

MEEWASIN ECOBLITZ 2011
Summary Report

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1. Description of the Northeast Swale

The Northeast Swale is an ancient river channel created by glacial meltwater around 12,000 years ago. Running northeast from Peturrson's Ravine, it starts on the east side of Central Avenue. In its entirety it parallels the river to the northeast and reconnects with it 26 km downstream. It has large patches of healthy, intact grassland as well as rocky knolls and many wetlands. Our study area this year is within an area slated for housing development. Meewasin believes strongly that we need to conserve as much of the Swale as possible. Ideally the Swale will serve as a high quality example of an authentic prairie landscape, wholesome in its biotic and abiotic components; flora, fauna, land and water. It will feature long-standing processes such as controlled burning and grazing in its management. Visitors will experience an ever changing quality prairie landscape which will stimulate a sense of wonder and foster reconnection to the land. The Swale has the possibility of becoming an integrated natural component of the surrounding neighbourhoods. As well, it can serve as a corridor for both humans and native animals.

Assets of the Northeast Swale

The Swale represents one of the largest pieces of unbroken prairie, riparian forest and wetland in the Saskatoon region with patches of fescue, a rare grassland. There are patches of fescue prairie and a marl bog at Peturrson's Ravine supporting nationally rare plants. The area has been home to several bird species at risk. There are palaeontological remains at the Riddell Site (near Northeast Swale).

In addition to the abundant natural resources, there are signs of human habitation over the past several centuries, including a remnant section of the Batoche/Moose Woods Trail and, according to amateur historian Dennis Fisher, Middleton's staging camp on the trek to the Battle of Batoche. It is also the site of the telegraph line ultimately linking North America to Europe via Russia. A section of the old town of Clarkboro is located within the Swale. Tipi rings from the encampments of the original residents of the Saskatoon area are believed to be located within the Swale. More recent archaeological remains include the lime kilns nearby and the holes left by the removal of large limestone erratics used to build the University of Saskatchewan.

2. Resource Management of the Swale

Meewasin's immediate goal is to develop a Resource Management Plan for the Northeast Swale. The primary goal of the EcoBlitz – through data collection, educational modelling, involvement of key community decision makers and a media campaign – was to raise awareness of the importance of the Swale. The EcoBlitz provided useful information for future management decisions as well as helped raise the profile of the area. One of the challenges will be to integrate the Swale into future neighbourhood developments. This rich ribbon of green fits with the city's proposed wetland policy and can provide opportunities for actions that prevent climate change. Its potential for conservation, education, interpretation, passive recreation and a sustainable quality of life is immense. Meewasin strives to preserve the authenticity of the native grassland of the

prairie landscape; minimize the impact of humans as a force of change and enhance the natural and heritage assets.

3. What is the Meewasin EcoBlitz 2011?

The EcoBlitz expands upon the concept of a bioblitz, a 24 hour event in which as much data as possible about the biology of a specific area is gathered. Meewasin's EcoBlitz focused on ecology and habitat in addition to species, and was inspired by the environmental perspective of "the country within the city".

The objectives for the EcoBlitz include the following:

- Promote awareness;
- Raise the profile of the area;
- Gather baseline data for future management decisions;
- Help decision makers to understand the importance of the area;
- Establish links with other environmentally based organizations;
- Encourage stewardship within surrounding neighbourhoods; and
- Act as a model to be utilized in management of other sites.

4. Description of the Two-Day Event

The Meewasin Valley Authority hosted the EcoBlitz on Sunday, May 29th and Monday, May 30th, 2011 at the Northeast Swale in section 18 of township 37 range 4.

The EcoBlitz included four main activities:

1. An intensive inventory of living things in a defined area within a fixed period of time.
2. An educational experience to demonstrate opportunities for quality teaching and learning on site.
3. A series of tours for community decision makers including city councillors, Meewasin board and committee members, and representatives from the City of Saskatoon and the University of Saskatchewan.
4. Media promotion including local print and television media and the production of a short documentary on the two day event.

Sunday May 29th

The inventory part of the EcoBlitz was conducted on Sunday, May 29th by volunteer scientists. About two dozen participants took inventory of as many living forms as possible including plants, birds, insects (including butterflies), mammals, reptiles and amphibians in the pre-determined half-section Conservation Area. The scientists collecting insects and those studying the mammals set their traps Saturday night and visited them Sunday morning. The plant scientists met at 9 a.m. Sunday and spent eight hours collecting information from the sampling sites. Unfortunately, the butterfly hike scheduled for 2 p.m. did not occur because of damp, cold weather conditions. Finally, the volunteers from the Saskatoon Nature Society were at the site from 6:30 p.m. to dusk

recording their observations on the birds sighted. (Appendix A – Report on Inventory Day)

Monday May 30th

Two schools – a grade 5 class and a Biology 20 class – participated in curricular studies at the site. Both groups were engaged in activities focussed on learning about the insects and birds and studying the wetlands and the upland plant populations. When the grade 5 students arrived they went as a group to visit Jared Epp, the shepherd on contract with the MVA. Jared demonstrated grazing as a mechanism to control invasive species on the prairie. The students observed him and his dog working together to herd the sheep. On their return from the grazing site, they divided into two groups to take an interpretive hike of the area, followed by a visit to the Orientation Tent to record their observations on an aerial photograph board of the Swale. The students were also invited to name the largest slough in the conservation area.

The high school students were divided into three groups, one-third was paired with half of the grade 5's and the other two-thirds went to the prairie to undertake plant population studies. The other half of the grade 5's worked in pairs at six learning stations in the Science Tent, each focussed on a different aspect of the biotic life at the Swale: mammals, insects, plants and birds, the wetland and inventory equipment. The materials at the learning stations came from the Brightwater Science and Environmental Program, the University of Saskatchewan Ecology Camps for kids and the scientists who had conducted the inventory on the Sunday. In the afternoon session the grade 5's switched sessions, one-third of the Biology 20 participated in an insect study, one-third studied the plant populations, and the remaining third were at the pond studying the aquatic invertebrates with half of the grade 5 classroom. (Appendix B – Report on Tent Activities)

Two aerial photographs of the site were posted in the Orientation tent, one upon which the scientists marked the data and observations recorded on Sunday, the other showing the location of the parking, tents, grazing and tour areas. Also on display were Meewasin's three-banner display about biodiversity, rangeland photographs, and the Northeast Swale. Ducks Unlimited's three-banner display on the importance of wetlands was also on display.

5. Description of the Tours and Media Event

Tours

Invited guests included members of the Meewasin Valley Authority board and committees, city councillors, City of Saskatoon planning and other selected staff, University of Saskatchewan representatives, and Saskatoon and area MLAs. About forty guests participated in the three tours. CEO Susan Lamb and Resource Planning Manager Mike Velonas made a brief presentation about the importance of the Swale to each of the groups. Meewasin's Luc Delanoy led the tour of the area which featured a visit to the core grassland area with views of the wetlands, and the students doing their studies and shepherd Jared Epp with his herd and sheepdogs.

Media

A media advisory describing the two-day event was released to the media as well as be distributed to contacts within the scientific and education communities. The media was invited to come out between 10 and 2 on Monday. Both CFQC CTV and Shaw Cable visited the site and conducted interviews. CTV aired a two to three minute segment on the noon news on Monday and a much shorter segment on the evening news.

6. Description of Partnerships

The Saskatoon Nature Society, the Entomological Society of Saskatchewan and the Native Plant Society of Saskatchewan all provided assistance to Meewasin. The consulting team was in contact with various professors and professors emeritus at the University of Saskatchewan to prepare for the inventory. The Saskatoon Public School Division and the Greater Catholic School Division participated by allowing their classes to participate in the second day of the EcoBlitz. Assistance was also given by the Brightwater Science and Environmental Centre, and the U of S Extension Division's Ecology Camps for Kids. Ducks Unlimited loaned a display on wetlands.

Appendix A – Report on Inventory Day

Inventories led by a specialist were planned for insects, mammals, birds, plants and aquatic invertebrates. Volunteers interested in helping out with any of these were invited to participate according to their interests.

ACTIVITIES

The following activities were scheduled:

Saturday, 28 May

Evening:

Set up of pitfall and light traps for insects to run all night unattended.

Set up of small mammal traps to collect mammals.

Sunday, 29 May

Morning:

Empty insect traps and begin processing insects in tent.

Check traps, release mammals.

Sweep for insects with nets and sample aquatic organisms.

Evening:

Three teams of bird surveyors visit existing stops.

All scheduled inventories were carried out except for the butterfly hike, which was cancelled due to cold weather unsuitable for seeing butterflies. Cold, wet and windy weather on Saturday night reduced the number of insects flying and mammals moving about, so the results from the pitfall and light traps, and the mammals traps were negligible.

DATA RECORDING

Each individual and each team was given the following:

- map of the survey area with a grid to record the location of unusual sightings;
- description of the habitat at the 13 plant sites;
- wildlife observation sheet to record observations of animals.

Individuals and teams had the option of using the following:

- plant list to record plants if they were surveying for plants;
- booklet for identification of invasive species of plants;
- color photographs (compiled by Andy Didiuk) for identification of snakes, frogs, toads and amphibians;
- plastic vial for collecting insects encountered while on the site.

The above materials were printed on waterproof paper and packaged in a plastic sleeve with a pencil.

RESULTS

Mammals – 11 species were recorded (based on sight records or other evidence): meadow vole (trapped), thirteen-lined ground squirrel, richardson's ground squirrel,

badger, muskrat, beaver, mule deer, white-tailed deer, moose, coyote and pocket gopher. Mammals recorded on days leading up to the blitz are a hare of some kind and a short-tailed shrew. One skull, and two white tail deer antlers were collected on the inventory day. These and several others found before the EcoBlitz have not yet been identified.

Reptiles & Amphibians – 2 species were recorded: plains garter snake and boreal chorus frog. Gray salamanders were collected in minnow traps before and after the EcoBlitz.

Birds – 75 species were documented during the bioblitz including a threatened species, the common nighthawk. Waterfowl are well represented with the Canada goose and 14 species of ducks. The abundance of waterfowl is impressive and one scientist estimated 40 to 50 duck nests around the big slough in the southeast ¼ of section 18. There are a variety of other water birds recorded - loon, grebe, cormorant, gull, tern – and shorebirds – willet, phalarope, snipe and sandpiper. 4 species of hawk were also recorded. A species list is included in Appendix E.

Plants

156 species of plants were recorded including crowfoot violet, a rare species that occurs in 20 to 100 patches in Saskatchewan. Two main groupings of the crowfoot violet were discovered in similar topographic positions. Further inventory is needed to thoroughly define the population. Species of cultural interest that occur on site include the floral emblems of the three Prairie Provinces –crocus, wild rose and western red lily, as well as sweet grass. Of the 156 species there were 24 species of grass, 7 of sedge and 21 trees and shrubs. Anyone familiar with plant taxonomy would be impressed with the number of grasses and sedges identified as these are difficult groups to identify. See Appendix E.

Insects – The total number has not yet been determined.

Aquatic macroinvertebrates - The total number has not yet been determined.

Appendix B – Report on Tent Activities

Science Tent – Six teaching stations with activities for a group of two students. Each teaching station is focussed on some aspect of the biotic components of the Swale: birds, mammals, insects, amphibians/reptiles, wetland area; Inventory equipment is a separate topic – plant press, butterfly net, insect collector, minnow trap, binoculars, magnifying glasses/boxes, field guides.

Orientation Tent – An aerial photograph of the study part of the Swale upon which the students attach sticky notes that describe observations made on their morning hike (they could write observations on clipboard and then transfer to sticky notes later). This is the same photograph that the scientists have made their observations from the previous day's data inventory.

Posters prepared by Ducks Unlimited were borrowed for Ecology Camps for Kids. The two wetland posters were on the wall behind the wetland area and the birds poster was placed on the wall behind that table.

Some materials were made available from Melanie Elliott, Ecology Camps for Kids. These included:

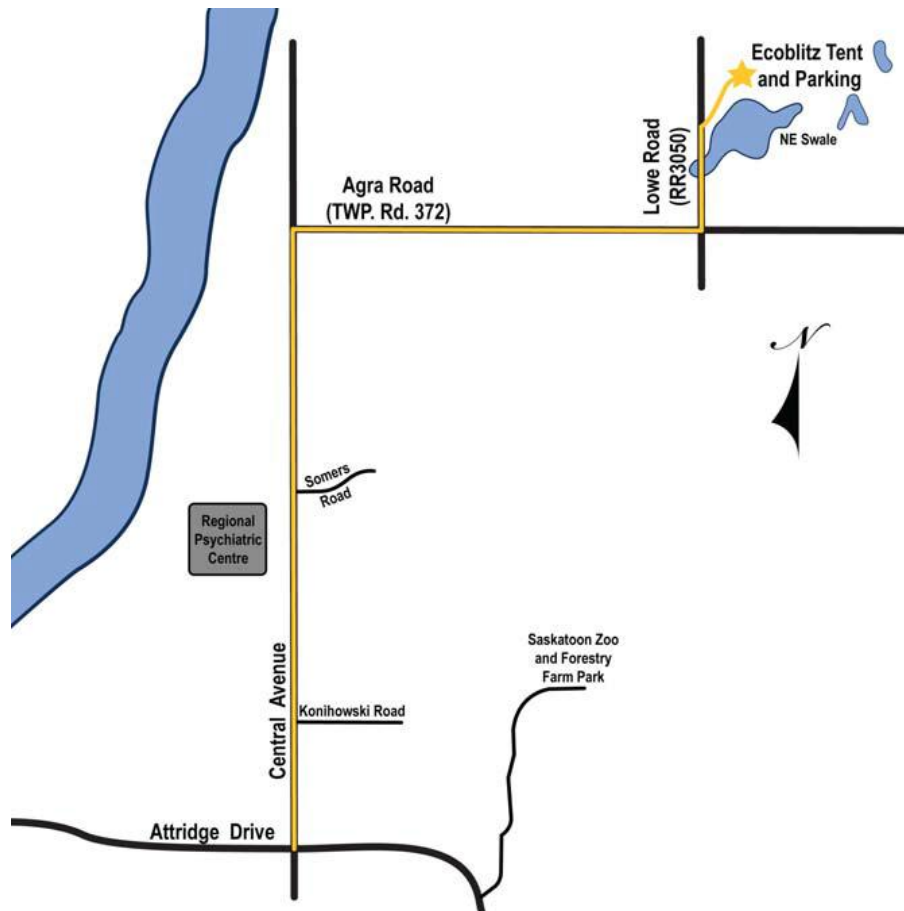
- Amphibian/reptile kit, laminated poster of garter snake, book and frog sounds cassette and battery powered player.
- Birds - BirdQuest binder with activity connecting beaks and feet
 - Stuffed grassland birds, squeeze for sound
 - Duck ID posters and duck banding poster that shows where they go in the winter
 - Our feathered friends (feet and beaks moulds)
 - Lots of 8 x10 calendar images of birds; laminated posters of pelican and red winged blackbird
- Mammals (no trees, no bats on site, so no bat bag)
 - Scat box
 - Mammal skins/furs box (muskrat, beaver, thirteen striped ground squirrel, snowshoe hare)
- Insects
 - Collection of dried insects
 - Book about insects
- The Pond
 - Posters – Who lives in the wetland, zones of vegetation of wetland, birds in wetland (posters have holes, need to tie them to hanging lathe or pin to wall of tent, or to front of the tables
 - 3 laminated Marsh Monster ID sheets each 8 x 11
 - Aquarium for tiger salamander and diving beetles from MVA Centre

Materials made available from Brightwater included:

1. 12 Pond-dipping nets 6 buckets
2. 3 plastic white trays

3. Watershed study kit
4. Samples of aquatic insects
5. Beaver Creek Watershed study package
6. Three two-way microscope and one magnifier, pipettes, petri dishes, small nets
7. One stereomicroscope
8. Groundwater kit

Appendix C – Map of EcoBlitz Site



Appendix D – What is the Northeast Swale? How was it formed?

There are a number of descriptions outlining the geomorphology of the area surrounding Saskatoon. We have chosen to share the passage on Glaciation from “The Meewasin Valley Project” (100 Year Conceptual Plan) and the background discussion from the Stantec Report (Development Guidelines and the Northeast Swale) in giving context to the formation of the Northeast Swale.

The Meewasin Valley Project

Retreat of the Glacier and Formation of Lake Saskatoon

The last wave of glaciation, The Wisconsin Glacier, advances from the northeast, out of Hudson Bay, with spectacular power. The ice flow is thousands of feet high, perhaps as high as two miles. It climbs over the Canadian Shield through Northern Manitoba and covers the plains. During this advance, the glacier scrapes vast quantities of soil from the Shield and deposits them on the plains.

The glacier begins to melt (around 20,000 years ago) and recede northward. As it retreats downslope to the north and northeast toward Hudson Bay, it blocks the regional drainage system. Along its south face, Lake Saskatoon is formed. It covers much of the area around the present day City of Saskatoon. During the roughly 3,000 year life of this glacial lake, 200 feet of stratified clay and silt are deposited as deltas over the ancient sediments.

Transition from Broad Flow Channels to River Valley

As the ice continues to retreat, a glacial spillway is created along the ice margin. Rapid drainage of the lake covering present-day Saskatoon begins to occur. At the beginning this drainage takes the form of a broad flow channel. It has no definite channel, and covers a band that extends about two miles east and up to four miles west of the present river channel.

This broad flow channel is now in the process of becoming the river channel that will eventually become a part of the South Saskatchewan River and its banks. In terms of geological time, this transition is a rapid one, commencing about 9,000 to 10,000 years before the present. The process is complex and dynamic, but the principle is simple: a search for dynamic equilibrium between the quantity and velocity of water, the slope of ground, and the quantity of and quality of materials that the water encounters.

South of Saskatoon as the channel continues to narrow, the broad flow channel rapidly cuts downward through the sand dune area. Later, as a river channel, it oscillates back and forth across this ever lowering plain, creating a broad, fertile and constantly changing valley. North of Saskatoon, the broad flow channel is working against a harder till deposited by the glaciers. It is cutting deeper and deeper into a much narrower band of erodable materials. During the early stages, when the broad flow abandons its wide and

varied channels, (the Northeast Swale was presumably one of these channels) it deposits a thin veneer of fluvial-lacustrine silt and clay on the surface gravels. These provide the rich topsoil that supports the agriculture of today. In some cases, especially in subsequent stages, the narrowing process and the lateral movement are so rapid that they create a type of sheet erosion. Where this occurs there is no subsequent deposition of gravel and sand; fine particles are removed from the surface leaving only an armouring of boulders. (There are also aquifers, the underground flows predating the glacier, interconnecting into the river channel and the Northeast Swale.) As the river is attempting to establish a course on this till plain it meanders as in the south, criss-crossing the present day alignment of the river. However, as it settles its course, unlike in the south, it leaves behind scars, such as the Hudson Bay Slough, the Northeast Swale, and coulees, marking the abandoned flow channels.

As it shifts and down-cuts, it creates terraces on one side of its channel and high cliffs on the other. The Saskatoon terrace (on which the City core is now established) is thus 8,000 years old in its present form.

So we see the conditions that create broad differences between the south and the north. The south is a sandy meander plain; the north is a harder glacial till with river-related sloughs, swales, coulees, aquifers and paired terraces. The future City of Saskatoon is to emerge at the junction of these two diverse areas.

Development Guidelines and the Northeast Swale (Stantec Consulting, 2002)

The Northeast Swale is located within the Moist Mixed Grassland Eco-region of the Prairie Ecozone and is adjacent to landscape areas of the Aspen Parkland Eco-region. Transitional zones such as this provide a diverse habitat for both plants and animals, and much of this diversity is represented within the swale region. Therefore, examples of native moist mixed grassland species are common, as are those plant and animal species associated with the aspen parkland. The grasslands and the several small aspen bluffs within the swale provide habitat for white-tailed deer and a variety of small mammals and birds.

The *Northeast Background Study* (The UMA Group, 1985 cited in the Stantec report) described the Northeast Swale region as a channel scar with sloughs. It states:

The surficial landform in this area is an eroded till plain. The sheet-type erosion has left behind a lag of gravel and boulders on the ground surface. The area is underlain by and extensive inter-till sand deposit known as the Forestry Farm Aquifer. This aquifer is of a relatively large regional extent and is recharged by surficial infiltration in the uplands to the east of the area.

The current scar and sloughs of this area are remnants of glacial times. The channel formerly carried melt water and once flowed as a broad sheet of water to the north. The area is considerably above the present river. The scar has been incised within the former glacial lake bottom that we know today as the prairie table land. As the scar has been

scoured below the general level of the prairie, it has remained an integral part of the prairie surface drainage system since being abandoned by the river. Over time it has accumulated some rich soils. This area supports rich land and animal life communities. Two examples are the fescue grassland and natural prairie that serve as a habitat for grassland birds. The scar is a wildlife corridor for mammals and a habitat for numerous bird varieties.

Due to the undulating topography and boulder cover, the agricultural capability is low and the area has never been farmed. Examples of natural prairie still exist. As few examples are left in North America they are worthy of preservation.

Appendix E – Detailed list of species recorded

Birds

American Coot	Lesser Scaup
American Crow	Mallard
American Goldfinch	Merlin
American Robin	Mourning Dove
American Wigeon	Nelson's Sparrow
Baltimore Oriole	Northern Flicker
Barn Swallow	Northern Harrier
Black Tern	Northern Pintail
Black-billed Magpie	Northern Shoveler
Blue-winged Teal	Pied-billed Grebe
Brewer's Blackbird	Purple Martin
Brown Thrasher	Redhead
Brown-headed Cowbird	Red-necked Grebe
Bufflehead	Red-tailed Hawk
California Gull	Red-winged Blackbird
Canada Goose	Ring-billed Gull
Canvasback	Ring-necked Duck
Chipping Sparrow	Rock Pigeon
Clay-colored Sparrow	Ruddy Duck
Common Goldeneye	Sanderling
Common Grackle	Savannah Sparrow
Common Loon	Sedge Wren
Common Nighthawk	Semipalmated Sandpiper
Common Raven	Song Sparrow
Double-crested Cormorant	Sora
Eared Grebe	Spotted Sandpiper
Eastern Kingbird	Swainson's Hawk
European Starling	Tree Swallow
Franklin's Gull	Upland Sandpiper
Gadwall	Vesper Sparrow
Gray Catbird	Western Meadowlark
Green-winged Teal	Willet
Horned Grebe	Wilson's Phalarope
Horned Lark	Wilson's Snipe
House Wren	Yellow Warbler
Killdeer	Yellow-headed Blackbird
Le Conte's Sparrow	
Least Flycatcher	
Least Sandpiper	

Plants

Scientific Name	Common Name
<i>Achillea millefolium</i>	Yarrow
<i>Agropyron cristatum</i>	Crested Wheatgrass
<i>Agropyron dasystachyum</i>	Northern Wheatgrass
<i>Agropyron repens</i>	Quack grass, Couch grass
<i>Agropyron smithii</i>	Western Wheatgrass
<i>Agropyron subsecundum</i>	Awne Wheatgrass
<i>Agropyron trachycaulum</i>	Slender Wheatgrass
<i>Allium textile</i>	Prairie Onion
<i>Amelanchier alnifolia</i>	Saskatoon, Service Berry
<i>Androsace septentrionalis</i>	Pygmy Flower
<i>Anemone canadensis</i>	Canada Anemone
<i>Anemone cylindrica</i>	Long-Fruited Anemone
<i>Anemone multifida</i>	Cut-leaved Anemone
<i>Antennaria neglecta</i>	Field Pussytoes
<i>Antennaria parvifolia</i>	Small-leaved Pussytoes
<i>Arabis divaricarpa</i>	Purple Rock-cress
<i>Arabis glabra</i>	Tower Mustard
<i>Arabis hirsuta</i>	Hairy Rock-cress
<i>Arabis holbelii</i>	Reflexed Rock-cress
<i>Arenaria lateriflora</i>	Blunt-leaf Grove Sandwort
<i>Artemisia campestris</i>	Plains Wormwood
<i>Artemisia frigida</i>	Pasture Sage
<i>Artemisia ludoviciana</i>	Prairie Sage
<i>Aster ericoides</i>	White Prairie/Heath Aster
<i>Aster hesperius</i>	Western Willow Aster
<i>Aster laevis</i>	Smooth Blue Aster
<i>Astragalus cicer</i>	Cicer milkvetch
<i>Astragalus crassicaarpus</i>	Ground Plum
<i>Astragalus flexuosus</i>	Slender Milk-Vetch
<i>Astragalus goniatus</i>	Purple milk-vetch
<i>Axyris amaranthoides</i>	Russian Pigweed
<i>Bouteloua gracilis</i>	Blue Grama Grass
<i>Bromus inermis</i>	Smooth Brome
<i>Calamagrostis inexpansa</i>	Northern Reed-grass
<i>Calamagrostis montanensis</i>	Plains Reed-grass
<i>Calamovilfa longifolia</i>	Sand Grass
<i>Campanula rotundifolia</i>	Harebell/Common Bluebell
<i>Carduus nutans</i>	Nodding/Musk Thistle
<i>Carex aurea</i>	Golden Sedge
<i>Carex eleocharis</i>	Low Sedge
<i>Carex filifolia</i>	Thread-leaved Sedge
<i>Carex lanuginosa</i>	Woolly Sedge

Carex obtusata	Blunt Sedge
Carex pensylvanica	Sun-loving Sedge
Carex sprengei	Sprengel's Sedge
Cerastium arvense	Field Chickweed
Cirsium arvense	Canada Thistle
Cirsium flodmanii	Flodman's Thistle
Cirsium undulatum	Wavy leaf/Grey Thistle
Comandra umbellata	Bastard Toadflax
Crataegus chrysoarpa	Round-leaved Hawthorn
Descurainia sp.	Flixweed
Eleagnus commutata	Wolf-willow/Silverberry
Equisetum hyemale var affine	Common Scouring-rush
Equisetum laevigatum	Smooth Scouring-rush
Erigeron glabellus ssp pubescens	Smooth Fleabane
Erysimum asperum	Western Wallflower
Erysimum cheiranthoides	Wormseed Mustard
Erysimum inconspicuum	Small-flowered Prairie Rocket
Festuca altaica var halii	Plains Rough Fescue
Festuca saximontana	Rocky Mountain Fescue
Fragaria virginiana	Smooth Wild Strawberry
Galium boreale	Northern Bedstraw
Galium trifidum	Small Bedstraw
Gaura coccinea	Scarlet Gaura/Butterfly-plant
Geum macrophyllum var perincisum	Largeleaf Avens
Geum triflorum	Three-flowered Avens
Glycyrrhiza lepidota	Wild Licorice
Gutierrezia sarothrae	Common Broomweed
Helianthus nuttallii	Clustered Sunflower
Helictotrichon hookeri	Hooker's Oat-grass
Heterotheca villosa	Hairy Golden Aster
Heuchera richardsonii	Richardson's Alum Root
Hierochloa odorata	Sweet Grass
Hippophae rhamnoides	Sea Buckthorn
Hordeum jubatum	Foxtail/Wild Barley
Juncus balticus	Baltic/Wire Rush
Koeleria cristata	June Grass
Lemna minor	Lesser Duckweed
Lesquerella arenosa	Sand Bladderpod
Liatris ligulistylis	Meadow Blazing-star
Liatris punctata	Dotted Blazing-star
Lithospermum incisum	Narrow-leaved Puccoon
Lomatium macrocarpum	Long-fruited Wild Parsley
Lysimachia ciliata	Fringed Loosestrife
Malus sp.	Prairiefire
Malvastrum coccineum	Scarlet Mallow

Medicago sativa ssp sativa	Alfalfa
Melilotus sp.	Sweet Clover
Muhlenbergia cuspidata	Prairie Muhly
Oenothera sp.	Evening-Primrose
Orthocarpus luteus	Owl's-clover
Oxytropis sericea	Early Yellow Locoweed
Penstemon gracilis	Lilac-flowered Beardtongue
Penstemon procerus	Littleflower penstemon
Petalostemon purpureum	Purple Prairie-clover
Phlox hoodii	Moss Phlox
Plantago major	Common Plantain
Poa cusickii	Early Blue-grass
Poa pratensis	Kentucky Blue-grass
Poa sandbergii	Sandberg's Blue-grass
Populus balsamifera	Balsam/Black Poplar
Populus tremuloides	Trembling Aspen
Potentilla anserina	Silverweed
Potentilla arguta	White Cinquefoil
Potentilla concinna	Elegant Cinquefoil
Potentilla gracilis var fastigiata	Slender cinquefoil
Potentilla hippiana	Woolly Cinquefoil
Potentilla pensylvanica	Prairie Cinquefoil
Prunus pensylvanica	Pincherry
Prunus virginiana	Red-fruited Chokecherry
Psoralea argophylla	Silverleaf Psoralea
Psoralea esculenta	Indian Breadroot
Pulsatilla patens	Prairie Crocus
Ranunculus rhomboideus	Prairie Buttercup
Ratibida columnifera	Long-headed Coneflower
Rhamnus cathartica	European Buckthorn
Ribes oxycanthoides	Northern/Canada Gooseberry
Rosa arkansana	Low Prairie Rose
Rosa woodsii	Wood's Wild Rose
Rumex pseudonatronatus	Field Dock
Salix bebbiana	Beaked Willow
Salix interior	Longleaf/Sandbar Willow
Salix petiolaris	Slender/Meadow Willow
Schizachyrium scoparium	Little Bluestem
Scirpus maritimus var paludosus	Cosmopolitan bulrush
Selaginella densa	Prairie Selaginella
Senecio canus	Silvery Groundsel
Senecio integerrimus var integerrimus	Entire-leaved Groundsel
Shepherdia argentea	Thorny Buffaloberry
Silene drummondii var drummondii	Drummond's campion

Sisyrinchium montanum	Common Blue-eyed Grass
Smilacina stellata	Star-flowered Solomon's-seal
Solidago canadensis var canadensis	Canada Goldenrod
Solidago missouriensis	Low/Prairie Goldenrod
Solidago nemoralis var longipetiolata	Showy Goldenrod
Sonchus arvensis	Perennial Sow-thistle
Spiraea alba	Narrow-leaved Meadow-sweet
Stipa comata	Needle-and-Thread Grass
Stipa curtiseta	Western Spear Grass
Symphoricarpos occidentalis	Western Snowberry/Buckbrush
Taraxacum officinale	Common Dandelion
Thalictrum venulosum	Veiny Meadow-rue
Thermopsis rhombifolia	Golden Bean/Yellow Buffalo Bean
Thlaspi arvense	Stinkweed/Field Penny-cress
Tragopogon dubius	Yellow Goat's-beard
Triglochin maritima	Seaside Arrow-grass
Typha latifolia	Common Cattail
Ulmus americana	American Elm
Ulmus pumila	Manchurian Elm
Vicia americana	American Vetch
Viola adunca	Early Blue Violet
Viola nuttallii	Nuttall's Yellow Violet
Viola pedatifida	Prairie Violet (Crowfoot Violet)
Zizia aptera	Heart-leaved Alexander
Zygadenus elegans	Smooth/White Camas

Insects

Chironimidae	5	non-biting midge
Syrphidae	2	hover fly
Tenthrididae	3	sawflies
Lepidoptera	2	moths
Culicidae	14	mosquito (based on trapping at nearby location through one season)
Ichneumonidae	3	parasitic wasp
Braconidae	1	parasitic wasp
Tachinidae	2	
Odonata	1	nymphal dragonfly
Zygoptera	1	damsel fly
Cantharidae	1	soldier beetle
<i>Dermacentor variabilis</i>	1	Am dog tick
Formicidae	1	ant
unknown diptera	1	

Total	38
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