

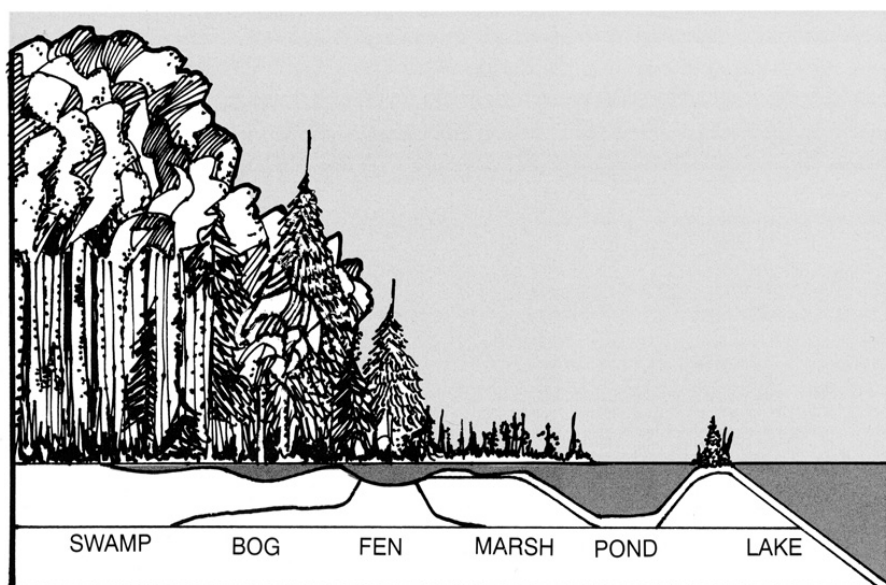


WHAT IN THE WORLD IS A WETLAND?

Some people say that wetlands are areas too wet to be considered land but not wet enough to be lakes. They are areas where the land is saturated with water long enough to have poorly drained soils. Wetlands also have water-loving plants and biological processes suited to wet areas.

There are many different types of wetlands in Alberta (See **Wetland Words**). Each type has certain kinds of plants and animals that live there. Most of Alberta's wetlands (93%) are bogs and fens. Although these are mostly found in the northern part of the province they extend as far south as Edmonton and Rocky Mountain House. Sloughs or marshes can be found throughout the province but are most common in central and southern Alberta.

Many wetlands, particularly *bogs* and *fens*, build up a supply of peat. Peat is a build up of partially rotted plants that grow in wet conditions. Peat is mostly made up of mosses, but also of sedges, rushes or grasses. One type, made up of Sphagnum moss, is called *peat moss*. Over the years, tonnes of peat are produced and it is gradually compacted by the weight of the new growth on top. Since plants die at a faster rate than they decompose, the decaying material builds up and forms peat. In bogs, the decay process is slowed down by wet ground, a lack of oxygen, colder temperatures and the acidic conditions.



Action In The Wetlands

Because wetlands are so rich in resources, there can be a great deal of human activity there. Some examples are hay cropping on the margins of wetlands, trapping, fishing, timber and wild rice harvesting, and peat mining.

Peat mining is the digging up of peat from wetlands. Peat accumulates very slowly, only renewing itself over a long period of time. Therefore, if peat is extracted in large amounts and the living surface is destroyed, it will not continue to renew itself. If extraction is done carefully, peat harvesting can be a sustainable activity.

Peat can be used to improve soil for gardening. Another use for peat is to burn it for fuel. There are two ways peat is harvested in Alberta. Both methods require the area to be drained to allow the peat moss to dry out. Some harvesters use a backhoe to remove the peat. Larger operations use a machine that vacuums up the dry peat (see poster front).

Wetlands can bring both costs and benefits to agriculture. The native grasses and sedges found in and around wetlands may be grazed by cattle or cut for hay. Prairie wetlands are also valuable for reducing erosion, increasing moisture in the soil and supplying water both for livestock and human use.

Wetlands can also be a hindrance to agriculture. They may result in less available land for crops and water-logged crops after rain storms. On the other hand, drainage of wetlands can make more land available for crops. It also allows earlier access to the land in the spring when the snow melts.

The most extensive use of land in the northern third of the province is from forestry. If a wetland has to be disturbed because of forestry operations, the forest company will require an approval.

Wild *rice* is a growing renewable resource industry in Alberta. In 1989, more than 45,555 kilograms of wild rice was harvested. Wild rice is grown in shallow water often found around the edges of wetlands and lakes.

Other plant and animal species are collected from wetlands for scientific study and medical supplies. Wetlands even contribute to art and culture. Willows are used for furniture and baskets, birch bark for some canoes and photographs, and paintings of wetlands hang in many places.

As water flows into fens, calcium may be deposited in the bottom sediment. This is called marl. It is mined out of some of these fens and used as cement. This is most common in the mountains but can also be found and mined in other parts of Alberta (near Edmonton).

WETLAND WORDS

There are many words used to describe wetlands. Here are some you may hear or see:

Wetland Types

The distinctions between different wetland types are gradual and there may be several types of wetlands in one area.

BOG

A type of wetland that received most of its water supply from rainfall. Vegetation consists mostly of sphagnum mosses and some trees such as *black spruce* or *tamarack*. They have thick layers of accumulated peat. Plants such as the sundew, pitcher plant, cranberry, and sedges also grow there. Bogs are mostly found in the northern part of the province.

FEN

A wetland that receives most of its water supply from groundwater. It supports vegetation such as sedges, grasses, shrubs or trees. Fens contain more nutrients than bogs.

MARSH

Also referred to as a *slough*. A marsh is a depression filled with plants and open water. The roots of marsh plants are flooded for most of the summer. Marshes have many *emergent plants* (see Wetland Words) such as cattails. The water can be a few centimetres or up to a metre deep, and can change depths from one year to the next.

MUSKEG

A general term used to describe peatlands, especially bogs and fens. The word *muskeg* is of native origin, referring to areas with mosses, sedges and sparse, scrubby trees.

POND

A general term for an open water wetland (either seasonal or permanent).

POTHOLE

A specific type of small wetland in the rolling hills on the prairies; left behind by glaciers. Potholes are generally isolated from other marshes by higher land. They can be deep or shallow.

SLOUGH

A term commonly used in Alberta to describe marshes. It is a type of *marsh* lying in a depression, surrounded by dry land (prairie). They can be a few metres across and up to kilometres long. In dry seasons farmers may cultivate and cut sloughs for hay.

SWAMP

Wetlands that are flooded by standing or slow-moving water. The vegetation is a dense cover of trees and shrubs. Swamps are not common in Alberta. Many people incorrectly refer to a wetland as a *swamp*.

Wetland Plants

BULRUSH

A type of *sedge*. Most bulrushes have solid, triangular stems. Small clusters of brown flowers may hang at the end of the spear-like stems.

CATTAIL

Probably the most recognizable marsh plant, cattails have long brown flower spikes that release fluffy seeds to the wind each autumn. They have rounded stems and flat leaves.

EMERGENT PLANTS

Wetland plants that grow with their stems partly in and partly out of water (see cattails on poster front).

PEAT

The dead remains of partly rotted plants that have piled up in deep layers over many years. Peat is mostly made up of mosses but may also contain sedges, grasses and rushes.

SEDGE

A term for grass-like or rush-like plants with long narrow leaves. Sedges have three sided stems (“sedges have edges”). They usually grow in moist or marshy areas. Bulrushes are a type of sedge.

SUBMERGENT PLANTS

Plants that grow completely under water, e.g. coontail.

Other Wetland Words

GROUNDWATER

Water that is found below the ground surface. It is water that passes through or stays in the soil and underlying layers. This water is free to move by gravity, soaking into the ground from wetlands and lakes or precipitation.

WETLAND WHEREABOUTS

Do you know where Alberta's wetlands are located? Most of our wetlands can be found in the northern third of the province. These wetlands are mostly bogs and fens. In some northern areas, wetlands make up 100% of the land area. Central Alberta has sloughs and marshes, but there are also some bogs, fens and swamps. In the southern third of the province, the wetlands are mostly potholes and marshes. Although marshes do not cover as much of Alberta as bogs and fens, they occur where the majority of Albertans live (central and southern Alberta). Look at a map of Alberta to identify where those areas might be.

Most of the wetlands in northern Alberta are *permanent*. Permanent wetlands are those that have water year round. There are fewer permanent wetlands in central and southern Alberta. In those areas, wetlands are usually *temporary* (they hold water only in the spring), or *semi-permanent* (they hold water until summer when hot weather usually dries them out). The climatic conditions and shape of the land affect whether a wetland is temporary, semi-permanent or permanent.

WETLANDS ALIVE!

Wetlands are home to many different kinds of plants and animals. These productive places can support huge numbers of insects, fish, birds and other animals and plants. They depend on wetlands for food, water, shelter and space.

As wetlands disappear, these plants and animals are in danger of dying out. For instance, since the 1960s the number of waterfowl such as *mallard*, *pintail*, and blue-winged teal ducks has decreased. These birds need temporary wetlands, like *potholes*, in the spring because the shallow water heats quickly and produces lots of insects and other food for them to eat. They also need more permanent locations once summer heat dries up the temporary locations.

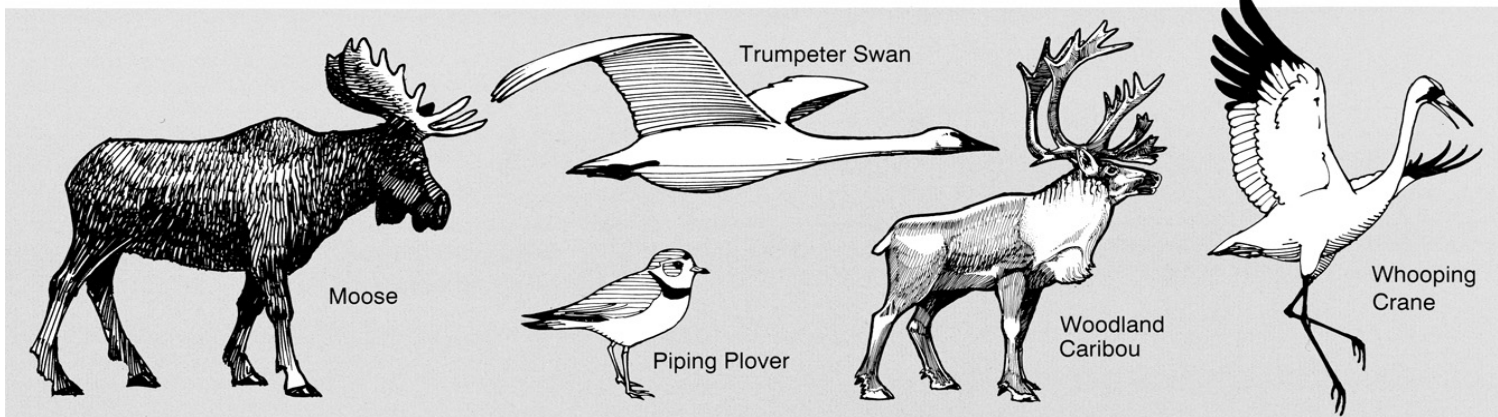
One third of North America's threatened and *endangered* species are found in wetlands. The loss of wetland habitat has been a major factor in their decline. Some examples of species that have been affected are:

- In Alberta, there are now fewer than 100 pairs of *Piping Plovers*. These birds are similar to sandpipers. They need dry, open, offshore areas for nesting and wet shoreline close to the waters edge, for feeding.
- *Trumpeter Swans* nearly died out on the prairies as the ponds where they built their nests disappeared. Because the swans are now protected birds, their numbers are increasing.
- In 1941, there were only 21 whooping cranes left, but with biologists' help, they became a protected species too and their numbers have grown.

Other animals are also affected by a decrease in wetlands. Woodland *Caribou* use bogs and fens during calving season in the spring and in the winter. Deer find shelter in black spruce swamps during snowstorms and *moose* seek wetlands as food sources. Wood Bison are a threatened species who depend on wetland meadows for food.

Wetland water tends to be slow-moving and shallow. The water in non-peatlands is also high in nutrients. Because of this, plant material is produced 2-3 times faster than on our best agricultural land. The rich nutrients of wetlands allow plants from microscopic algae to tall cat-tails to flourish there. Wetlands also support rare plants such as the Western Blue Flag.

Because so many important plants and animals depend on wetlands for shelter and food, we need to work to keep the wetlands that we have for the future.



Sightseeing With a Dragonfly

How would you like to be an *ecotourist*? An ecotourist is someone who visits sites just to see nature at work and to enjoy the beauty of the earth. Imagine you are a small ecotourist – one who is tiny enough to fit on the back of a dragonfly with rainbow wings. Once you've climbed on, she will give you a flying tour of her favourite wetlands. Hang on!



As the dragonfly flies near the wetlands, you can see a stand of balsam poplar trees. Swooping closer still, she brushes against the tip of a spear-like bulrush leaf. Then she drops down to land on the brown fuzzy flower spike of a cattail.

A white-throated sparrow swoops by singing, “Oh Sweet Canada, Canada, Canada.” The yellow spot between its beak and eyes shines in the sunlight. A muskrat, looking like a rabbit-sized mouse, slides into the dark water searching for tender cattail roots for lunch.

The dragonfly stretches her wings and takes off from the branch, gliding closer to the water, skimming a cluster of *tily* pads with yellow blossoms. On one of the pads, a little *frog* basks in the sunlight. Your tour guide avoids going too close because frogs like to eat dragonflies. Brightly coloured insects zip by you looking for snacks of mosquitoes and flies.

Closer to shore, the dragonfly skims near the water coated with green duckweed. Duckweed are tiny floating plants with dangling roots. In the quiet shade near shore, a Great Blue Heron stretches its neck into a long S curve, waiting for a carelessly fish. Not far from the *heron*, a moose raises its head, with strings of water weeds dripping from its mouth.

The dragonfly glides over a patchwork of colours – the green, rusty brown, orange, red and gold of moss and the right yellow pouches of the yellow lady’s slipper. As the dragonfly soars back up into the morning sky to leave the wetlands behind, you hear the creaky call of a *red-winged blackbird* among the bulrushes saying good-bye; o-ka-lee, o-ka-lee.

WETLAND WISDOM

Did You Know That..

- Peat in Alberta grows only 3-7 cm in a century.
- More than 6,000 of the world’s 9,000 known bird species are suffering a serious decline in numbers. In Alberta, one of the major causes is the decrease in the number of wetlands.
- Canada has designated 17 wetland sites (covering 200,000 square kilometres) for protection.
- Peatlands provide a record of the climate going back as far as 6,000 years.
- The expression “to be bogged down” means to have too much to do and comes from the experience of sinking into the soft moss of a bog and sometimes getting stuck
- Water in a bog may be 300 years old because the water passes through so slowly.
- 2,000 year old seeds found in a Chinese bog sprouted when put into fresh water.
- Farmers can harvest some wetland plants and use them as hay for cattle.
- Cattail root can be ground up and used as flour.
- At Wagner Bog near Edmonton there are several types of orchids that are not known to be found anywhere else in Alberta!
- Freshwater shrimp and clams can be found in some of Alberta’s wetlands.
- Many urban areas were once wetlands, e.g. Edmonton’s Northlands Exhibition Grounds.
- Beaverhill Lake near Edmonton is internationally recognized as an important wetland for migratory birds.

TIME MACHINE

Bogs are the oldest wetlands. Exploring a bog can be like entering a time machine. Some bogs preserve evidence of events that happened long ago. For example, pollen from plants is often preserved in a bog. By taking a long core of peat and examining pollen under a microscope, a scientist can tell what plants used to live near the bog centuries ago. Sometimes this can be as long as 3,000 years ago! By studying layered bog remains, scientists have pieced together information about how climates, plants and landscapes have changed over time.

Scientists have also found pieces of charcoal from cooking fires of long ago. This tells them when people started to live near the bog. Sometimes, the bog may even preserve animals and people. In Ireland, a woman who had been dead for thousands of years was found under eleven feet of peat still dressed in her original clothes.

Water in bogs is tea-coloured because the plants contain the same substance that gives tea its colour. This substance, *tannin*, is used to preserve (or tan) hides into leather. This is the same way that the Irish woman was preserved.

If you are interested in reading more about bog discoveries, look for the book *The Mystery of the Bog Forest* by **Lorus J. Milne and Margery Milne**.

Bottoms Up!

Have you ever seen a **duck** stick its head under water and its tail in the air? No, it is not standing on its head, it is looking for food. Ducks who get their food this way are called dabblers or puddle ducks. Mallards are dabblers. They feed on plants or small animals just below or at the water's surface. Waterfowl such as Mergansers, that dive deep into the water in search of food, are known as divers. If you look closely you can see how each one is specially adapted to catch and eat food.

Dabbler Dazzlers:

Q • How do they do the trick of tipping upside down?

A • Dabblers have legs that are set well forward on their body for balance on land and in water.

Q • How do they know where their food is when they are under water?

A • Dabblers use their sensitive bills to feel or sense where there might be food.

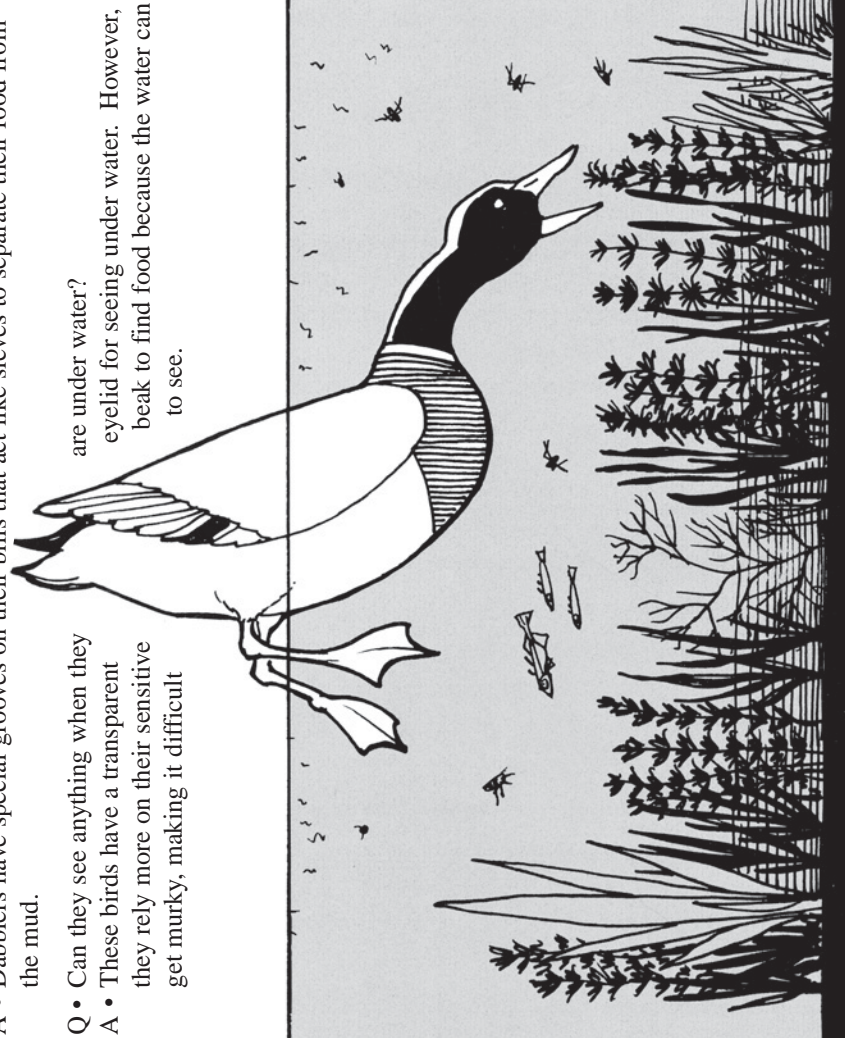
Q • How do they separate their food from the inedible things in the water?

A • Dabblers have special grooves on their bills that act like sieves to separate their food from the mud.

Q • Can they see anything when they

A • These birds have a transparent

eyelid for seeing under water. However, they rely more on their sensitive beak to find food because the water can get murky, making it difficult to see.



Nature's Waterbed

Peat moss floats in water because its cells are filled with gas. Walking on moss can be like trying to walk on a waterbed. The ground in a bog moves when you walk on it because it is not solid earth like your lawn. If you squeeze moss, the gas will escape through tiny pores. If you squeeze it under water, the cells will refill with water. The plant can hold 200 times its own weight in water. They act like giant sponges, soaking up moisture from heavy rain or melting snow. This can help protect areas from flooding and drought. Later, they release it, providing moisture when it is needed in the soil.

When moss loses its gas, the plant sinks. Living moss will grow up into the air and push down older parts. As they die and lose their gas, they add to the thickness of the floating mat of moss. Dead moss rots very slowly and will grow to several meters in thickness. This moss can support woody plants like black spruce, tamarack and alder because they are adapted to low oxygen and nutrients, high acidity and wet roots.

ONCE UPON A TIME

- Rushes dipped in tallow (animal fat) were once used for torches (candles).
- **Reeds** were once used for thatching roofs.
- Aboriginal people used peat moss to diaper their babies. Now the absorbent quality of peat is used commercially for personal paper products and oil spill cleanups.
- Marshmallows were originally made from a wetland plant called *Althea officinalis*, or the marsh mallow.
- Egyptians made the first paper from papyrus reeds which grow in wetland areas in Egypt.

Wetland Magic

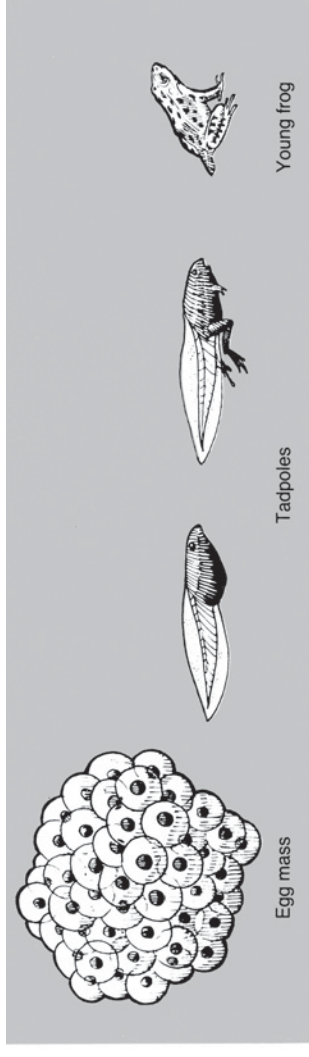
In springtime, wetlands are magical places, teeming with life. As summer nears, some of this life seems to disappear. Are they really gone, or have they mysteriously changed their appearance? Amphibians, for example, go through several changes in their life cycle. This magical process of change is called *metamorphosis*. Let's take a closer look at a familiar amphibian, the frog.

Frogs begin life as eggs in water. The eggs hatch into tadpoles that are well adapted to life in water. They have gills, a fish-like tail, and no appendages (arms and legs). Tadpoles are herbivores, meaning that they eat only plants.

After a month or two, tadpoles go through metamorphosis. Almost like magic, their gills become lungs, legs appear, their tail disappears, their eyes move to the front of their head and their mouth widens. They change their diet, from eating plants to eating insects. Even their digestive system changes to accommodate this new diet.

In Alberta, there's a special frog whose numbers are declining. It's the Northern Leopard Frog, Alberta's largest common frog. Scientists are still trying to find the exact reason for the declining numbers. Presently, they can be found in small isolated wetlands surrounded by large, dry areas. This limits the amount of movement from one suitable habitat to another. These frogs rely on a variety of habitats to complete their life cycle.

You can help to provide a secure future for this magical species. If you spot one of these frogs, count yourself lucky. Don't disturb it or remove it from its habitat. Instead, report the sighting to your local Alberta Fish and Wildlife Office. See if you can find out more about the Northern Leopard Frog. Find out why the tadpoles of these frogs are often referred to as "giants of their kind."



Fierce Competition

Competition is more than winning and losing. In the wetland, it's a way of life. Take the red-winged blackbird, the yellow-headed blackbird and the marsh wren for example.

In the spring, red-winged blackbirds are usually the first to establish territory for good nesting sites in and around the wetland. A good nesting site offers good cover and distance from predators. Yellow-headed blackbirds also want to find a good place to raise their families. They are bigger than the red-winged blackbirds and provide fierce competition. They often push the smaller red-wings from their territories.

What really makes things interesting are the marsh wrens. They are smaller than both the red-winged blackbird and the yellow-headed blackbird. Can they actually compete with the bigger birds? Yes, they can destroy the eggs of their competitors when they aren't looking. The competitor then leaves the nest and the marsh wrens move in!

Next time you visit a wetland, try to see if you can see some competition!

Wetlands Hide-and-Seek

Find the letters spelling the word WETLANDS hidden somewhere on the front of the poster. The location of the hidden letters will be a clue to help you fill in the missing words below. The hidden letters are the first letters of the missing words. The missing words are also given to you scrambled at the end of each sentence.

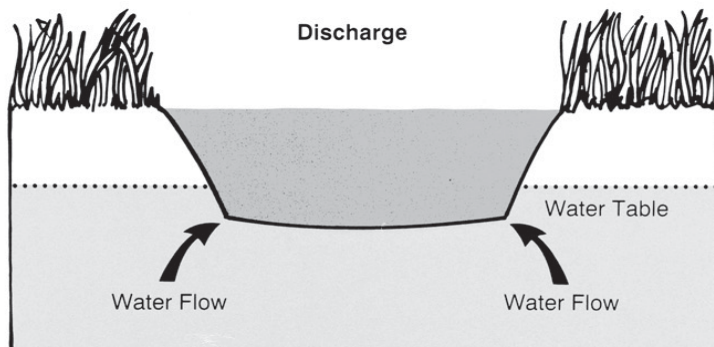
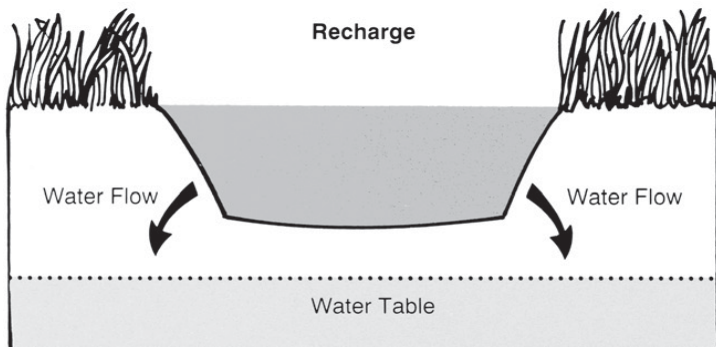
- By providing places to store _____, wetlands act like giant sponges.
(awret)
- Peat mining contributes to Alberta's _____.
(nmoyeco)
- Alberta's many wetlands provide a variety of _____ opportunities.
(sotiumr)
- Purple _____, an introduced plant, is a threat to wetlands because it spreads quickly and takes over the habitat of naturally occurring plants.
(soelofrsite)
- Sometimes wetlands are drained so more land can be used for _____.
(uegractilru)
- Many species of birds find excellent _____ habitat in wetlands.
(tniesgn)
- Wetlands have a great _____ of plant and animal life.
(sitvdeyri)
- The Trumpeter _____ is a threatened species that relies on wetlands in Alberta.
(wnas)



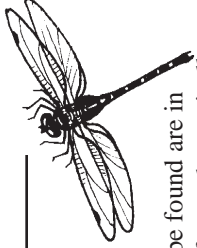
EXPLORE NATURE'S WATER RECYCLER

Wetlands are important because they link **groundwater** and surface water. The water table is the level at which water in the ground is located. The level of the water table varies from location to location depending on things such as the type of soil and rock underground. Wetlands can **recharge** groundwater supplies when the water table is low. Water is slowly released from the wetland into the underground soil and rock. This adds valuable moisture to the soil, which can be very important, especially during dry spells or times of drought.

Water can also flow from the water table into the wetland. This is called **discharge**. Discharge into a wetland occurs when the water table is high.



BOG BROWSE



Explore the wonders of a wetland through a word search. All the words to be found are in **bold and italicized** somewhere on the back of this poster. They are spelled forwards, vertically and horizontally. See if you can find all 34 words. Have fun!!

P P M A R S H M A R I G O L D S Y L I L
I E A K C D O L P E N B I D W I R A A S U R U
N T M L U W I S H O L I S A S L I D R A A B E C S U O G T
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L E D R N H E B T O B L C A T T A I C A N S I G O S S
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N E M S R I U E M N A W S D E R E
O R M D I R M S E P S D E R E
G O O D D P C E R E

When Dragonflies Dream and Tadpoles Tell



Tales

Plants found in wetlands can be very interesting. For example, the Bladderwort is a dark tangle of small empty pouches that are like trapdoors waiting to capture insects such as mosquitoes or water fleas. When the plant senses a victim, it sucks it inside like a vacuum, shuts the trapdoor and uses juices to digest the body. Here is a list of other interesting wetland plants that have unusual names. Write a story about how you think the plant got its name. Draw a picture of what you imagine the plant might look like. Check a plant book to compare your imaginary drawing to the real plant.

Dragon's mouth	Cattail
Lady's slipper	Bog rosemary
Hooded Lady's-tresses	Sphagnum moss
Labrador tea	Marsh marigold
Butterwort	Sundew
Bog orchid	Pitcher plant

WETLAND POLLUTION

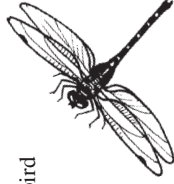
Runoff from cities and towns, roads, forestry, agriculture and mining may pollute wetlands. Depending on the source of the runoff, it may contain a variety of different chemicals. Wetland plants can act like filters, absorbing and breaking down many of the chemicals through biological action. Some chemicals are nutrients, speeding up the natural process of plant growth. The increased plant growth and increased sediment load (from plant decay) also speed up the filling in of a wetland.

The filtering action of wetland plants is being used by some communities to treat sewage and filter contaminants and nutrients out of the water. Artificial wetlands are created to provide a stage of purification for the water. Afterwards, the plants are harvested and burned or placed in a landfill. In cases where only nutrients are removed from the water, some plants (e.g. duckweed) can be processed into animal feed rather than dumped or incinerated.

FOR THE BIRDS

Many birds call wetland areas *home*. Check out the front of the poster and see if you can find the birds listed below. Even if you don't know the bird, their names often give clues about their appearance.

- Red-winged blackbird
- Great horned owl
- Dark-eyed junco
- Mallard
- Trumpeter Swan
- Canada goose
- Great blue heron
- Coot
- White-throated sparrow



What's Happening To Our Wetlands?

There are a variety of threats to wetlands in Alberta. Although all levels of government and many other agencies are doing much to ensure the wise use of wetlands, there is no one law that addresses wetlands only. The protection of wetlands falls under a variety of laws dealing with water, agriculture, land use, energy resources, forestry and wildlife.

THREATS

Purple loosestrife - an introduced garden plant that spreads quickly, taking over the habitat of plants naturally found in wetlands. It has no native predators.

Drainage and filling of wetlands for urban development and roads.

Water contamination and pollution.

Peat extraction - if peat is extracted in large quantities and the living surface is destroyed, it will not renew itself.

Agriculture - some practices may lead to destruction of wetlands.

Climatic changes - may cause a decrease in wetlands when there are a series of years with drier than normal conditions.

WHAT'S BEING DONE

- plants and their roots can be pulled out and destroyed (small scale)
- organization of an intensive Canada-wide control program by groups concerned about wetland conservation (large scale)
- public education about the threat of purple loosestrife
- discouraging any planting of purple loosestrife and reporting the location of the plants to your nearest agriculture office
- more roads are being built around wetlands instead of through them
- environmental protection agencies have laws to regulate drainage
- proposals for drainage of wetlands are evaluated, and the costs and benefits of drainage versus conservation are weighed
- disposal of sewage in wetlands is regulated
- public education about the effects of pesticides and other chemicals on the water supply
- mining companies are responsible for reclaiming a harvested site
- applications for peat extraction are carefully reviewed, costs and benefits are evaluated
- approvals are required to drain peatlands prior to extraction
- laws and guidelines have been established to ensure sustainable use of Alberta's wetlands
- encouraging landowners to fence cattle out of wetlands and use an alternate technique to gain access to water
- education for landowners and farmers about the benefits of wetlands to agriculture (erosion and flood control, soil moisture)
- funding for landowners to enhance or reclaim former wetlands is available through wetland conservation organizations, e.g. North American Waterfowl Management Plan and Ducks Unlimited Canada
- conservation organizations pay farmers for land left as wetlands
- government studies ongoing in different parts of the province to address wetland issues related to agriculture
- incentives to drain wetlands are being removed
- this is one where nature has the most control. We can help by decreasing our contribution to the greenhouse effect which will decrease the rate of evaporation from wetlands (long term)
- avoiding cultivation of wetlands during dry years so that natural habitat is available when precipitation returns to normal (short term)

Signs Of Seasons



A marsh can look very different from one season to the next. If you live near a marsh, you could write field notes for each season. (See **Rubber Boot Adventures**) Here are some things to begin the field notes of what you might see in summer, fall, winter and spring. In which season do you see a greater diversity of life? You might want to use the images to write your own marsh poem.

- Summer:** insects, red-winged blackbirds, muskrats, frogs, ducks, dragonflies, wild rice, sedges, grass, lily pads, berries such as raspberries and gooseberries
- Fall:** deer, skunks, migrating birds such as Canada geese, cattails, mice, cattail flowers fluffing out their seeds, leaves turning colour, frost
- Winter:** trees without leaves, ice instead of water, deer, snowshoe hares, snow, footprints in the snow
- Spring:** buds on trees, flowers in bloom, returning birds, melting ice, cattails, tadpoles, fox, mosquitoes, muskrats, ducklings, goslings, pussy willows

Watch Out For Those Wetlands!!

Here are some places to look for wetlands:

- sites where black spruce and tamarack trees grow
- low spots that hold water for a week or more
- places where water is pooled
- edges of streams or creeks
- areas where you see cattails, bulrushes and sedges
- areas where you see ducks swimming, feeding or nesting



Be sure you have your parents' permission and the landowner's permission if you are going on someone's private land before exploring wetlands ... and be careful! Water and mud can be dangerous. Don't go alone.

For more information please contact:
Alberta Environment
Education and Information Centre
Phone: (780) 427-2700



Ducks Unlimited Canada
CANADA'S CONSERVATION COMPANY

Alberta

BOGGED DOWN



Bogs have had "shady" reputations in the past. People stayed away from bogs because sometimes they could get stuck in the soft, spongy earth. The water below the moss was dark and mysterious. People thought they were smelly, damp places filled with strange creatures and annoying pests like *mosquitoes*.

The open pool of the water towards the centre of the bog is sometimes called the eye of the bog. In the first century, mapmakers filled unknown areas in their maps with "sandy deserts full of wild beasts and unapproachable bogs." Movie makers have sometimes set scary movies in or near bogs. The truth is that bogs are fascinating places and are no more dangerous than any other habitat. Bogs also have been known to preserve old secrets like ancient bodies. In Britain, these areas are often referred to as moors and mires. Read about bogs in the library to discover more of their strange reputation and then write your own mysterious bog tale.

WHAT DOES IT MEAN?

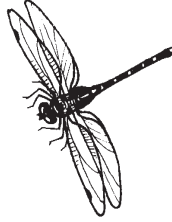
Webbed feet not required means...

- wetlands have many functions and values in addition to providing habitat.
- anyone can visit a wetland, even those without webbed feet!
- not all wetlands are standing water (see **Wetland Words**).
- wetlands are not just duck habitat. They provide habitat for a variety of species.
- webbed feet are not a requirement but curiosity is.
- it's your frame of mind that counts; not your feet.
- you don't even need feet; roots will do fine.
- many living things value wetlands, not just those with webbed feet.

A Marsh Web Of Life

A food web shows the possible feeding relationships between plants and animals. Try to complete the following food web by placing the names in the correct circles of the web. The names of the plants and animals are listed below. The numbers and the clues will help you figure out where they fit in the web.

Muskrat
Great Blue Heron
Sideswimmer
Cattails
Dragonfly nymph
Frog



Algae (phytoplankton)
Stickleback fish
Daphnia (zooplankton)
Northern Harrier (Marsh Hawk)
Duckweed

1. A common marsh plant with brown hotdog-shaped flower spikes that contain over 10,000 tiny flowers.
2. Although these are the smallest plants you will find in a wetland, their numbers are plenty. They are an important food source for many organisms.
3. Tiny floating marsh plants with dangling roots. Named after well known marsh residents.
4. The spines on my back give me my name.
5. An animal that has a tail like a rat, webbed feet like a frog and teeth like a beaver.
6. Tiny, almost invisible, fast moving animals that help break down dead and decaying plants in the water.
7. A freshwater organism that looks like a shrimp swimming on its side. It's a scavenger that also eats small plants (phytoplankton) and small animals.
8. The dagger-like beak, long skinny legs and flexible neck of this graceful bird make it well adapted to life in a wetland.
9. A bird of prey that hunts by day. This hunter will eat an assortment of wetlands birds and small mammals.
10. A meat eating insect that searches for its food on the bottom of ponds or among the plants. It is an immature stage of the dragonfly.
11. When this wetland creature hatches, it looks like a small fish. Later, it transforms into an adult with long, strong hind legs used for leaping and jumping.

