

Life is not only diverse, but complex in its interactions with other species and its environment. The success of any species, from humans to the common blue damselfly (*Enallagma cyathigerum*) on the front cover, is based upon its ability to adapt and evolve to the world around it.

The damselflies are an excellent example of that success. Damselflies and their close relatives, the dragonflies, have been around for over 250 million years, and they are well adapted to life near rivers, streams, and ponds. Their wings are adapted for hovering in place, and their eyes, which cover the majority of their head, have over 38,000 facets for processing visual information. This makes them powerful predators, and a common sight near sources of water. While damselflies themselves are not endangered—the common blue damselfly shown here is found throughout Europe—they play an important role in our understanding of how aquatic systems function.

The majority of the life cycle of a damselfly is spent as an aquatic larva called a nymph. During this period of development, the nymphs are voracious carnivores, consuming a variety of aquatic insect larvae and other animals. For this reason, damselflies are often used by ecologists as an indicator of the health of an aquatic environment. Damselfly larvae are susceptible to environmental stress, from climate change to the presence of chemicals in the water. Not only does a loss of damselfly nymphs in a pond or river indicate environmental problems, but the loss of these predators is often associated with an increase in pest insect populations, namely mosquitos.

Biology is an exciting area of science, with new discoveries being made almost every day in the areas of genetics, physiology, and medicine. The goal of this text is to provide a foundational knowledge of our scientific understanding of life—the science of biology, and assist you in developing an appreciation of what it means to be alive and inspire you to learn more about the fascinating species that occupy our planet with us.



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