

# CLIMATE CHANGE

## KEY MESSAGES

- Canada is a leader in reducing greenhouse gas (GHG) emissions associated with beef production. In 2021, a kg of boneless beef on your plate creates 15% less GHG than it did in 2014<sup>1</sup>. We produce less than half of the global average of GHGs to produce a unit of beef<sup>2</sup>.
- Nearly 1/3 of Canada's agricultural land is grasses and forages (21.4 million hectares)<sup>1</sup>. These lands are typically unsuitable for crop production, but support grazing ruminants while maintaining wildlife habitat, grassland health and storing carbon.
- Land used for raising beef cattle in Canada currently stores **1.9 billion tonnes of carbon**<sup>1</sup>, and sequesters an additional amount equivalent to the annual carbon emissions of 7.9 million cars every year.
- Grasslands that have cattle on them store about 12% more carbon than grasslands that don't have cattle on them<sup>3</sup>.
- A study led by Nature United suggested that **"avoiding grassland conversion and the resulting preservation of soil carbon stocks represents the single largest opportunity in Canada"** for natural climate solutions<sup>4</sup>. In other words, a decrease in the national cattle herd would release much more soil carbon into the atmosphere than would be saved from the reduced cattle emissions.
- The majority of GHG associated with cattle production is methane, belched as part of the digestion process in the rumen. Methane from cattle is short-lived and part of a natural cycle.
- Cattle are **upcyclers**, utilizing land that can't grow crops and producing manure and nutrient-dense protein, contributing to increased soil health, crop productivity<sup>5</sup> and human health<sup>6</sup>. The process that allows them to do this results in methane emissions.
- The Canadian beef industry is committed to environmental stewardship and supports research and innovations that reduce the environmental impact of beef. As part of the [2030 Beef Industry Goals](#), we are working together to reduce primary production GHG emission intensity of Canadian beef by 33% by 2030, and with a 15% reduction between 2014-2021, we are on track to reach that goal.

## BACKGROUND

Canada, along with many other countries, has committed to significant reductions of greenhouse gas (GHG) emissions by 2050. When comparing direct emissions, beef has a higher GHG footprint than other foods. However, GHG is a single sustainability metric and does not factor in the environmental benefits associated with raising beef cattle in Canada. These include conserving grasslands and biodiversity, maintaining wildlife habitat, improving soil health and carbon sequestration, and enabling circular agroecosystems.

Reducing the amount of beef consumed with the goal of reducing GHGs could result in unintended negative environmental impacts including, ecosystem and habitat loss and soil carbon storage loss from the conversion of native grasslands or pasture.

## CATTLE AND THE ENVIRONMENT, BY THE NUMBERS

- The Canadian beef industry has a long history of increasing efficiency and reducing GHG emissions. Between 1981 and 2011, the Canadian beef industry reduced its GHG footprint by 14%<sup>8</sup>. A separate study shows this trend continuing, with a reduction of 15% between 2014 and 2021<sup>1</sup>.
- Of the land used to raise beef cattle in Canada, 84% is pasture, 8% is used for growing hay and 8% is cropland for growing feed<sup>1</sup> like barley, oats, corn and wheat. In addition, cattle can consume the by-products and residue from human food production, minimizing food waste from crop production.
- Over their lifetime, nearly 80% of the feed cattle consume comes from grass-based forages<sup>8</sup>.
- Globally, 86% of all livestock feed is not suitable for human consumption<sup>9</sup>.
- In Canada, there are 545 wildlife species that use crop and pastureland for reproduction and feeding. Land used for raising beef cattle contributes the majority of the critical habitat that wildlife need for reproduction, to raise their young (74%), and find food (55%)<sup>1</sup>.



**Canadian  
Cattle  
Association**



**CANADIAN BEEF**  
Public & Stakeholder Engagement

# ENVIRONMENTAL BENEFITS OF CATTLE ON THE CANADIAN LANDSCAPE

## Preserving Grasslands

- Canadian grasslands are one of the world's most endangered ecosystems. These landscapes evolved with grazing pressure, so keeping cattle on grasslands protects what remains of this vulnerable ecosystem, while also keeping them healthy.
- From 2016 to 2021, Canada lost 1.3 million acres of natural land for pasture due to land conversion<sup>11</sup>.

## Carbon Sequestration

- Canadian grasslands, most of which are under the care of ranchers, can store 50 to 200 tonnes of carbon per hectare<sup>10</sup>. Cultivation of these grasslands could result in a 20-60% loss of soil organic carbon<sup>5</sup>.

## Preserving Wildlife Habitat

- Although Canadian pasture and grasslands are disappearing, the wildlife habitat capacity on land used for raising beef cattle in Canada has increased, signifying its important contribution in maintaining Canada's wildlife<sup>1</sup>.



## CATTLE ARE UPCYCLERS

HUMAN  
INEDIBLE  
FEED

Converted to...

HIGH  
QUALITY  
PROTEIN

- By-products of crops
- Marginal land (land unable to support crop production)
- Crops damaged by weather / pests
- Grocery store spoilage
- Grass and forages

- All essential amino acids
- Excellent source of iron, protein, vitamin B12 and zinc<sup>6</sup>

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