



Dytiscid larva

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Hydrochara

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Aquatic Beetles

common name

many different species

scientific name

phylum

Arthropoda

class

Insecta

order

Coleoptera

family

Dytiscidae and Hydrophilidae

habitat

vernal pools, lakes, ponds, marshes, and quiet streams

size

3 to 44 mm long

description

The most common species of Aquatic Beetles in vernal pools come from two families: The Predaceous Diving Beetles (the Dytiscids) and the Water Scavenger Beetles (the Hydrophilids). The larvae of both families are similar. They are worm-like, with hard heads and a pair of long, sharp pincers for jaws. Their jaws are specially designed to capture and eat aquatic animals. The jaws have long, hollow grooves along them that work like straws to suck out nutritious body fluids. The larvae of some species hunt by hanging by their tails from the water surface. Others hold onto underwater plants.

description
(continued)

Adult beetles can fly. They can also swim on top of or under water. The hind legs are flat and fringed with long hairs that form paddles for swimming. The adult beetles are smooth, oval and very hard. Most are black, but some species are brown or green. Like other beetles, they have two pair of wings. The front pair is hardened to cover the back of the beetle. Tucked under these hard wings

is a pair of normal wings used for flying. The adults of many Aquatic Beetle species protect themselves with a sharp spine on the end of their [abdomen](#), so watch out!

fun facts

The larvae of Aquatic Beetles are called "Water Tigers" because they are fierce hunters. They will eat almost any prey they can catch. The Ricksecker's Water Scavenger Beetle stabs its prey with its jaws. Then it climbs up a plant to get to the water surface where it holds its prey out of the water. The juices from the prey run into the beetle's mouth, without flowing into the vernal pool. This method avoids loss of the juices and avoids attracting other predators to lunch.

life cycle

The female beetles lay their eggs under water. Most species deposit eggs in a silk case that they attach to an aquatic plant. The eggs hatch into larvae, which are soft-bodied and worm-like. The larvae go through [metamorphosis](#), to change into their adult beetle form.

ecology

Many species of Aquatic Beetles live in vernal pools. The larvae will eat almost anything that moves, including prey much larger than themselves. They eat Water Fleas, Flatworms, Copepods, Mosquito larvae, Water Boatmen, and Pacific Chorus Frog tadpoles. They will even eat the larvae of other Aquatic Beetles. As adults, Dytiscid beetles continue to be [carnivores](#). Hydrophilid beetle adults become [herbivores](#). The larvae and adults of Aquatic Beetles are eaten by frogs, salamanders, wading birds like the Great Blue Heron, [shore birds](#) like the Killdeer, and ducks like the Mallard.

investigate

You will probably see Aquatic Beetle larvae in vernal pools. However, it is less common to see the adults. Observe other common beetles that you can easily find in the field or around your home, such as Lady Bugs. Watch them just as they take off to fly. You will notice that the hardened wings (the elytra) are hinged at the top. The beetle opens this pair to allow the wings underneath to unfold and fly.

Aquatic insects

Dytiscid and Hydrophilid beetles are insects. About a million insect species have been discovered and researchers estimate that at least two million exist. The number of insect species on Earth is greater than the total of all other animal species combined.

Most insect species live on land. There are only about 20,000 species of insects that spend part or all of their lives in the water. That means that only 2% of insects live in aquatic environments! Most of them must have clean water environments to survive.