

Vernal Pools



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American toads are found in vernal pools.

Vernal pools are seasonal wetlands. They are areas covered by shallow water for periods between winter and spring, but may be completely dry for most of the summer and fall. These wetlands range in size from small puddles to shallow lakes. Beneath vernal pools lies either bedrock or a hard clay layer in the soil that helps keep water in the pool.

Most vernal pools are found in upland forests, but another common location for vernal pools is in floodplains, such as the vernal pools found in the Red River floodplain at the Living Lab.

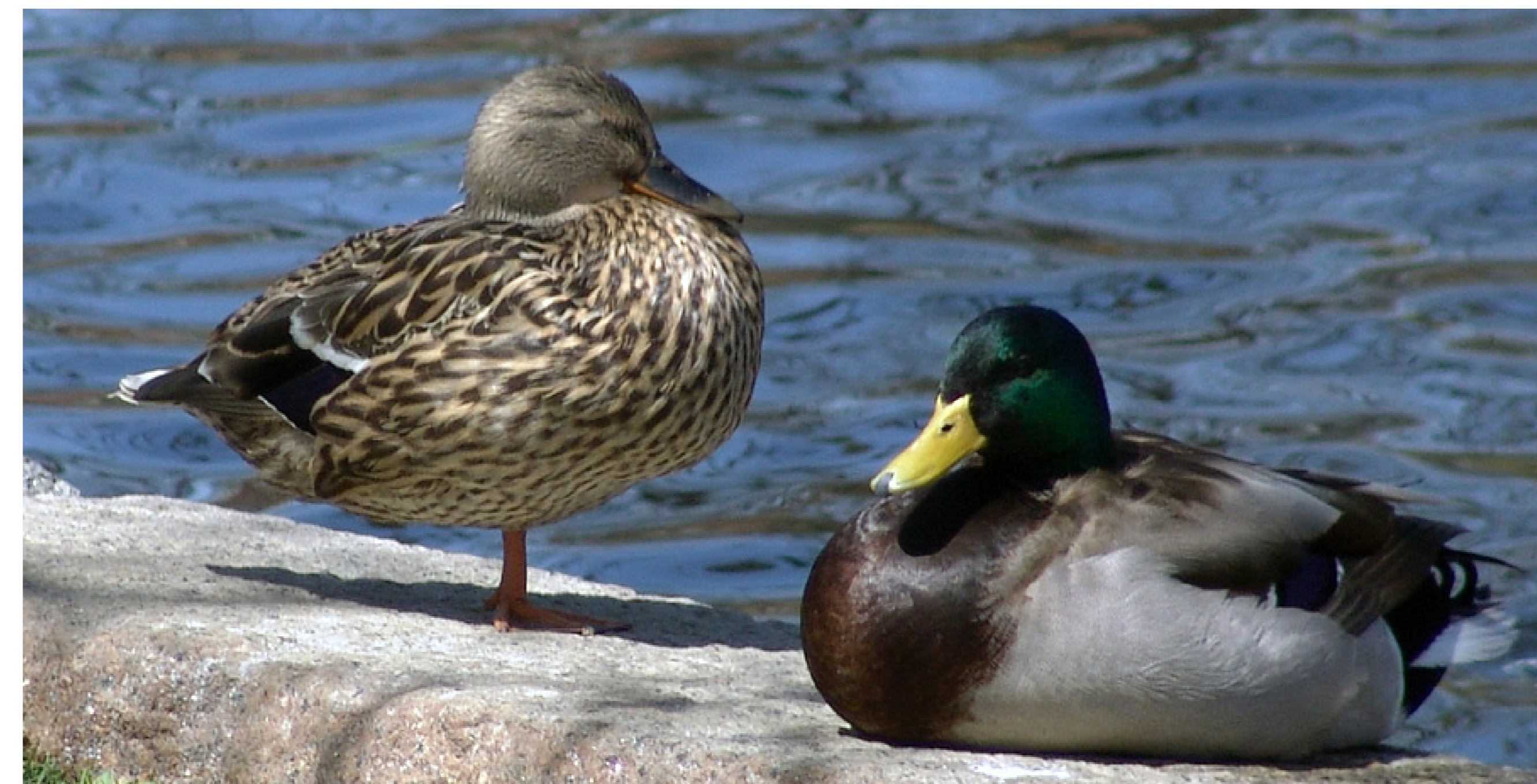
Seasonal climatic changes cause dramatic changes in the appearance of vernal pools. The pools collect water during winter and spring rains, changing in volume in response to these weather patterns. During a single season, pools may fill and dry several times. In years with little rain or drought, some pools may not fill at all. Because vernal pools completely dry up from time to time, it is impossible to establish fish populations in them.

The unique environment of vernal pools provides habitat for numerous rare plants and animals that can thrive in these harsh conditions. Many of these plants and animals spend the dry season as seeds, eggs, or cysts, and then grow and reproduce when the ponds are filled with water. In addition, birds such as ducks, egrets, and hawks use vernal pools as a seasonal source of food and water.



River Keepers

This vernal pool fills seasonally with water and wildlife.



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Mallard ducks are a facultative vernal pool species.

Obligate Vernal Pool Species

Obligate vernal pool species rely on vernal pools for all or portions of their life cycle and are unable to successfully complete their life cycle without vernal pools. This is often because these species depend on a wetland area without fish to act as predators.

Obligate species include wood frogs, spotted salamanders, blue-spotted salamanders, Jefferson salamanders, and fairy shrimp.

Facultative Vernal Pool Species

Facultative species are species that can use vernal pools for all or portions of their life cycle, but are able to successfully complete their life cycles in other water bodies. There are many types of facultative vernal pool species because of their flexibility in habitat.

Facultative amphibians include spring peepers, gray tree frogs, American toads, Fowler's toads, green frogs, pickerel frogs, leopard frogs, bull frogs, four-toed salamanders, and red-spotted newts.

Facultative invertebrates include water scavenger beetles, giant water bugs, water scorpions, dragonfly larvae, caddisfly larvae, leeches, rat-tailed maggots, mosquitoes, water mites, mayflies, and clam shrimp.

Facultative reptiles include garter snakes, eastern ribbon snakes, northern water snakes, spotted turtles, wood turtles, painted turtles, and snapping turtles.

Other facultative species include mallard ducks, wood ducks, and raccoons.

