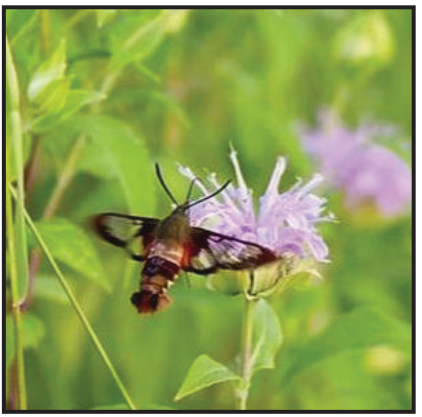
WILD About Bees



Source: Vicki Heidt

"We know native pollinators are declining, but what is the best way to combat this? Create more habitat!"

LACOMBE COUNTY

Introduction

It is well known that native bees and other pollinator species are on the decline, mainly due to habitat loss. Lacombe County has noticed a recent interest in pollinators and the development of pollinator habitats, resulting in the creation of the Wild About Bees Initiative, which focuses on educating and encouraging the public to create quality pollinator habitats.

The Wild About Bees program will provide participants with seeds native to and suitable for use in the Aspen Parkland ecoregion, where Lacombe County is located.

What is an ecoregion?

Ecoregions cover relatively large water and land areas and contain geographically distinct groupings of natural communities and species. Ecoregions differ in their biodiversity of flora, fauna, and ecosystems.

The seeds provided to Wild About Bees participants were sourced from Skinner Native Seeds in Manitoba. The seed package contains six native bunch grasses (at 40%), two native clovers (at 40%), and 33 native wildflowers (at 20%). This seed mix is well researched and contains plants that are native to the Aspen Parkland ecoregion of Western Canada. (Displayed in Figure 1)

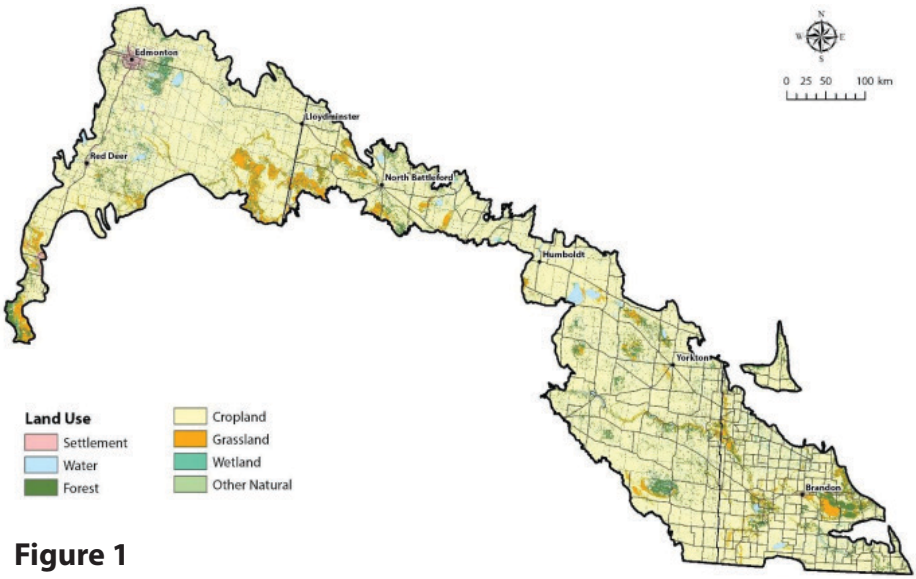


Figure 1

The ecoregion extends a broad arc from south western Manitoba and stretches northwest through Saskatchewan to its northern apex in Central Alberta, along the Rocky Mountains.

The Aspen Parkland Ecoregion is a broad transition zone between the Prairies and Boreal Plains ecozones. It marks the transition from grasslands to mountains in the west. This ecoregion represents the most extensive boreal grassland transition in the world. It is characterized by a rich mosaic of grasslands, aspen groves, and wetlands. This ecoregion provides habitat for more than 45 species at risk and includes some of the most productive and extensive waterfowl breeding habitats on the continent.

However, almost 80% of the natural cover has been converted to cropland and other land uses. Only 4% is included in conserved/protected areas, and of this 0.7% is designated as community pasture.

Site Preparation for Pollinator Gardens

When planting your Wild About Bees seeds, follow these steps to ensure the best conditions for germinating:

1. Maintain weed-free soil.
    - Use herbicides, such as Glyphosate
    - Hand-pick weeds
2. Choose a sunny, well-drained area or choose appropriate plant species for your site.
3. Seed ready soil.
    - Harrow and roll
    - Rake and pack
    - When walking on the surface after seeding, you should notice no footprint. This is a good indicator of a packed surface
4. Good seed to soil contact
    - Seed drill
    - Broadcast seed, harrow/rake, then pack
5. Water after seeding to initiate germination

Source: Jeremy Vander Muelen

Qualities of a Pollinator Garden

- Choose species that are adapted to your local moisture, soil, and light conditions. Gardeners can often find information on where different species like to grow in plant identification guides.

** Source: Katherine Harder*

- Strive to have at least three species at the peak of their flowering period every month in the growing season (April is a bonus).
- Choose species with different flower colours and shapes, as different pollinators will be attracted to different flower characteristics. In particular, smaller pollinators such as Lassioglossum Bees, Parasitoid Wasps, and Hoverflies have relatively short tongues and are only able to access shallower flowers.

** Source: Carolyn Vanderhoek*

- Maximize the morning sun exposure of your habitat by planting shorter species towards the south and east. More morning sun means more flowers in your planting and more hours in the day that pollinators can forage.
- Clump flowering species together in groups of 3-8 individuals per square meter. This will increase the foraging efficiency of pollinators. If you want to add plugs or additional species to your pollinator garden, plant these in clusters.
- Increase structural diversity by including taller trees and shrubs (particularly on the north or west side), interspersing bunch grasses among the flowering species, and allowing deadfall to decay on site. Doing so will provide diverse nesting and overwintering sites for pollinators.
- Connect habitat to existing natural habitat so that pollinators will be able to migrate into your habitat.
- Place site within 150m (500') of pollinator-dependent crops if you have any and wish to maximize their pollination.

Bonus: Include a few nitrogen-fixing species in your mix. This will not directly benefit pollinators, but it will improve the nutrient cycling within the habitat.

Wild About Bees - Plant Species

GRASSES

Bouteloua gracilis
Blue Grama Grass
POACEAE / GRASS

Bromus anomalus
Nodding Brome
POACEAE / GRASS

Koeleria macrantha
Prairie June Grass
POACEAE / GRASS

Schyzachyrium scoparium
Little Bluestem
POACEAE / GRASS

Nassella viridula
Green Needle Grass
POACEAE / GRASS

Andropogon gerardii
Big Blue Stem
POACEAE / GRASS

CLOVER

Dalea purpurea
Purple Prairie Clover
FABACEAE / PEA FAMILY
Bloom time:
July - August

Dalea candida
White Prairie Clover
FABACEAE / PEA FAMILY
Bloom time:
June - July

WILDFLOWERS

Rosa arkansana
Prairie Rose
ROSACEAE / ROSE FAMILY
Bloom time:
June - July

Ratibida columnifera
Prairie Cone Flower or Mexican Hat
ASTERACEAE / ASTER FAMILY
Bloom time:
June - August

Gaillardia aristata

Common Blanketflower or **Common Gaillardia**

ASTERACEAE / ASTER FAMILY

Bloom time: June - August

Rudbeckia hirta

Black-eyed Susan

ASTERACEAE / ASTER FAMILY

Bloom time: July - September

Asclepias ovalifolia

Oval leaved Milkweed

ASCLEPIADACEAE / MILKWEED

Bloom time: May - June

Liatris punctate

Dotted Blazingstar

ASTERACEAE / ASTER FAMILY

Bloom time: July - September

Monarda fistulosa

Wild Bergamot

LAMIACEAE / MINT FAMILY

Bloom time: June - August

Solidago rigida

Stiff-leaved Goldenrod

ASTERACEAE / ASTER FAMILY

Bloom time: August - September

Zizia aptera

Meadow Parsnip or Heart-leaved Alexanders

APIAEAE / CARROT FAMILY

Bloom time: May - June

Anemone Canadensis

Canada Anemone

RANUNCULACEAE / BUTTERCUP FAMILY

Bloom time: June-July

Anemone cylindrical

Long-fruited Anemone

RANUNCULACEAE / BUTTERCUP FAMILY

Bloom time: May - July

Allium stellatum

Autumn or Prairie Onion

AMARYLLIDACEAE / AMARYLLIS FAMILY

Bloom time: July

Symphyotrichum laeve

Smooth Aster

ASTERACEAE / ASTER FAMILY

Bloom time: July - September

Symphyotrichum ericoides

White Heath Aster or Tufted White Prairie Aster

ASTERACEAE / ASTER FAMILY

Bloom time: July - September

Helianthus maximilia

Maximilian Sunflower

ASTERACEAE / ASTER FAMILY

Blooming time: August to November

Oxytropis splendens

Showy Locoweed

FABACEAE / PEA FAMILY

Blooming time: June - August

Hedysarum alpinum var. americanum

Alpine Sweetvetch

FABACEAE / PEA FAMILY

Bloom time: June- July

Linum lewisii

Lewis or Blue Flax

LINACEAE / FLAX FAMILY

Bloom time: May - September

Astragalus adsurgens

Prairie or Rattle Milkvetch

FABACEAE / PEA FAMILY

Bloom time: June - July

Pulsatilla patens

Prairie Crocus

CROWFOOT / BUTTERCUP FAMILY

Bloom time: April - June

Geum triflorum

Prairie Smoke or Three Flowers Avens, or Old Man's Whiskers

ROSACEAE / ROSE FAMILY

Bloom time: May - June

Potentilla arguta

White, Tall, or Prairie Cinquefoil

ROSACEAE / ROSE FAMILY

Bloom time: June - July

Achillea millefolium

Yarrow

ASTERACEAE / ASTER FAMILY

Bloom time: June - August

Agastache foeniculum

Giant Hyssop

LAMIACEAE / MINT FAMILY

Bloom time: June - August

Solidago nemoralis

Field Goldenrod or Gray Goldenrod

ASTERACEAE / ASTER FAMILY

Bloom time: August - September

Anemone multifida

Cut-Leaved Anenome

RANUNCULACEAE / BUTTERCUP FAMILY

Bloom time: June - July

Liatris ligulistylis

Meadow Blazing Star

ASTERACEAE / ASTER FAMILY

Bloom time: July - August

Campanula rotundifolia

Harebell

CAMPULACEAE / BELLFLOWER FAMILY

Bloom time: June - August

Oxytropis monticola

Late Yellow Locoweed

FABACEAE / PEA FAMILY

Bloom time: April - May

Astragalus crassicarpus

Buffalo Bean

FABACEAE / PEA FAMILY

Bloom time: May - June

Heuchera richardsonii

Alumnroot

SAXIFRAGACEAE / SAXIFRAGE FAMILY

Bloom time: June - July

Antennaria ssp.

Alpine/Pussy Toes or Small-Leaved Everlasting

ASTERACEAE / ASTER FAMILY

Bloom time: June - August

Cirsium floodmanii

Floodman's Thistle*

ASTERACEAE / ASTER FAMILY

Blooming time: June - September

WHY DO I HAVE A THISTLE IN MY SEED MIX?

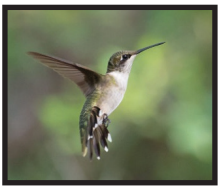
Native thistles are largely misunderstood. These diverse plants fill a variety of significant niches along with more esteemed wildflowers. The flowers provide a food source for countless flower visitors. The stem and leaf structure can create protection for animals, such as the clay coloured sparrow, which lays its eggs under thistles as predator protection. While many restoration practitioners have embraced native thistles, the appreciation for finding a place in flower gardens or other smaller restoration projects has yet to catch on.

PLEASE NOTE: Invasive thistles, such as Canada thistle, still require integrated vegetation management control as regulated by the *Alberta Weed Control Act*. Mainly being this thistle spreads fast and intensively by seed and roots, displacing these native plants.

Lacombe County's Top 20 Pollinators

Sure, we all recognize the importance of honeybees to pollination, but there are many pollinators beyond that!

**Source: University of Calgary, Galpern Lab*



1 Ruby-Throated Hummingbird *(Archilochus colubris)*

Left Photo: Male

Right Photo: Female

There's only one species of hummingbird that is common in Lacombe County, the ruby-throated hummingbird. These birds prefer red and orange flowers due to the high sugar contact. They also eat insects and sometimes supplement their diet with tree sap.

Ruby-throated hummingbirds overwinter in Mexico and Central American and some birds fly without stopping across the Gulf of Mexico to get to their overwintering grounds. These birds can double their bodyweight in preparation for migration.

2 Rufous hummingbird (*Selasphorus rufus)*

Left photo: Male

Right Photo: Female

Rufous hummingbirds have been observed in Lacombe County, but are considered rare here. They are typically found in the mountains.

Rufous hummingbirds are notoriously aggressive, chasing off all other hummingbirds that enter their territory, whether during the breeding season or migration. They place their nests about 30 feet off the ground in trees. During migration, they can be found at elevations up to 12,600 feet. They mainly overwinter in Mexico.

3

Papilio Canadensis
Canadian Tiger Swallow Tail
This species can be seen:
May- June.

4

Speyeria cybele
Great Spangled Fritillary
This species can be seen:
July - August

5

Celastrina ladon
Spring Azure
This species can be seen:
April and May.

6

Hyles gallii
Gallium Sphinx Moth
This moth can be seen:
June each year.

7

Hemaris thysbe
Hummingbird Clearwing Moth
This moth is typically seen:
May

8

Autographa mappa
Wavy Chestnut Y Moth
This moth is seen:
June and July.

9

Polychrysia esmeralda
Delphinium Leaftier Moth
This can be seen:
June and July

10

Polites peckius
Peck's Skipper
Typically seen:
June

11

Dolichovespula maculata
Black Jacket Wasp
Many people refer to this species as the white-ass hornet

12

Dolichovespula arenaria
Common Aerial Yellowjacket wasp

13

Bombus nevadensis
Navada Bumble bee

14

Megachili inermis
Unarmed Leafcutter Bee

Photos 3, 4, 5, 9, 10, 12, 13, 14, 16, and all bonus species taken by Doug Macauley, Alberta Agriculture & Forestry

15

Apis mellifera
Western Honey Bee
European Honey Bee
(Not native to North America)

16

Bombus flavifrons
Yellow-fronted Bumble Bee

17

Lasioglossum sp.
Sweat Bees

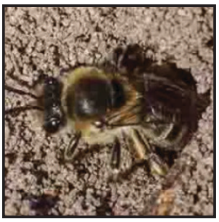
18

Bombus ternarius
Orange-belted Bumble bee

19

Melissodes confusus
Confusing longhorn

20



Andrenidae nivalis
Snow miner bee
These miner bees can burrow in the ground and can be harder to find

THREE BONUS SPECIES, because we just can't get enough!

Trichiotinus assimilis
Bee Mimic Beetle

Limenitis arthemis
Western White Admiral

Sphaerophoria spp.
Globetail Fly

Further resources to dig in a litter deeper

ALBERTA NATIVE BEE COUNCIL (ANBC)
https://www.albertanativebeecouncil.ca/

XERCES SOCIETY FOR INVERTEBRATE CONSERVATION
https://xerces.org/endangered-species/wild-bees

AGROFORESTRY WOODLOT EXTENSION SOCIETY (AWES)
https://www.awes-ab.ca/

UNIVERSITY OF CALGARY, DEPT. OF BIOLOGICAL SCIENCE GALPERN LAB

http://ecologics.ucalgary.ca/lab/

Thank you to the all of the Wild About Bees groups and organizations who contributed to this program.

Alberta Native Bee Council

The Alberta Native Bee Council's mission is to promote the conservation of native pollinator communities through research and monitoring, advocacy, education, and collaboration with others.

Their objectives are to:

1. Learn more about native pollinator diversity and abundance in Alberta;
2. Promote conservation and enhancement of native pollinators and their habitats in Alberta;
3. Provide education and outreach to raise awareness about native pollinators in Alberta; and
4. Create a collaborative network for people with an interest in native pollinators.

Skinner Native Seeds

The Skinner family's involvement in prairie horticulture stretches back almost 100 years. John Skinner (Skinner Native Seeds) has been growing native grasses for 20+ years. He grows warm-season grasses, cool-season grasses, prairie clovers and collects wildflower seed. Skinner Native Seeds have broad experience in most aspects of native revegetation.

Ellis Bird Farm

Ellis Bird Farm

Ellis Bird Farm is both a non-profit organization and a working farm. It was established in 1982 to carry on the legacy of Lacombe-area conservationists Charlie and Winnie Ellis, when Union Carbide Canada Ltd purchased their farm. At the time, Charlie and Winnie operated one of the largest bluebird trails in Canada and had established their farmstead as a haven for wildlife.

Alberta Agriculture and Forestry

Alberta Agriculture and Forestry

Insect Pest Monitoring Section

The Alberta Insect Pest Monitoring Network strives to provide timely, accurate insect management information and resources to support Alberta's agricultural industry. An entomologist on staff provides expertise on insects (usually pest surveillance) within Alberta.

University of Calgary

UNIVERSITY OF CALGARY

Courtesy of the Department of Biological Science, Galpern Lab

The Galpern Lab at the University of Calgary's major focus is on pollinator conservation. They are interested in how landscape context and climate change affect wild pollinator status and pollination services in natural and agricultural landscapes, and how this may contribute to pollinator decline.

A second major theme examines how the spatial structure of landscapes may influence the mobility of organisms (including insects, wildlife and people).

Lacombe County

Lacombe County has a rich and diverse agricultural history, with 668,102 acres of area and more than 1,045 farms that call our County home. Agriculture is the predominant industry of Lacombe County, with 95% of the County zone agricultural district.

As a municipality, our mission is to engage, support and enhance the agriculture community and rural entrepreneurs, and enhance rural life in Lacombe County. Lacombe County will contribute to and support agriculture in the municipality by developing and implementing responsive and progressive municipal policies and programs.

Like other rural counties, Lacombe County appoints qualified individuals to implement the county's agriculture policies, programs, and resources.

If you have any questions about the Wild About Bees program or would like to provide input/photos, please contact Jalene Makus at jmakus@lacombecounty.com or 403-782-8959.

We want to see your Wild About Bees projects!

Send photos and share your success through our social media pages (you can tag @LacombeCounty on Facebook, Twitter, and Instagram)

Tell us what pollinators you see in your garden.

Tell your neighbours! This program is currently open to Lacombe County residents, but it may expand in the future.

Notes and Observations:

LACOMBE COUNTY

/LacombeCounty @LacombeCounty /LacombeCounty

www.lacombecounty.com | 403-782-6601 (Admin) /
403-782-8959 (Community Services)