

## WATER

## MUD

### BELTED KINGFISHER

**Belted kingfisher** hover above ponds looking for fish to eat. When they see an **Olympic mudminnow**, **coho salmon** or **three-spined stickleback**, they plunge head first into the still water.

### COMMON CATTAIL

**Common cattails** provide a place for birds to build their nests. They also help keep the water clean. Their roots hold the soil beside the pond in place and capture pollutants flowing from the land.

### BEAVER

**Beavers** are ecosystem engineers. Their dams, built of tree branches and trunks, create ponds that are important habitat for **common cattails**, **sedges**, **common rushes**, **three-spined stickleback**, **signal crayfish** and **buffleheads**.

### SIGNAL CRAYFISH

The **signal crayfish** eats the decaying roots and leaves of the **common cattail**, **sedges** and **common rushes**. It also eats **three-spined stickleback** and **Olympic mudminnows**. Some people catch them for dinner.

### AMERICAN BITTERN

An **American bittern's** brown and beige feathers blend in with the tall brown stems of the **common cattail**. This helps the **American bittern** sneak up on and catch **Olympic mudminnows**, **coho salmon** or **three-spined sticklebacks**.

### HARDHACK

**Hardhack** grows beside **common cattails**. It is a shrub with pretty pink flowers. **Western tiger swallowtails** pollinate **hardhack** flowers as they gathers nectar from the flowers. **Hardhack** also provides a spot for the **marsh wren** to nest and to hide from the **northern harrier**.

### RED-WINGED BLACKBIRD

**Red-winged blackbirds** perch on **common cattails**. They attach their nests to **common cattail** and other plant stems. **Red-winged blackbirds** eat **hardhack** seeds, berries, insects, spiders and snails. **Red-winged blackbirds** work together to defend themselves from **northern harriers**.

### COHO SALMON

When they're not in the ocean, **coho salmon** live in slow moving freshwater. They swim fast and jump sideways to avoid **belted kingfishers** and **great blue herons**. **Common cattails** and **common rushes** help keep the water where coho swim clean. **Coho salmon** make tasty fish tacos.

### NORTHERN HARRIER

The **northern harrier** hunts for **rough-skinned newts**, **northern red-legged frogs**, **red-winged blackbirds** and **marsh wrens**. They build their nests on the ground in a dense clump of **common cattails**, **common rushes** or **sedges**.

### MARSH WREN

The **marsh wren** is a small bird found in tall **common cattails** or other wetland plants. They're hard to see but you'll often hear them singing. They eat insects and nest near the ground amongst the **sedges** and **common rushes** and **hardhack**.

### OLYMPIC MUDMINNOW

The **Olympic mudminnow** is a small, striped fish. It lives in wetlands where **common cattails** and **common rushes** grow. They eat insects, such as **common green darner** larvae.

### THREE-SPINED STICKLEBACK

The **three-spined stickleback** spines help it avoid predators, such as bigger fish, **great blue herons** and **belted kingfishers**. The males guard their eggs so they aren't eaten by a **common green darner** larva.

SUN

OXYGEN

### GREAT BLUE HERON

**Great blue herons** thrive where beavers live. The slow-moving water created by beavers are home to the fish that herons eat. They eat **Olympic mudminnows, coho salmon** and **three-spined sticklebacks**. After eating, **great blue herons** preen their feathers to remove any fish oil.

### YELLOW POND-LILY

**Yellow pond-lilies** thrive in the slow-moving waters created by **beaver** dams. Their leaves float on the surface and their roots grow in the below. The **common green darner** rests on its leaves. It grows best in water that is clean. **Common cattails** help filter the water where the **yellow pond-lily** grows.

### WOOD DUCK

**Wood ducks** thrive in **beaver** ponds. They eat fruit, seeds and insects. **Wood ducks** nest in holes in rotting trees or in nest boxes put up by people.

### COMMON RUSH

**Common rush** stems are round. They grow along the edges of sunny wetlands. Ground nesting birds, such as the **American bittern**, **northern pintail** and **marsh wren** build their nests amongst **common rushes**.

### BUFFLEHEAD

**Buffleheads** are one of the smallest ducks you'll see in a wetland or on a calm ocean bay. Like **wood ducks**, they nest in holes in old trees or in nest boxes put up by people. They dive for insect larva, fish eggs, snails and small fish.

### WESTERN TIGER SWALLOWTAIL

**Western tiger swallowtails** pollinate **hardhack** flowers as they gather nectar. They lay their shiny, green eggs on the underside of leaves. The immature caterpillars look like bird droppings (that's a science word for bird poop). The chrysalis looks like a small branch.

### RIVER OTTER

**River otters** live in both freshwater wetlands and along ocean shores. They use their whiskers to detect prey in murky water. They eat the **signal crayfish**, frogs and bird eggs. The entrance to their dens are underwater to help protect them from predators.

### PEOPLE

### COMMON GREEN DARNER

The **common green darner** is a type of dragonfly that resembles a darning needle. They lay their eggs under the water near wetland plants. The larva live and grow under the water. When the mature larva are ready to become adults they crawl up nearby **sedges** or **common rushes** into the air.

### ROUGH-SKINNED NEWT

**Rough-skinned newt** larvae live under the water and breathe through feathery gills. The adults spend their time either in the water or nearby under logs and rocks. Under the water, they attach their eggs to aquatic plants, such as the **yellow pond-lily** or **common cattail**.

### SEDGE

**Sedges** have edges. If you gently roll a **sedge** stem between your fingers you can feel that it has three sides. Its fruit and seeds float on the water. The **northern pintail** and **wood duck** scoop them up in their bills. Their grass like stems help camouflage **American bittern** and **marsh wren** nests.

### NORTHERN PINTAIL

**Northern pintails** are ducks that feed and nest in wetlands. They build their nest on the ground amongst grasses, **sedges** and **common rushes**. They're social and will swim near **wood ducks** and **buffleheads**. They eat seeds and insects.

### WESTERN PAINTED TURTLE

The **western painted turtle** is named for the yellow stripes on its head, neck, tail and legs. In the winter, they hibernate in the mud at the bottom of wetlands. They bask in the sun on logs or mats of vegetation that are surrounded by water. Underwater, they eat insects, frogs and plants.

### SMALL DUCKWEED

**Small duckweed** is found in shallow, freshwater ponds. Each duckweed is a single free-floating leaf with one dangling root. It produces the world's smallest flower and fruit. Dabbling ducks, such as the **northern pintail** and wood duck scoop up **small duckweed** with their bills.

### **TOE-BITER BEETLE**

The **toe-biter beetles** preys on small fish, frogs, newts, turtles and other underwater insects. They grasp their prey with their two pinchers. Once they catch their prey, they inject them with poisonous digestive juices. It can't breathe underwater. Instead, while underwater, it breathes air trapped under its wings.

### **NORTHERN RED-LEGGED FROG**

The **northern red-legged frog** lives in slow-moving water. It prefers wetlands where lots of plants grow. It attaches its egg masses to **common cattail, common rush, sedge,** and **hardhack** stems growing under the water. Tadpoles are eaten by fish, **rough-skinned newts, toe-biter beetles** and dragonflies.

### **MUSKRAT**

The muskrat is a basically a large mouse that lives in a wetland. It lives where there are lots of **common cattails, pondweeds** and **sedges** growing. Muskrats eat these plants and use them to build their lodges. They bind the plants together with mud.

### **WHITE BOG ORCHID**

The white bog orchid grows a slender stalk of white flowers. The flowers are very fragrant. The flowers are pollinated by insects, such as the **western tiger swallowtail**.

### **SKUNK CABBAGE**

Skunk cabbage lives in muddy wetlands. Its large leaves and yellow flower emerge in early spring. Its skunky smell attracts flies to pollinate it. B.C. First Nations used the leaves to wrap food, similar to how we use wax paper today.

### **ROUND-LEAF SUNDEW**

The round-leaf sundew has sticky red tentacles that capture small insects such as mosquitoes, midges and gnats. It uses digestive juices to dissolve nutrients out of these insects because there not many nutrients in the wetland soils where it lives.