

RIPARIAN HABITAT

A **riparian habitat** is an area along the bank of a natural river or stream. Things that are included in a study of a riparian habitat are: the plants, wildlife, and physical site information.

The study of plant life along a stream or river includes identification of the plants, canopy cover, and different ages of the trees and shrubs. Wildlife information includes details of mammal activity and observations of birds, fish, amphibians, and reptiles. Physical site information includes the **stream morphology** (form and shape of the river), what kind of material is in the streambed and banks, disturbances found around the stream (human and natural causes), and the amount and cause of bare ground along the river.

Plant life contributes to the health of a stream or river. Plants provide many things that influence fish habitat. Plants prevent erosion, influence water temperature, provide cover for fish to hide in, and provide food from organisms that fall into the water. A wide variety of plants provide homes for a wide variety of bird life. A healthy riparian habitat also provides enough resources for migrating birds that will stop to rest and feed.

At one time logging and farming would occur right up to the banks of a river or stream. With more information gained from scientific studies of riparian habitats, logging companies and farms are required to leave natural vegetation along the river or stream. Logs and snags are now left in the water to provide still pools for fish to rest in and hide from predators and a place to obtain food and lay eggs.

A riparian area provides a **habitat** (food, water, and shelter) for all kinds of wildlife. The following animals would make their home in a riparian area:

Mammals:

Beaver

<http://static.open.salon.com/files/beaver1231206221.jpg>

<http://www.youtube.com/watch?v=kZVbKwDmr-o>

River Otter

<http://www.fws.gov/midwest/images/RiverOtter.jpg>

<http://www.youtube.com/watch?v=XsxHbJ-5Mew>

Muskrat

<http://www.rsmintermediate.com/leeweb/per2htmlT1/davankarmp2htm/muskrat2.jpg>

<http://video.google.com/videoplay?docid=6971734752657644679&ei=rvuFS8-gJKWaqQOplqCnBw&q=muskrat&hl=en&view=3&client=firefox-a#>

Raccoon

<http://www.saynotocrack.com/wp-content/uploads/2008/07/raccoon.jpg>

<http://video.google.com/videoplay?docid=-5785836630559000117&ei=WvyFS7LEMYP-gAPG-CnBw&q=raccoons&hl=en&view=3&client=firefox-a#>

Deer

<http://www.michiganfilmoffice.org/cm/images/content/789px-White-tailed-deer.jpg>

<http://www.youtube.com/watch?v=LRzzBc6fwkI>

Elk

<http://www.gg.rhul.ac.uk/MScQS/2007/Flower/elk.jpg>

Small Rodent

<http://barriertermite.com/housemouse.gif>

Brown Bats

http://mariewin.server304.com/marieblog/uploaded_images/BROWN%20BAT-768944.jpg

Birds:

Osprey

<http://www.visitcumbria.com/photos/osprey1.jpg>

Belted kingfisher

http://dsf.chesco.org/ccparks/lib/ccparks/creaturefeature/img_5454_belted_kingfisher.jpg

Water ouzel

<http://yosemiteexplorer.com/albums/d/3342-4/061209-17-supers-bridge-ouzel.jpg>

Great blue heron

http://api.ning.com/files/rceLnAKn5My2XjnchvTa*beT41PAs3kTqd44thOTQLTdkwmwCcOGx3d8s-odx65fHXZotZb3XqqtLelzSfQbrdgtBYai0QeG/greatblueheron.jpg

Canada Goose

http://grizzlyrun.com/Files/Images/Image_Gallery/Canada_goose.jpg

Mallard Duck

<http://www.hrhunter.com/images/Species/Mallard.jpg>

Merganser

<http://www.cst.cmich.edu/users/dietr1rv/birds/%23HoodedMerganser.JPG>

Grouse

<http://www3.cesa10.k12.wi.us/ecosystems/woodlands/birds/GROUSE2.jpg>

Quail

<http://henrykh.files.wordpress.com/2009/06/california-quail.jpg>

Dove

http://agriculturenews.net/Public/UploadedImages/Brief_en-20051114103710_dove.jpg

Pileated woodpecker

http://www.college.emory.edu/culpeper/GOUZOULES/site/images/birds/bpics/pileated_woodpecker.jpg

Cliff swallow

http://world.std.com/~eva/co_cliff_swallow_nesting.jpg

Amphibians:

Pacific giant salamander

<http://www.odsacom/images/munchmouse.jpg>

Olympic salamander

<http://www.fws.gov/digitalmedia/FullRes/natdiglib/E777887A-BBEB-4978-9BD8E82EFA648EF3.jpg>

Northern red-legged frog

http://www.fws.gov/arcata/fisheries/herps/images/frogs/northern_red-legged_frog.jpg

Northwestern toad

<http://www.rgisbc.com/Introduced%20species/Others/frog1.jpg>

Tailed frog

<http://www.washington.edu/burkemuseum/collections/herpetology/ascaphus1.jpg>

Reptiles:

Garter snake

<http://www.mynaturephotos.com/images/Garter-Snake.JPG>

The physical site information includes the **stream morphology**. Stream morphology refers to the form and shape of the river. The form and shape of the river will depend on the slope of the land, the materials that make up the land and gravity. Streams and rivers that travel down steep slopes form fast running water. Rivers and streams traveling through level land form **meanders**, winding and turning curves through the land. If you look at an aerial photograph of the Sandy River as it travels through the Metro Regional Oxbow Park you will see U-shaped meanders that are called oxbows. Oxbows get their name from the U shaped piece of wood that fits under and around the neck of an ox.

A second part of the physical site information is the streambed. Some streambeds are made up of rocks that form rapids and white water. Some are composed of gravel and sand and can provide places for salmon to spawn. And still others are composed of sand, clay, silt, and other sediments that may provide a safe harbor for amphibians.

Finally, a look at the physical site information looks at disturbances and areas of bare ground along the river or stream that may affect soil erosion, and water turbidity.

Anadromous Fish

In the Pacific Northwest, we are proud of an anadromous fish that represents this region of the United States. An **Anadromous fish** is a fish that lives part of its life in the ocean and then migrates to fresh water to **spawn** (lay its eggs, fertilize eggs). The salmon of the Pacific Northwest is an anadromous fish. It is important for us to know about the life and habits of the salmon because humans can affect their habitats.

Salmon Life Cycle – Videos

<http://www.youtube.com/watch?v=EgmGSexPaEk>

<http://player.discoveryeducation.com/index.cfm?guidAssetId=A2E6FEDE-E75F-40EB-95FD-6EFBDE05392D&InFromSearch=1&productcode=US>

Salmon Life Cycle – Picture

http://www.thinksalmon.com/images/uploads/salmon_lifecycle_illustration_full.jpg

The female salmon **spawns** – lays her eggs – and the male salmon fertilizes the eggs in a nest referred to as a **redd** due to the pink color of the salmon eggs. In about 8-week's time, the eggs will hatch with an egg sac attached. They are referred to as **sac fry** at this stage and will continue to mature as the sac gets smaller. Eventually, the sac will disappear behind scales and function as their digestive system – thus becoming **button-up fry**. At this point in development, the small fish are ready to hunt and eat on their own. They will remain in the fresh water near where they hatched for about 1 to 2 years and grow in size and strength.

At about 2-years of age, fingerlings begin to change internally as they migrate down the river towards the ocean and the waiting salt water where they will spend the majority of their adult lives. The process where the salmon get ready to prepare for the ocean water is called the **smolt** stage. During this stage, the salmon's kidneys change to be able to process salt through their system.

Once they reach the ocean, salmon will mature and live anywhere from 3–5 years and travel in schools over great distances. At some point in their adult lives, a trigger is flipped on and the salmon are drawn back to the headwaters of the very river where they were hatched. Traveling great distances and having to scale fish ladders, rapids, and waterfalls, salmon will eventually follow the river to the actual streambed where their ancestors deposited them many years prior. The cycle then comes full circle as the females spawn and males fertilize with their remaining strength and final breaths.

References:

Salmon Activity Book – 18 pages

www.critfc.org/kids/activity_book.pdf

Chinook Salmon

<http://www.adfg.state.ak.us/pubs/notebook/fish/chinook.php>

Coho Salmon

<http://www.adfg.state.ak.us/pubs/notebook/fish/coho.php>

Chum Salmon

<http://www.adfg.state.ak.us/pubs/notebook/fish/chum.php>

Salmon Life Cycle

<http://cybersalmon.fws.gov/chin.htm>

Sammy Salmon Site

<http://www.canfisco.com/kids/homepage.asp>

More Salmon Life–Cycle Videos

<http://pbskids.org/dragonflytv/show/salmonrun.html>

Riparian Habitats

<http://www.cfses.org/salmonid/html/water/habitat.htm>

<http://www.science.smith.edu/departments/Endangered/riparian.html>