The Dow Chemical Company
Midland, MI 48674

September 14, 2021

Lisa L. Williams
Lead Administrative Trustee
U.S. Fish and Wildlife Service
2651 Coolidge Road
East Lansing, MI 48823

Re: Dow Chemical – NRD Consent Decree
Appendix D – Eagle Ridge Nature Area
Supplemental Final Design
Pollinator Area and Education Signs
Submittal Number: NRD2021.21

Ms. Williams,

Attached is the Appendix D – Eagle Ridge Nature Area – Supplemental Final Design and Implementation Plan - Pollinator Area and Education Signs. Please note that within the educational signage text, while the proposed text has gone through multiple local stakeholder reviews, the final layout work for the sign is not 100% complete. For example, there are spaces and hyphens that were left in the text that will be corrected after final text is approved. Also, there were draft images in the proposal and images that will be updated to a higher resolution after Trustee review and approval. These images have been identified in the plan by outlining the images with red boxes. The final sign layout will be complete once content is approved.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I have no personal knowledge that the information submitted is anything other than true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Sincerely,

Todd Konechne

Todd Konechne
The Dow Chemical Company
Project Coordinator

cc: As to the United States:
U.S. Department of Justice by email: eescdcopy.enrd@usdoj.gov
Re: DJ # 90-11-3-08953
U.S. Department of Justice by mail:
EES Case Management Unit

Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Washington, D.C. 20044-7611
Re: DJ # 90-11-3-08953

Chief, Environmental Defense Section
Environment and Natural Resources
Division
P.O. Box 7611
Washington, D.C. 20044-7611
Re: DJ ## 90-11-6-05801, 90-11-6-17614

DOI: Kimberly Gilmore
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As to the Tribe: The Saginaw Chippewa Indian Tribe ofMichigan
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As to the Lead Administrative Trustee:
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U.S. Fish and Wildlife Service
2651 Coolidge Road
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As to Dow: The Dow Chemical Company
Attention: Environmental Remediation Director
2211 H.H. Dow Way
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And The Dow Chemical Company
Attention: Project Manager
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EAGLE RIDGE NATURE AREA

SUPPLEMENTAL FINAL DESIGN AND IMPLEMENTATION PLAN

POLLINATOR AREA AND EDUCATIONAL SIGNS

Prepared by:
Tittabawassee and Saginaw River Team

Prepared for and Submitted by:
The Dow Chemical Company

September 14, 2021

Dow Submittal Number: NRD2021.21

Contents

Acronyms and Abbreviations

CD:	Consent Decree
Dow:	The Dow Chemical Company
NRD:	Natural Resource Damage
SOW:	Statement of Work

1 Project Background

This Supplemental Final Design and Implementation Plan was prepared in accordance with the requirements contained in Appendix D (Eagle Ridge Project) of the Consent Decree for the Dow Chemical Company (Case No. 1:19-cv-13292), effective July 20, 2020. The purpose of this Supplemental Plan is to present the final required design and implementation elements of the Eagle Ridge Nature Area Project – Pollinator Area and Educational Signage.

The following is a summary of the Eagle Ridge Pollinator Area and Education Signage project requirements.

- Seeding and planting of pollinator species in full sun area(s) on at least one acre and no more than 2 acres required.

- Installation of signage to support interpretive education, including the unique topographic features of the property within the urban environment of the City of Midland.

2 Pollinator Area Development

The area selected for the Pollinator Area is an approximate 2-acre area on the west side of the Stratford Park Entrance Drive (Figure 1a). The area is owned by the City of Midland and was selected for establishing the pollinator plots because there is very little mature woody tree growth. The current vegetation identified in the area is invasive buckthorn and autumn olive, along with understory vegetation. There are also areas with some seasonal standing water. In January through April 2021, the Dow NRD Implementation Team started removing the invasive common buckthorn and autumn olive shrubs/trees from the pollinator area while leaving quality vegetation, including dogwood and other desirable woody species. As a result of the invasive woody removal and opening up additional sunlight, understory vegetation, which included native pollinator species, has begun to develop in this area. Slender Mountain Mint (*Pycnanthemum tenuifolium*) is one of the predominate species of plants that has begun to populate as a result of the invasive species removal.

The following are steps taken or need to be taken to complete the development of the pollinator area.

Pollinator Area Development

1. The pollinator trail was marked via global positioning system as shown in Figure 1a and 1b.

2. The remaining invasive species removal (common buckthorn/autumn olive) within the proposed pollinator area was completed in September 2021.

3. Areas of smaller woody desirable species (dogwood, etc.) and portions of the existing understory vegetation have been identified to be left in place and not disturbed. These areas will also include the areas with seasonal water within the 2 acre pollinator area.

4. Stumps of removed invasive woody species have been painted with a herbicide.

5. Areas not marked in the field to save will be brush hogged to begin the preparation for planting the pollinator species. This will be completed in September.

6. A spot herbicide spraying program will be implemented to address the common buckthorn, autumn olive, multi-flora rose, honeysuckle, and thistle saplings that grew after the initial winter/spring 2021 invasive removal. Herbicide spraying will be completed in about a month after the brush hog activity.

7. After the site has dried out from the spring melt, the area will be monitored for regrowth of invasive and spot sprayed again if needed for buckthorn, autumn olive, multi-flora rose, honeysuckle, and thistle (spring 2022).

8. Remaining stumps will be ground, remaining vegetation mowed low to the ground and the pollinator areas seeded with a no till application.

9. Native pollinator seed mix (listed below) will be applied at 30 pounds per acre with a 20 pound per acre cover crop. Seed mixes are attached in Appendix A.

Seed Mixes

MI Pollinator Mix – 10 pounds/acre

MI Biologist Recommended Mesic Mix – 10 pounds/acre

MI SAFE – Pheasant & Monarch Recovery Mix – 10 pounds/acre

Cover Crop – Oats/Rye – 20 pounds/acre

2022 Actions - Pollinator Area -Trail Development

As detailed in the original July 2021 Eagle Ridge Final Design and Implementation Plan, there will be a trail that connects the Pollinator Area to the City of Midland – Main Stratford Park Parking Lot and also the Northern Wetland Area in the Eagle Ridge Nature Area. The new trail is shown on Figure 1a and 1b. The trail will be constructed as a new trail as follows:

1. The Pollinator Trail route as identified will be field adjusted to avoid trees larger than 4 inches, when possible.

2. The new Pollinator Trail will be prepared by using a forestry mower to remove small trees and saplings, grind small root system and remove the organics to a width of 6 feet.

3. To help mark and establish the new trails where necessary, woodchips created from some of the March 2021 select removal may be used. The chips would be placed at a width of approximately 2 to 3 feet on the trail. The goal is for the woodchips to help demark the trail locations and to eventually decay naturally and along with the public/foot traffic help establish the nature trail.

3 Educational Signs

Dow has worked with Chippewa Nature Center and the City of Midland to develop 10 interpretive educational signs to be installed within the Eagle Ridge Nature Area. The educational signs have been designed to highlight important ecological aspects of the Eagle Ridge Nature Area, such as:

- What wetlands are, different types of wetlands, how they work and their ecological value.

- Amphibians, reptiles and mammals that may reside at Eagle Ridge, their characteristics, and their habitat needs.

- The glacial effects on the topography at Eagle Ridge.

- The stages of forest succession and the existence of Beech Trees at Eagle Ridge.

- The many birds that may reside in the nature area and information regarding bird boxes.

- The importance of pollinators and information regarding invasive species at Eagle Ridge.

The interpretive education signs will be installed in the Eagle Ridge Nature Area in the locations currently proposed in Appendix B. Appendix B also contains the details pertaining to each of the proposed Educational Signs.

Per the details in Appendix B, each sign will be supported by 4 inch x 4 inch pressure treated posts. An auger will be used to drill a hole approximately 5 feet below level surface and a minimum of 10 inches in diameter. The pressure treated posts will be plumbed, and backfilled with bagged ready mix concrete. The educational signage will be installed in May 2022.

4 References

2020. United States of America; State of Michigan, and The Saginaw Chippewa Indian Tribe of Michigan verses The Dow Chemical Company – Consent Order Case No: 1-19-ev-13292 (CD), Appendix D, Eagle Ridge Project.

Figures

Eagle Ridge Nature Area
Restoration Project - Pollinator Planting Area

Figure 1a

Detailed Pollinator Planting Area

Figure
1b

Appendix A

MI Pollinator Seed Mix

Scientific Name	Common Name	Seed/#	PLS#s
Zizia aurea	Alexander, Golden	192,000	0.0500
Symphyotrichum novae-angliae	Aster, New England	1,056,000	0.0200
Monarda fistulosa	Bergamot, Wild (Prairie Beebalm)	1,200,000	0.0200
Ratibida pinnata	Coneflower, Grayheaded (Yellow)	625,008	0.0500
Echniacea purpurea	Coneflower, Purple	105,600	0.2500
Coreopsis lanceloata	Coreopsis, Lanceleaf (sand)	320,000	0.300
Oenothera biennis	Evening primrose	1,376,000	0.500
Solidago rigida	Goldenrod, Stiff (Rigid)	656,000	0.0200
Asclepias tuberosa	Milkweed, Butterfly (Butterflyweed)	70,000	0.0300
Ascieplas syraca	Milkweed, Common	64,000	0.0300
Chamaecrista fasciculata	Partridge Pea	50,000	0.3000
Dalea purpureum	Prairie Clover, Purple	275,008	0.2000
Heliopsis helianthoides	Sunflower, False (Oxeye)	104,000	0.2500
Helianthus maximiliani	Sunflower, Maximillian	200,000	0.3000
Rudbeckia hirta	Susan, Black-eyed	1,500,000	0.1740
Verbena hastata	Vervain, Blue	1,488,000	0.0500
Schizachyrium scoparium	Bluestem, Little (Aidous, Itasca)	225,000	0.9500
Koeleria macrantha	Junegrass, Prairie	1,465,000	0.0500
Bouteloua curtipendula	Sideoats grama (El Reno Butte)	190,000	1.0000

PLS: Pure Live Seed

MI SAFE

Common Name	Scientific Name	Seeds/#	PLS#s
Aster, New England	Symphyotrichum novae-angliae	1,056,000	0.02
Bergamot, Wild (Prairie Beebalm)	Monarda fistulosa	1,200,000	0.04
Coneflower, Grayheaded (Yellow)	Ratibida pinnata	625,008	0.05
Coneflower, Purple	Echinacea purpurea	105,600	0.15
Coreopsis, Lanceleaf (sand)	Coreopsis lanceolata	320,000	0.25
Culvers Root	Veronicastrum virginicum	12,000,000	0.003
Goldenrod, Stiff (Rigid)	Solidago rigida	656,000	0.03
Leadplant	Amorpha canescens	200,000	0.1
Milkweed, Butterfly (Butterflyweed)	Asclepias tuberosa	70,000	0.05
Milkweed, Common	Asclepias syraca	64,000	0.06
Partridge Pea	Chamaecrista fasciculata	50,000	0.3
Prairie Clover, Purple	Dalea purpureum	275,008	0.1
Sunflower, Annual	Helianthus annuus	112,000	0.26
Sunflower, False (Oxeye)	Heliopsis helianthoides	100,800	0.15
Sunflower, Maximillian	Helianthus maximiliani	200,000	0.25
Susan, Black-eyed	Rudbeckia hirta	1,500,000	0.174
Vervain, Hoary	Verbena stricta	534,000	0.03
Bluestem, Big (tall)	Andropogon gerardi	130,000	0.4
Bluestem, Little (Aidous, Itasca) (tall or short)	Schizachyrium scoparium	225,000	0.5
Sideoats Grama (short)	Bouteloua curtipendula	190,000	0.8
Indiangrass (Neb 54 or Tomahawk) (tall)	Sorghastrum nutans	170,000	0.3

PLS: Pure Live Seed

MI Bio Wet Mesic

Grasses:

Common Name	Scientific Name	Seeds/#	PLS#s
Big bluestem	Andropogon gerardi	130,000	0.7
Fox sedge	Carex vulpinoidea	1,297,000	0.1
Indiangrass	Sorghastrum nutans	170,000	0.6
Switchgrass	Panicum virgatum	400,000	0.35
Virginia wildrye ©	Elymus virginicus	75,000	0.5

Note: © = cool season

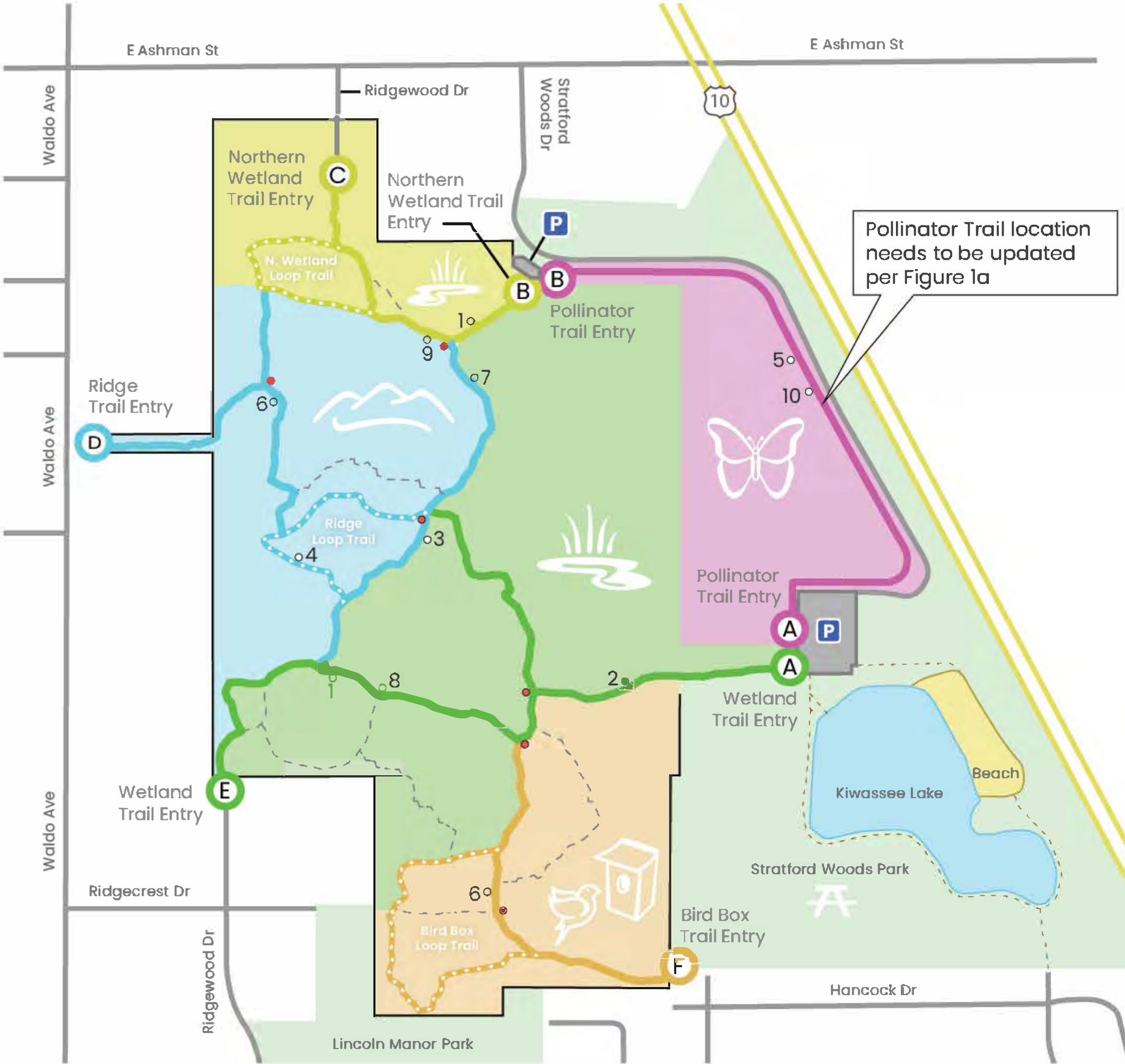
Forbs:

Common Name	Scientific Name	Seeds/Oz.	oz/ac
Black-eyed Susan	Rudbeckia hirta	93,750	1
Blue vervain	Verbena hastata	93,000	1.28
Boneset	Eupatorium perfoliatum	160,000	0.16
Culver's Root	Veronicastrum virginicum	750,000	0.08
Foxglove beardedtongue	Penstemon digitalis	125,000	0.4
Golden alexanders	Zizia aurea	12,000	1.12
Great blue lobelia	Lobelia siphilitica	457,500	0.08
Heath Aster	Aster ericoides	200,000	0.16
Milk vetch	Astragalus canadensis	15,625	3
Mountain mint	Pycnanthemum virginianum	220,000	0.16
New England Aster	Aster novae-angliae	66,000	0.24
Riddell's goldenrod	Solidago riddellii	93,000	0.16
Swamp milkweed	Asclepias incarnata	4,375	0.48
Wild bergamont or bee balm	Monarda fistulosa	75,000	0.64

PLS: Pure Live Seed

Appendix B

Nature Area Trail Map



MAP LEGEND

- Map Signs
- Educational Signs
- Entry / Exit Locations
- Northern Wetland Trail
- Wetland Trail
- Ridge Trail
- Pollinator Trail
- Bird Box Trail
- N. Wetland Loop Trail
- Ridge Loop Trail
- Pollinator Loop Trail
- Bird Box Loop Trail
- Discovery Trails

Educational Sign Locations:

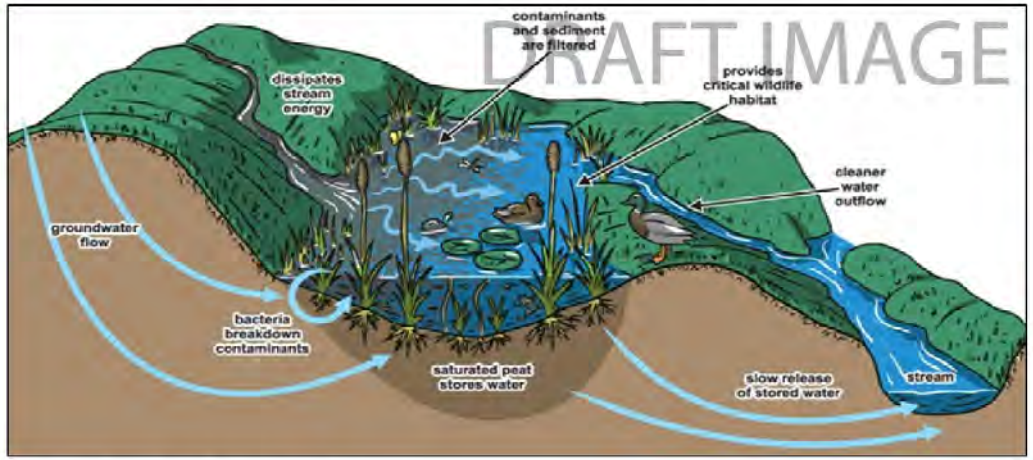
1 - Wetlands
2 - Wooded Wetlands
3 - Glacial Deposits
4 - Forest Succession
5 - Pollination and Pollinators
6 - Cavity Nesting Birds
7 - Amphibian Species
8 - Reptile Species
9 - Mammal Species
10 - Invasive Species

WETLANDS: NATURE'S FLOOD CONTROL

Wetlands serve an important role in absorbing and slowly releasing water into the watershed

WHAT IS A WETLAND?

Wetlands periodically or always have shallow water or saturated soil and are inhabited by plant species adapted to wet conditions. The Eagle Ridge Nature Area wetlands are primarily composed of wooded wetlands and emergent wetlands.



HOW DO WETLANDS WORK?

Wetlands capture, store and filter water, provide flood storage, and reduce downstream soil erosion. Wetlands collect and slow the flow of water allowing the sediments in the water to settle out within the wetland, providing natural pollution control. Preventing sediments from moving with the water provides cleaner water entering downstream lakes and reservoirs. This leads to a healthier ecosystem and provides for better recreational activities.

RESIDING IN A WATERSHED?

People often confuse watersheds and wetlands. A watershed is an area of land that drains water into various waterways such as streams or creeks and eventually makes its way to larger bodies of water such as lakes and oceans. Midland is part of the Saginaw Bay watershed. That means that all precipitation that falls makes its way to the Saginaw Bay. Watersheds unite people, plants, animals, across the landscape making land stewardship essential for everyone's health.

WHY ARE WETLANDS IMPORTANT?

Wetlands shelter and feed hundreds of different plants and animals, including many that are threatened and endangered.

Wetlands play an important role in the freshwater ecosystem and are a vital component of healthy watersheds, contributing to the quality of both surface and ground water supplies.

PRESERVATION AND CONSERVATION

Since the 1800s, over half of Michigan's wetlands have been drained or filled. Many wetlands are threatened by draining, pollution, invasive species, and urban development. To preserve these natural resources, restrictions and conditions have been placed on the use and development of wetland property.

Did You Know ?

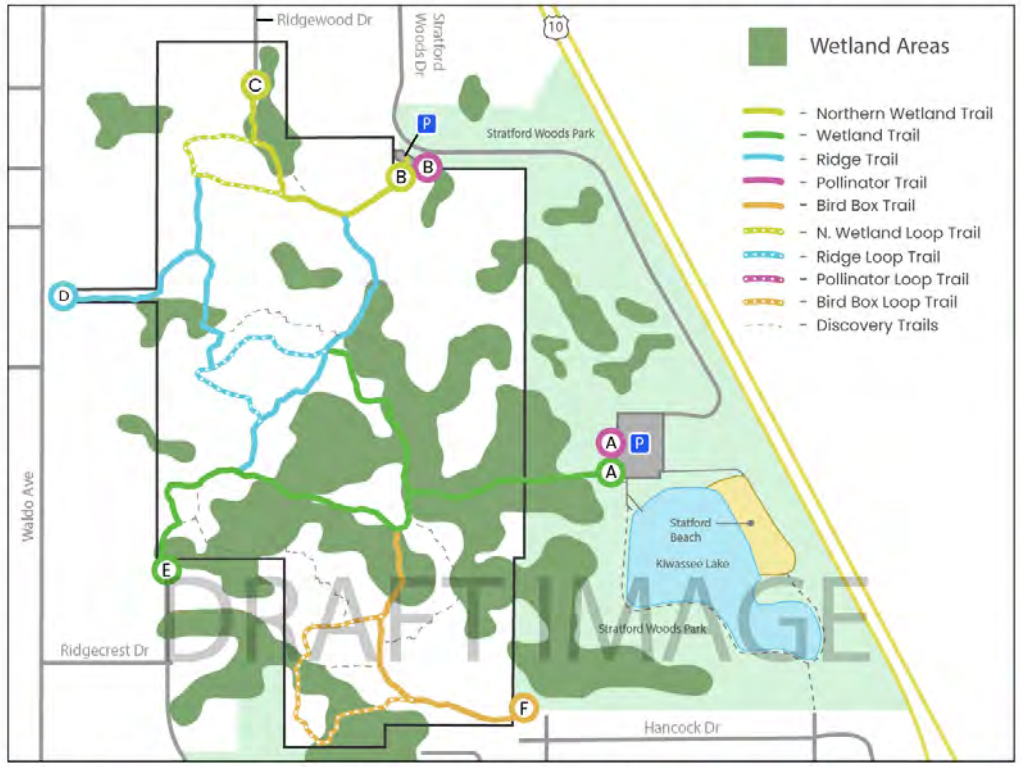
You can help to preserve wetlands by not polluting the environment, conserving water, and properly disposing of materials such as paints, gases, and oils.

WOODED WETLANDS OF EAGLE RIDGE

A unique ecosystem that provides important habitat for local plants and animals

Discover the Wetlands at Eagle Ridge!

Explore the Wetlands Trail as well as other trails to get a closer look at the wetlands that can be found in Eagle Ridge!



WOODED WETLANDS ARE IMPORTANT

Wooded wetland provide habitat for many amphibians including wood frogs, chorus frogs, and spring peepers, and breeding and nesting habitat for migratory and residential birds. Many other animals visit wooded wetlands to find food, water or shelter.

Wooded wetlands also store and slowly release water providing flood and erosion control for nearby areas.

IDENTIFYING A WOODED WETLAND

A wooded wetland is a forest where the soils are saturated or flooded for at least a portion of the growing season creating a soggy or spongy ground. The vegetation is dominated by trees that are tolerated to flooded condition and the leaves on the ground are typically covered with sediment. Blown down trees will also provide evidence of shallow root systems.

Did You Know ?

Wooded wetlands are sensitive ecosystems that you can help protect by staying on the trails, packing out your garbage, and reducing pesticide use.

AMPHIBIANS: LIVING A DOUBLE LIFE

Requiring high quality land and water ecosystems to thrive

WHAT IS A AMPHIBIAN?

The word amphibian means "two-lives" indicating that most amphibian spend time on land and in water as part of their life cycle. Unlike reptiles, amphibians lack claws and scales, and are instead covered with skin. Amphibians are cold blooded and unable to regulate their temperature internally. They move around their environment in order to warm up or cool off.

As amphibians develop, they go through metamorphosis. Most lose their gills and grow lungs, allowing them to breath air. They also grow legs giving them the ability to walk or hop on land.

Did You Know ?

You can help with the conservation of amphibians by providing clean water, hiding places, and insects to eat by creating a back yard pond.

Anishinaabe Language

The language uses the word Makkii (pronounced Muck-key) for frog.

FROG LIFE CYCLE

As amphibians grow, their bodies undergo metamorphosis. They grow lungs to breathe air. They also grow limbs, enabling them to move around on land. The transformation is not the same in all amphibians, but most species go through some sort of metamorphosis.

EGG: As the female frog lays the eggs, the male fertilizes them. Encased in a protective jelly coating which deters predation, the eggs are laid in the water where they will stay moist until they hatch.

TADPOLE: Tiny tadpoles hatch from the eggs. With a long tail, gills, and no legs, they are well adapted to life underwater. Eating small aquatic plants and algae, the tadpole stage can last for weeks, months or years depending on the species. As tadpoles mature, they will develop back legs and begin developing lungs before moving to the next stage.

FROGLET: In this stage, the young frog develops front legs and its tail begins shrinking. Its lungs become fully developed so the froglet comes to the water's surface to breathe.

ADULT FROG: With no tail and fully functioning legs and lungs, the frog is ready to hunt insects on land. Some species return to water daily for safety and additional food, while others move into the woods, fields, and trees until breeding season comes again.

Michigan amphibian species that may be found at Eagle Ridge!

GLACIERS: WHY IS THERE A RIDGE AT EAGLE RIDGE?

Glaciers formed the landscape where you are standing today

HISTORY OF THE RIDGE

This ridge is a unique feature, standing above the relatively flat terrain of the surrounding area. During the Pleistocene Epoch (from about 2 million years ago until 10,000 years ago), glaciers covered large sections of the earth. In what is now Michigan, these thick sheets of ice moved sand, dirt and rocks across the surface of the land. As the glaciers melted and retreated, they left behind basins and depressions, which became lakes, as well as ridges of dirt and stone, known as moraines .This ridge was likely a sand dune, formed from the wind moving the sand along the edge of a post-glacial lake, much like what we see today at Sleeping Bear Dunes and other Michigan dunes.

LINES TELL A STORY

The topographic map, pictured above, tells a story about the land you are standing on. Each line connects points of equal elevation and some are marked with the number of feet above sea level. Lines that are very close together indicate a steep slope, while lines with more space between them show a more gradual change in elevation. Can you find the ridge on the map?

MORE GLACIAL ACTIVITY AT EAGLE RIDGE

As you explore other parts of Eagle Ridge, you may notice several wooded wetlands. These areas were likely created by the same glacier that left behind the sand that makes up this ridge. Instead of piling up material, it was scooped out by the glacial activity, resulting in a basin that filled with water when the glacier melted.

Did You Know ?

About 10,000 years ago Michigan was covered by one-mile-thick sheets of ice.

REPTILES OF EAGLE RIDGE

Supporting healthy populations of local reptiles

WHAT IS A REPTILE?

Reptiles are cold blooded animals, which means they must utilize their environment to regulate their body temperature because they do not produce their own body heat. They are covered with scales or bony plates and most lay leathery-shelled eggs.

HABITAT NEEDS

Different species of turtles live in different places. Many spend time in lakes, ponds and wetlands, moving into upland habitats only to lay eggs. Some species spend more time on land, traveling through woodlands in search of food.

Depending on their diet, some snakes prefer meadows, while others spend time in forests or wetlands. They all require basking sites where they can elevate their body temperatures by laying in the sun as well as shelter for when the summer days get too warm or for hiding from predators.

All Michigan reptiles brumate during winter. Much like hibernation in mammals, brumation allows them to survive the lack of food and low temperature of the season by slowing their metabolism. Most reptiles brumate underground or at the bottom of a pond or wetland.

Be on the lookout for different reptiles here at Eagle Ridge Nature Area!

Blanding's Turtle

Eastern Snapping Turtle

Wood Turtle

Painted Turtle

Brown Snake

Butlers Garter Snake

Eastern Hog-Nosed Snake

Eastern Milk Snake

Northern Red Bellied Snake

POPULATION DECLINE

Many reptiles require access to both wetland and upland habitats to find food and complete their life cycle.

Habitat fragmentation and destruction, as well as reduced habitat quality, from development, agriculture, and roads can significantly reduce reptile populations in an area.

LEND A HELPING HAND

- Keep wild reptiles in the wild. Don't bring them home as pets or purchase wild caught reptiles from stores or dealers.
- Do not release pet reptiles. They could carry diseases to native reptiles, may not be well adapted to local conditions, or could become an invasive species.
- Help turtles across the road. If it's safe, stop and let them cross or carefully move them in the direction they were going.
- Enhance your backyard with stumps, plywood sheets or other cover for reptiles. Provide a ground-level birdbath with clean water.

Did You Know ?

Michigan has lizards. The five-line skink is the most common species. The distinctive stripes and blue tail become less well defined as the skinks age. When sexual maturity is reached the blue coloration begins to fade to brown or tan, disappearing completely at about a year.

Anishinaabe Language

The language uses the word Kaadi-gnebik (pronounced Kaa-deh Kneh-bik) for lizard.

FOREST SUCCESSION

The forests you see here are the result of a long process of ecological succession

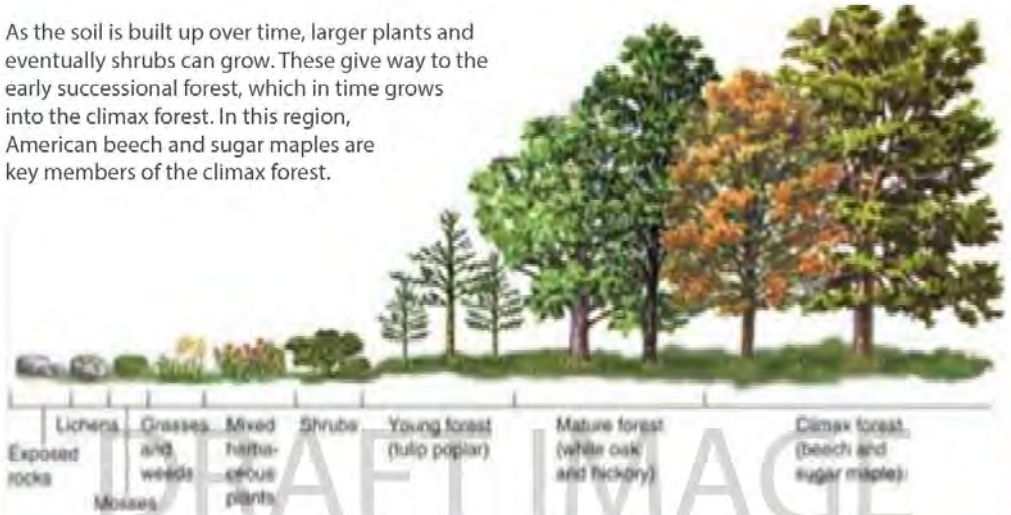
WHAT IS ECOLOGICAL SUCCESSION

Ecological succession is the process of change in the species structure in an ecological community over time. This occurs as one community of plant species replace another.

THE STAGES OF FOREST SUCCESSION

The first stage of succession begins with lichen and mosses, which can grow on rocks and surfaces without soil. After these decompose and create a thin layer of soil, small plants including grasses can move in.

As the soil is built up over time, larger plants and eventually shrubs can grow. These give way to the early successional forest, which in time grows into the climax forest. In this region, American beech and sugar maples are key members of the climax forest.



BEECH TREES

Some of the oldest trees within Eagle Ridge are American Beech trees. As part of the climax community for this region, they indicate a mature forest at the end of its successional journey. Easy to recognize with its smooth, gray bark, brilliant yellow leaves in the fall, and orange pointy buds in the winter, these giants can grow over 100 feet tall.

As these trees die of old age or fall victim to invasive beech bark disease, forest succession will move back a step and another shrub or tree will take its place.

Anishinaabe Language

The language uses the word Zhawemish (pronounced Shaa-weh-mish) for beech.

Did You Know ?

The first stage of succession involves a pioneer species such as lichens? Lichens are considered a pioneer species because they can grow without soil and can colonize bare rock. Lichens secrete acids that break down rock and start the soil production process.

INVASIVE SPECIES THREATEN LOCAL ECOSYSTEMS

Invasive Species out-compete native species resulting in decreased quality of local ecosystems

WHAT IS AN INVASIVE SPECIES?

An invasive species is any organism that is non-native or alien to the ecosystem. By entering the ecosystem, the species can cause ecological harm. Invasive species threaten other species because they compete with them for food, shelter, sunlight and space.

Invasive species can degrade wildlife habitat, create poor agricultural lands, reduce water quality, increase soil erosion, and decrease recreational opportunities.

Did You Know ?

The timing of the removal of invasive plants is critical. If invasives are removed when their fruit is ripe, the fruit can fall off the plant during the removal and actually do more harm by spreading the invasives further.

INVASIVE SPECIES AT EAGLE RIDGE

Autumn Olive:

Identification: Shrub with narrow green leaves with silvery undersides. Creamy, white heavily scented flowers in spring. Red berries. Stems sometimes have thorns.

Removal: Cut and apply herbicide to prevent re-sprout

Impact: Shades out native plants forming dense stands, degrades soil.

Common Buckthorn:

Identification: Small tree or shrub with oval, toothed, dark green leaves. Black to purple berries. Inner bark is orange.

Removal: Cut and apply herbicide to prevent re-sprout.

Impact: Shades out native plants forming dense stands, changes soil chemistry.

Phragmites:

Identicification: Perennial grass with flat, smooth leaves, reaching over 15 feet tall in some conditions. Flowers and seeds in dense clusters on end of stem.

Removal: Hand pulling, herbicide, burning, or flooding.

Impact: Prevents movements and eliminates food sources of native wildlife and overcomes native vegetation. Can be fire danger for nearby residents.

MANAGEMENT AT EAGLE RIDGE

Invasive species are controlled by routinely removing the plants and using herbicide to prevent regrowth from the remaining stumps. Removal of invasive species gives native plants an opportunity to thrive.

Spraying herbicide is effective for invasive management

HELP PREVENT THE SPREAD

You can help with invasive species control by being on the lookout for invasive species and report any that you find. You can also get involved in your local community to help with the management of invasive species.

Contact Central Michigan Cooperative Invasive Species Management Area (CM-CISMA) as a local resource (www.cmcisma.org)

DISCOVERING MAMMALS OF EAGLE RIDGE

Learning how to recognize their signs can help you discover who is living in the area

WHAT IS A MAMMAL?

Mammals have hair or fur and females produce milk to feed their young. Mammals are also warm-blooded, meaning they can maintain their body temperature through their metabolism, independent of the outside environment.

Anishinaabe Language

The language uses the word Jidmoonh (pronounced Chi-moonh) for squirrel.

IDENTIFYING MAMMALS AT EAGLE RIDGE

Mammals can be identified by their scat, tracks, browse, burrows, and other signs. Many mammals call this area home, but it can be difficult to spot them.

SOME WAYS TO IDENTIFY WHICH MAMMALS ARE PRESENT

White tailed deer lack upper front teeth and leave a jagged edge when browsing plants. The location of the browsed areas are also higher up on the plants.

Rabbits have four scissor-sharp incisors and make clean cuts on plants closer to the ground.

Burrows can be indicators of the presence of mammals such as ground hogs, chipmunks, rabbits, skunks and fox.

Buck rubs and scraps indicate deer are present.

Scat, or poop, not only indicates what kind of animal was present, but also what it has been eating.

DISCOVERING MAMMAL TRACKS

Be on the lookout for different mammals and their tracks here at Eagle Ridge!

Raccoon	Virginia Opossum	Coyote	Red Fox	Eastern Cottontail Rabbit	Gray Squirrel	Skunk	Groundhog	Whitetail Deer
								
								

HOLLOW HOMES SUPPORT LOCAL BIRDS

Many native bird species rely on cavities for nesting

CAVITY NESTING BIRDS

Commonly referred to as "cavity nesters", some birds seek holes in trees where they can lay eggs and raise their young. Due to development and changing land management practices, there are not enough natural cavities available to sustain healthy populations of these birds. Supplementing natural cavities with nest boxes provides valuable homes as well as opportunities to observe these birds.

Barred Owl

Screech Owl

Tree Swallow

Black Capped Chickadee

Red-Breasted Nuthatch

Eastern Bluebird

House Wren

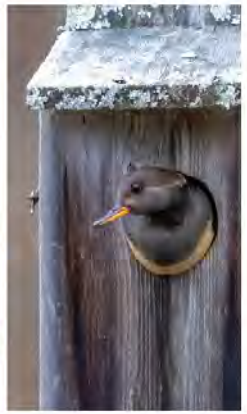
Wood Duck

Anishinaabe Language

The language uses the word Baapaase (pronounced Baa-paa-seh) for woodpecker.

NESTING BOXES AT EAGLE RIDGE

As you walk the trails at Eagle Ridge, look for nest boxes and remember to keep a safe distance so you don't disturb the box residents.



DIFFERENT TYPES OF BOXES ATTRACT DIFFERENT SPECIES OF BIRDS

Purple Martin houses will attract tree swallows and house wrens as well.

Bluebird houses will attract Eastern bluebird, and tree swallows.

House wren houses welcome black capped chickadee, tufted titmouse, white breasted nuthatches, red breasted nuthatches, and house wrens.

Wood duck house will attract wood ducks, screech owls, hooded merganser and golden eyes.

PUT UP YOUR OWN BIRD BOX!

You too can put up your own bird box to help the cavity nesters! A well-built and well-placed bird box can help boost local populations.

Here are some tips:

- Bird nesting boxes can be purchased or built, many plans can be found online. Nestwatch.org is a good source for up to date and accurate bird box plans.
- The size of the hole and dimensions of the box will attract different birds.
- Place bird boxed on structurally sound trees, posts, or buildings. Predator guards can be attached to posts or trees to protect the box from snakes, raccoons, opossums and other predators.
- Hang your bird box facing north, northeast or east to protect the box entrance from the weather.
- Boxes should be placed before February and it may take a couple of seasons for birds to find your box.

CREATING NATURAL CAVITIES

Woodpeckers are cavity nesters and often create cavities used by birds and mammals for nesting, sleeping, protection from predators, and shelter from the elements. These animals move into old woodpecker nests once the woodpeckers have moved on. In addition, cavities created by woodpeckers expose insects for other animals to eat.

Pileated Woodpecker

NATIVE POLLINATORS NEED OUR HELP

Native pollinators are an important part of the ecosystem and need our help to thrive

WHY ARE POLLINATORS IMPORTANT?

Local pollinators provide the important ecological service of pollination for flowering plants. Whether its blueberries, apples, sunflowers or purple coneflowers, many flowering plants require pollination from insects, birds, or small mammals in order to produce fruits and seeds. Pollinators are an important part of the local ecosystem, ensuring reproduction of native wildflowers as well as the production of much of the food we depend upon.

Anishinaabe Language

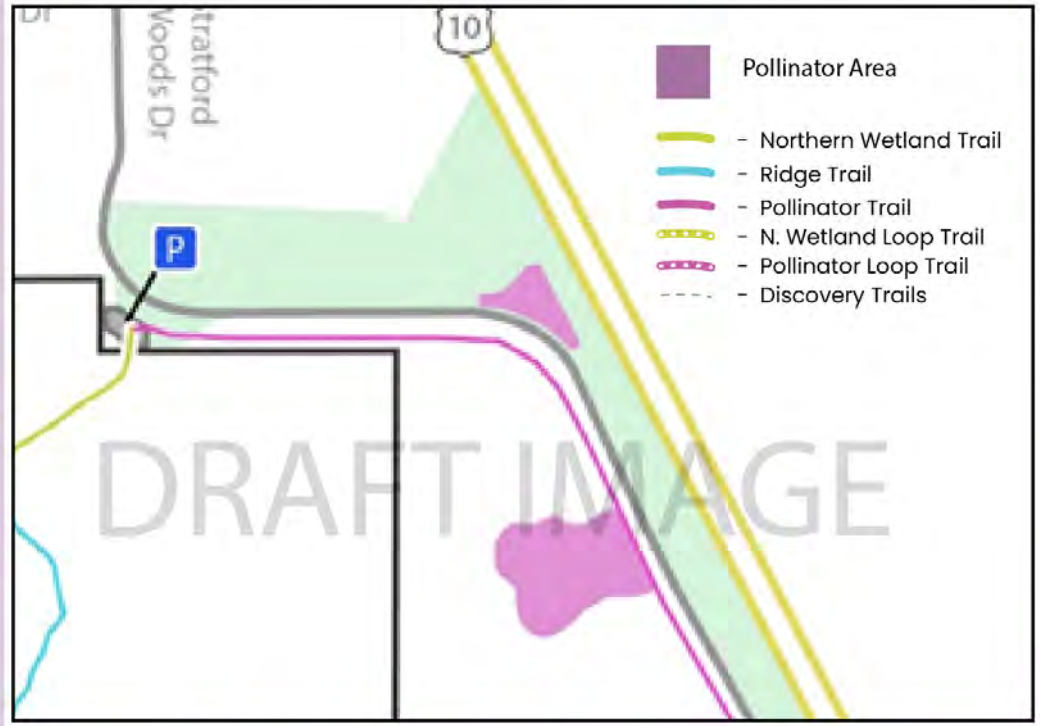
The language uses the word Aamoo (pronounced Aah-moo) for bee.

HELP POLLINATORS THRIVE

- Grow pollinator friendly native plants with a variety of bloom times, shapes, colors, and scents to welcome a variety of pollinators from early spring through late fall.
- Reduce or eliminate pesticide use.
- Provide clean water for birds and insects, such as a bird bath or small pond.

POLLINATOR AREA AT EAGLE RIDGE

In order to support the local pollinator populations, a pollinator area was created at Eagle Ridge. First, invasive species such as common buckthorn and autumn olive were removed, and then the area was planted with native wildflowers. As you explore these areas, look for bees, butterflies, birds, and the colorful plants they pollinate!



Did You Know ?

Plant species have differing flowering times which decreases completion for pollinators. This also provides pollinators with a constant supply of food.