



Wild Wonders



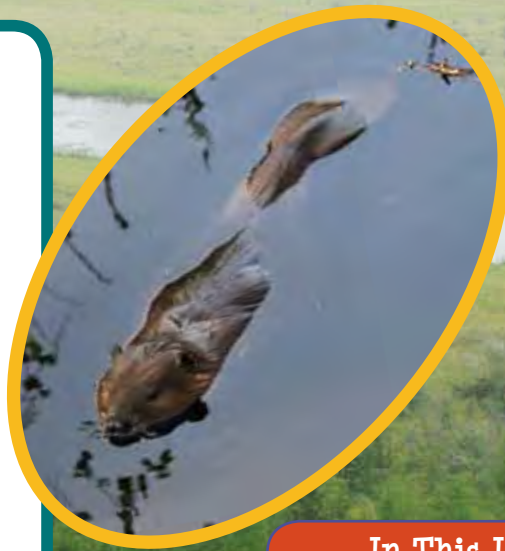
Wonderful Wetlands

What are wetlands? Lands that are wet is one way to describe them. But there is so much more to know about these amazing ecosystems. Walk across the spongy tundra and feel waterlogged soils sink under your step. Or sit on a beach next to a coastal estuary and watch thousands of birds rest and feed. Both are wetlands. Wetlands are found nearly everywhere in Alaska; roughly half of the state is considered wetlands! In this issue of *Wild Wonders*, we learn about five basic wetland types: tundra, freshwater marshes, riparian, coastal wetlands and peatlands. We will also learn how important these areas are to wildlife and how some Alaska birds, mammals, fish, amphibians and insects are uniquely adapted to live in these wet worlds. Ready to be amazed? Wade in and learn more!

Did You Know?

Beavers are well adapted for life in a wetlands!

- ⊙ Special valves close their nostrils and ears while under water.
- ⊙ Their fur-lined lips can close behind their teeth to help them from swallowing water while swimming and carrying sticks.
- ⊙ A clear membrane over their eyes works like swim goggles to protect their eyes under water.
- ⊙ Their thick waterproof fur coat traps air to keep them warm.



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Coastal Wetlands

You know you are in a coastal wetlands if...

- ⊙ There is a mixture of saltwater and freshwater known as brackish water.
- ⊙ Lots of mixing is going on, like a big blender or washer where nutrients are constantly being stirred together.
- ⊙ You find many birds and young fish. Coastal wetlands are important resting spots during migrations and are a good place to raise young.
- ⊙ You find plants that don't mind living in salty water.

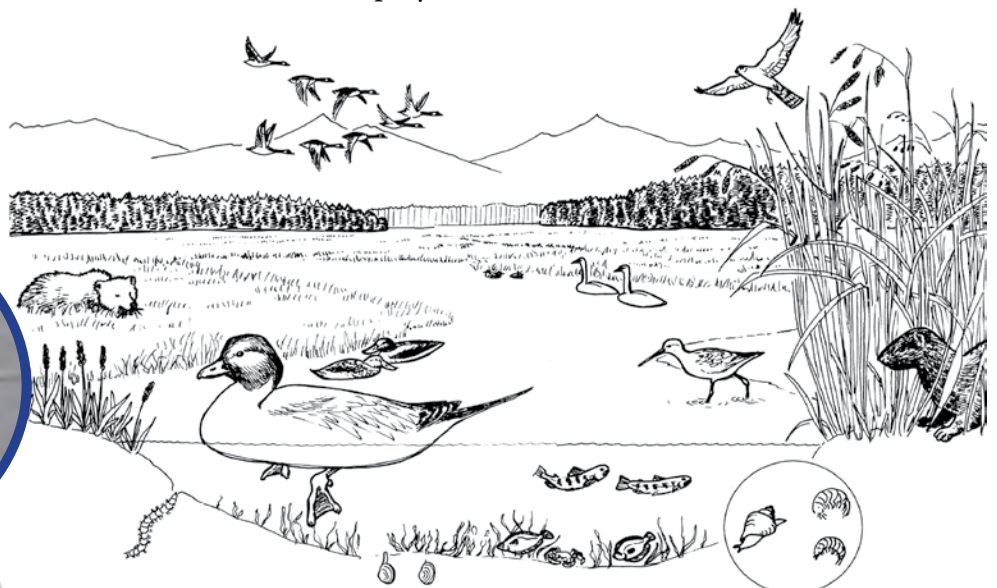
Where can you find freshwater from the land and saltwater from the sea mixed together? In a coastal wetlands! The mixing of freshwater and saltwater by river currents and ocean tides brings in nutrients that allow plants and animals to thrive. If you are plant or animal, it's like landing at a big buffet! Alaska has more coastline than any other state – almost 44,000 miles – which means Alaska has lots of coastal wetlands.



Lots of animals, lots to eat!

If you could swim through the water along coastal wetlands you might be surprised at how many animals you would see. Young salmon, sand lance, bottom fish, crab and shrimp hide out in the grasses and muddy bottom of the wetlands. They feed on clams, worms and tiny invertebrate animals that you can only see through a microscope. Birds also flock to coastal wetlands. Millions of migratory birds like swans, geese, ducks and shorebirds gather to rest and feed in coastal wetlands each spring and fall as they travel to and from Alaska along the Pacific flyway.

Who Eats Whom? In the picture below, make a food web by drawing lines between the animals and their prey.



Tundra Wetlands

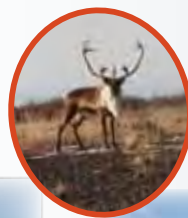
Tundra wetlands dominate the northern and western parts of Alaska where mostly flat lands have slow drainage and are often underlain by permafrost (permanently frozen ground). Tundra wetlands are very productive in the brief Arctic summer when millions of shorebirds and waterfowl migrate back to Alaska to nest. After the summer ends, many fish and birds return to more southern areas for the winter to avoid the harsh, cold climate. But some wildlife are adapted to the harsh winter conditions. Lemmings, voles, muskoxen, ptarmigan, ravens, snowshoe hares and caribou remain active on the tundra all year long.

You know you are in a tundra wetlands if...

- ☉ The growing season is short and it's cold and windy. Brrr!
- ☉ There are no tall trees.
- ☉ Lots of birds and other animals spend summers here but take off to warmer areas in winter.

Let's Move! Tundra wetlands look very different in the winter and fall compared to the spring and summer. Because of these big changes, some animals migrate between breeding grounds in the Arctic and wintering grounds in warmer, more southern areas. Migration is a survival strategy used by animals to find food in better feeding areas.

Circle the animals below that **migrate** away from the tundra in winter.



Winter & Fall



Spring & Summer



Freshwater marshes



Freshwater marshes exist where water collects in shallow depressions, created by a variety of geological processes.

Freshwater marshes may be as shallow as a few inches but are usually not deeper than a few feet. Some marshes may dry out completely during parts of the year.



Did You Know? Moose can lose 25 percent of their body weight during the winter. They regain this weight, in part, by feeding on the nutrient-rich plants submerged in freshwater wetlands.

Did You Know?

The wood frog is capable of surviving the frigid Arctic winter because it can withstand freezing better than almost any species on Earth; it has the amazing ability to freeze solid and thaw out as temperatures warm in the spring. Wood frogs love marshes!

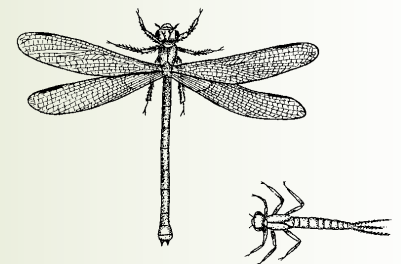
You know you are in a freshwater marsh if...

- Waters are shallow.
- Vegetation, like grasses, leaves or flowers, stick out from the water. This is called emergent vegetation.
- The soil has a lot of organic materials and is rich in minerals.



Marshes provide food - and a place to hide!

Freshwater marshes support a wide array of insects, plants, mammals, birds, and fish. Emergent vegetation provides food and cover for invertebrates, such as dragonflies and stoneflies, and fish such as grayling and sticklebacks.



Larger fish forage on aquatic invertebrates and terrestrial insects that drop from plants into the water. Many species of loons, diving ducks and other waterbirds nest in or near lakes, ponds and marshes, using the plants for nesting materials and for cover at the first hint of trouble. If something is trying to eat you, you need a good place to hide!

Learn more about Alaska's wildlife at www.wildlife.alaska.gov



Peatlands

Peatlands are commonly called muskeg, an old Algonquian term referring to a soggy bog. There are two types of peatlands:

1) **Bogs** are distinguished by a lush growth of moss (usually sphagnum) and thick, organic, acidic soils. The water source in bogs is mainly precipitation.

2) **Fens** are complexes of groundwater-influenced linked channels that usually receive some drainage.

Bogs are generally areas of low productivity. This means food for wildlife is not as abundant as in other wetland areas. Even though food can be scarce, peatlands are important for a variety of wildlife species during all seasons. Insect-eating birds like songbirds, raptors like the harrier, and grazing birds like swans all use peatlands as feeding areas.



Did You Know? Alaska has about 127 million acres of peatlands. That's about 75 percent of all of Alaska's inland wetlands.



You know you are in a peatlands if...

- Drainage is slow and lacking.
- Decomposition is slow and incomplete, resulting in a buildup of dead or decaying plants called peat.
- Waters and soils are cold, and often acidic and lacking in nutrients.
- You might find sphagnum moss or other plants adapted to tough, waterlogged conditions.

Carnivorous Plants? Yes, Way! Sundew plants, found in peatlands, trap insects on their sticky leaves. The leaves close around the insect and digest it. Nitrogen and phosphorus in the insect's body are valuable nutrients the sundew needs to produce its flowers.



Entering.. the Riparian Zone!



Riparian (ri-pair-ee-uhn) means stream or river bank. The middle of the stream or river usually has *FAST* moving water, while the sides of streams and rivers are where you find *slow* moving waters. Riparian wetlands, or river banks, are important to the health of the stream and provide hearty habitat for wildlife. This type of wetland is found throughout Alaska wherever there are rivers, streams or creeks.

Math Brainbuster! There are 1,000 miles of rivers and streams in Alaska for every day of the year. How many miles of riparian zones are there in Alaska? My answer: _____

You know you are in riparian wetlands if...

- Water levels change when it rains or snows, during freeze-up and break-up.
- You are standing next to a gravel bar, river, stream or an oxbow lake (formed by a big bend in a river).
- The water flows in a current. Fish and wildlife use riparian zones as a highway and to give birth and raise young.

I find food and hide from predators in the zone!



Who Am I? Read the clues. See if you can guess the riparian animal!

I hatched in the zone!



I can raise my family in the zone!



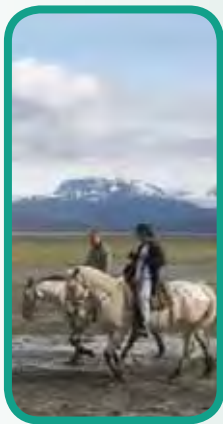
Awesome Animal Adaptations! Webbed feet help propel some wetland animals through the water as they swim and also allow them to walk over soggy ground without sinking into the mud.

Math Answer: 365,000!

32 Special Places for Wildlife

State Refuges, Sanctuaries, Critical Habitats

3.2 MILLION acres of land have been set aside by the Alaska State Legislature as special areas to protect rich wildlife habitat. These special places have awesome fish and wildlife and recreational opportunities! These areas belong to all Alaskans, so get out and enjoy them!



Did You Know?

All of Alaska's 32 special areas contain some type of wetlands!

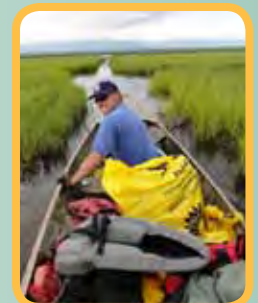
Meet Joe Meehan, Refuge Program Manager

On any given day, you might find Joe Meehan in one of Alaska's 'special places' coordinating the clean-up, repair or creating access to a refuge. Joe and his crew of technicians work outside most summer days. Joe also helps manage special access permits for refuges, like determining how many people are allowed to view animals at McNeil River State Game Sanctuary.

Hey Joe! What's your favorite part of your job? What's your least favorite? That's easy. I love seeing people enjoy, appreciate and protect our state's refuges and special places. I don't like dealing with disrespectful actions to the community of people who work to protect these places.

What sort of education and training did you need for your job? I have a degree in wildlife ecology and management. As a kid, my siblings and I were always outside.

What's your favorite experience since working in this field? I once spent five weeks on Agattu Island in the Aleutians. We camped on the beach where we were doing research. That little beach was just alive with wildlife and amazing plants. It really had everything one could imagine. It was a very special place!



Wetlands are WILD

Become a Wetland Investigator

Head out to a wetland near you and become a wetland investigator. Take a camera, notebook, ruler, magnifying lens and a field guide to help you figure out which animals and plants live in your wetlands. See how many different animals, plants and insects you can find.

Here are a few questions to help in your discoveries:

- ⊙ How many different animals can you see?
- ⊙ Which plants did you see most often?
- ⊙ How many different insects did you see?



Crossword Challenge



Across

6. The old Algonquian word for soggy bog.
7. Land that has been set aside to protect wildlife habitat.
8. Webbed feet are one type of _____ that make it easier for some animals to live in a wetland.
9. Lands that are wet.

Down

1. A mixture of salt and freshwater.
2. Means "stream or riverbank".
3. An animal that can freeze solid in winter then thaw out in the spring.
4. The carnivorous plant that traps insects with its sticky leaves.
5. The seasonal movement between breeding and wintering grounds.

Wetland Match

Draw a line matching the description of the wetland with its picture.

Waters are shallow and may dry out during some parts of the year,



An important nesting ground for millions of birds.



Decomposition is slow resulting in a build-up of dead plants.



An important resting place for millions of birds during migration.



Found near rivers or streams.

