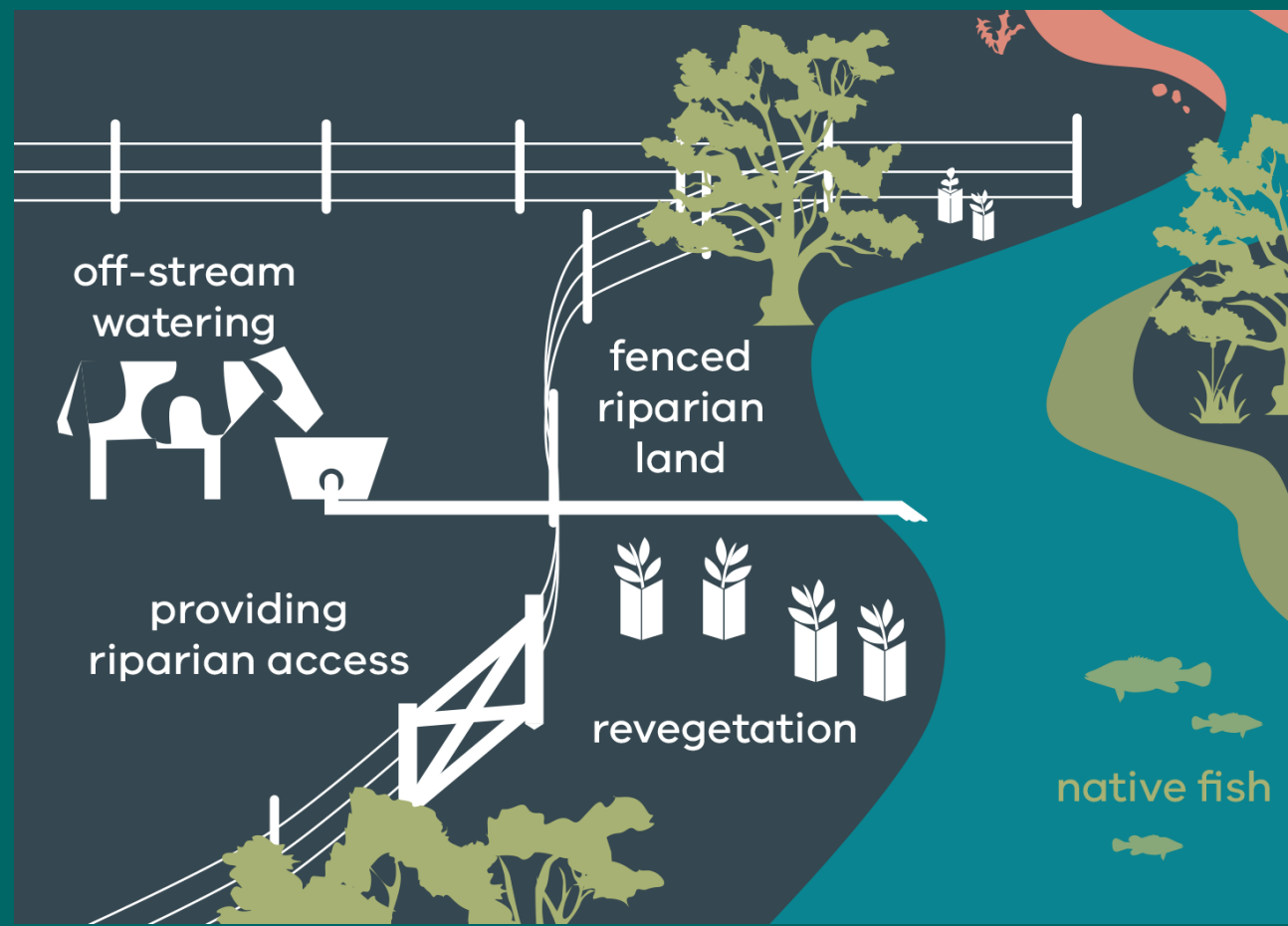
Riparian areas are areas that are beside lakes, rivers, streams, and wetlands



REDUCES CONTAMINATION



IMPROVES WATER QUALITY



## 2. MANAGING GRASSLANDS WITH CATTLE

# GRAZING

Grasslands, tame pastures and native ecosystems evolved with grazers. Remember the bison?



IMPROVE SOIL  
FERTILITY



STORES  
CARBON



IMPROVES  
BIODIVERSITY

Photo: Sara Hylton/The Narwhal



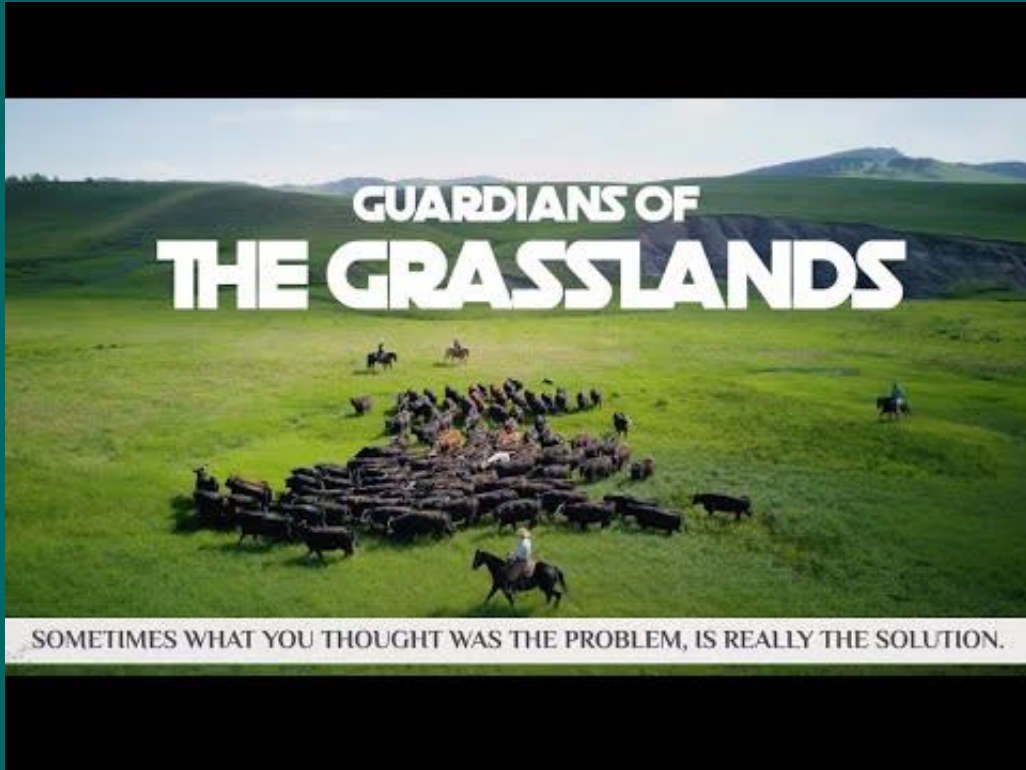




**CATTLE AS BISON?**



# MYTH BUSTING





# CROP FARMERS



# TRUE OR FALSE?

Crop farmers ruin soil over time.

**FALSE**





# HOW CROP FARMERS ARE **HELPING**

1. Protecting existing habitat
2. Practicing sustainable and regenerative agriculture methods

- No-tillage
- Crop rotation and intercropping
- Integrated Pest Management
- Cover Crops
- Planting winter wheat





# **1. PROTECTING EXISTING HABITAT**





## 2. SUSTAINABLE AGRICULTURE

# NO-TILLAGE

No-tillage keeps the remains of the previous crops in place and doesn't turn up the soil.



PREVENTS  
EROSION



INCREASE  
STORED  
CARBON



IMPROVES  
BIODIVERSITY

Photo: Sara Hylton/The Narwhal





## 2. SUSTAINABLE AGRICULTURE

# CROP ROTATION AND INTERCROPPING

**Crop Rotation:** Planting different crops on the land from year-to-year

**Intercropping:** different crops are combined in a single plot



CONTROLS  
WEEDS  
AND PESTS



REPLENISHES  
NUTRIENTS

Photo: Mary-Jane Orr





## 2. SUSTAINABLE AGRICULTURE

# INTEGRATED PEST MANAGEMENT

**Integrated Pest Management: uses an ecosystem-based strategy to prevent pests through biological control, use of crop rotations, and habitat manipulation.**



CONTROLS  
PESTS



REDUCES THE  
NEED OF  
PESTICIDES

Photo: Mary-Jane Orr



## 2. SUSTAINABLE AGRICULTURE

# WINTER WHEAT

Winter wheat is a cover crop that provides soil cover as well as habitat for waterfowl and birds.



PROVIDES  
SOIL COVER



MANAGES  
WEEDS AND  
PESTS



PROVIDES  
HABITAT





# DUCKS UNLIMITED CANADA



# TRUE OR FALSE?

Ducks Unlimited Canada only cares about ducks.

**FALSE**





# HOW DUCKS UNLIMITED CANADA IS HELPING

1. Conservation and restoration
2. Science and research
3. Education





HOW DUCKS UNLIMITED  
CANADA IS HELPING

# 1. CONSERVATION AND RESTORATION





HOW DUCKS UNLIMITED  
CANADA IS HELPING

## 2. SCIENCE AND RESEARCH



HOW DUCKS UNLIMITED  
CANADA IS HELPING

# 3. EDUCATION





# WHY DOES DUC CARE?

Cows and ducks both need grass and water to survive. They use the same habitat and co-exist swimmingly.





**WHAT CAN YOU DO?**



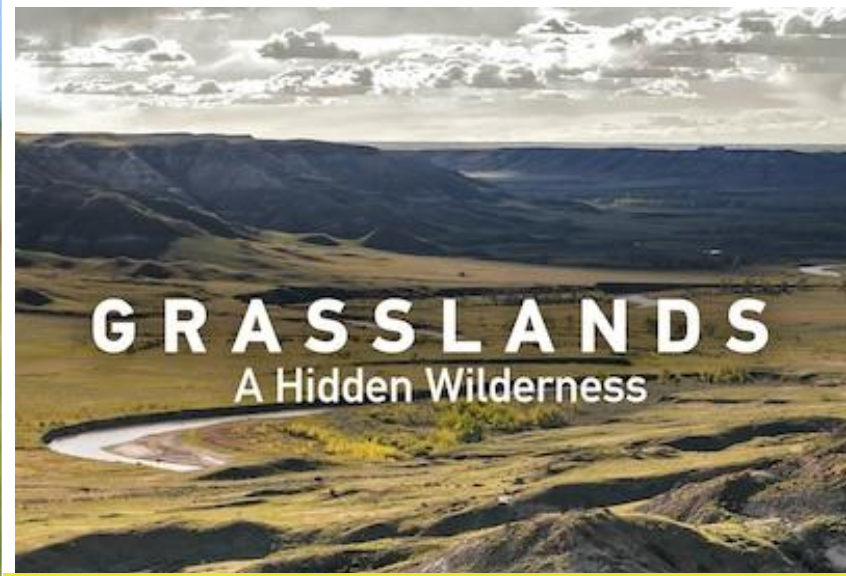
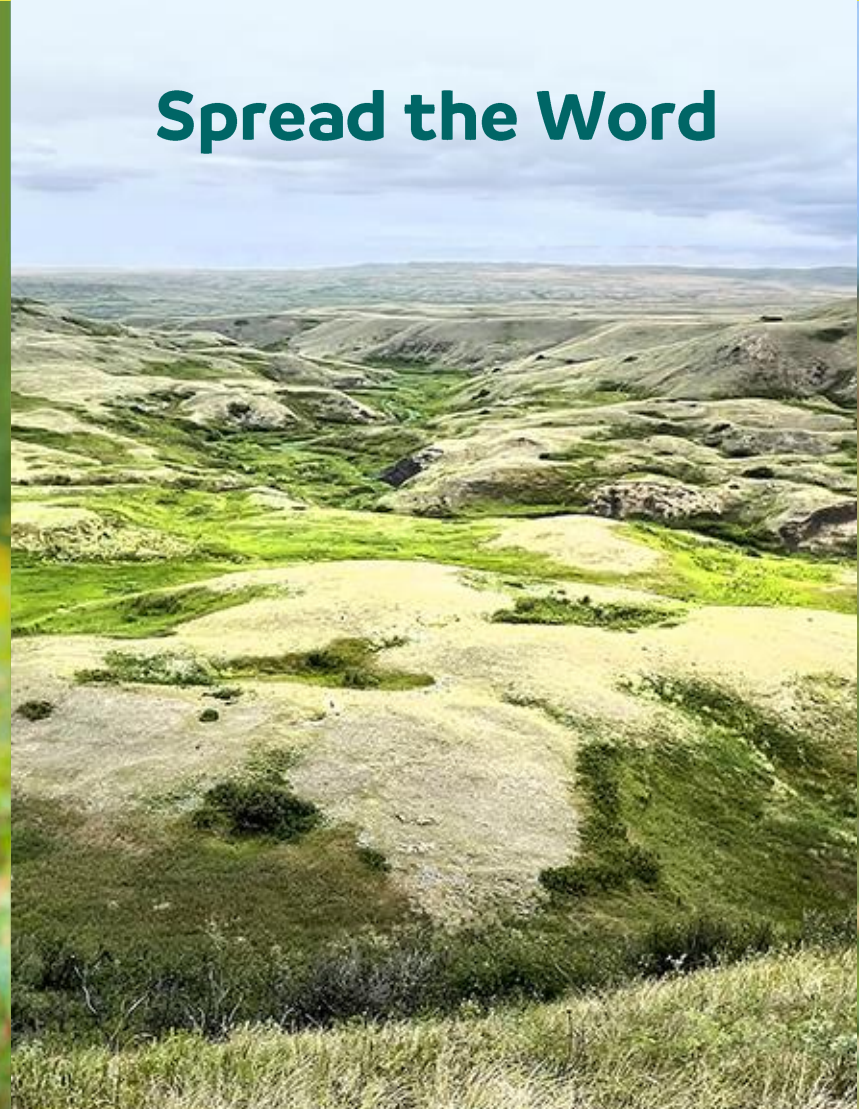


# PERSONALLY

Start a Project



Spread the Word



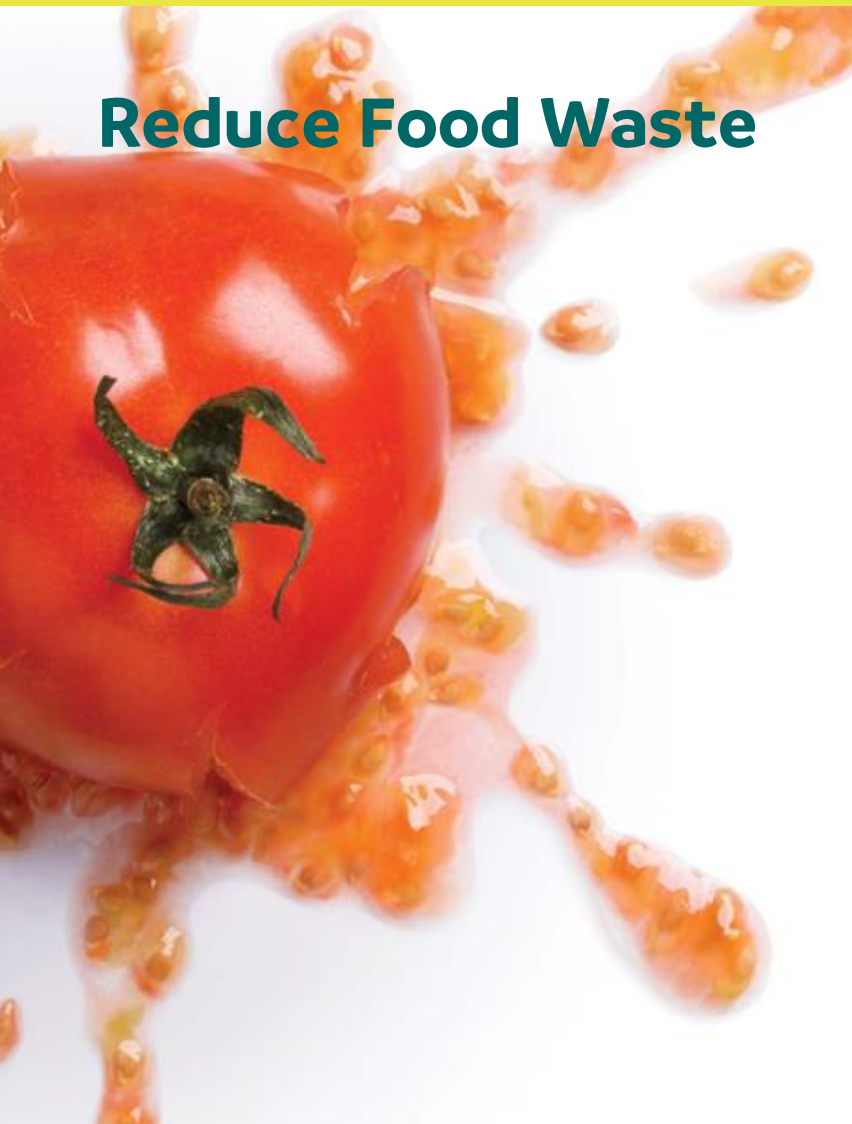
Continue to Learn



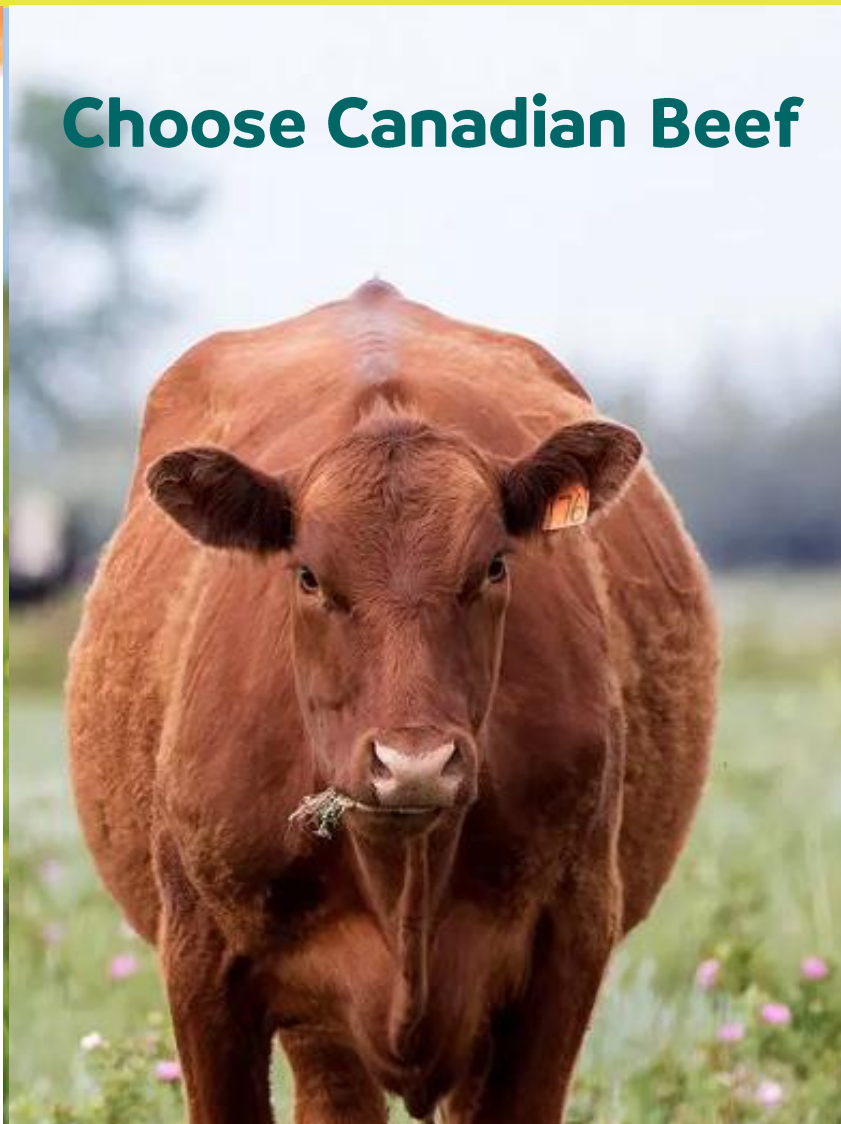


# AT HOME

**Reduce Food Waste**



**Choose Canadian Beef**



**No Mow May!**





# IN YOUR COMMUNITY

**Join a Community Garden**

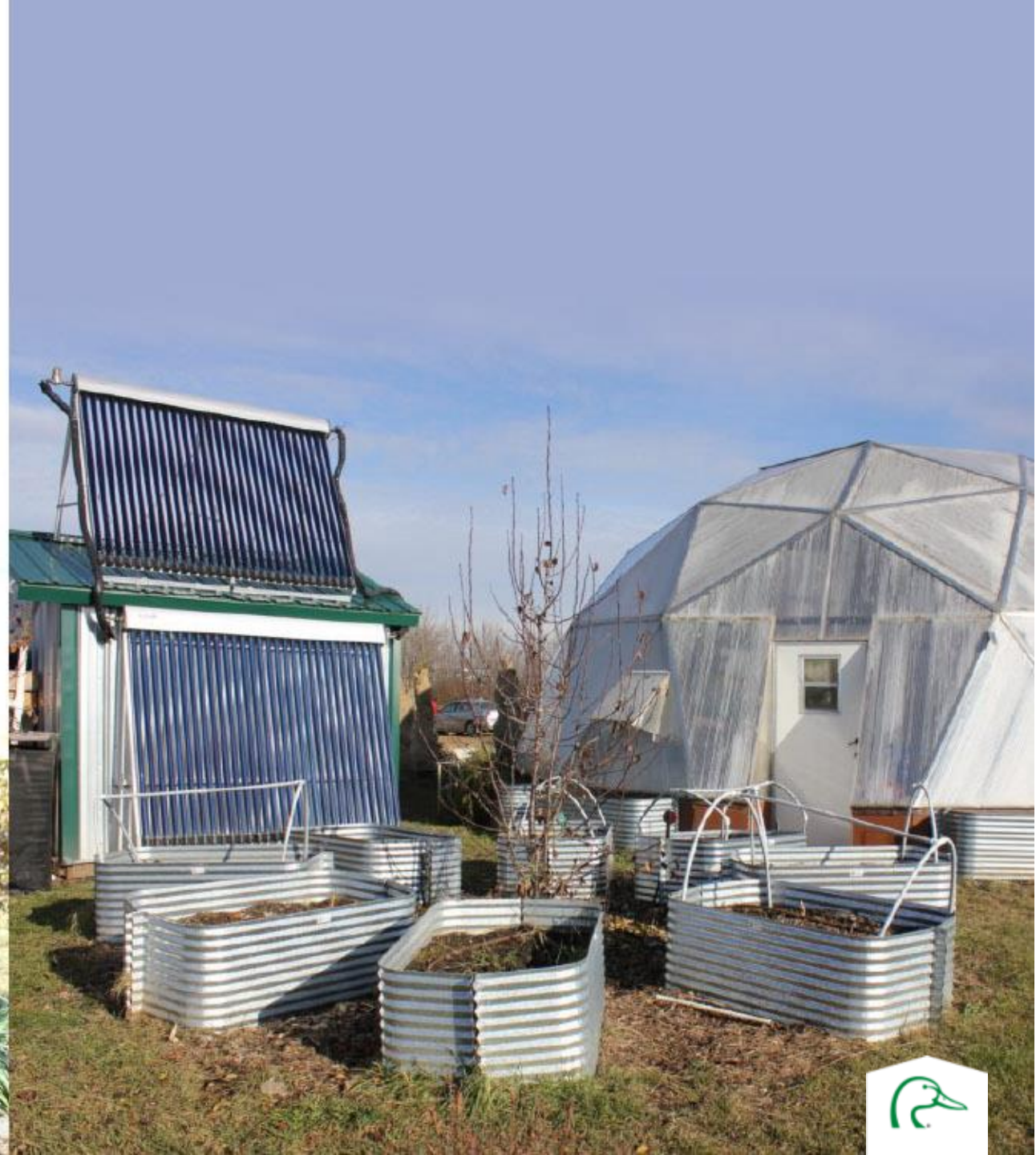


**Take Action, Get Funding!**





# PROJECT BEEWISE





**REMEMBER YOU  
CAN MAKE A  
DIFFERENCE...**

**...BUT YOU'RE  
NOT ALONE!**



# DUC EDUCATION WANTS TO HELP TOO!

Have an idea? We want to hear about it!

Send us a message at [education@ducks.ca](mailto:education@ducks.ca)

Follow us on Instagram: [@duc\\_youth](https://www.instagram.com/duc_youth)

**Share your story with us!** Let us amplify your voice for conservation and share your projects!

