

## For Creative Minds

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### Keystone Species: Beaver

Beavers are among the few species (including humans) that can make big changes to their environment. This ability to shape their habitat makes beavers into **ecosystem engineers**.

Beavers shape their environment by building dams. A colony of beavers works together to make a dam out of wood, mud, and stones. The dam slows a stream and creates a pond of still water behind the dam. The pond is usually between three and six feet deep. It helps protect the beavers from land predators like wolves, bears, and coyotes. The pond hides the underwater entrance to the lodge, where the beaver lives.

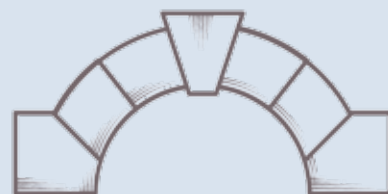
Beaver dams change a forest into a wetland environment. These changes last for years, even long after the beavers are gone.



In a stone bridge or arch, there is one stone called a keystone. This stone presses down on the others and holds the whole structure in place.

Plants and animals in an ecosystem rely on each other. They help each other meet their basic needs.

Sometimes there is one species that helps support all the other species. This is called a **keystone species**.



Just like a keystone in an arch holds the structure in place, the keystone species holds the ecosystem in balance. Without the keystone species, the whole ecosystem would suffer.

Beavers are a keystone species. They shape their habitats to create new types of ecosystems, like forested wetlands. Other plants and animals need these new ecosystems.

## Beaver Dam Forested Wetland Sequencing

Some forested wetlands are created by beavers. These forested wetlands can last for many years but are not permanent. Put the following stages in order to discover how a beaver makes a forested wetland, and how that forested wetland can change over time.

The answer will spell the word for beavers' genus.

**R** Once the pond completely fills with sediment, it becomes a bog or fen.

**C** A beaver builds a dam across a stream near a forest.

**T** As the forest trees die, more sunlight reaches the pond. Aquatic plants grow.

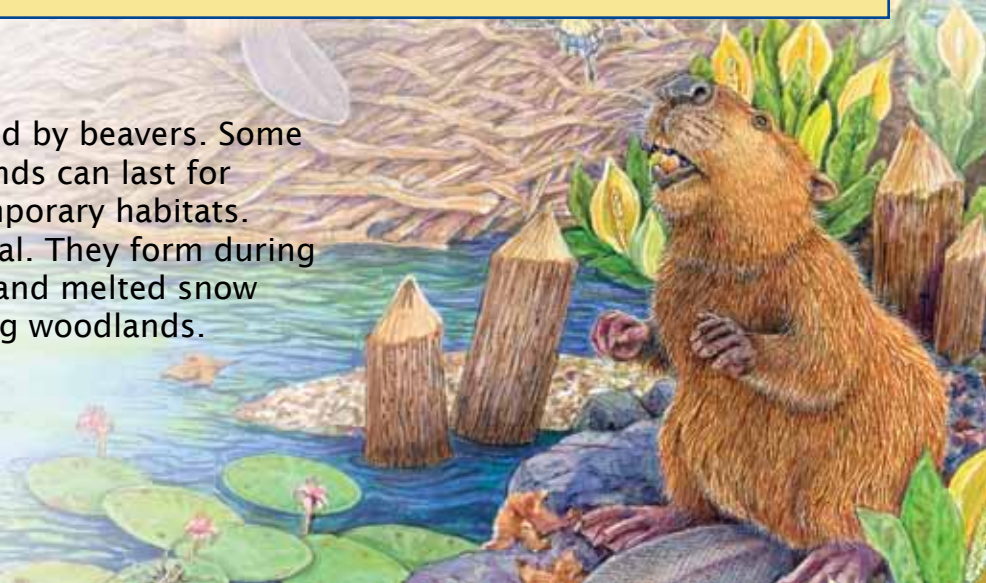
**O** Over many years, aquatic plants live and die. Old plant matter fills the pond with rich sediment, and the water gets shallower. New marsh plants begin to grow.

**S** Many trees cannot live with their roots underwater. They die in the new forested wetland. Some trees, like alders and cypress, continue to grow and thrive.

**A** The pond behind the dam floods the forest. This creates a forested wetland.

Not all forested wetlands are created by beavers. Some can occur naturally. Forested wetlands can last for centuries, or they may be more temporary habitats. Some forested wetlands are seasonal. They form during spring flooding as water from rain and melted snow overflows rivers and floods low-lying woodlands.

Answer: Castor. The North American beaver belongs to the species *Castor canadensis*.

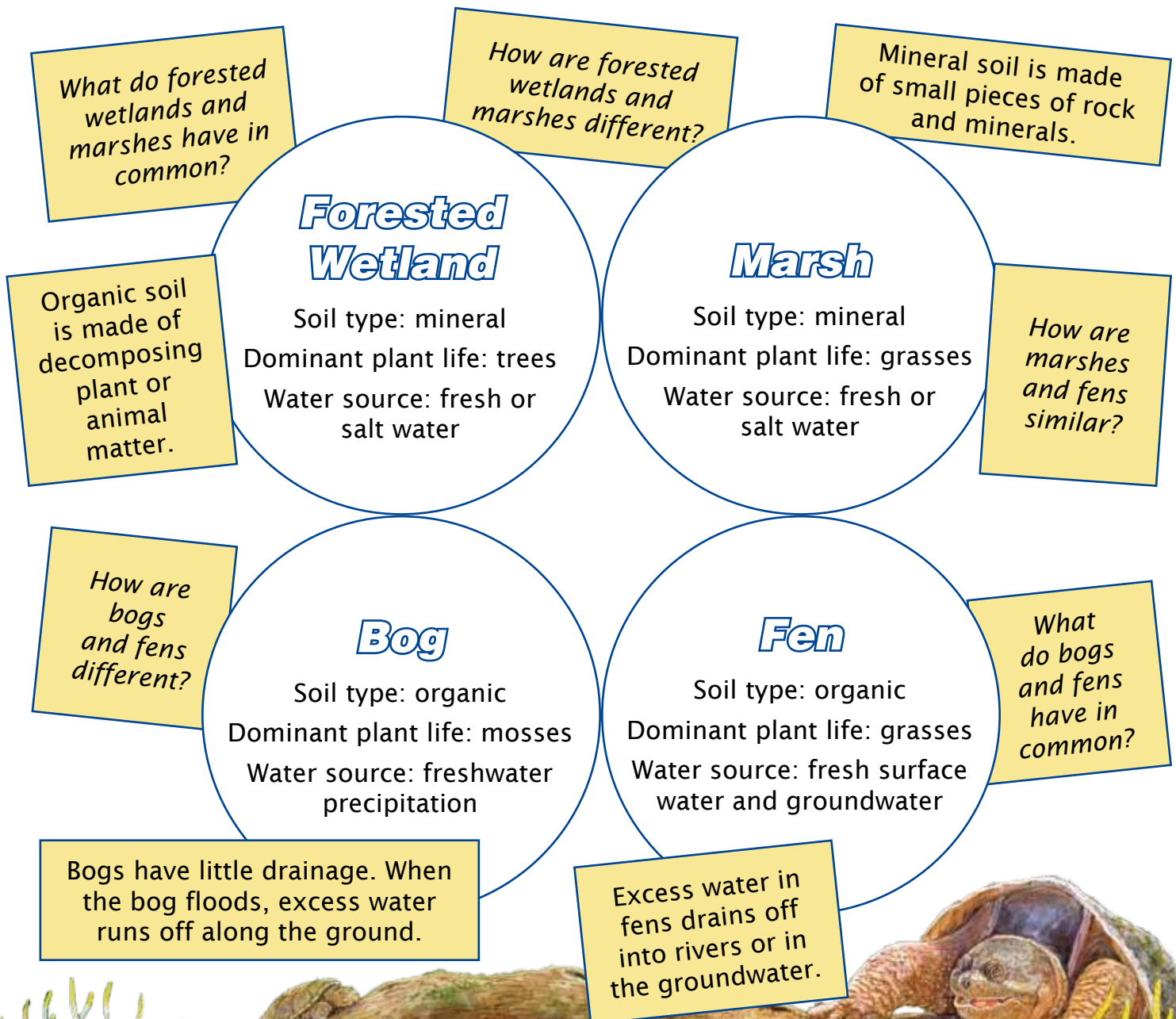


# Wetlands

A wetland is an environment where the soil becomes completely saturated with water. Shallow water sometimes covers the surface for at least part of the year. Wetlands can occur in areas with poor drainage or where the water table is close to the soil surface.

There are four main types of wetlands: forested wetlands (sometimes called swamps), marshes, bogs, and fens. Often multiple types of wetlands can exist side-by-side, without clear barriers between the different types.

*As a forested wetland created by a beaver dam changes over time, it can become which of these other wetland types?*



## Find the Animal

**Barred owls** make a hooting sound that sounds like they are saying “Who cooks for you.”

**Beaver** teeth are orange because they contain iron, which makes them stronger for cutting down trees.

**Bobcats** get their name from their naturally-short tails. “Bob” is an old-fashioned word that means “to cut short”.

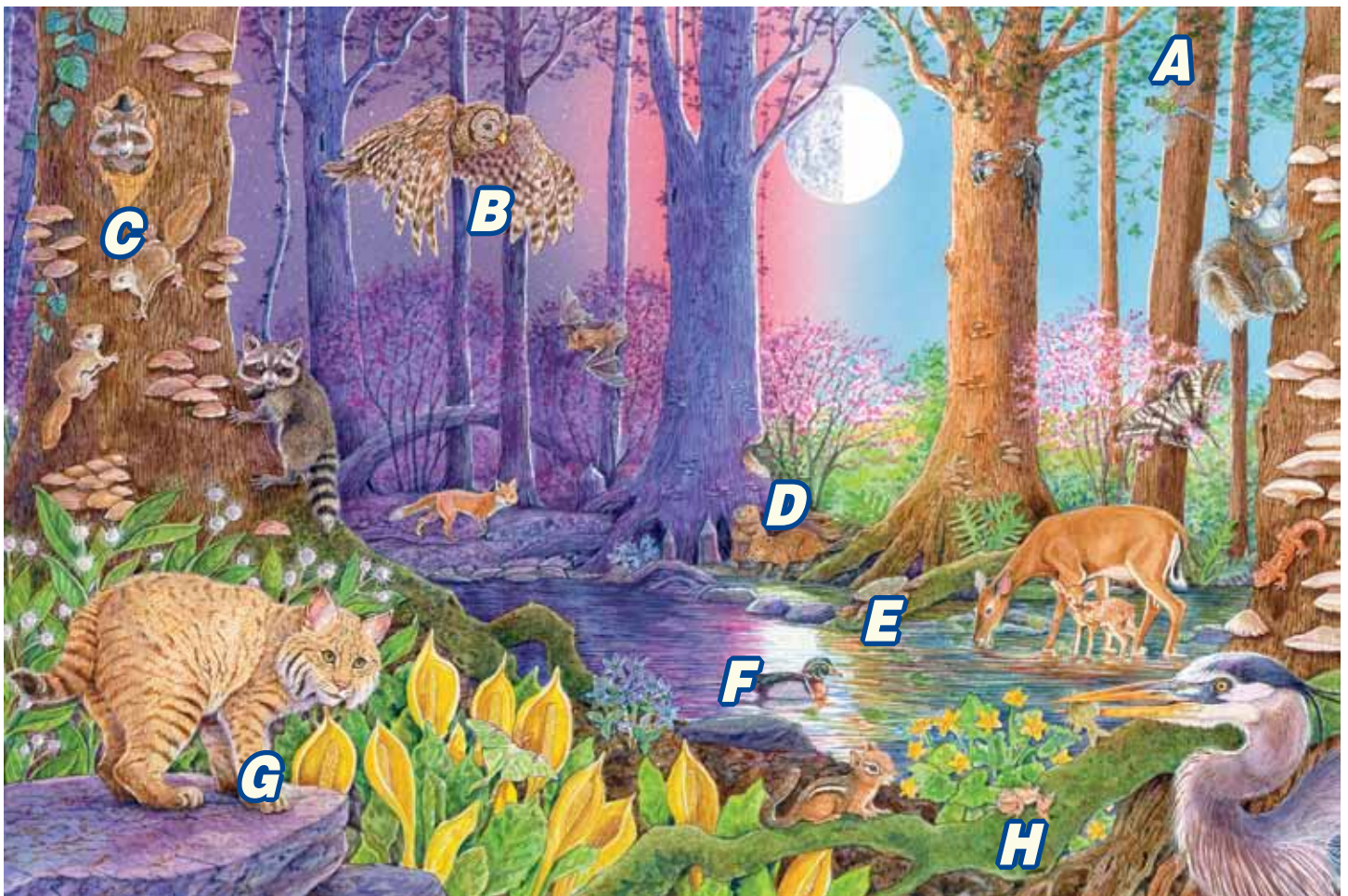
**Flying squirrels** can glide for distances over 150 feet.

**Green darners** will fly south for the winter, often in large swarms.

**Snapping turtles** eat both plants and animals (omnivores). One-third of their diet comes from plants.

**Spring peeper** bodies can freeze almost completely solid during the winter. They wake up in the spring when they warm up.

**Wood ducks** build nests in tree holes. Their ducklings can jump out of a nest from up to 50 feet in the air without hurting themselves.



Answers: A) green darter. B) barred owl. C) flying squirrel. D) beaver.  
E) snapping turtle. F) wood duck. G) bobcat. H) spring peeper.