

Field Guide to the ADM-SMSU Environmental Learning Area



**Southwest Minnesota State
University**

**Environmental Science Program
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This field guide was written and compiled by Justin Hill and Garrett Wee, both senior Environmental Science majors at Southwest Minnesota State University during the 2017-18 school year. This Field Guide was created to document the range of biodiversity in the nature area, to provide a baseline for future studies, and to provide a resource for the public to use to enhance their visit to the SMSU campus.

Thanks to SMSU faculty members, Dr. Deaver and Dr. Desy for their input during the creation of this guide. Thank you to Marcy Olson for formatting and printing assistance. All photos not otherwise credited were taken in the SMSU-ADM Environmental Learning Area and are property of Garrett Wee.



An Ovenbird photographed during spring migration.

Table of Contents

	Page
About.....	1
Birds.....	2
Bird checklist.....	4
Mammals.....	9
Mammals checklist.....	10
Prairie plants.....	11
Trees.....	19
Wetlands.....	26
Resources.....	27
Map.....	28
References.....	29



Alligator Snapping Turtle just off the hiking path

About

The idea to establish an environmental study area at SMSU began in the spring of 1980. During the following few years a marsh was excavated, domestic grasses were eradicated and replaced with native prairie seeds, and over 300 tree seedlings were planted. The area has been periodically enhanced ever since, with projects such as the 1998 four acre prairie restoration, and the division of the area into its current five habitats: Coniferous Forest, Deciduous Forest, Prairie, Wetland, and Open Parkland (see map on p.28). The area is a total of 40 acres with 13 acres being prairie and 27 acres being forested habitat. SMSU science students utilize the area for labs and research projects. It is open to the public and includes 1.5 miles of mowed hiking trails. Hiking trail entrances are located off of Mustang Trail, one on the east side by the intersection of Mustang Trail and Stadium Drive and one on the south side that starts in the prairie section. The entire western and northern edges of the area are bordered by a row of trees and a city drainage ditch.



White-tailed Deer in the coniferous forest

Birds

The SMSU-ADM Environmental Learning Area is home to diverse bird populations because of its wide variety of habitats. The large tracts of woodland and prairie vegetation provide habitat relief from the surrounding urban area and is a key stopover point during migration.

Quite often birds will migrate at night so it's not uncommon to return to the nature area in the morning to find the trees filled with songbirds. The best time to see new migrants is after a moderate south wind in the spring and a north wind in the fall. These migrants are often seen in groups, usually occupying stands of trees with adequate understory. Look for birds actively foraging in low trees and shrubs during the morning hours. One can often find multiple species in these migrant groups, with a higher chance of spotting an uncommon or rare species.

Many species prefer to forage near water sources, especially during spring migration when the first flying insects emerge from the water. Make sure to check the trees between the two wetlands in the southeast corner, as this spot has a high diversity of breeding birds.

The stands of dense conifer trees provide excellent daytime roosting habitat for raptors and owls. Sometimes northern finches such as Purple Finch, Pine Siskin and Red Crossbills can also be observed in the conifers.

Adjacent to the coniferous forest lies the wooded marsh and a storm water retention pond. Nesting pairs of Green Herons, Great Blue Herons, Hooded Mergansers, and Wood Ducks have been found here. Marsh Wrens, Song Sparrows, Swamp Sparrows, Yellow Warblers and Common Yellowthroat are also quite easy to find here.

The native prairie on the western edge of the nature area provides easy, close observation birding. Eastern Bluebirds and Clay-colored Sparrows are common. American Goldfinch dot the prairie portion in late summer and fall following the blooming of the Prairie Dock.

The following checklists were created with data from breeding bird surveys conducted by Garrett Wee in the Spring/Summer 2017. All species listed have been recorded at least once within the nature area. For the best experience it is recommended that you bring binoculars and a bird identification guide.



Dark-morph Broad-Winged Hawk.

Bird Checklists

Bird Season and Abundance Key

Sp (Spring) = March, April, May

Su (Summer) = June, July

Fa (Fall) = August, September, October,
November

Wi (Winter) = December, January, February

C = Common — present, relatively easy to find

U = Uncommon — observed, may be difficult to
find

O = Occasional — may or may not be present in
any year

R = Rare — has occurred at least once, may or
may not be expected to recur

Blank cells – bird species is not present in the
area during the specified season

Birds Species	Sp	Su	Fa	Wi
Waterfowl and Upland Birds				
[] Cackling Goose	R		R	
[] Canada Goose	C	U	C	
[] Wood Duck	C	C	C	
[] Mallard	C	U	U	
[] Blue-wing Teal	O	R	R	
[] Northern Shoveler	O			
[] Green-wing Teal	O			
[] Hooded Merganser	U	O		
[] Ring-neck Pheasant	U	U	U	U
[] American Coot	R			
[] Pied-billed Grebe	R	R	R	
[] Great Blue Heron	O	O	O	
[] Green Heron	O	O		

Birds Species	Sp	Su	Fa	Wi
Raptors				
[] Turkey Vulture	R	R	R	
[] Osprey	R		R	
[] Coopers Hawk	U	U	U	O
[] Broad-winged Hawk	U		U	
[] Red-tailed Hawk	U	R	U	
Shorebirds				
[] Killdeer	U	O	O	
[] Least Sandpiper	R		R	
[] Spotted Sandpiper	O		O	
[] Solitary Sandpiper	O		O	
Gulls				
[] Ring-billed Gull	R			
Owls				
[] Eastern-Screech Owl	O	O	O	O
[] Great Horned Owl	U	O	O	U
[] Barred Owl	R	R	R	R
Pigeons and Doves				
[] Rock Pigeon	C	C	C	C
[] Eurasian Collared-dove	U	U	U	U
[] Mourning Dove	C	C	C	
Hummingbirds				
[] Ruby-throated Hummingbird	C	U	C	
Woodpeckers and Kingfishers				
[] Belted Kingfisher	O	O	O	
[] Red-bellied Woodpecker	C	C	C	C
[] Yellow-bellied Sapsucker	C	O	C	
[] Downy Woodpecker	C	C	C	C
[] Hairy Woodpecker	U	U	U	U
[] Northern Flicker	C	O	C	R

Birds Species	Sp	Su	Fa	Wi
Flycatchers				
[] Olive-sided Flycatcher	O		U	
[] Eastern Wood-Pewee	U		U	
[] Yellow-bellied Flycatcher	R		R	
[] Alder Flycatcher	U		U	
[] Willow Flycatcher	C	R	U	
[] Least Flycatcher	C	U	C	
[] Eastern Phoebe	C	U	C	
[] Great Crested Flycatcher	C	C	C	
[] Eastern Kingbird	C	C	C	
Vireos				
[] Yellow-throated Vireo	U		O	
[] Blue-headed Vireo	U		U	
[] Philadelphia Vireo	O		O	
[] Warbling Vireo	C	C	C	
[] Red-eyed Vireo	C	C	C	
Jays and Crows				
[] Blue Jay	C	C	C	C
[] American Crow	C	C	C	C
Swifts and Swallows				
[] Chimney Swift	C	C	C	
[] Tree Swallow	C	C	C	
[] Bank Swallow	U		U	
[] Barn Swallow	C	C	C	
Small Forest Birds				
[] Black-capped Chickadee	C	C	C	C
[] Red-breasted Nuthatch	U		U	C
[] White-breasted Nuthatch	C	C	C	C
[] Brown Creeper	U		U	U
Wrens				
[] House Wren	C	C	C	
[] Sedge Wren	R		R	
[] Marsh Wren	O	O	R	

Birds Species	Sp	Su	Fa	Wi
Thrushes etc.				
[] Eastern Bluebird	C	C	C	
[] Veery	U		R	
[] Gray-cheeked Thrush	R		R	
[] Swainson's Thrush	C		C	
[] Hermit Thrush	C		C	
[] American Robin	C	C	C	U
[] Gray Catbird	C	C	C	
[] Brown Thrasher	C	C	C	
[] European Starling	C	C	C	C
[] Cedar Waxwing	U	O	C	O
Warblers and Kinglets				
[] Ovenbird	U	R	U	
[] Northern Waterthrush	C		U	
[] Black-and-white Warbler	C		C	
[] Tennessee Warbler	C		C	
[] Orange-crowned Warbler	C		C	
[] Nashville Warbler	U		U	
[] Connecticut Warbler	R			
[] Mourning Warbler	R			
[] Common Yellowthroat	C	C	C	
[] American Redstart	C	R	C	
[] Northern Parula	O		R	
[] Magnolia Warbler	U		U	
[] Bay-breasted Warbler	U		O	
[] Yellow Warbler	C	U	C	
[] Palm Warbler	C		C	
[] Yellow-rumped Warbler	C		C	R
[] Golden-crowned Kinglet	C		C	
[] Ruby-crowned Kinglet	C		C	

Birds Species	Sp	Su	Fa	Wi
Sparrows				
[] Grasshopper Sparrow			R	
[] American Tree Sparrow	C		C	C
[] Chipping Sparrow	C	C	C	
[] Clay-colored Sparrow	C	C	C	
[] Field Sparrow	U	O	O	
[] Fox Sparrow	C		C	
[] Dark-eyed Junco	C	R	C	C
[] White-crowned Sparrow	U		U	
[] Harris's Sparrow	C		C	R
[] White-throated Sparrow	C		C	R
[] Vesper Sparrow	O	R	O	
[] Song Sparrow	C	C	C	
[] Swamp Sparrow	C	O	C	
[] House Sparrow	C	C	C	C
Cardinals and Grosbeaks				
[] Northern Cardinal	C	C	C	C
[] Rose-breasted Grosbeak	C	O	C	
[] Blue Grosbeak		R		
Blackbirds				
[] Bobolink	R	R	R	
[] Red-winged Blackbird	C	C	C	R
[] Yellow-headed Blackbird	O			
[] Common Grackle	C	C	C	
[] Great-tailed Grackle	R			
[] Brown-headed Cowbird	C	C	O	
[] Orchard Oriole	U	O		
[] Baltimore Oriole	C	C	U	
Finches				
[] House Finch	C	C	C	C
[] Purple Finch	O		O	U
[] Red Crossbill			R	
[] Pine Siskin	C	R	C	U
[] American Goldfinch	C	C	C	U

Mammals

The astounding diversity of mammals in the SMSU-ADM Environmental Learning Area is often overlooked. Some are easily spotted while others require the knowledge of preferred habitat, a keen eye, and a bit of luck.

Mammals such as Fox Squirrel, Gray Squirrel, and Eastern Cottontail can be easily found by scanning the ground and trees. Whitetail Deer often seek shelter in the sumac in the northeast corner of the area. Most mammals will become more active at dawn or dusk, including many of the rodents, bats, and nocturnal animals such as Common Raccoon and Virginia Opossum. Walking the trails at dawn or dusk, one might see a Meadow Jumping Mouse or a Little Brown Bat flying above. When near the wetlands, scan the bases of trees for signs of a beaver gnawing through the trunk and watch the water closely for a swimming muskrat. Red Foxes are seen frequently in the nature area. Below is a checklist of mammals that have been recorded at least once in this nature area.



Common raccoon in a green ash tree.

Mammals List

- () **Virginia opossum** (*Didelphis virginiana*)
- () **Eastern gray squirrel**
(*Sciurus carolinensis*)
- () **Fox squirrel** (*Sciurus niger*)
- () **American red squirrel**
(*Tamiasciurus hudsonicus*)
- () **Thirteen-lined ground squirrel** (*Spermophilus tridecemlineatus*)
- () **Woodchuck** (*Marmota monax*) *rare
- () **North American Beaver**
(*Castor canadensis*)
- () **White-footed mouse**
(*Peromyscus leucopus*)
- () **Deer mouse** (*Peromyscus maniculatus*)
- () **Meadow vole** (*Microtus pennsylvanicus*)
- () **Muskrat** (*Ondatra zibethicus*)
- () **Meadow jumping mouse**
(*Zapus hudsonius*)
- () **Eastern cottontail** (*Sylvilagus floridanus*)
- () **Masked shrew** (*Sorex cinereus*)
- () **Northern short-tailed shrew**
(*Blarina brevicauda*)
- () **Little brown bat** (*Myotis lucifugus*)
- () **Common raccoon** (*Procyon lotor*)
- () **Striped skunk** (*Mephitis mephitis*)
- () **Red fox** (*Vulpes vulpes*)
- () **White-tailed deer**
(*Odocoileus virginianus*)
- () **Plains pocket gopher** (*Geomys bursarius*)

Prairie Plants

A walk through the 13 acres of reconstructed prairie will give you a glimpse of how all of Southwest Minnesota looked pre-settlement. Four acres of this prairie were restored and planted with native prairie wildflowers and grasses in 1998. Prairie wildflowers are best viewed during late summer through mid-fall. A list of some of the most common plants found in this prairie is provided. Keep an eye out for garter snakes sunning themselves on the paths during warm days in the Fall and Spring. Don't be surprised if you discover a plant that's not on this list. As prairies mature, the plant diversity increases. Many more species have been found since the prairie's planting almost 20 years ago. Below are some descriptions of common prairie plants found in the nature area.



South entrance to the prairie area, showing Painted Lady Butterflies on Stiff Goldenrod. Photo by Emily Deaver.

Grasses

Big Bluestem (*Andropogon gerardi*)

One of the most iconic and abundant prairie grass in the area. This grass grows 3-6' tall and is easily identified by the blue/purple tinges on the round, segmented stem. The flowering top has 3 parts that resemble a turkey foot.

Leaves unfurl as it grows; they are less than ½" wide and up to 2' long.



<http://webs.anokaramsey.edu/prairie/Grassesonweb/Bigbluestem.htm>

Little Bluestem (*Schizachyrium scoparium*)

Look for this grass growing in dense bunched clusters about 4' in height. The leaves grow up to 12" long and are less than ¼" wide. The stem is hairy and flattens out at the base of the grass.

Indian Grass (*Sorghastrum nutans*)

This grass grows up to 7' tall and often associates with Big Bluestem. Leaves can grow to 2' long and less than ½" wide. Look for the two pointed red/yellow lobes where the leaf blade joins at the stem.

Side-Oats Grama (*Bouteloua curtipendula*)

Can grow up to 3' tall with leaves up to 12" long. Very thin stemmed with tiny flowers. The light tan flowers have bright orange stamens. Easily identified by the oat-like spikelets that line one side of the stem.

Wildflowers

Canada Goldenrod (*Solidago canadensis*)

An abundant 2-4' tall wildflower that is in full bloom from Sept. to mid-Oct. The small yellow flowers form a pyramid-like shape at the top of the stem. Look for the hairy stems and alternate coarse toothed leaves. It grows in dense clusters. Some plants will have a ball shaped deformity in the stem which houses the larvae of the Goldenrod Gall Fly.

Stiff Goldenrod (*Solidago rigida*)

Similar to Canada Goldenrod, this plant has yellow flowers, and slightly hairy, rigid, stems. Grows in clusters. It grows up to 5' tall and has shorter leaves. The flowering heads are wide and flat, pointing straight up. The leaves are in an alternate arrangement, elongated, and only slightly serrated. Blooms Aug-Oct.

Heath Aster (*Aster ericoides*)

A common white aster that grows in patches, anywhere from 1-2 feet tall. Small (3" long, ½" wide), with narrow, pointed leaves that alternate. The white flower heads are arranged in dense clusters about a ½"

wide, surrounded by 20 petals around a yellow center.



http://www.illinoiswildflowers.info/prairie/plants/hth_asterx.htm

Blooms Aug-Oct.

New England Aster (*Aster novae-angliae*)

Much larger than Heath Aster, this plant grows up to 6' tall and has hairy stems. The long, narrow leaves occur alternately around the stem, about 4" long and 1" wide. Flowers are purple and about 1-1.5" wide with

approximately 30 purple petals clustered around a yellow center.



<https://plants.usda.gov/core/profile?symbol=syno2>

Blooms Aug-Oct.

Dotted Blazing Star (*Liatris punctate*)

A low growing perennial that is usually less than 1 foot tall. Identified by the dense, leafy spikes that stand straight up. These spikes are surrounded by small pink/purple flower clusters. Leaves are less than 5" long, ¼" wide, and are dotted underneath. Blooms July-Sept.

Prairie Blazing Star (*Liatris pycnostachya*)

Separated from Dotted Blazing Star by size and leaf structure, this unbranched wildflower can grow up to 5' tall. Leaves are about 1' long and ½" wide and progressively get smaller towards the top of the stem. The tops of the stems have long spikes surrounded by small purple flower heads.



<https://nature.mdc.mo.gov/discover-nature/field-guide/prairie-blazing-star-gayfeather>

Compass Plant (*Silphium laciniatum*)

One of the tallest wildflowers on the prairie, growing from 6'-8' tall with stout light-green stems. Deep lobed leaves are large and hairy and alternate around the stem. The lower leaves often stand on edge and orient in a North/South direction.

Flowers are similar in shape to a sunflower, 2.5-4.5" wide with yellow rays surrounding a dark colored center.



<http://www.illinoiswildflowers.info/prairie/plants/compassx.htm>

Blooms July-Sept.

Cup Plant (*Silphium perfoliatum*)

Has a thick, smooth, square stem and can grow up to 8' tall. Large coarse toothed leaves combine to form a cup shaped funnel surrounding the stem, an adaptation for water retention. The individual yellow flowers are 2.5-4" wide with 20-30 rays. Blooms July-Sept.

Gray-Headed Coneflower (*Ratibida pinnata*)

This wildflower has thin smooth stems and can grow 1-3' tall. The long narrow leaves are alternately arranged with short gray hairs. It has prominent, 3" wide,

yellow flowers with a protruding gray center.



https://webapps8.dnr.state.mn.us/restoreyourshore/plants/plant_detail/300

Blooms June-Aug.

Lead Plant (*Amorpha canescens*)

A woody, shrub-like plant that grows up to 3 feet tall.



<http://www.illinoiswildflowers.info/prairie/plantx/leadplantx.htm>

Leaves are divided into leaflets that are about $\frac{3}{4}$ " long and $\frac{1}{4}$ " wide. The gray hairs on the stem give the plant its color and name.

The small flowers are a blue/purple color with orange stamens. Blooms June-Aug.

False Sunflower or Oxeye

(*Heliopsis helianthoides*)

This yellow flowering plant grows up to 4' tall. The toothed leaves are oppositely arranged, growing about 6" long and 3.5" wide. Flower heads are 2-4" wide with 20 petals surrounding a cone-shaped yellow center. Blooms July-Sept.

Maximilian's Sunflower (*Heliopsis maximilian*)

A thick stemmed yellow wildflower that can grow up to 9' tall. The narrow leaves are up to 9" long and less than 2" wide. They are curved downward and are alternately arranged. The flower is 4" wide with between 10-25, 1.5" petals that

surround a yellowish center.



<https://conservationgardenpark.org/plants/66/santa-fe-maximilian-sunflower>

Blooms Aug-Sept.

Butterfly Milkweed (*Asclepias tuberosa*)

This is one of the brightest flowers on the prairie, it is found growing in dense clusters up to 5' tall. Its leaves are 4" long, less than 1" wide, and alternate around the stem. About 25 small, individual, orange

flowers make up the flattened flowering heads.



Blooms June-Aug.

Common Milkweed (*Asclepias syriaca*)

This 2-5' plant is best known for attracting pollinators and Monarch Butterflies. Its oval, toothless leaves grow up to 8" long and 3" wide. The center vein of the leaves are a white/pink color. The seed pods are large, prominent, green, bumpy and contain many brown seeds with wispy white hairs. The many ½" pink flowers are arranged in a spherical shape at the top of the plant. Blooms June-Aug.



<http://extension.wsu.edu/whitman/2013/11/common-milkweed/>

Common milkweed seed pods

Prairie Dock (*Silphium terebinthinaceum*)

Very common in the nature area. This species is a native to the eastern North American prairie, but is not native to Minnesota prairies. Wide flat leaves have a sandpaper like texture and are up to 18" long and 12" wide. These large leaves make it a dominant plant in the prairie. Flowers are located at the

very top of stems that are 3-12" tall, and are typically 2-3" wide with 15-30 yellow petals.



<http://www.riveredgenaturecenter.org/research/phenology/riveredge-plant-phenology-trails/prairie-dock/>

Blooms Aug-Oct.

Purple Prairie Clover (*Dalea purpurea*)

Grows in patches up to 2' tall with slender stems. Leaves are pinnately compound with small leaflets less than 1" long and 1/8" wide. The small purple flowers are arranged in a spike at the top of the stem. The bottom flowers bloom first and climb up the spike as the new flowers bloom. Blooms June-Sept.



http://minnesotaseasons.com/Plants/purple_prairie_clover.html

Trees

When the SMSU-ADM Environmental Learning Area was being designed, many tree seedlings were planted to create a specific deciduous forest and coniferous forest. The conifer trees are located in the east-central part and along the northern and western edge. The deciduous trees are dispersed throughout but are primarily in the center of the area.

Coniferous Trees

Red or Norway Pine (*Pinus resinosa*)

Perhaps the most abundant conifer in the nature area, this tree is named after its reddish-brown bark. On mature trees the bark eventually becomes plate-like, although very few Red Pines in the nature area have reached this stage. The sharp needles occur in clusters of two. Commonly reaches heights of 60'-80'. Minnesota's State Tree.

Eastern White Pine (*Pinus strobus*)

This large pine is known for its dark smooth bark and stately appearance. Mature trees will begin to show furrowed bark near the trunk. Mature trees will also show overall irregular conical growth. Not overly abundant in the nature area. Soft needles occur in bundles of 5. This conifer easily exceeds 75' and has the potential to reach 120'.

Northern White Cedar (*Thuja occidentalis*)

The thick foliage has many branchlets with flat, scaly leaves, a characteristic exclusive to cedars. Great for wildlife in providing cover and cones that are consumed by many birds and mammals. Typically a smaller tree but can reach heights of 50'.

Eastern Red Cedar (*Juniperus virginiana*)

Relative of the Northern White Cedar. The Red Cedar is distinguished by blue, berry-like "cones" and attains a burgundy color in the winter months. Flat scaly leaves like the white cedar. High wildlife value as well; many animals consume the cones in the winter, often times resulting in the tree becoming semi-invasive in some areas where cones have been deposited by animals.

Black Spruce (*Picea mariana*)

The Black Spruce is a shorter spruce that shows more conical growth compared to other spruces. The Black Spruce is usually green overall and the needles are ½" in length. These trees are scattered throughout the nature area as individuals. It reaches maximum heights of 40'.

White Spruce (*Picea glauca*)

The White Spruce is the much larger relative of the Black Spruce. The needles typically have a whitish sheen, hence the name. Needles are slightly longer than Black Spruce. The cones are also longer than Black Spruce. It typically reaches heights up to 60' but some native individuals can reach 100'.

Balsam Fir (*Abies balsamea*)

This conifer tree is commonly used as a Christmas Tree. The soft, short needles are flat and grow horizontally. The cones are always found growing upright. Distinct smooth bark with resin filled blisters. This tree typically grows up to 50' and is found scattered in the coniferous portion of the nature area.

Tamarack or Larch (*Larix laricina*)

This is one of only 14 species of deciduous conifers in the world. The needles turn a bright yellow color before they shed in the autumn. They regrow in the spring in small clusters about 1" long surrounding the stem. Cones are a round shape. This tree is found in bogs in its native range

and associates with Black Spruce. It can reach heights of up to 70'.



Deciduous Trees

Green Ash (*Fraxinus pennsylvanica*)

Relatively common tree found in the nature area, known for dropping the flat, oval shaped seeds. This tree usually has a uniformly furrowed bark throughout the tree. Leaves are teardrop shaped around 3-5" long, turning yellow in autumn.

Balsam Poplar (*Populus balsamifera*)

This medium sized tree closely resembles the Eastern Cottonwood which is also common throughout the nature area. The Balsam Poplar has less serrated leaves with leaf surface being smooth as well and lighter colored bark and is often smooth. Can grow up to 80'. Uncommon in the nature area though possibly spreading naturally.

Eastern Cottonwood (*Populus deltoides*)

This prairie native lives well in Southwest Minnesota but often times becomes invasive in wetter areas. Very similar to the Balsam Poplar in all respects, though usually distinguished by darker, more furrowed, bark. Eastern Cottonwoods grow to be massive trees sometimes reaching 100' tall with a canopy spread of over 60'.

Choke Cherry (*Prunus virginiana*)

This small tree is often categorized as a shrub. Capable of reaching 25' in height though rarely tops 15'. Uniformly oval shaped leaves and the reddish, cherry-like fruit in the fall make this tree easy to identify. This tree can form dense thickets.

Black Cherry (*Prunus serotina*)

This small tree is uncommon in the nature area. It is recognized by its fragrant white flowers in the spring. Bark is dark brown and smooth with tiny corky blisters. Fruit ripens in the fall. This tree can reach 25-30' in height.

Boxelder (*Acer negundo*)

This species of maple is considered to be semi-invasive due to its habit of thriving in neglected areas. The hardiness of this tree makes it extremely easy to grow. The leaves come in leaflets of three and resemble ash leaves more than a maple. Seeds from the Boxelder are commonly referred to as “propellers” or “helicopters” as they spin to the ground.

Red Maple (*Acer rubrum*)

A fitting name for this medium sized tree that is known for its vibrant red foliage in the fall. Leaves have three main lobes which are more shallow-lobed compared to other maples. This tree typically reaches 60' in height with a canopy spread of up to 40'.

Silver Maple (*Acer saccharinum*)

This maple is native to southwest Minnesota, with large specimens common in city parks reaching 70' tall with canopy spreads as large as they are tall. Limbs break easily in strong wind. Deep lobed leaves turn a yellowish color in the fall

Sugar Maple (*Acer saccharum*)

This tree is known for producing large amounts of sap which is collected to produce maple syrup. Leaves turn a variety of colors in the fall, ranging from yellow to red. Like all maples, they release winged seeds that fall to the ground in a spiraling motion. Most grow to approximately 80' tall at full maturity.

American Elm (*Ulmus americana*)

Best known for their tall stature and wide canopies. Many of the largest trees have fallen victim to Dutch Elm disease. They have alternating leaves with serrated edges and prominent leaf veins. These trees can exceed 100' with canopy spreads of 60' or more.

White Oak (*Quercus alba*)

Capable of growing to large heights with long spreading branches. The leaves are deeply lobed and can feel fuzzy on the underside. Drops bumper crops of acorns every few years which have high wildlife value. Typically grows to heights of 80'.

American Basswood (*Tilia americana*)

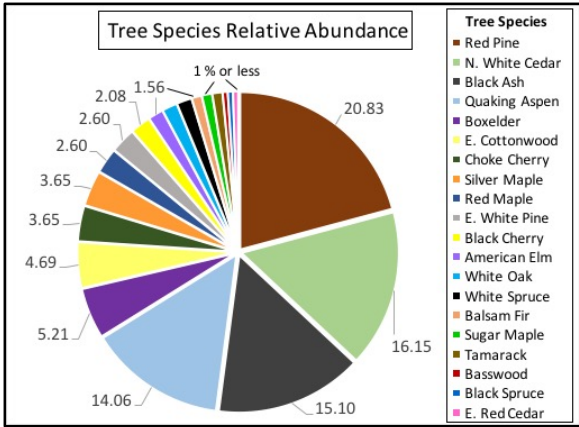
A signature hardwood of wet forests, growing to heights of 80' quite easily. Heart shaped leaves are 3-6" long. The basswood is known for dropping small pea sized fruits found in clusters that are dropped in the fall.

Paper Birch (*Betula papyrifera*)

This iconic tree is best known for the peeling bark that gives the tree a flaky appearance and white bark. Medium to small tree, often growing in loose colonies, these trees commonly reach 40' but very seldom taller.

River Birch (*Betula nigra*)

Very similar to the Paper Birch, bark is also flaky in appearance but golden colored. Leaves have a much more "toothed" appearance in comparison to the Paper Birch.



The relative abundance of tree species in a subsample of the SMSU-ADM Environmental Learning Area. Data and graphic from a tree survey completed by Environmental Science major Melissa Klecker summer 2017.

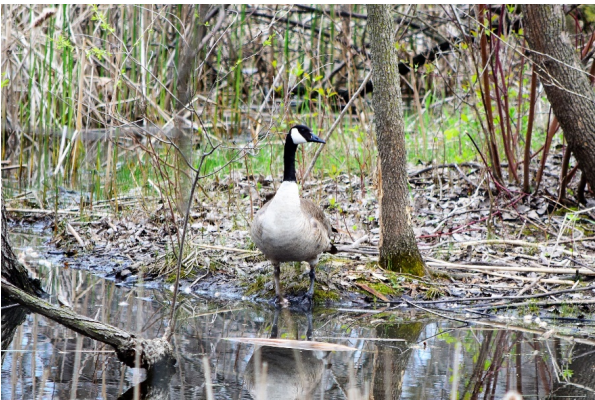


A row of trees on the edge of the nature area. From left to right: 1)White Spruce, 2)Eastern Cottonwood, 3)White Pine, 4)White Spruce, 5)Red Pine. Photo by Emily Deaver

Wetlands

The nature area contains 3 different types of wetlands. These wetlands provide some of the best opportunities to view wildlife. A constructed stormwater runoff pond is present on the eastern edge near the stadium. A natural freshwater marsh is adjacent and to the west of the stormwater pond. An ephemeral wetland (not shown on the map) is located amongst the trees in the northern section. It only holds standing water in the spring season but water may not or may not be present at any given year.

These wetlands are home to aquatic organisms such as crayfish, Northern Leopard Frog, Chorus Frog, Painted Turtle, Snapping Turtle, and aquatic insect larvae. Many wetland plants such as sedges, rushes, grasses and cattails are present. Listen for Chorus Frogs in the spring and early summer. Their call is often described as being similar to running your fingernail down the teeth of a hair comb.



Canada Goose in the marsh

Suggested Resources

For Birds: Sibley Guide to Birds 2nd edition; National Geographic Field Guide to the Birds of North America 6th Edition; eBird app; Audubon Birds of North America app; iBird app; Merlin Bird ID app.

For Plants: LeafSnap app; Trees Pro app; TallGrass Prairie Wildflowers 2nd edition; Minnesota Department of Natural Resources Plant pages found at http://www.dnr.state.mn.us/trees_shrubs/index.html

CAUTION, Be Aware: Poison Ivy is present in the nature area; stay on the paths. Look for glossy, mitten shaped leaves in sets of three.



https://www.medicinenet.com/poison_ivy_oak_and_sumac/article.htm

Example of poison ivy leaves

Map

SOUTHWEST Wildlife Area MINNESOTA STATE UNIVERSITY



Map of the ADM-SMSU Environmental Learning Area, which is 40 total acres, with 13 acres of prairie and 27 acres of forest.

References

The following resources were referenced for background information and to create plant descriptions.

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Minnesota DNR. 2017. *Minnesota's Native Trees*. Accessed online Oct. 23, 2017 from <http://www.dnr.state.mn.us/forestry/education/treeforallseasons/nativetrees.html>

Minnesota Wildflowers. 2017. *Minnesota Wildflowers, a Field Guide to the Flora of Minnesota*. Accessed Oct. 17, 2017 from <https://www.minnesotawildflowers.info/>

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