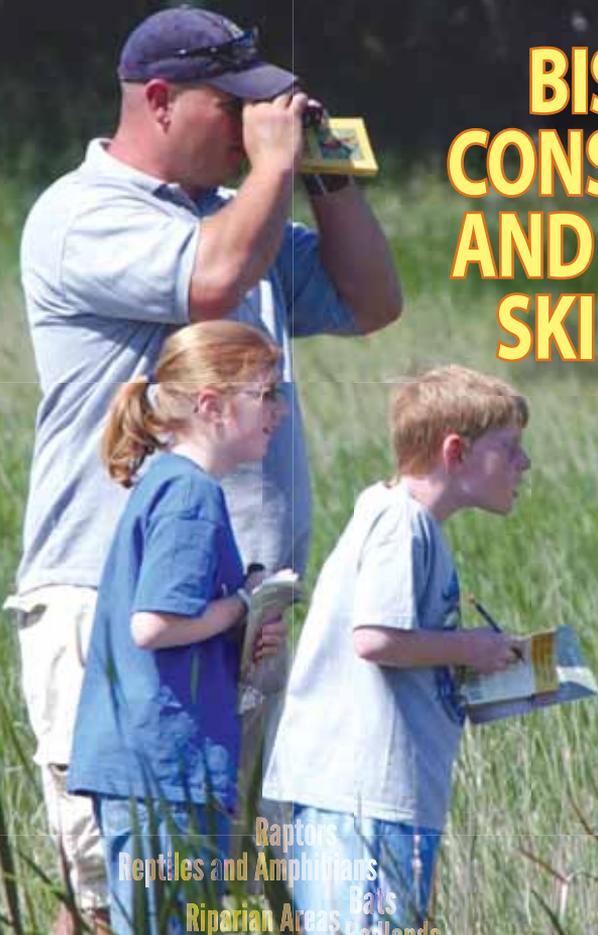


BISMARCK CONSERVATION AND OUTDOOR SKILLS AREA



Raptors
Reptiles and Amphibians
Bats
Riparian Areas
Batlands
Deciduous Forest
Upland Nesting
Temporary/Seasonal Wetland
Decomposition
Wildlife Tracks
Wetland Benefits
Brush Piles
Cottonwood Forest
Wetland Threats
Small Rivers and Streams
Semi-permanent Wetland
Wetland Birds
Native Grasses and Wildflowers
CRP
Man-made Nesting Structures

Snags
Water Cycle
Invertebrates
Aging Trees
Beaver Lodge
Upland trail
Cattails
Wetland trail



**North Dakota
Game and Fish Department
Conservation and Outdoor Skills Area**

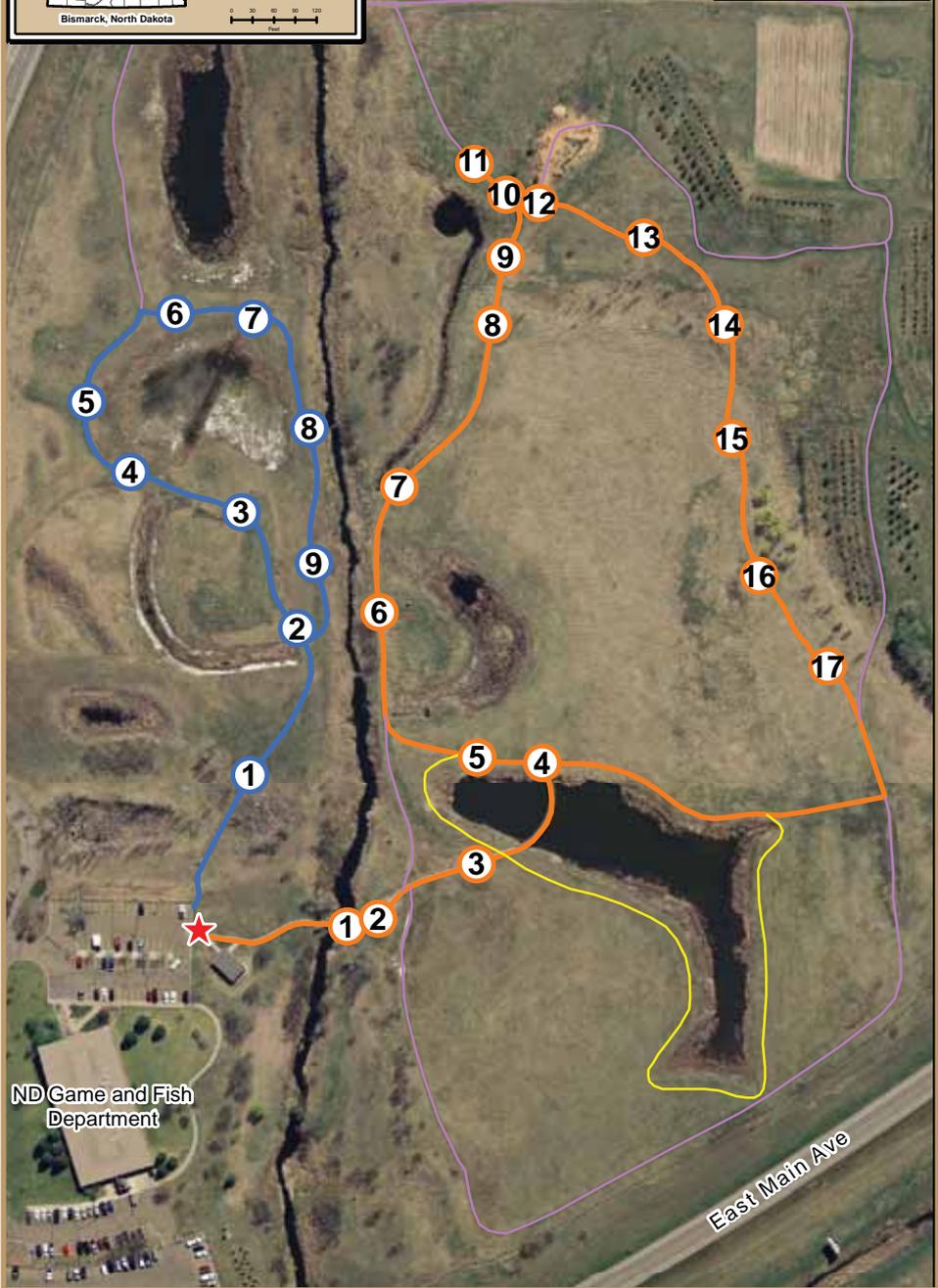


Bismarck, North Dakota



Map Features

- ★ Start of Trails
- Orange line Upland Interpretive Trail (0.75 mi.)
- Blue line Wetland Interpretive Trail (0.41 mi.)
- Yellow line Fish Identification Trail
- Purple line Additional Trails



ND Game and Fish
Department

East Main Ave

The red star on the opposite page is the starting point for BOTH the wetland and upland interpretive trails. The following pages contain questions and activities that will test your knowledge at each stop.

WETLAND TRAIL

- Stop 1.** Cattails
- Stop 2.** Water Cycle
- Stop 3.** Wetland Benefits
- Stop 4.** Temporary/Seasonal Wetland
- Stop 5.** Wetland Threats
- Stop 6.** Semi-permanent Wetland
- Stop 7.** Invertebrates
- Stop 8.** Wetland Birds
- Stop 9.** Small Rivers and Streams

WETLAND TRAIL INTERPRETIVE SITES

- Stop 1. Cattails:** Cattails are a common wetland plant found along the edges of wetlands. They are very beneficial to these habitats, providing food and shelter for a variety of animals and aiding in the filtering and cleansing of runoff entering these water bodies.
- Stop 2. Water Cycle:** Water is constantly moving in a continuous pattern called the hydrologic cycle. The sun warms water on the surface of the earth causing it to evaporate and form clouds. Clouds then drop moisture to the ground in the form of rain or snow. Each wetland has its own water collection area on the ground called a watershed. Water stored in wetlands is purified as it moves into the ground. Part of the water in wetlands evaporates back into the sky to start the cycle once again.

- Stop 3. Wetland Benefits:** Wetlands are very beneficial for people and wildlife. They provide important habitat for many wildlife and plant species. Wetlands create clean water by filtering out pollutants. They store water and prevent flooding in some areas. Some water from wetlands filters into the ground creating aquifers which provides a source of water for drinking, irrigation, livestock and industrial uses. It is important for all of us to keep this source of water clean.
- Stop 4. Temporary/Seasonal Wetlands:** Temporary and seasonal wetlands only contain water for a portion of the year. Temporary wetlands will dry out quicker than seasonal wetlands. Both provide important resting and feeding sites for migrating birds.
- Stop 5. Wetland Threats:** Wetlands have historically been thought of as not very important areas. Therefore, many have been drained for agriculture and development. Today, remaining wetlands are constantly threatened by pollutants and soil that run into them.
- Stop 6. Semi-permanent Wetlands:** Semi-permanent wetlands contain water year-round unless there has been a period of dry conditions. Many bird species take advantage of these wetlands for rearing young in what is termed "brood water". Vegetation that grows along the shoreline provides good protection from predators. Shore and wading birds also use these wetlands for feeding areas. Reptiles and amphibians make this water their homes. In the winter, vegetation in semi-permanent wetlands can be important cover for both birds and mammals.
- Stop 7. Invertebrates:** There are thousands of species of invertebrates. These creatures are characterized by having no backbone and include insects, shellfish, worms and crustaceans. Since many invertebrates are very small and provide food for larger organisms, they create the

beginning of the food chain. A large variety of invertebrates is generally a good sign of a healthy wetland.

Stop 8. Wetland Birds: Many species of birds utilize wetland habitats for rest stops during migration and raising young. They are commonly grouped into waterfowl, which includes ducks and geese, and shore or wading birds like herons, sandpipers and egrets. Some species commonly found in North Dakota wetlands are great blue heron, black-crowned night heron, great egret, avocet, willet and spotted sandpiper.

Stop 9. Small Rivers and Streams: These wetlands move precipitation that falls to earth to storage wetlands, thus helping in flood prevention. They also provide important habitat for aquatic organisms and many species of mammals and birds that rely on the unique food and cover found in these special habitats.

WETLAND TRAIL QUESTIONS

Stop 1. _____ eat cattails and use them to create huts in which they live.

Stop 2. Water is continually recycled, while underground it can be stored in an _____.

Stop 3. List three benefits of having a wetland:

A. _____

B. _____

C. _____

Stop 4. _____ in temporary and seasonal wetlands warms up faster in the spring and provides _____ for migrating waterfowl.

Stop 5. What are two main threats to wetlands?

A. _____

B. _____

Stop 6. _____ wetlands hold water longer than temporary and seasonal wetlands and provide protection for young waterfowl.

Stop 7. Invertebrates have no _____ and are considered the beginning of the _____.

Stop 8. List three wetland birds other than ducks or geese found on North Dakota wetlands.

A. _____

B. _____

C. _____

Stop 9. Small rivers and streams move snow/rainfall to _____ or larger _____.



WETLAND TRAIL WORD SEARCH

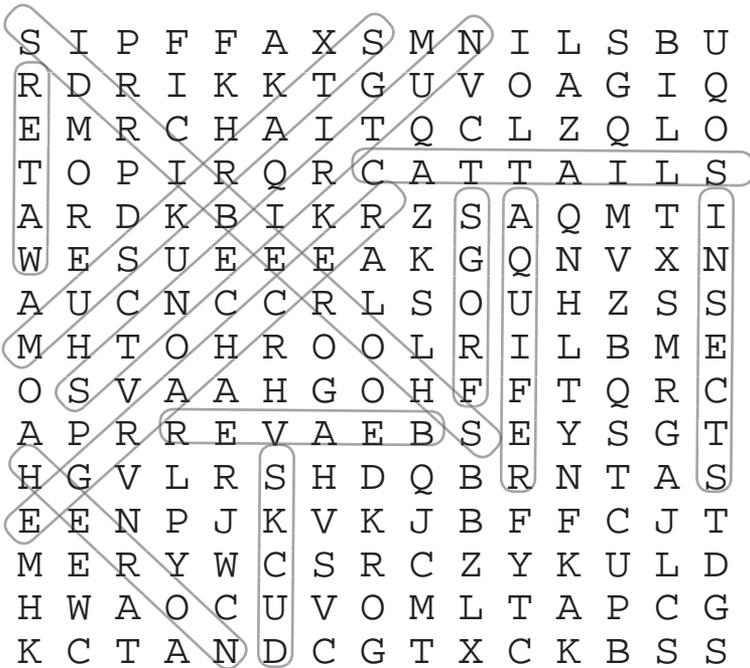
S I P F F A X S M N I L S B U
R D R I K K T G U V O A G I Q
E M R C H A I T Q C L Z Q L O
T O P I R Q R C A T T A I L S
A R D K B I K R Z S A Q M T I
W E S U E E E A K G Q N V X N
A U C N C C R L S O U H Z S S
M H T O H R O O L R I L B M E
O S V A A H G O H F F T Q R C
A P R R E V A E B S E Y S G T
H G V L R S H D Q B R N T A S
E E N P J K V K J B F F C J T
M E R Y W C S R C Z Y K U L D
H W A O C U V O M L T A P C G
K C T A N D C G T X C K B S S

AQUIFER	INSECTS
BEAVER	MUSKRATS
CATTAILS	NUTRIENTS
DUCKS	RECHARGE
FROGS	SHOREBIRDS
HERON	WATER

ANSWERS TO WETLAND TRAIL QUESTIONS

- Stop 1.** Muskrats
- Stop 2.** Aquifer
- Stop 3.** Prevent flooding, creates habitat, recharge groundwater (could be others from the sign)
- Stop 4.** Water, food
- Stop 5.** Sedimentation, nutrification
- Stop 6.** Semi-permanent
- Stop 7.** Backbone, food chain
- Stop 8.** Sandpipers, red-winged blackbird, yellow headed blackbird, great blue heron, willet, black-crowned night heron
- Stop 9.** Lakes, rivers

ANSWERS TO WETLAND TRAIL WORD SEARCH



UPLAND TRAIL

- Stop 1. Riparian Areas
- Stop 2. Native Grasses and Wildflowers
- Stop 3. CRP
- Stop 4. Wildlife Tracks
- Stop 5. Reptiles and Amphibians
- Stop 6. Man-made Nesting Structures
- Stop 7. Snags
- Stop 8. Cottonwood Forest
- Stop 9. Beaver Lodge
- Stop 10. Deciduous Forest
- Stop 11. Aging Trees
- Stop 12. Badlands
- Stop 13. Decomposition
- Stop 14. Brush Piles
- Stop 15. Upland Nesting
- Stop 16. Raptors
- Stop 17. Bats

UPLAND TRAIL INTERPRETIVE SITES

- Stop 1. **Riparian Areas:** Riparian areas are zones of vegetation that grow along the edges of rivers and streams. They stabilize vegetation to prevent erosion and sedimentation into other wetlands. Riparian areas host a variety of unique types of vegetation since they tend to have ample moisture.
- Stop 2. **Native Grasses and Wildflowers:** Native prairie is made up of a variety of grasses and wildflowers that have survived for thousands of years. A large portion of the native prairie in North Dakota has been converted to cropland. Many wildlife species that depend on this habitat have been negatively affected by the loss. Prairie stabilizes the soil to prevent erosion, provides a habitat for ground

nesting birds, and its plants provide food for wildlife and insects.

- Stop 3. CRP:** The Conservation Reserve Program is a government funded plan which puts marginal and highly erodible farmland back into grass. The vegetation created by CRP over the years has increased the habitat available for wildlife and helps minimize soil erosion.
- Stop 4. Wildlife Tracks:** Wildlife tracks can be encountered just about everywhere – while camping, hunting, or just relaxing outdoors. Being able to identify them allows you to see what kinds of animals may live in an area.
- Stop 5. Reptiles and Amphibians:** These animals are considered “cold-blooded” meaning they can’t regulate their own body temperature. Amphibians like frogs, toads and salamanders lay eggs in the water that hatch into larvae with gills, then develop into adults with lungs. Reptiles like turtles, snakes and lizards develop in an egg laid on the ground or in an egg inside the female. They resemble their parents at the time of hatching.
- Stop 6. Man-made Nesting Structures:** Artificial nesting structures are not a replacement for good natural habitat, but can be important when natural habitats have been destroyed. Along with providing important nesting habitat for birds, they also bring wildlife into places where they can be viewed and enjoyed. Examples of nesting structures include wood duck boxes, bluebird boxes, bat houses, goose nesting tubs and culvert structures, and purple martin houses.
- Stop 7. Snags:** These include dead trees that have fallen to the ground, into water, or remain standing. In the water, they help stabilize the banks of rivers and provide habitat for organisms that are food for fish, reptiles, amphibians and birds. Standing snags provide homes for cavity nesting birds.

- Stop 8. Cottonwood Forest:** Cottonwood trees are primarily found lining riparian areas and wetlands. They require a bare piece of earth to get their start. Fluffy seeds blow around in the air during mid-summer and stick to mud or sand where the water has recently receded. The historic flooding and receding periods along the Missouri River grew many large cottonwoods. Since most areas don't flood today, most cottonwoods are either dead or dying.
- Stop 9. Beaver Lodge:** Beavers are the largest rodents in North America. They cut down trees to build dams, creating water habitat for themselves and other wildlife. They also build a home of cut trees and mud called a lodge. Their preferred food is the bark of aspen, willow, ash and cottonwood trees. They make a pile of branches called a cache outside their lodge to survive during winter.
- Stop 10. Deciduous Forest:** Deciduous trees lose their leaves each fall. In North Dakota, these forests can be found in the Turtle and Killdeer mountains, along rivers, and in the badlands. They provide excellent habitat for deer, songbirds, turkey and elk.
- Stop 11. Aging Trees:** Each year trees leave behind a sign that will help tell their age. They produce one growth ring each year. In wet years they are thicker than during dry years. Use this knowledge to determine the age of the tree trunks at this stop.
- Stop 12. Badlands:** Formed from ancient rivers, wind and water erosion, the badlands are found in western North Dakota. The climate is much drier than the rest of the state, therefore, the area is unique to various plants and animals.
- Stop 13. Decomposition:** This is the process where dead ani-

mals are broken down by bacteria and fungi. Rates of decomposition vary with temperature and precipitation. The dead animal is utilized by mammals like the coyotes, insects and turkey vultures. If anything remains, it is recycled into the soil.

Stop 14. Brush Piles: Brush piles are man-made from tree branches and bushes. They provide escape cover, nesting sites and shelter to many small mammals and birds.

Stop 15. Upland Nesting: Many birds make their nests on the ground rather than in a tree or cavity. These nesters require quality grasses to provide protection from the weather and predators. Some of these birds include ducks, turkeys, pheasants and native sparrows.

Stop 16. Raptors: Raptors include birds such as hawks, falcons, eagles and owls. These birds are hunters, preying on small mammals, reptiles, amphibians, and other birds for food. Raptors vary greatly in size – the largest in North Dakota is the golden eagle with a wing span reaching up to 7 feet.

Stop 17. Bats: Bats are the only true flying mammal. They are active mostly at night. The main food source for bats is insects. They use echolocation to find their food. Bats roost (rest) in locations such as under the bark of trees. The most common bat in North Dakota is the little brown bat.

UPLAND TRAIL QUESTIONS

- Stop 1.** List three benefits of a riparian area:
- A. _____
- B. _____
- C. _____
- Stop 2.** Native _____ and _____ are important habitat for many bird and wildlife species.
- Stop 3.** Highly erodible farmland is put into programs like _____ to create vital habitat for ground nesting birds and white-tailed deer.
- Stop 4.** Name three different wildlife tracks that you can see:
- A. _____
- B. _____
- C. _____
- Stop 5.** Reptiles include animals such as _____ and _____, while amphibians include _____ and _____.
- Stop 6.** List two man-made nesting structures that you see on your hike:
- A. _____
- B. _____
- Stop 7.** Snags are _____ trees that are found in water or on land and create important _____ for wildlife.
- Stop 8.** What are the fastest growing trees in North Dakota?
- Stop 9.** Beavers cut down trees to build _____ and _____; the bark of trees is also their main food source.

- Stop 10.** The main type of forest found in North Dakota is _____ forest.
- Stop 11.** Using the tree stumps on the trail; record the age of one here: _____.
- Stop 12.** The badlands are found in _____ North Dakota, and are home to a variety of different plants and animals.
- Stop 13.** After animals die, their bodies _____ and become a part of the _____.
- Stop 14.** _____ are man-made structures made of tree branches and bushes.
- Stop 15.** Many birds such as _____, _____, _____, and _____ make their nests on the ground and require tall grasses for protection.
- Stop 16.** How big are your wings? Which raptors have the largest wingspan? _____
- Stop 17.** Bats are important because they eat _____ which they find using _____.

UPLAND TRAIL WORD SEARCH

S N A G S H U F X S S F A E P
Q M B H K P T L O D E Q I M C
L V O B D H T Y J R L D T S K
S U O U D I C E D I T S X C H
H R E D S S G N H B R P G U D
Z S V F U R E Q T G U J W N M
O M U T S S E N O N T D P S C
Z V C R T T A W U O E A G L E
O A Q S B S A D O S D E C A Y
C M V D A G J B R L F Q X H Y
Y V E E M R Z Z Z H F A O T A
D E H G R A S S E S O D C R P
R P D O O W N O T T O C L U S
R A C C O O N O A N M T C I V
O Z K Y E E X J E T W V I A W

BATS

DECIDUOUS

PHEASANT

BRUSH

DEER

RACCOON

CACTUS

EAGLE

SNAGS

COTTONWOOD

FISH

SONGBIRDS

CRP

GRASSES

TURTLES

DECAY

NESTS

WILDFLOWERS

ANSWERS TO UPLAND TRAIL QUESTIONS

- Stop 1.** Stabilize bank, improve water quality, habitat for plants and animals (could be others from the sign)
- Stop 2.** Grasses, wildflowers
- Stop 3.** CRP
- Stop 4.** Raccoon, goose, elk, deer, pheasant, badger, etc. (others that are mentioned or noticed by teacher/guide)
- Stop 5.** Reptiles: turtles, snakes; Amphibians: frogs, toads
- Stop 6.** Wood duck nest box, bluebird nest box, goose tubs, bat houses, culvert nesting structure, purple martin house, etc.
- Stop 7.** Dead, habitat
- Stop 8.** Cottonwood trees
- Stop 9.** Lodges, dams
- Stop 10.** Deciduous forest
- Stop 11.** _____
- Stop 12.** Western
- Stop 13.** Decay, soil
- Stop 14.** Brush piles
- Stop 15.** Songbirds, ducks, turkeys, sharp-tailed grouse
- Stop 16.** Their wing span, eagles
- Stop 17.** Insects, echolocation



ANSWERS TO UPLAND TRAIL WORD SEARCH

S	N	A	G	S	H	U	F	X	S	S	F	A	E	P
Q	M	B	H	K	P	T	L	O	D	E	Q	I	M	C
L	V	O	B	D	H	T	Y	J	R	L	D	T	S	K
S	U	O	U	D	I	C	E	D	I	T	S	X	C	H
H	R	E	D	S	S	G	N	H	B	R	P	G	U	D
Z	S	V	F	U	R	E	Q	T	G	U	J	W	N	M
O	M	U	T	S	S	E	N	O	N	T	D	P	S	C
Z	V	C	R	T	T	A	W	U	O	E	A	G	L	E
O	A	Q	S	B	S	A	D	O	S	D	E	C	A	Y
C	M	V	D	A	G	J	B	R	L	F	Q	X	H	Y
Y	V	E	E	M	R	Z	Z	Z	H	F	A	O	T	A
D	E	H	G	R	A	S	S	E	S	O	D	C	R	P
R	P	D	O	O	W	N	O	T	T	O	C	L	U	S
R	A	C	C	O	O	N	O	A	N	M	T	C	I	V
O	Z	K	Y	E	E	X	J	E	T	W	V	I	A	W



North Dakota Wildlife Facts



The state fish is the northern pike.



The largest paddlefish caught in ND weighed 120 lbs.

eight species of snakes inhabit ND

Bull snakes can reach a length ranging from 5 TO 6 feet.



A common snapping turtle can weigh up to 65 pounds.



A little brown bat can eat up to 1,200 mosquitoes within an hour.



Peregrine falcons can reach speeds of 200 mph or more when diving to capture prey



Pronghorns are the fastest land mammal in North America reaching speeds of more than 40 mph.



Shrews are the smallest mammal in ND



A muskrat can hold its breath underwater for up to 15 minutes.



There are five species of toads and four species of frogs in ND



Owls have special adaptations such as night vision, soft feathers and faces shaped like a dish to gather sound while hunting at night.



Wood ducks nest within cavities of dead and dying trees.



Beavers are the largest rodents in North America.



The howl of a coyote can be heard up to 3 miles away



Eighty species of mammals can be found in ND



There are 10 species of bats in ND



ND waters are home to nearly 75 species of fish.

The shrike is the only carnivorous songbird in the state.

A ruby-throated hummingbird's heart beats at 1,200 times per minute while in flight.



Fish the Conservation and Outdoor Skills Area Pond year-round!



Open for public fishing during daylight hours seven days a week.

On Wednesdays and Saturdays (June - August),
bait, tackle and instructor volunteers are provided.



The picnic shelter is available for public use. Groups of 10 or more need to make a reservation by calling the Bismarck North Dakota Game and Fish Department office at (701) 328-6300.

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