Built to Survive in the Charles River Habitat:
a guide to our favorite local organisms

Third graders at the Cambridgeport School are proud to share their research with you. They hope that as you learn more about the organisms of the Charles River, you will care enough about them to continue efforts to protect them. We are grateful to the Charles River Watershed Association and aquatic scientist Elisabeth Cianciola for sharing resources and information with us, and for their hard work to make the Charles River habitat a safer, healthier place.

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The Alewife Herring
by Issaiah

The Alewife Herring depends on its habitat to survive. They live in water 56 to 100 meters deep at about 40 degrees C. They are sensitive to light and tend to be in deeper water during daylight hours. Alewives eat mostly zooplankton, small crustaceans, cladocerans, mysids and ostracods. Some spawning adults eat small fish or fish eggs.

The Alewife Herring relies on its body to survive. The color helps them camouflage in the water. The gills help them breathe underwater. The Alewife Herring is built to survive in its habitat.
The Lily Pad
by Destin

Floating on the Charles River is the water lily pad. The water lily depends on its habitat to stay alive. The water lily eats sunlight. Do not plant too many trees but still enough to get our oxygen. The water lily needs all that stuff from its habitat to stay alive.

The water lily needs veins to have the water go through the stem so the water can go through the water lily's body structure. It also needs to have a flower to grow seeds to reproduce. The water lily needs a long stem so the water lily can stay in one place for along time. It needs green leaves to absorb sunlight and the shape of the leaf to float.

People had to build buildings to get rid of the nasty stuff that was in the Charles River. When you go canoeing make sure to not hit the water lily because it can hurt the water lily. The flower on the water lily also has a seed inside. Some people grow water lilies in garden ponds too. The water lily is getting admired right now.
The Crayfish
by Corinne

Crayfish need a lot of things from their habitat like people need homes. It is the same for Crayfish. If people don’t have homes, like crayfish, we will not live. Water is like oxygen for crayfish. They need temperate freshwater like lakes, ponds and rivers. Algae help crayfish live. If Crayfish do not have those things they will die. Crayfish eat snails, insects, plants, algae, and other invertebrates. The habitat gives shelter and food.

What parts of the Crayfish’s body help them live? Crayfish have 10 walking legs that help them get away from Predators. Crayfish have claws and they have a dark banded stripe that runs along their middle. Raccoons are predators to Crayfish. Body structures help Crayfish survive.
The dragonfly needs a habitat to survive. It needs space to fly. They need freshwater to live near. They need open space to hunt. They eat small fish and insects they can grab. It needs a habitat to survive.

Dragonflies use their special body parts to survive. They fly much faster than other insects and can have wings up to 6 inches. It has 6 legs and 4 wings to fly. They have 2 large eyes used to find small fish, small animals and mosquitoes.
The American Eel
by Ella

The American Eel depends on its habitat to get food and shelter while it slithers through the water of the Charles River. The warm water doesn’t affect the American Eel as much as other organisms in the Charles River because it can store a little bit of air in its body. The colder the water the more oxygen there is in the water. The American Eel hunts at night; in the day it sleeps in caves near a rocky shore or digs in the muddy ground to hide from predators. If the American Eel doesn’t migrate to the ocean it will never finish its life cycle to lay more eggs. After the eggs hatch they begin their long 2-5 year journey back to the river. In its long life it also needs to eat. The American Eel feasts on mussels, insects, worms, snails, shrimp, smaller fishes, fish eggs and clams. The American Eel relies on its habitat.

The American Eel doesn’t just need its habitat to survive; it also needs physical features on its body to help catch prey and defend enemies. It has its long fin on its
back, that helps it swim through the waters of the Charles River. The American Eel is greenish brown so it is very easy for it to camouflage. It also has very smooth skin so water can easily go over its body. It has a pointy head so it can cut through the water. It has very sharp teeth so when it sees food it can clench down on its food and the prey has a very hard time escaping. The American Eel also has an extra feature where it can absorb oxygen through its skin and slither on land like a snake. When it’s swimming back to the river its stomach shrinks and it doesn’t eat anymore. On its way it turns gray. When it gets to the river it lays its eggs then dies. The American Eel has physical structures on its body that help it survive.

Dams and sewers that humans built can also interfere with the American Eel’s life cycle. When it rains sewers can overflow and polluted water can get into the river. The polluted water can kill the American Eel but it can also kill its prey so it will starve to death. Dams can stop the life cycle when the American Eel can’t get over the dam. If they don’t lay their eggs in the river the population will go down. Dams and sewers can interfere with the life cycle.
The White Catfish
by Nada

White catfish depend on its habitat to stay alive. Without salt water it won’t be alive by now. It hides in deep muddy holes. White catfish eat reptiles, fish, insects, mollusks.

The white catfish relies on its body to help it survive. It survives with its fins, spine, heart and blood. Its fins help it swim. Its heart helps it live. Its spine helps its brain sends messages to its tail to make it move. It has gills because it helps it breath. Its scale is another part of the body structure. The heart pumps so that it goes to its lungs so that it survives. The size of the white catfish helps it eat small fish.
The Beaver
by Itamar

Stomping on the Charles River grounds, the beaver depends on its habitat. Beavers need branches to eat and build with in order to build dams. Beavers also eat bugs, and leaves. The beaver relies on its habitat.

Beavers have particular body structures to help it survive. Beaver’s tails are scaly and flat and look like paddles. They use them to swim. Beavers have front hands with 5 joints, that helps them carry more than human beings. Beavers have webbed feet which helps them swim. Beavers have special body parts.

Other fun facts: Beaver dams are not bad. Their dams actually make habitats for other organisms. Once they make dams soil sinks into water and then that soil turns
mad rich. So a lot of trees grow, and then more organisms can live there. That's why beavers are one of the most important organisms in the Charles River.

Sewer Problem

If sewers overflow it can cause devastation to a beaver's dam. So don't throw trash into the Charles. And don't support human dams because they cover huge parts of the Charles. That means that fish cannot pass through dams. But Beaver dams are made out of sticks so fish can pass through. Help the organisms of the Charles. Make your mark on the world!
The Red Spotted Salamander
by Noah

The red spotted salamander relies on its habitat to survive but the habitat they live in is filled with trash and that makes the Charles River hard to rely on. If the red spotted salamander does not have a nice clean pond, stream or river to swim in, it is almost impossible for it to survive. Some more things it needs to survive is a bed of leaves and a tunnel. A baby salamander must live in a pond until they grow legs and develop in two habitats (on land and in the water). The red spotted salamander’s habitat, the Charles River, is packed with small fish the salamanders can munch on and worms, snail, frog tadpoles and millipedes and centipedes. (They’re carnivores.) The red
spotted salamander relies on the Charles River, and if they were kicked out it would take years for them to adapt and rely on their “new” habitat.

The red spotted salamander also relies on its body structures to survive in that habitat. One amazing body structure it has is its skin is creased with poison so if a predator tries to eat it the poison kills it. The female red spotted salamander is slightly larger than the male and that definitely helps it hunt. The red spotted salamander has webbed feet to walk/crawl on land.

The red spotted salamander is struggling because of the dams around because the dams are being used for electricity (otherwise known as pollution.) Pollution hurts the environment including the Charles River, and that is why WE want to get rid of them. If we don't so many organisms may die, including the red spotted salamander. The red spotted salamander isn't expecting that because it trusts us and if we break that trust and don't take down the dams it will be immensely hard for all the organisms to survive. People don't care about them and we want YOU to make a difference on the Charles River.
The Spring Peeper Frog
by Dimitrije

The spring peeper frog hops and swims along the Charles River. The Charles River is great for the spring peeper because it gives it pools to swim in and soil to burrow in.

The spring peeper eats things like insects, spiders, and algae that it finds near the Charles River.

The spring peepers body structures help it survive in the Charles River. It has long toes and webbed feet for swimming and jumping. Its stripes and coloration make it hard for predators to find.
The Painted Turtle
by Ronan

Slightly swimming through the waters of the Charles River, the painted turtle needs many things from its habitat like food. Imagine a river without food. The painted turtle also needs to eat many things to survive, like fish and plants. Painted turtles live in groups under things like logs. They can live up to 40 years. The painted turtle needs its habitat to survive.

The painted turtle has physical structures to help it survive like a shell. Without a shell it cannot survive and they can hide in their shell. They are 3 to 9 inches and the female is larger than male. The painted turtle needs its physical structures to live.
The Common Carp
by Rayan

Imagine a river with trash and it will not be a good place for the common carp. The common carp does not like a messy river. It needs a clean river to find rocky places to live in. And sleep and get a well done meal. The common carp likes rocky places for its body to get stronger. The more rocky it is the more stronger. The reason it gets stronger is rocks or strong so when the common carp gets slimy really tiny rocks almost stick to its body like magic. The common carp always needs a hiding spot. So it can get it meal easy.. It needs a lot of room because when danger there's not a lot of shelter where it lives. So if there is danger it goes to go its home for shelter. Common carps always do
not need a messy river it needs a clean river because when it is dirty the it needs to use a lot of power to light up its cylinders

Common carps always use their body structures to survive in the Charles River and the Atlantic Ocean. They use a lit up cylinders from the side of their mouths so when it is dark they can see in the dark. When other fish go up to breath the common carp stays more than most underwater fish. It is so brown it can blend in with the rocks for its meal. And hiding so if a shark comes by it blends in with all the rocks around it for safe comfort then when the shark is gone it comes out of blending in. When it breathes it doesn't take the full breath. It saves some in it’s body for more breath than other fish. It doesn’t like a lot of cold. The common carp depends on it’s body structures to help it live.
The Soft Shelled Clam
by Owen

Here are some great facts about the wonderful Soft Shelled Clam. In these words it tells about the amazing world of science. So let’s get going.

Lying at the bottom of the Charles River lives the soft shelled clam. Here are the stuff it needs from its habitat. It is protected by the movement of waves. It stays at the bottom to stay safe and keep away from predators. It is very rocky down there.

Here are the body structures it needs to survive. Soft shelled clams’ bodies are protected by a hard shell. Two of the muscles help protect it. It has no teeth. It mostly eats plankton. The soft shelled clam has body structures that it needs to survive. The muscles help keep the shell closed. It is protected by the movement of the waves because it lives in shallow water it gets hidden from predators. Since the coral is really rocky down there, and as we all know clams are hard, I think it’s good camouflage.
The Muskrat
by Kamari

The muskrat needs a clean habitat, because if it has a dirty one it will die. The muskrat eats roots and frogs and fish. The muskrat needs marsh swamp and bog to use as a home, because if it does not have those things it won't survive.

The muskrat’s body parts help it survive. Did you know that muskrats are related to beavers? The muskrat munches through ice with its sharp teeth. The muskrat’s fur is waterproof to help it swim. It does not get cold because it has a warm coat underneath. The muskrat’s body is built for its habitat.
The Blue Heron

by Keianna

The blue heron needs a lot of things from its habitat. The blue heron uses trees to nest in. Great blue herons usually travel in groups not all the time but sometimes they travel alone. Great blue herons can be found in Canada, the United States, Central and South America too. Great blue herons need to live near water to find food like frogs and fish. The things that eat them are red tailed hawks, bears and common raven and raccoons.

The way its body helps it survive is the long legs because the legs are 6 feet long and the wings are up to 19 feet long so they can fly very fast.
The River Otter
by Rafi

Crazy Habitat

The North American river otter relies on its habitat to survive. The River Otter lives where the habitat offers water and food to eat and drink. The river otter can also live in cold or warm waters. The river otter is also very careful about its habitat because it cannot live in polluted waters. It eats birds, eggs, insects, plants and water. It also eats mammals and amphibians. That is what the river otter’s habitat gives to it.

Amazing Body Features

The river otter uses its long body and other amazing features to survive. It uses short legs so it doesn’t get unwanted company of predators and its semi-aquatic body to move on land and in the water. The webbing between its claws
help it paddle through the water. Its nose helps it to smell out prey. It uses its long body to dive and its flat body and its fur to keep it warm.

The river otter uses its amazing body structures to escape these predators, including bobcats, coyotes, birds and alligators. The river otter uses its hands which unlike other animals have thumbs and mouth to catch its prey and to survive. That is how the river otter uses its body to survive.

Pollution, No Habitat

The river otter can not live in polluted water. If they did they would die from food poisoning. The reason behind that is the food would be poisoned too. Also the river otter population would go down and they would become endangered species. That’s one reason why people should not litter or drop trash in any kind of river. That is what pollution can do to animals that live in big or small long or short places with our very strong and helpful bodies of water. But at least people have been setting up clean up groups to help keep the animals and clean the air and water so we and the other animals can live in the Charles river or any kind of river or body of water.
Eating dead plants in the Charles River is the riffle beetle! The riffle beetle needs to live in riffle zones. Riffle zones are places for it to float and get their food like the Charles River. The riffle beetle depends on its habitat.

The riffle beetle’s body is built to survive. The riffle beetle has thousands of hairs to make so it could blend in the Charles River. The riffle beetle has long legs to float in the Charles River.
The Mallard Duck
by Maddy

The mallard duck needs lots of things from its habitat to live and to stay alive. It needs food, water, plants, insects and worms and air to stay alive. It also needs grassy land because it sometimes needs a break.

The mallard duck needs body parts to live and its body parts to survive. It has a bill, which helps it sift out food from the water. Its wings are good for flying. Its feet are webbed which is good for swimming. Also it has feathers which keep it warm. The mallard duck needs lots of body parts to stay alive.
The American Toad

by Jasper

Hopping in the New England forests is the American Toad. The American Toad needs a habitat to live. It needs a freshwater pond to survive. They need food to survive in their habitat. In their habitat they lay their eggs. Toads don't drink water but soak in it. Some large toads eat other frogs and rodents. Trash in the Charles River makes it hard for the toads to live.

The American Toad has a fantastic body. They use their tongues to catch bugs. When in danger it puffs itself so it is harder for its predator to eat them. They have a chemical on their skin that can irritate its predators. They are carnivores. American toads have a bunch of defences to attack. One of the main predators of the toad is the hognose snakes. Adult toads can eat up to 1000 insects a day. They have short legs stout bodies and thick skins with noticeable warts.
The gulls fly across the Charles River to its habitat. Gulls need to eat fish to survive. They live near land. They need some of the land to make their nest and survive the whole night. They need fish so the babies and the grown ups can eat.

The gull needs its body to fly and catch fish. Gulls need hearts to stay alive. They need their lungs to breathe. Some gulls are savage, they can steal another gull's meal. Their wings keep the gull in the air. The Gull is going in the water so that the babies can eat to get their fish. The babies grow and grow and grow and turn to grownups. Gulls need their legs to grab fish and other prey.
Catching fish in the waters of the Charles River, the largemouth bass needs a lot from its habitat to survive. It needs shallow waters to be able to find its prey. If the water is more clear and quiet it might be more successful for it to find its food. What the food the largemouth bass gets from its habitat is zooplankton, aquatic insects, crayfish and other fish species. The largemouth bass relies on its habitat.

A largemouth bass body is built to catch prey and defend predators. Largemouth bass use their large mouth to help them catch fish. They are prized angling fish because of their quick and strong movements. The largemouth bass uses its dorsal fins to help it swim faster and faster. The largemouth bass predators are the yellow perch, the walleye, the northern pike, the muskellunge, and humans.
The Raccoon
by Adriana

A raccoon relies on its habitat to survive. What a raccoon needs from its habitat is a water source because animals need any type of liquid. Raccoons eat crayfish, insects, rodents, frogs, fish, and bird eggs. If a raccoon doesn't have food it will die of hunger. Raccoons prefer to live in woodland areas.

The raccoon’s body structures is meant for this habitat. Some body structures a raccoon has are claws and a lot more like the eyes to let it see and the nose to let it smell. One thing a raccoon has that a lot of animals don’t are fingers that can move around so they could grab stuff like food. It’s a good thing because if they had flat hands they wouldn’t be able to grab stuff.
Our Resources:

- https://cdn2.hubspot.net/hub/311892/file-624489908-pdf/CTAs/Fish_Field_Guide/FishFieldGuide2014.pdf?utm_source=hs_automation&utm_medium=email&utm_content=12367427&hsenc=p2ANqtz--R2QeiV-Lqge5He08xhxGfKt9FRYNTmethTIXDihNDEtGWs_uyKsNoEbU2PpVRgpbr-IWn8YmMDc-5687552Dc7GFQ17GDk3WEiEU&hsmi=12367427
- http://www.biokids.umich.edu/critters/Alosa_pseudoharengus/
- http://school.eb.com/levels/elementary/article/390611
- http://www.biokids.umich.edu/critters/Ictalurus_punctatus/
- http://school.eb.com/levels/middle/article/353085
- http://www.biokids.umich.edu/critters/Cyprinus_carpio/
- http://school.eb.com/levels/elementary/article/390662
- http://school.eb.com/levels/elementary/article/352837
- http://www.biokids.umich.edu/critters/Ondatra_zibethicus/
- http://school.eb.com/levels/elementary/article/353510
- http://school.eb.com/levels/elementary/article/353690
- http://www.biokids.umich.edu/critters/Procyon_lotor/
- http://www.biokids.umich.edu/critters/Chrysemys_picta/
- https://www.warnernaturecenter.org/animals/paintedturtle
- http://www.chesapeakebay.net/fieldguide/critter/soft_shell_clam
- http://school.eb.com/levels/middle/article/600564
- http://school.eb.com/levels/elementary/article/35358
- http://www.biokids.umich.edu/critters/Lontra_canadensis/
- http://www.biokids.umich.edu/critters/Ambystoma_maculatum/
- http://www.biokids.umich.edu/critters/Pseudacris_crucifer/
- http://school.eb.com/levels/elementary/article/390140
- http://school.eb.com/levels/elementary/article/390734
- http://www.biokids.umich.edu/critters/Anisoptera/
- http://www.biokids.umich.edu/critters/Elmidae
- http://school.eb.com/levels/elementary/article/352842
- http://www.biokids.umich.edu/critters/Orconectes_propinquus/
- http://school.eb.com/levels/elementary/article/353023
- http://www.biokids.umich.edu/critters/Anas_platyrynchos/
- http://school.eb.com/levels/elementary/article/390384
- http://school.eb.com/levels/elementary/article/390616
- http://www.biokids.umich.edu/critters/Ardea_herodias/
- http://www.biokids.umich.edu/critters/Larus_delawarensis/
- http://school.eb.com/levels/elementary/article/353219
- http://school.eb.com/levels/elementary/article/353915