



SAVING THE WORLD'S MOST STARTS AT HOME

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Ask any Canadian kid to name the world's most endangered ecosystem. Chances are you'll hear one of the following answers: 1) rainforests, 2) coral reefs, 3) leave me alone*.

Ignoring the last answer, there's a good reason why kids, and most other people, think that these are the most endangered ecosystems — the planet's most critical and urgent habitats for conservation. Tropical rainforests and coral reefs are incredibly important for protecting the planet's biodiversity. They are a cornucopia of millions of species and display the incredible and beautiful forces of life that create diversity.

There is no question that they are threatened. We are continuing to lose tropical rainforest, and coral reefs are at increasing risk from pollution, rising water temperatures and ocean acidification (the latter two a consequence of climate change).

Tropical rainforests and coral reefs are also the focus of international campaigns to protect biodiversity, to protect "hotspots" of species diversity. I was brought up in an era when every hamburger had a topping of guilt that it was clearing Brazil's rainforests. Many of the world's biodiversity hotspots are within tropical rainforests and coral reefs, and they are the focus of education and awareness campaigns that are on Canadian news and in Canadian classrooms.

Now, what if I told you the world's most endangered ecosystem isn't

tropical rainforests or coral reefs. It's a different habitat. And one that is much closer to home than you might think.

Conservation scientists spend a lot of time generating and gazing at maps and data. Much of this information is used to help prioritize important places for conservation. Places where conservation could protect and prevent the endangerment of species and habitats.

Endangerment comes down to risk. The risk of losing a species, habitat or ecosystem for future generations. When we look at the risk factors for endangerment: past loss, current amount of conservation, potential for future loss — the winner (actually the loser) are temperate grasslands, including the good old Great Plains of Oh Canada that stretch across southern Manitoba, Saskatchewan and Alberta, and the grasslands of B.C.'s



Old Man on His Back, Saskatchewan. Photo credit: Branimir Gjetvaj

ENDANGERED ECOSYSTEM

interior. The world's most endangered ecosystem is right here at home.

Globally, temperate grasslands cover about eight per cent of the Earth's land surface.¹ They generally exist in the interior of continents where there is not enough rain and snow fall to support forests. There are many reasons why temperate grasslands are endangered. They are the original breadbasket of the world. Over 50 per cent have been converted to crops and other land uses.¹ Much of the remaining are intensively grazed, replacing what were some of the planet's greatest concentrations of wild grazing animals with cattle, goats and sheep. Around the world, temperate grasslands are faced with continuing habitat loss, fragmentation and desertification, impacting both biodiversity and local people that rely on healthy grasslands for their livelihood.

The loss and continued threats

to temperate grasslands has been recognized for almost a decade, and they have been identified by the International Union for the Conservation of Nature as the world's most endangered ecosystem.² An analysis of global habitat loss and conservation found that temperate grasslands had the highest Conservation Risk Index compared to all other terrestrial ecosystems.³ This high risk is a result of large scale conversion of and very few protected areas. A global analysis in 2016 found that the greatest impacts and land use pressures to ecosystems are found in temperate grasslands.⁴

Canada's temperate grasslands mirror the fate and state of this ecosystem around the world. Over 70 per cent of Canada's prairie grasslands have been converted.⁵ In some regions, including Manitoba's tallgrass prairie region, the losses have been over 99 per cent, prompting the government of Manitoba to be

the first jurisdiction in Canada to list tallgrass prairie as an ecosystem at risk.^{5,6} A 2010 report on the status and trends of Canada's major habitat types found that our grasslands are the only major ecosystem type that is impaired, and continuing to decline.⁵ A recent study found this continued decline is significant. Between 2009 and 2015, the annual rate of grassland conversion in North America's Great Plains was two per cent, with some of the highest conversion rates in Canada.⁷

Protection of all ecosystems, from tropical forests to coral reefs to arctic tundra, is important. What makes Canada's temperate grasslands different is the urgency of their conservation need. Yes, we need to direct resources to places like the Amazon rainforest, but when we directly compare the loss and conversion of rainforest to temperate grasslands, your feeling of conservation urgency may shift

northward. While we have lost 20 per cent of the Amazon rainforest, over 70 per cent of Canada's prairies are gone. While the continued conversion of the Amazon rainforest is continuing, the continued conversion of Canada's prairies is happening faster.⁷ We are witnessing the loss of a core Canadian landscape in this generation.

The endangerment of grassland habitat in Canada has cascaded into the endangerment of many grassland species. Over 60 Canadian species at risk depend on this habitat, including species that symbolize our grasslands such as Plains Bison (*Bos bison bison*), Swift Fox (*Vulpes velox*) and Greater Sage-Grouse (*Centrocercus urophasianus urophasianus*). The 2016 report on the State of North America's Birds concluded that many grassland birds are rapidly declining, and some species have lost over 70 per cent of their population in the last 40 years.⁸ The songs of birds such as Baird's Sparrow (*Ammodramus bairdii*), Sprague's Pipit (*Anthus spragueii*) and Chestnut-collared Longspur (*Calcarius ornatus*) are slowly dimming on our prairies.

The loss of Canada's grasslands is a loss for Canadians. In addition to wide open prairies, our grasslands also contain wetlands, lakes, rivers and valleys. Canada's grasslands support fishes, waterfowl and breathtaking avian migration spectacles as millions of birds stop to rest and feed on their way to the boreal and arctic. In an ecosystem that is created by a lack of water, grasslands are critical for allowing water to infiltrate into the ground, providing base flow to rivers and streams, and holding water during floods. Grasslands are also important for carbon storage, with intact native prairies proving to be particularly effective at sequestration and long-term storage in their deep and extensive root networks.

Grasslands can also showcase how people and nature can co-exist. Many of Canada's grasslands have a long history of sustainable cattle grazing. This grazing has supported generations of prairie ranchers, can help to maintain grassland health and benefits many species of prairie wildlife.

The loss of Canada's prairies is also a loss for the world. One of the last places on Earth to protect grasslands at a meaningful scale are the grasslands of North America's Great Plains, and despite a loss of 70 per cent, Canada has some of largest and best sites remaining. A global assessment of critical places for the conservation of temperate grasslands finds a place on the map here at home, highlighting the importance of our conservation efforts in Canada.²

There is hope in the conservation of our grasslands. We have already proven that cooperation and conservation can save prairie species. From early efforts to protect the last wild Plains Bison that roamed the prairies in the late 1800s, to the establishment of "regeneration" national parks[†] to save Pronghorn (*Antilocapra Americana*), to the return of the Swift Fox in 1983, Canadians have shown a passion and ability to conserve and restore our grassland heritage. The Nature Conservancy of Canada has protected over 80,000 ha of grasslands, including large intact areas such as Old Man on His Back in southern Saskatchewan, and there is a key and immediate opportunity to conserve large areas of prairie and maintain local ranching economies by protecting Community Pastures^{††} in Alberta, Saskatchewan and Manitoba.

Witnessing the rapid loss of habitats and species at a global scale can bring on feelings of both urgency

and helplessness. It can also be easy to think of it as someone else's issue and that direct responsibility lies elsewhere. Here in Canada we have opportunities to protect and restore habitats that are important for Canadians, and important for the world. We have an opportunity to protect and restore our grasslands.

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[†]Canada established four national parks in Saskatchewan and Alberta to recover populations of Pronghorn antelope and Plains Bison. With the recovery of these populations, these parks were delisted on July 17, 1947.

^{††}In Saskatchewan alone there are almost 700,000 ha of community pastures.