

Meewasin Northeast Swale – Biodiversity Through Targeted Conservation Grazing

MEEWASIN

Meewasin is a conservation agency dedicated to conserving the cultural and natural resources of the South Saskatchewan River valley. Meewasin's mandate is to ensure a healthy and vibrant river valley, with a balance between human use and conservation by:

- Providing leadership in the management of its resources;
- Promoting understanding, conservation and beneficial use of the Valley; and
- Undertaking programs and projects in river valley development and conservation, for the benefit of present and future generations.



Crowfoot Violet (*Viola pedatifida*)



Sheep grazing on Canada Thistle (*Cirsium arvense*)



Rare white form of Prairie Crocus (*Anemone patens*)

Targeted Conservation Grazing

Targeted conservation grazing is the use of livestock to achieve conservation objectives through replicating natural disturbance regimes similar to those created by historic prairie herbivores (Romo 2007). Meewasin utilizes sheep grazing at the Meewasin Northeast Swale in both a free range and controlled manner through financial support from Environment and Climate Change Canada's Habitat Stewardship Program. The sheep help re-invigorate native species, increase biodiversity, reduce native shrub cover, decrease the occurrence of invasive species, and create a mosaic of disturbance patches in the Swale (Northeast Swale Resource Management Plan 2013).



483 sheep led to paddock by shepherd

Grazed Wolf Willow, a targeted native shrub

Dog at work herding sheep

The "Swale"

The Meewasin Northeast Swale is a remnant post-glacial channel scar of the South Saskatchewan River. The Swale extends 26 kilometers from Peturrson's Ravine in Saskatoon to the Clarkboro Ferry in the RM of Aberdeen covering 2,800 hectares. The unique geological, hydrological and ecological attributes of the Swale have allowed remnant Plains Rough Fescue grasslands and prairie pothole wetlands to remain relatively intact. These irreplaceable habitats create a rich biodiverse landscape with more than 200 plant species and 100 bird species recorded, to date.

From a jurisdictional perspective, the Meewasin Northeast Swale consists of two parts: lands within the City of Saskatoon (the Swale), and lands within the Rural Municipality of Corman Park and Aberdeen (the Greater Swale). The Swale, within Saskatoon city limits (primarily owned by the City of Saskatoon), is approximately 300 hectares in size and 5 kilometers in length (roughly 10% of the greater Swale area).



Grazing sheep at the Meewasin Northeast Swale (Photo courtesy of Liz Hartman)

Research and Ecological Monitoring

Meewasin engages a variety of stakeholders, volunteers, and consultants to assist with the collection of ecological data in the Swale for research and monitoring purposes including vegetation surveys, wildlife surveys, GPS data collection, testing for pollution (light and water) and photo monitoring. Partnerships with organizations across the Saskatoon region help ensure a better understanding of the ecology and diversity of this natural area.



Range Health Assessments



Wildlife camera monitoring



Grazing cages are used to determine utilization by grazers

Public Engagement and Citizen Science

Meewasin's conservation grazing program encourages the public to participate in grazing demonstrations provided by a shepherd, herding dogs, and the sheep. The shepherd educates children and adults on grazing ecology, the relationship between predator and prey, the grazing history of the prairies, the species targeted for grazing and how to get the sheep to eat them, and the partnership and respect between shepherd and dog.

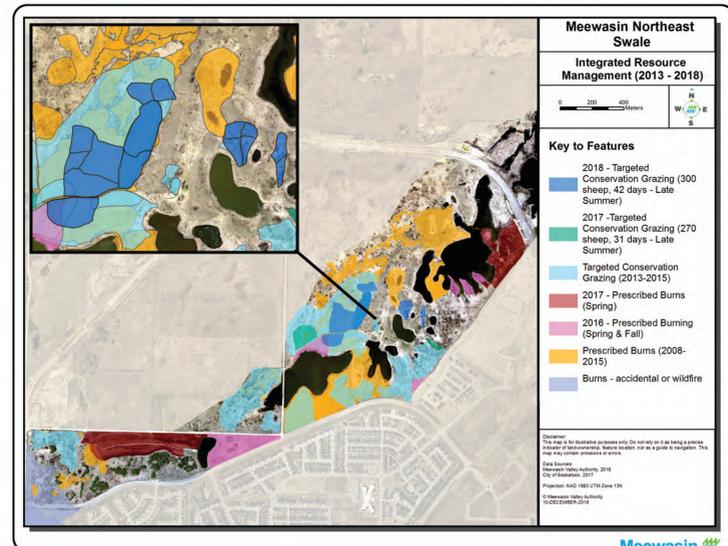
Meewasin engages the public and school groups in citizen science activities. Current initiatives include light pollution monitoring, water quality sampling, wetland dipping for benthic invertebrates and Ecoblitz events which include plant and animal surveys.



Breeding bird survey



School group watching the grazing program



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DECEMBER 2018



Target: Invasive Species



Leafy Spurge (*Euphorbia esula*)

Invasive species are the second greatest threat to biodiversity after habitat loss (IUCN) and were identified as the largest threat to conservation in the Saskatoon region in the Meewasin Valley-wide Resource Management Plan (2017). Through conservation grazing Meewasin targets non-native grasses of Kentucky Bluegrass (*Poa pratensis*) and Smooth Brome (*Bromus inermis*) and noxious weeds of Perennial Sow Thistle (*Sonchus arvensis*), Canada Thistle (*Cirsium arvense*) and Leafy Spurge (*Euphorbia esula*).



Perennial Sow Thistle (*Sonchus arvensis*)

Grazing also targets Wolf Willow (*Elaeagnus commutata*) and Western Snowberry (*Symphoricarpos occidentalis*). These native shrubs rapidly encroach on the prairie resulting in a shift from a grassland to shrubland community. The objective of systematically grazing these native shrubs is to open the grassland canopy to enhance native prairie plants and grassland bird habitat. Additionally, Plains Rough Fescue (*Festuca hallii*), a rare native grass, is also targeted to increase the natural disturbance regime on which it is dependent.



Putting up electric netting for grazing



Shepherd Jared Epp with Rex the dog

Integrated Resource Mangement

Grazing is only one of the resource management techniques that Meewasin uses to manage conservation sites throughout the Meewasin Valley. Other methods utilized include prescribed burning, mechanized mowing and invasive species management. Prescribed burning is used to reduce litter, invigorate native species, decrease invasive species and create a mosaic of disturbance patches. Invasive species management is an integrated approach which includes hand-pulling and digging, mechanized removal, biocontrols and herbicides.



Biocontrol: Spurge Hawk Moth (*Hyles euphorbiae*)

Meewasin has used targeted conservation grazing on their sites for over 15 years and continues to include this as part of their annual integrated resource management program.



Prescribed burning

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