8 COULEES

French fur traders in the 1800's called these long, narrow valleys with low drainage areas, coulees. They are frequented by numerous birds and animals that seek food and shelter, especially in the winter when cold winds sweep across the rolling native prairie. Look carefully and a deer may be seen in the distance. Deer are most active around dawn and dusk, feeding on tender shoots of plants.

9 COTTONWOOD TRAIL

Cottonwood Trail received its name because of the large number of cottonwood trees planted here in the late 1930's by the CCC's. Dead or alive, the cottonwood tree is valuable in nature. It is used as a perch for hawks, owls and songbirds and as a home and dining area for flickers and woodpeckers.

Cottonwood Trail consists of two loops. One is ½ mile long and features a scenic overlook area. The longer loop is one mile long and continues from the overlook area down through the coulee and up on the ridges that surround it.

10 CREEPING SHORELINE

Underwater plants in the center of the pool are slowly killing this marsh! As plants die, they decay. The decayed material falls to the marsh floor and forms a mat called "humus". Humus provides larger plants, such as bulrushes and cattails, with a place to become anchored. Their roots can then secure necessary soil elements.

Grasses, such as the tall phragmites, and other plants along the shore will gradually occupy the fertile drying humus left behind by the aquatic plants. This process is called plant succession. As a result of succession, the shoreline of a marsh eventually meets in the center. After hundreds of years, this marsh will probably disappear.

To maintain this area as a marsh, the vegetation must be managed. Periodically the marsh is dried out, the vegetation is either mowed, burned or disced and then reflooded. This sets back the succession process and promotes aquatic plant growth that benefits wildlife.

11 PRAIRIE WILD ROSE

The prairie rose (Rosa arkansana) is the state flower of North Dakota, and is another example of wildlife habitat. These thickets provide protective cover to a variety of wildlife. The flowers are pink to pinkish-white and bloom from May to July. Wild roses grow in moist soil and are found on hillsides, in valleys or along streams.

12 DUCKS DINING ROOM

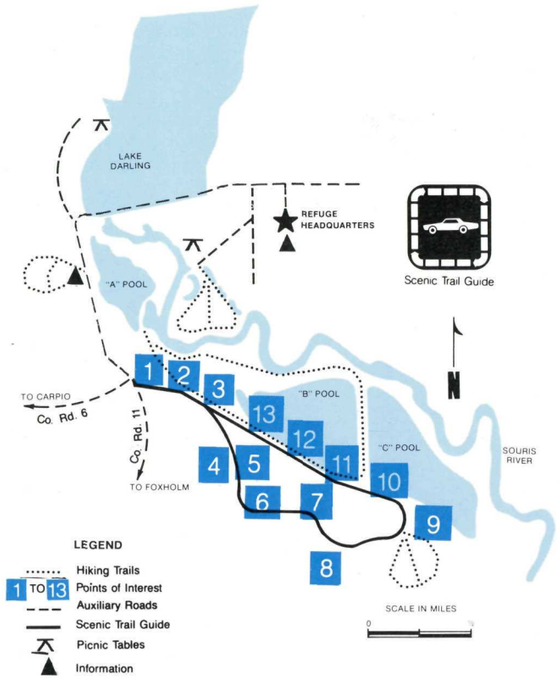
This marsh is a duck's dining room. The hen brings her ducklings here for their first meal. With necks outstretched, the ducklings skitter across the water in pursuit of mosquitos and water insects. When about six weeks old, ducklings exchange downy fluff for true body feathers. Soon they begin to feed on plants, dipping their heads and necks under water. Gradually, plants replace animal matter as the duck's major food.

These pools are good places to see a wide variety of waterfowl and other wildlife. A closer look might reveal a muskrat or a mink. Listen to the many different calls of the marsh birds. We encourage our visitors to walk along the dike and take a closer look at a classic example of a changing marsh.

13 ALTERNATIVE NESTING SITES

Nesting sites for Canada geese were scarce at Upper Souris NWR. Female geese that nested seemed to prefer muskrat houses as nesting sites. As few muskrat houses existed on the refuge, the flax bales which are similar in appearance to muskrat houses were introduced in 1973 as alternative nesting sites. These large round bales are set out in the winter. The bales are hauled onto the ice and eventually settle through the ice in an upright position. In spring and summer the bales are surrounded by water and are relatively safe from skunks, raccoons, coyotes and other predators which may destroy unprotected nests. Canada geese now nest in abundance on the refuge.

This is the last stop on the Auto Tour Route. Further down the road there is two way traffic, so please drive carefully. We hope you enjoyed your visit and we welcome you back in the future.



U.S. FISH AND WILDLIFE SERVICE
Department of the Interior

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UPPER SOURIS

SCENIC TRAIL GUIDE

Welcome to the Upper Souris National Wildlife Refuge. The refuge was established in 1935 for wildlife management and the preservation and propagation of migratory waterfowl. Upper Souris contains more than 32,000 acres and extends for nearly 30 miles along the beautiful Souris River Valley.

As you proceed along the tour route or hike the trails, we suggest you go slowly to see and enjoy the unexpected things that are not described in the pamphlet nor on roadside interpretive signs. You may see deer browsing in the tall grass, or a brood of ducks headed for the safety of the water. A red-tailed hawk may be soaring high above in search of food. These are some of the unexpected things that help make the tour so enjoyable.

Two picnic areas are available for your use. These are located at the Outlet Fishing Area southeast of Lake Darling Dam and at Landing 3 north of the dam. In addition, the refuge offers 11 public fishing areas.

Informational pamphlets are available at the Refuge Headquarters and at the Interpretive Site southwest of the dam. The refuge office is open Monday through Friday from 8:00 a.m. until 4:30 p.m.

Numbered signs along the scenic trail correspond to the points of interest described in this pamphlet. The tour begins at the gate located 100 yards south of the intersection of Ward County Roads 6 and 11. Please follow the signs at the west end of the dam to find the scenic drive entrance.

1

PELICAN TRAIL

Pelican trail offers a three mile hike around "B" Pool. Pelicans, Canada geese, blue-winged teal, mallards, deer, muskrat and mink are often seen in this area. The viewing loop to "A" spillway is a ¼ mile hike one way and is an excellent area to view waterfowl and a wide variety of other wildlife. Be patient and look carefully; wildlife are wary of strange noises and unexpected visitors.

Note: these trails may be closed at times to prevent disturbance to nesting and resting waterfowl. Please obey the signs.

2

WILDLIFE FOOD

The bushes in front of you are chokecherry. In the late summer you will see an abundance of bluish-black berries that are a favored food of wildlife. Native Americans used to dry the berries and grind them to use in pemmican or mincemeat.

Other berries are also evident alongside the trail. June berries, for example, ripen in June, producing bluish-red berries. In the fall, Hawthorn and buffalo berry shrubs yield clusters of reddish fruit. Russian olive, a silvery-green shrub, produces grey-colored berries that are especially useful to wildlife in late winter.

All of these berries are eaten by wildlife, but occasionally corn, sunflowers, milo, oats, and other small grains are planted and left standing in the fields to supplement wild food. During extreme winters when food is covered by snow, refuge workers may put out bales of grain to help wildlife survive.

3

DENSE NESTING COVER

This thick stand of vegetation is one of many areas of dense nesting cover (DNC) planted on the refuge. DNC is a mixture of alfalfa, sweet clover, intermediate and tall wheatgrass. It provides one of the best protective covers for upland nesting ducks, such as mallards, pintails, and shovelers. Some ducks nest as far as two miles from the nearest water. Without adequate protective cover, raccoons, red fox, skunks, and other predators destroy duck eggs and severely limit production.

4

GREEN ASH

The rows of trees in the coulee below are Green ash, (Fraxinus pennsylvanica.) They were planted in the late 1930's by the Civilian Conservation Corps.

Green ash is a fast-growing hardwood that is extremely resistant to hot and cold temperatures. Indians used the wood for making bows. Early settlers found this hardwood especially good for hammer and axe handles. Green ash is often used in windbreaks and helps prevent wind and water erosion. In winter, the blowing snow is caught by the trees and provides an increased moisture supply for plants.

5

VIEWING AREA

The Civilian Conservation Corp (CCC) was activated by President Roosevelt in 1933 to alleviate widespread unemployment. Through the establishment of conservation camps, young men could work on forest and conservation projects.

The dike work, nesting island and control structures seen below were CCC projects intended to improve habitat for migratory waterfowl. They are still in use today.

Water levels may be raised or lowered at the control structures to encourage the growth of food-producing aquatic plants. Careful maintenance of water levels stablilizes marsh vegetation and prevents flooding of nesting sites.

6

THICKETS

Thickets such as this one are a valuable source of food, shelter and cover for wildlife. Small birds and mammals find these thickets excellent for escape cover. White-tailed deer, rabbits and porcupines use these areas frequently for feeding. Deer browse is evident on the black stems of the chokeberry and juneberry bushes.

7

NATIVE GRASSES

As you leave your car at the native grass display, listen to the wind rustling the prairie. The wind sweeps unhindered, rolling the grasses into wave after wave of undulating motion.

The display area is a typical native grassland. Pamphlets are available to explain each of the ten native grasses in greater detail. How many of the native grasses can you identify in the grassland around the exhibit?

Historically the prairies used to burn following a lightning storm. This is good for the grass because the fire removes old dead litter that slows plant growth. These prairies are burned as needed in the spring to rejuvenate the grasses and forbs.