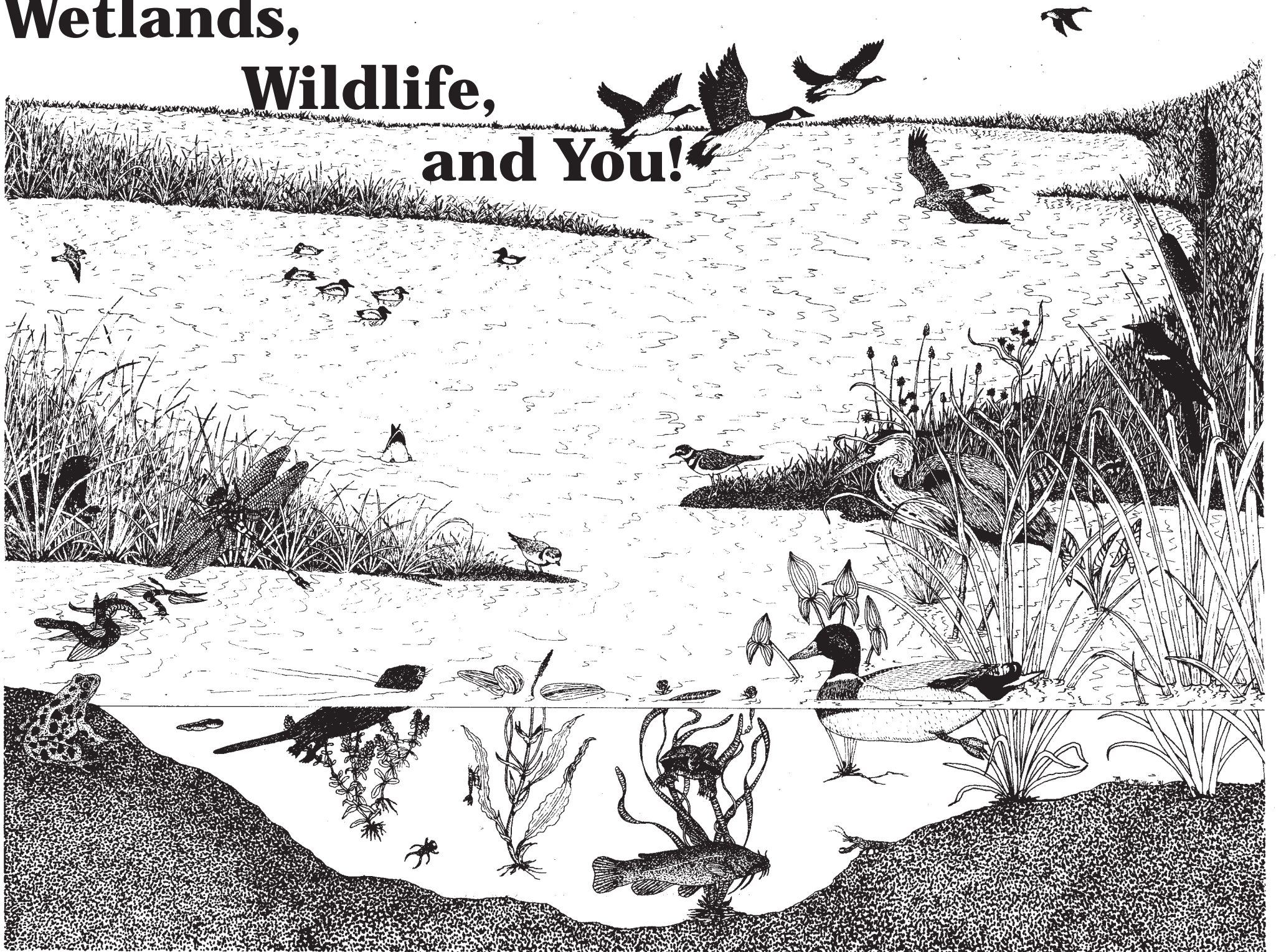


Wetlands,

Wildlife,

and You!



Like winds and sunsets, wild things were taken for granted until progress began to do away with them. Now we face the question whether a still higher standard of living is worth its cost in things natural, wild, and free.

—Aldo Leopold in *A Sand County Almanac*

The Wetland Zone...

“Ooo, yuck!” you cry as the goo from the bottom oozes up between your toes. A sulphury smell reaches your nose. A winged creature cries out in alarm and flaps away. Something green and slimy “plunks” into the water and dives into the tangled plants near your feet. Are you in danger? No. You have just entered the Wetland Zone!

Lucky you! You’ve found a fascinating, beautiful, and useful “prairie pothole,” one of the many types of wetlands found across the United States and Canada. The winged creature was a mallard duck whose afternoon siesta you disturbed. The “plunk” was from a frog. The smell was from decaying plants that create the soil oozing up between your toes.

Wetlands — the word defines itself. It’s land that has water in and on it. It’s a wet spot, a bog, a marsh, a swamp, a lake, a river, a slough (pronounced *slew*), an oxbow, a pothole. It’s a place where you can get your feet wet!

We used to have many of them in the upper Midwest. But, since the mid-1800’s, we’ve been filling them and draining them at a rapid rate to gain cropland, and to make way for towns, cities, industries, and roads. In fact, depending on the state or province that you’re in, we’ve lost from 60 to 98 percent of all the wetlands that were here in 1850. The trade-off, of course, is a highly productive agricultural system, nice towns and cities, and industries that make goods and provide important services. But to many people these

benefits do not outweigh the cost of losing wetlands.

Wetlands are an important natural resource. They are just about the most productive ecosystem on Earth. Most wetlands in this region were formed as glaciers melted some 10,000 years ago. As the ice withdrew, it left behind thousands of depressions in the ground. Filled with water, they became **prairie potholes**. While there are other kinds of wetlands in this region, we’ve lost more prairie potholes than any other type. They serve many important purposes.

What good is a prairie pothole wetland?

- Pothole wetlands are important water storage areas, especially for the heavy rains of spring. They release their water slowly, and help prevent flooding of streams and river valleys.
- Pothole wetlands trap sediment that may erode from upland areas. This prevents silt from clogging up the streams and filling in the lakes. Pothole wetlands trap many chemicals that are carried on the silt, preventing them from polluting rivers, streams, and groundwater.
- Pothole wetlands filter out nutrients that run off upland areas. Wetland plants use up many of these nutrients, keeping them out of streams and rivers where they would over-enrich the waters.
- Pothole wetlands serve as natural sponges, holding excess water and increasing soil

moisture. In some areas, wetlands recharge groundwater systems that feed water into people’s wells.

- Pothole wetlands provide cover, food, and water for hundreds of species of wildlife year-round. These include insects, fish, reptiles, amphibians, birds, and mammals — and YOU!
- Pothole wetlands provide recreation for thousands of people each year. Wildlife watchers, photographers, hunters, trappers and many others use wetlands.

So, as we’ve lost wetlands, we’ve lost a lot. But many things are being done to save the wetlands that are left. The Canadian provinces of Alberta, Saskatchewan, and Manitoba, and the states of Montana, North Dakota, South Dakota, Minnesota, and Iowa have formed partnerships called “Joint Venture.” These joint ventures are part of the North American Waterfowl Management Plan. It’s made up of government agencies, private conservation groups, and concerned individuals all working hard to educate people about the value and functions of wetlands, and protect and restore them.

We need your help! Learn all you can and help spread the word. Get your feet wet by jumping into the articles, drawings, and games in the rest of this newspaper.

Get into the Wetland Zone!

Muskrats and Mink:

Mammal Marvels of the Marsh!

Wetlands are important places for mammals, too. We usually think of beavers as important wetland builders. Indeed they are, cutting trees with their sharp front teeth to dam a stream, slowing down the water to flood an area and creating a small wetland pond.

But prairie potholes are more often home for two other mammals, the muskrat and the mink.

Like the beaver, muskrats are rodents. They are **herbivores** (plant-eaters) and depend on the roots, shoots, and leaves of wetland plants for food and lodging. Though they may burrow into dirt banks, muskrats usually build dome-shaped homes of plants, especially cattails and bulrushes. The domes may be over 3 feet high and up to 9 feet wide. Whether a muskrat home is a bank den or a marsh plant house, the entrance is always underwater. During the winter, they “eat themselves out of house and home.” Muskrats eat the walls of their plant houses from the inside out!

Their webbed back feet help them to be excellent swimmers. Eyes located on top of their heads allow them to see while swimming, though they are rather near-



sighted. The muskrat’s tail is covered with scales instead of fur. It is flattened vertically (the opposite of a beaver’s which lies flat upon the ground or water). Muskrats use their tails as rudders to help them steer through the water.

Their sharp front teeth (**incisors**) grow constantly and wear at an angle. This helps the teeth stay long enough and sharp enough to cut the tough wetland plants.

Muskrats breed several times each year, having 3-9 young in each litter. You can see how the numbers of muskrats (the **population**) could build up quickly. When there are too many muskrats in a wetland, they can and sometimes do eat too many of the wetland plants. The wetland becomes more open, depriving it of the cover of wetland plants. Muskrats must then move or die, because there is nothing more for them to eat.

Fortunately, wetlands have some predators to help control muskrat populations. People often trap muskrats for their fur, which helps to keep muskrat populations at levels where they don’t eat-out the wetland.

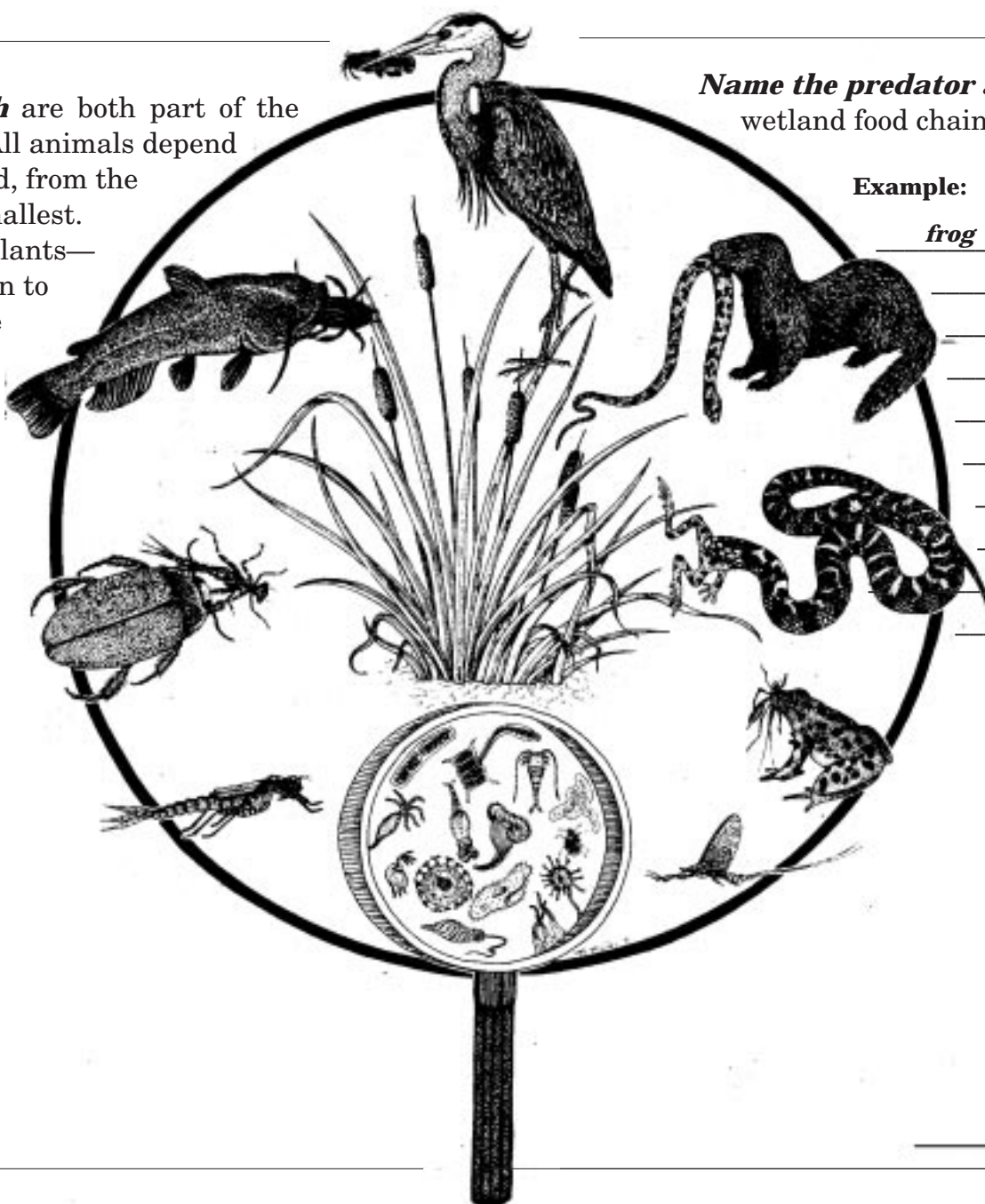
Mink are also important predators on muskrats. These sleek, beautiful animals are members of the family of animals we call **Mustelids**. All members of the family have special glands that give off strong smells. Yes, skunks are relatives of the mink. So, too, are weasels, ferrets, marten, fisher, otters, badgers, and wolverines.

Like all Mustelids, mink are **carnivores**. They are intelligent predators, using their keen sense of smell and sharp eyesight to detect their prey. Like all predators, mink are opportunists, taking almost any available kind of prey — birds, mice, fish, turtles, crayfish, frogs, and snakes. But among their favorite prey are muskrats. They often dig into the muskrat houses during the fall and winter, or swim after muskrats in the spring and summer. Mink are good swimmers and can sneak up on the near-sighted muskrat.

Mink use stream banks or rock or log piles for dens. Often they will occupy the former dens of muskrats they’ve just had for dinner!

Life and death are both part of the wetland cycle. All animals depend on others for food, from the largest to the smallest. Green wetland plants—capturing the sun to grow—are at the center of it all. The food chains illustrated here are two of many possible wetland food chains.

Can you think of any others?



Name the predator and the prey in each link of these wetland food chains.

Example:

frog eats insect (mayfly)

_____ eats _____

_____ eats _____

_____ eats _____

_____ eats _____

_____ eats _____

_____ eats _____

_____ eats _____

_____ eats _____

_____ eats _____

Black Bullhead:

The Whiskered Wonder of Deeper Wetlands

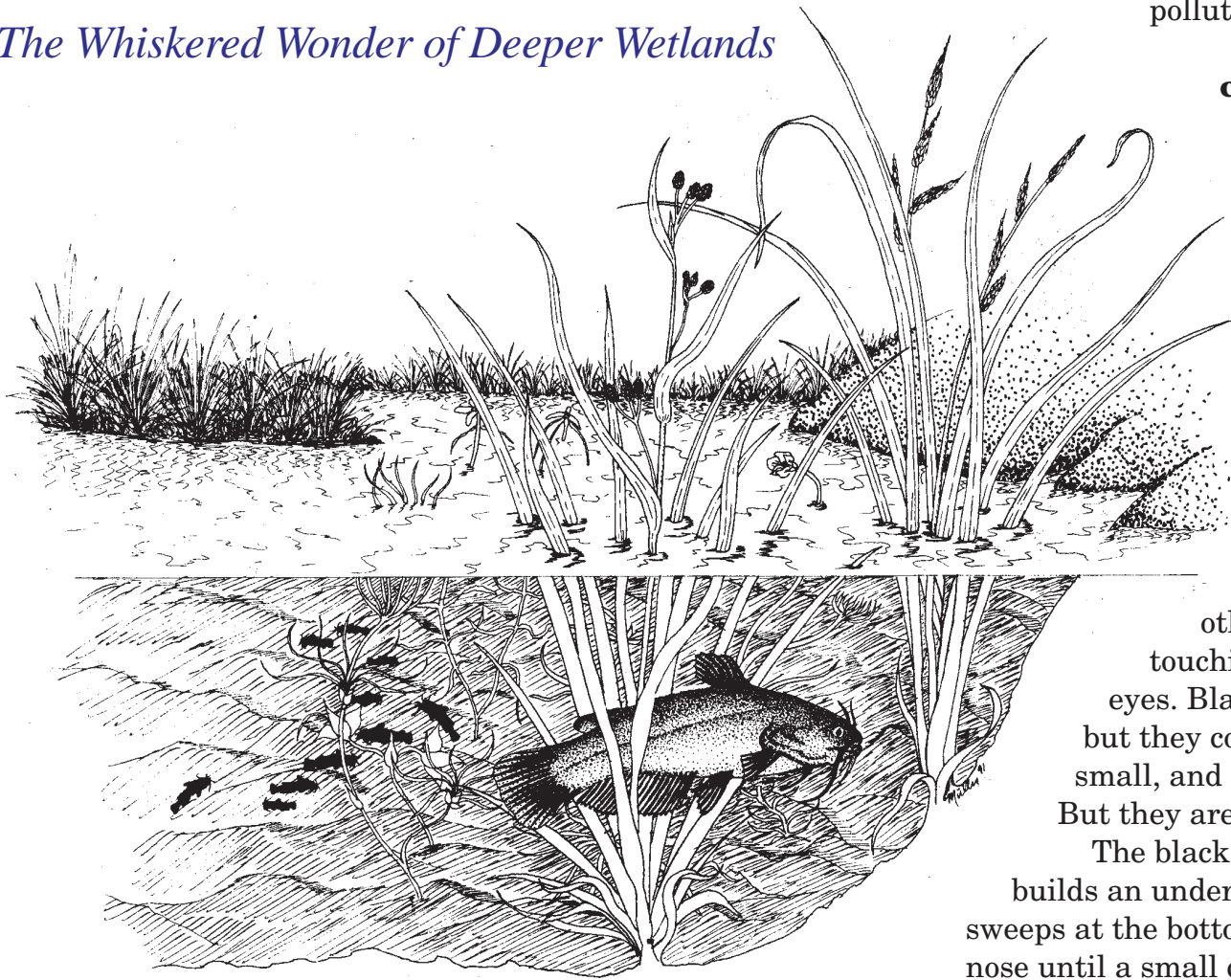
is quite at home. You might say the black bullhead is one tough fish. This fish is so tough it can even live in some polluted waters where other fish cannot survive.

The black bullhead is a member of the **catfish family** because it has six long, skinny **barbels** on its face that look like a cat's whiskers. The barbels are the bullhead's fingers and tongues. The bullhead uses the barbels to feel its way along in muddy water and at night. Tastebuds on the barbels allow bullheads to taste the food they touch.

Black bullheads eat whatever food is available. They eat plants, insects, small crayfish, leeches, snails, frogs, small fish, and even dead animals. Because they usually eat at night, bullheads use their barbels (along with other methods of tasting, smelling, and touching) to find their food instead of using their eyes. Black bullheads do not really need their eyes, but they could use a pair of glasses. Their eyes are small, and they cannot see as well as most other fishes. But they are not blind.

The black bullhead is a good parent. The female builds an underwater nest in which to lay her eggs. She sweeps at the bottom with her fins and pushes pebbles with her nose until a small cup-shaped nest is formed. The nest is closely guarded by both male and female until the eggs have hatched. When the young fish are big enough, they leave the nest, swimming in a tight mass called a **school**. Under their parents' watchful eyes, the school of young fish feeds until they are about one inch long. Then the parents leave, and the school is on its own. The young fish move to shallow shorelines to feed, relying on their spines for protection.

People enjoy fishing for black bullhead because they can be caught easily with worms, liver, or almost any kind of meat. They put up a good fight, and are very tasty.



A swarm of tiny black fish hovers in the shallow water at the edge of the wetland. Be careful! Grabbing one of these fish can give you a sharp jab. They may be small, but each of these young **black bullheads** is well-protected by a large, sharp **spine** on its back and one sticking out each side just behind its head. Because of these spines, predators that eat other fish do not often eat the black bullhead.

Not many other kinds of fish can live in the warm, shallow, low-oxygen waters of the wetlands. But here the black bullhead

Tigers in the wetlands?

What's black with olive-yellow blotches, has slimy skin, primitive teeth, and no claws, yet eats just about any living creature small enough to be swallowed? The tiger salamander! Its name comes not only from its coloration but also from its carnivorous (meat-eating) food habits.

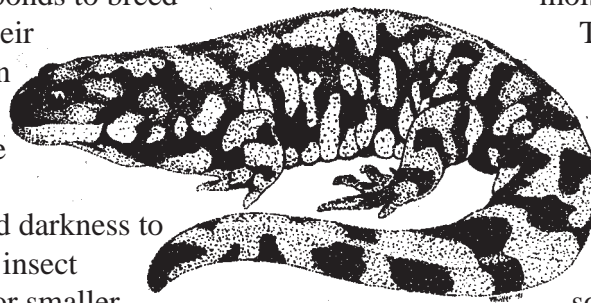
Like all amphibians, salamanders must live in moist environments and spend at least part of their life in the water. Tiger salamanders are in the group called "mole salamanders." They burrow into the fallen leaves and soils of upland areas. They also live in the burrows of mammals.

But wetlands are very important to them. Early each spring they migrate in large numbers to potholes and other ponds to breed and lay 100 or so of their gelatin-covered eggs in the shallow water. Afterwards, they move back to upland areas under cover of rain and darkness to burrow in and feed on insect larvae, worms, frogs, or smaller salamanders. Back at the wetlands, eggs hatch in 3-4 weeks into young with gills. When they become adults in the fall, they migrate to winter

quarters underground. For salamanders, wet areas are essential for keeping their skin moist to help them breath.

Tiger salamanders are among the 115 or so species of salamanders found in the United States and Canada. Tiger salamanders are found throughout most of the eastern United States and southwestern Canada and south

into parts of Mexico. Check out your wetlands in early spring. See if the tiger has come home to lay its eggs!

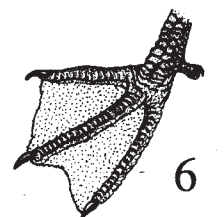
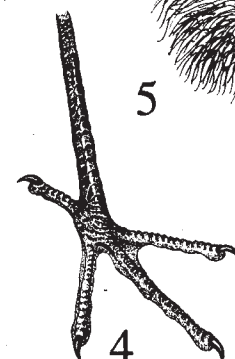
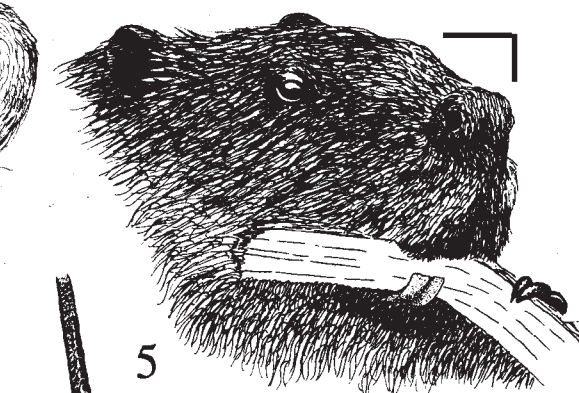
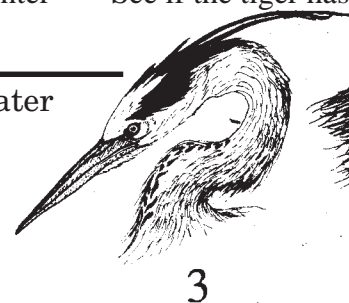
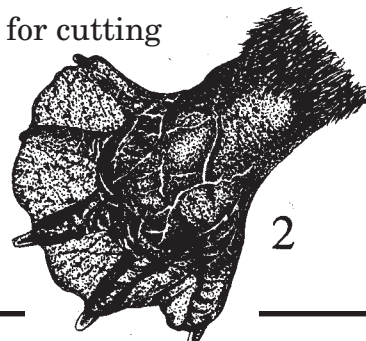
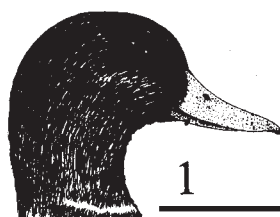


Wildlife Whatzits

Many animals have special **adaptations** that allow them to live in their habitat. An example is the flat tail of the muskrat which serves as a rudder (for steering) while swimming. Match the following wetland adaptations with the drawings:

- A. Featherless extra skin to help paddle through the water. 0
- B. Keeps this animal from sinking in the mud while looking for fish, snails, frogs, or other things to eat. 0

- C. Propels this animal through the water and helps in grooming its fur. ()
- D. Used for sifting water and mud to strain out bits of food. 0
- E. Long, slim, strong, and pointed to reach into the water and catch or skewer fish and frogs. 0
- F. Strong, chisel-like teeth for cutting trees and brush. 0



Wetlands: Homes and Rest Stops for Migrating Birds

Bottoms up! Duck bottoms that is. The tails of **dabbling** or **puddle** ducks often stick straight up out of the water, because these ducks feed near the surface of shallow wetland waters. These ducks have special strainers on the edges of their bills to filter out the food from the mud and water. The best-known dabbling duck is the **mallard**.

The male mallard or **drake** is very colorful. He has a green head, white collar around his neck, brown breast, and grey body. The female mallard, or **hen**, is more drab. Her straw-brown color helps to **camouflage** her on her nest of dried grasses and other plant material.

Mallards are migratory ducks. Instead of living in one place year round, they have a winter home and a summer home. They can be seen flying (**migrating**) in large flocks from one home to the other during the spring and fall. Many mallards spend their winters in the southern United States and their summers in the prairie pothole area of the

northern United States and southern Canada. The prairie pothole area is the mallard's favorite summer nesting spot because of the many small wetlands.



Mallards migrate along the same route each year. The duck highways used by mallards and other waterfowl are called **flyways**.

Many other duck species use prairie potholes both for nesting and for rest

stops during migration. They include blue-winged teal, pintails, shovelers, wigeon, redheads, canvasbacks, scaup, and others. Check your bird book — and your local wetland — to see how many you have.

The Piping Plover

Only the sharpest eyes will see the **piping plover's** nest.

Called a **scrape**, the nest is a small bowl-shaped hollow in the ground lined with pebbles, bits of shell, or driftwood. This lining helps to camouflage the nest, which is usually built among the scattered stones on the shoreline of a lake or sandy wetland. The eggs are hard to see because they look like pebbles too — small tan eggs with dark speckles.

When the young hatch, they look like little balls of cotton on tiny toothpick legs. They are colored like their parents, white and sand-colored with black markings. This is perfect camouflage on the stony beach. The parent birds will move the young away from danger. But if the menace gets too close, the young will drop to the ground and “freeze” to hide.

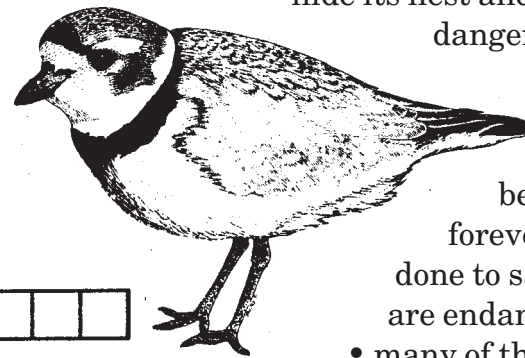
An adult bird with a “broken wing” is a sign for people and pets to stay away. The wing is not really broken, but is an act by the parents to lure people and animals away from the nest or the young birds. It is best to go around the area so you do not step accidentally on the nest or young.

This wetland bird takes great care to hide its nest and protect its young from danger. Even so, the piping plover is an endangered species —

animals that may

become **extinct** (be gone forever) if something is not done to save them. Piping plovers are endangered because:

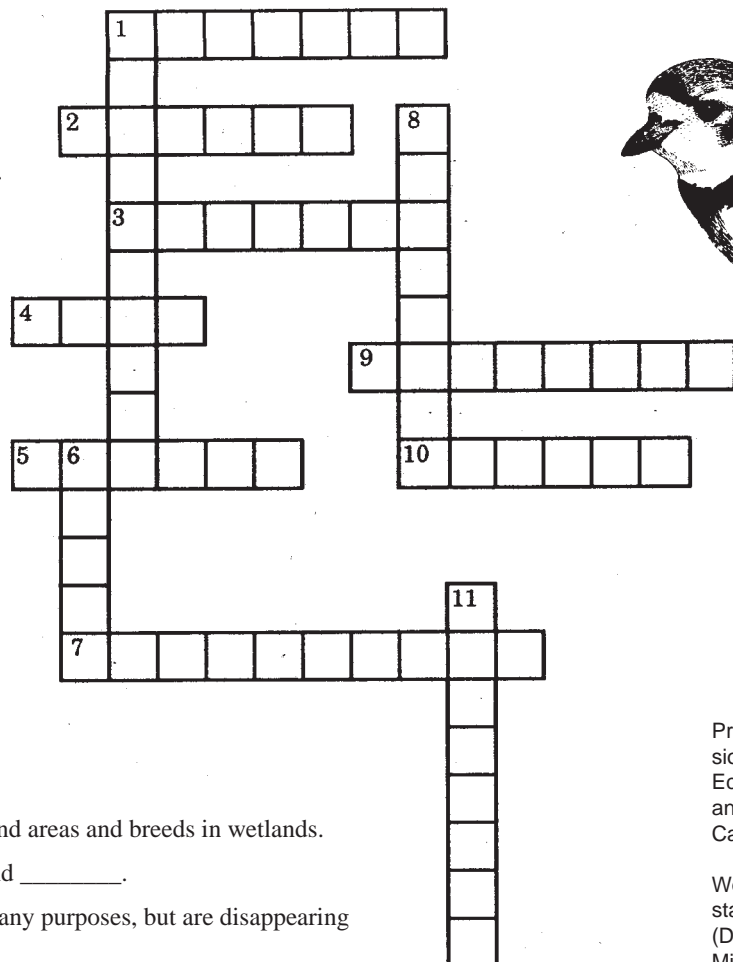
- many of the wetlands that they need to live have been drained for building or farming; and,
- many careless people (and their pets) destroy the plover's nests along the beaches.



Wetlands Crossword Puzzle

Across

- 1) Pothole wetlands serve as natural _____, holding excess water and increasing soil moisture.
- 2) The duck highway often used by mallards is a _____.
- 3) This animal has such a big appetite, it eats its own home from the inside out.
- 4) These sleek predators have special glands that give off strong smells.
- 5) The nest of the piping plover.
- 7) Animals that may become extinct if something is not done to save them.
- 9) Wetlands hold water, release it slowly thereby helping to prevent _____.
- 10) Even young black bullheads can defend themselves because of these.



Down

- 1) This carnivorous amphibian lives in upland areas and breeds in wetlands.
- 6) Life and death are both part of the wetland _____.
- 8) These numerous, small wetlands serve many purposes, but are disappearing rapidly.
- 11) Wetlands _____ groundwater systems that provide water for many rural and urban people.

Answers

11) recharge	7) endangered
8) potholes	5) scrape
6) cycle	4) mink
1) salamander	3) muskrat
Down	2) flyway
10) spines	1) sponges
9) flooding	Across

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Would you like to know more about how YOU can help protect wetlands? Write your state fish and game department, or the U.S. Fish and Wildlife Service, P.O. Box 25486 (DFC), Denver, Colorado, 80225; or Federal Building, Fort Snelling, Twin Cities, Minnesota 55111.

... and justice for all

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