A Visit to Suffield National Wildlife Area

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In August, standing outside in the sweltering heat, I had a rare glimpse of how the prairies might have looked hundreds of years ago, uncultivated, and vast. Suffield National Wildlife Area (NWA) is one of the largest remaining tracts of uncultivated grassland in Canada's prairies. Stretching over 45,836 hectares, the area's sensitive ecosystems have long been recognized and protected, although the NWA was only formally established in 2003. Due to its position within Canadian Forces Base (CFB) Suffield, the NWA is managed by both the Department of National Defence (DND) and Environment and Climate Change Canada (ECCC).

In March, AWA sent a letter to the Ministers of Defence and Environment and Climate Change Canada. We had heard about a possible withdrawal of British troops from the area and hoped this opportunity could be used to enhance conservation in the NWA. Although we were told not to expect any real changes regarding military land use at the base, the Base Commander was eager to open communications around Suffield. Which is why, on a warm summer morning, I made the three-hour trip from Calgary to Suffield with Christyann Olson, AWA's acting Executive Director at the time.

We were treated to a tour of the NWA, led by two biologists, Drew Taylor and Amy Moores. Also accompanying us was Base Commander Lieutenant-Colonel Steve Burke, along with several other important military and support staff. Before leaving, we were reminded that CFB Suffield is an active military base, and we were briefed on the risks associated with any military area. Then we climbed into the base-provided trucks – because anything smaller would have difficulty driving on the rough roads – and we set off.

Northern leopard frog hidden in the grass at Suffield NWA. Northern leopard frogs and Great Plains toads were abundant in the protected riparian area and show the success of the area in protecting these semi-aquatic species. Photo © C. Olson.

The first stop of the tour was a grazing dugout, positioned in one of thirteen pastures that had been managed by the Prairie Farm Rehabilitation Administration (PFRA) before they were dissolved in 2013. These pastures continue to operate at Suffield NWA, managed with fences that separate individual pastures. The fencing is vital to controlling grazing and producing a range of intensities, which in turn provides a range of habitats for species with different needs. Being able to produce a patchwork with areas that contain low vegetation height and density while other areas are allowed to grow without interference, encourages a greater diversity of species to settle in the area.

The water in the dugout was calm. A nearly perfect image of the blue sky above was reflected on the surface, broken only by ripples as tiny invertebrates moved across the still water. Tall green reeds and shorter yellow grasses surrounded it. In the grass and on the water were dozens of small northern leopard frogs and Great Plains toads. The sensitive riparian habitat was protected with solid wooden fence posts and four strands of wire: three barbed, and the bottom one smooth to allow wildlife movement. Thin metal

spikes lined the fence posts, acting as a deterrent to any perching predators, and further protecting the small frog haven.

Our second stop was much drier. Climbing up a hill, picking our way past scraggly patches of grass and sagebrush, we were introduced to stabilized sand dunes. Sand dunes, unlike most environments, are not covered in vegetation. There are bare patches and shifting sands, and in fact, several species, including Ord's kangaroo rat and gold-edged gem moths, make their habitat in active sand dunes. Sand dunes can be stabilized by changes in moisture, fire or grazing. To reactivate sand dunes requires careful prescribed burning and manual methods, but DND, ECCC and Alberta Environment and Parks are working on restoring this habitat and relocating the endangered Ord's kangaroo rat to areas where they have a greater chance of surviving and recovering.

Our third stop took us to a field of brittle yellow grass overlooking a green river valley, and to the Ellis Medicine Wheel. Medicine Wheels are acknowledged as an important Indigenous symbol and are proof of the historical presence of Indigenous people in the Suffield area. This site was only one of several archaeological sites found throughout CFB Suffield, and efforts are in place to protect these sites.

The nearby river valley is important for another reason. Snake hibernacula, where most snakes shelter in the winter, line the river valley. In the NWA, surveys found five species of snakes: the more common bullsnake and prairie rattlesnake, and the less frequently observed plains hognose snake, plains garter snake, and wandering garter snake. When snakes emerge from their hibernacula, they travel further onto land, crossing roads where they risk being run over. To protect the snakes, seasonal speed reductions were introduced, and industrial access was moved west to avoid snake paths.

Our final stop for the day was at Hogsback, a high point overlooking the Suffield training area. From there, we could see far across to the distant horizon, our view unimpeded by trees or buildings. The sky above was a cloudless blue, the sun shining bright, while below us the grassland expanse spread out in all directions.

Stabilized sand dunes in the grasslands region at Suffield NWA. Sand dunes become stabilized with changes in fire, moisture or grazing, and vegetation becomes overgrown. Stabilization of sand dunes is a threat to the species that rely on active sand dunes, including the endangered Ord's kangaroo rat and gold-edged gem moths. Photo © C. Olson.

There, we gathered to hear about military managed lands, which studies showed contain some of the highest biodiversity of any land managed federally. Military lands are often large, continuous tracts with limited development. In addition, they have regular disturbances that generally produce a range of environments, and so attract species with different habitat preferences. For instance, at CFB Suffield, the land outside the NWA experiences high fire frequency, while the area inside the NWA has a much lower fire frequency. These two distinct fire frequencies attract different species, improving biodiversity.

Still, other projects can and have been used to further boost biodiversity at CFB Suffield. We were shown the result of an investigation into wildlife-friendly fencing, the most effective to allow for wildlife crossings, and we were told that all new fencing would feature wildlife-friendly barb-free bottom wire. Another project is the ECCC and Calgary Zoo's burrowing owl head-starting project, which takes owlets and raises them in captivity, thus reducing the mortality rate as owlets, and reintroduces them into the wild as first-year adults. These projects have been deemed successful overall, and, along with other projects like the relocation of Ord's kangaroo rat, work together to help recover species at risk.

Suffield NWA, along with the entire Range and Training Area, is one of the last shelters for many grassland species. As more and more native prairie is lost, grassland species are being pushed into smaller and smaller spaces, until eventually, they have nowhere left to run. Places like Suffield offer hope. They prove that these species are still present on the landscape, and prove that our actions can help struggling populations. This is why land management at Suffield is important, and why AWA is continuing discussions on the future of Suffield NWA, and the roles DND, ECCC, AWA and our Indigenous colleagues can play in conservation.