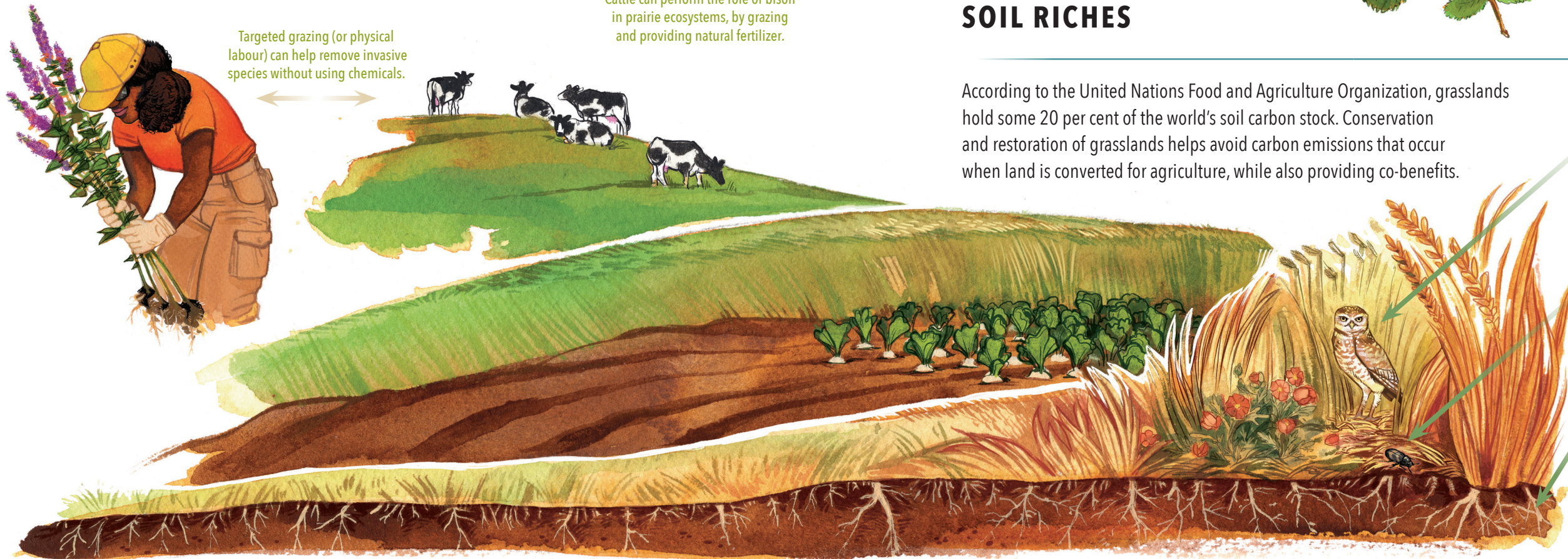


Field fixes

How grasslands protection and conservation agriculture can work as front-line defences against climate change

BY BRIAN BANKS



Targeted grazing (or physical labour) can help remove invasive species without using chemicals.

PASTURELAND

Cattle can perform the role of bison in prairie ecosystems, by grazing and providing natural fertilizer.

CROPLAND

Crop rotation can help minimize carbon emissions and contribute to long-term soil health. Duncan Morrison, executive director of the Manitoba Forage and Grassland Association, recommends farmers think a season or two ahead when choosing crops. To break up hardpan soil (a dense layer under the topsoil), plant sunflowers or radishes; for early spring grazing, fall rye and winter wheat.



SOIL RICHES

According to the United Nations Food and Agriculture Organization, grasslands hold some 20 per cent of the world's soil carbon stock. Conservation and restoration of grasslands helps avoid carbon emissions that occur when land is converted for agriculture, while also providing co-benefits.

CO-BENEFITS:

Restoring native plant species provides critical habitat for endangered and threatened grasslands species.

A mix of native grasses and plants attracts beneficial insects, providing natural pest control and pollinator services and contributing to soil health.

Restored grasslands are more resilient to droughts and floods.

The sweeping vistas of the Govenlock-Nashlyn-Battle Creek grasslands in southwest Saskatchewan have been long recognized as a haven for prairie plants and nationally endangered and threatened birds. With Canada having lost more than 75 per cent of its native prairie grasslands, protection of these remaining tracts is a key conservation priority. That aim is gaining even greater urgency, says Gauri Sreenivasan, director of policy and campaigns at Nature Canada. The reason? Vast amounts of carbon stored in the roots and soil underfoot.

"Grasslands are not only the most endangered terrestrial ecosystem on the planet," says Sreenivasan, "but they are important as carbon sinks."

Protection for these specific Saskatchewan grasslands seems likely, as negotiations between the federal and provincial governments, First Nations, ranchers and

other parties are nearing completion. Their story is a microcosm of the interconnected roles that grasslands protection can play across the Prairies in using nature as a front-line defence against climate change, while also saving species.

Grasslands conservation helps avoid carbon emissions that would occur if those lands were converted to agriculture. Its complement is grasslands restoration, involving the reintroduction of native grasses and the removal of invasive species.

It's important to highlight that grasslands conservation involves working closely with ranchers, either as landowners, lessees of Crown land or so-called pasture patrons with rights to graze cattle on provincial or federal community pastures, such as in Govenlock-Nashlyn-Battle Creek.

"Grazing cattle fill an ecological role traditionally played by bison," explains Sreenivasan. Careful management of cattle can augment carbon storage in pasture lands.

At a summit held in Ottawa earlier this year on nature-based climate solutions, grasslands and agriculture were combined in a single breakout session. This reflects, in part, the essential role that farmers, like ranchers, need to play in any efforts to avoid or reduce emissions and sequester carbon in working landscapes. Lara Ellis, vice-president of policy and partnerships with Alus Canada, a national organization that works with farmers to promote conservation, restoration, water and soil management on their lands, moderated that session.


"The majority of our work is on marginal or uneconomic farmland identified by participants for enrolment in the program," says Ellis. "What we're doing is putting natural

features back on that land, whether it be wetland restoration, afforestation or restoring grasslands."

These actions not only help lock in carbon but also provide habitat for more species, enhancing biodiversity. But, says Ellis, there are a great many other "co-benefits," including flood and drought mitigation, pollinator services and natural pest control. Both Ellis and Sreenivasan also stress the community benefits that accompany natural climate measures for grasslands and agriculture.

"You're cutting down on emissions, but you're also creating jobs in rural Canada, which are hard to come by. Plus, all those benefits around food and water security," says Ellis. "When you're investing in nature, the benefits are so wide-ranging."

MARY SANCHE/CAN GEO

 This is the second in a series of infographics exploring natural climate change solutions. See the first at cangeo.ca/ja20/naturalsolutions.