Beef's place in a healthy environment

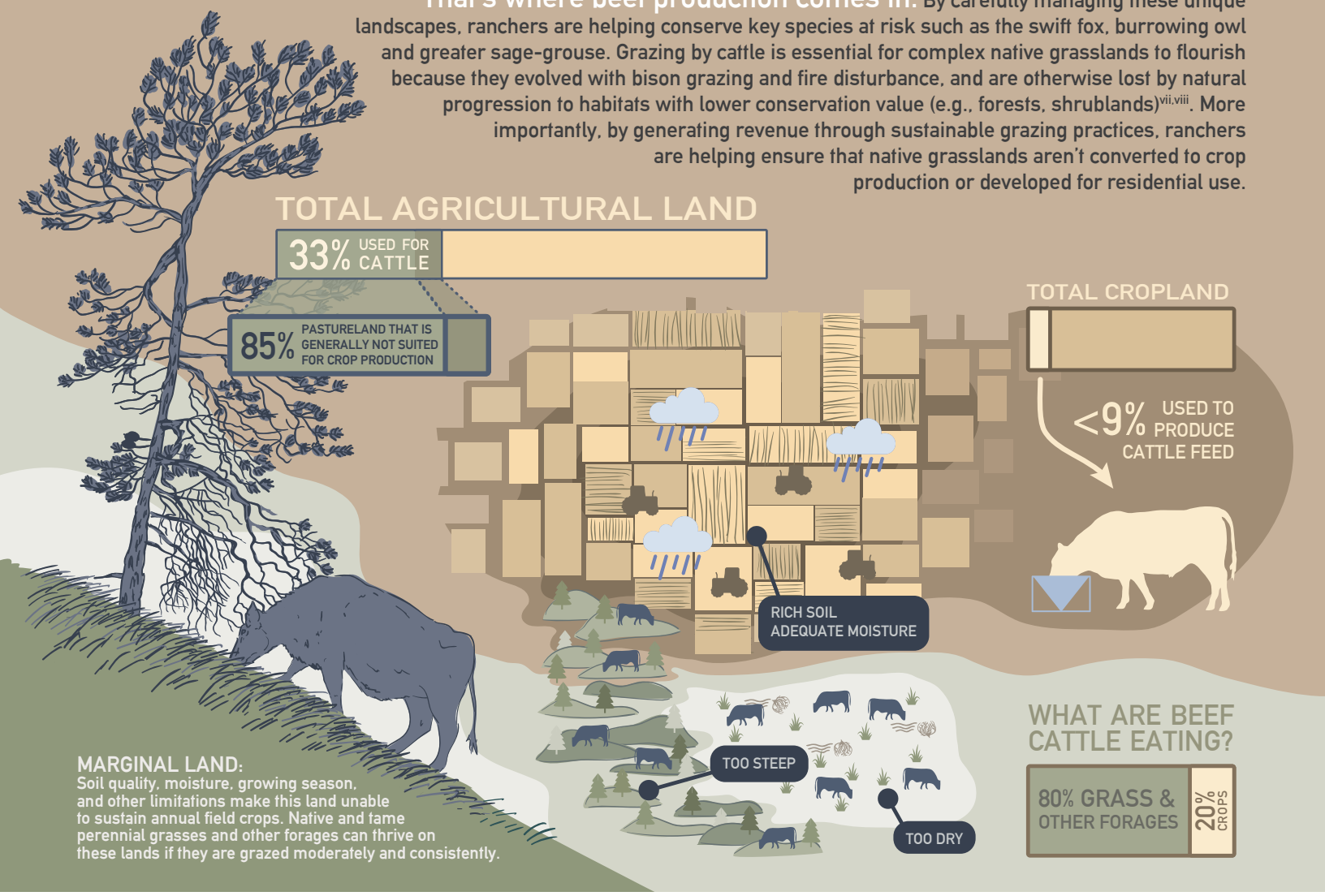
Beef production in Canada has often been the focus of important discussions around sustainability, including factors like greenhouse gas production, water consumption and management of different landscapes for ecosystem health. Topics worthy of a closer look include the relationship between raising cattle and biodiversity, and the types of feed that cattle consume. Research shows that cattle grazing is a major contributor to the conservation of native grasslands and endangered species, and that most of the plants cattle eat aren't suitable for human consumption and would otherwise be waste products. This document takes a closer look at these two important topics and sheds light on key facts related to beef production in Canada.

- Conservation of species that depend on native grasslands, like burrowing owls and many songbirds, is supported by cattle grazing and the continued presence of livestock on the landscape[i]. Without beef production, these native grasslands (home to over 60 Canadian species at risk[iv]) are often converted into fields for growing crops like barley, potatoes and other foods.
- Cattle don't require high-quality feeds and consume a lot of products that would otherwise go to waste. These include by-products left over from the production of food for humans and grains that don't meet the high-quality standards for human consumption[ii].
- 80% of the feed required for beef production in Canada is grass and other plants that are inedible to humans[iii]. Much of this is grown on land that is too dry, rocky, forested or steep for crop production.

Cattle and native grasslands: a natural fit

Native grasslands, like those found in the Canadian prairie provinces, are one of the most threatened ecosystems in the world — more threatened than rainforests[iv]! Conversion of native grasslands to croplands resulted in the loss of over 97% of tall grass prairie and 71% of mixed grass prairie by 2003[v]. The disappearance of native grasslands has led to an overall loss of nearly half the populations of grassland species since the 1970s, with some species declining by as much as 87%[vi]. When grasslands are lost to cultivation, species that depend on that grassland for survival suffer.

That's where beef production comes in. By carefully managing these unique landscapes, ranchers are helping conserve key species at risk such as the swift fox, burrowing owl and greater sage-grouse. Grazing by cattle is essential for complex native grasslands to flourish because they evolved with bison grazing and fire disturbance, and are otherwise lost by natural progression to habitats with lower conservation value (e.g., forests, shrublands)[vii,viii]. More importantly, by generating revenue through sustainable grazing practices, ranchers are helping ensure that native grasslands aren't converted to crop production or developed for residential use.



Beef production makes use of what's left behind

Throughout much of Canada there are privately owned landscapes that are not well suited to crop production. Many of these areas are too steep, rocky, forested or susceptible to erosion for production of agricultural crops. Cultivating these lands often increases soil erosion, releases stored carbon and nutrients into the atmosphere and requires greater use of fertilizers and other inputs to make them productive[ix]. By grazing cattle on these lands, high-quality beef protein can be produced from land that cannot, or should not, be used for growing crops to feed the human population.

It's also important to recognize that people and cattle do not compete for the same foods. Cattle are fed by-products from the production of human foods like margarine, beer, and corn syrup. In cases where grain is fed directly to cattle, it's because it hasn't met the high-quality standards required for the production of bread, pasta, rolled oats, beer and other foods. Beef production, therefore, makes use of what's left behind - not food that can go straight to the table of a growing human population.

Canadian beef and you

The nutrients of Canadian-grown beef protein are produced in a way that supports grassland habitat conservation and sustainable food production. Sustainable grazing practices and the use of by-products and low-grade feeds makes our beef herd an important part of our thriving prairie communities.

[i] CRSB. 2016. National Beef Sustainability Assessment and Strategy – Environmental and Social Assessments. Calgary, Ab. Canfax Research Services.|[ii] Mottet et al. 2017. Livestock: On our plates or eating at our table? A new analysis of the feed/food debate. Global Food Security.|[iii] Legesse et al. 2012. Greenhouse gas emissions of Canadian beef production in 1981 as compared with 2011. Animal Production Science.|[iv] Kraus. 2016. Why Canada's prairies are the world's most endangered ecosystem. [NCC blog post] http://www.natureconservancy.ca/en/blog/archive/grasslands-the-most.html#.XMn4SHdFyP8|[v] Federal Provincial and Territorial Governments of Canada. 2010. Canadian Biodiversity: Ecosystem Status and Trends 2010. Canadian Councils of Resource Ministers.|[vi] Downes et al. 2011. Landbird trends in Canada, 1968-2006. Canadian Council of Resource Ministers.|[vii] Morgan. 1980. Bison Movement Patterns on the Canadian Plains: An Ecological Analysis. Plains Anthropologist.|[viii] Fuhlendorf and Engle. 2001. Restoring Heterogeneity on Rangelands: Ecosystem Management Based on Evolutionary Grazing Patterns. BioScience.|[ix] BCRC. 2019. Is beef Canada's ultimate plant based protein? [BCRC blog post] http://www.beefresearch.ca/blog/

BCRC
BEEF CATTLE RESEARCH COUNCIL