



# The Dragonfly Life Cycle Explained

A BRIEF DISCUSSION ON THE LIFE CYCLE  
OF THE COMMON DRAGONFLY

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Cover Photo: Mitchell, Forrest L and Lasswell, James L., A Dazzle of Dragonflies [Online Image].  
Retrieved October 31, 2016 from <http://www.audubon.org/magazine/july-august-2012/chasing-dragonflies-and-damselflies>

## Audience and Purpose

This document will explain the life cycle of a dragonfly, and will be broken down into sections based on the chronological life stages of this insect. Each section will be further broken down to include a photograph of the stage being discussed, and an explanation of what each stage entails. This document was prepared for the general public, and is meant to be a basic informational description of the life process of the common dragonfly for anyone with a curiosity to learn more about these unique insects.

## Introduction

The dragonfly is a large, colorful, predatory insect generally found in or near watery locations in both the Northern and Southern Hemispheres. There are more than 5,000 known species of dragonflies, and fossil evidence suggests that they've been on the earth for many years. They have long, thin, colorful bodies, six legs, large eyes, and two pairs of transparent wings that allow them to propel themselves up, down, forward, backward and side to side while in flight. They are

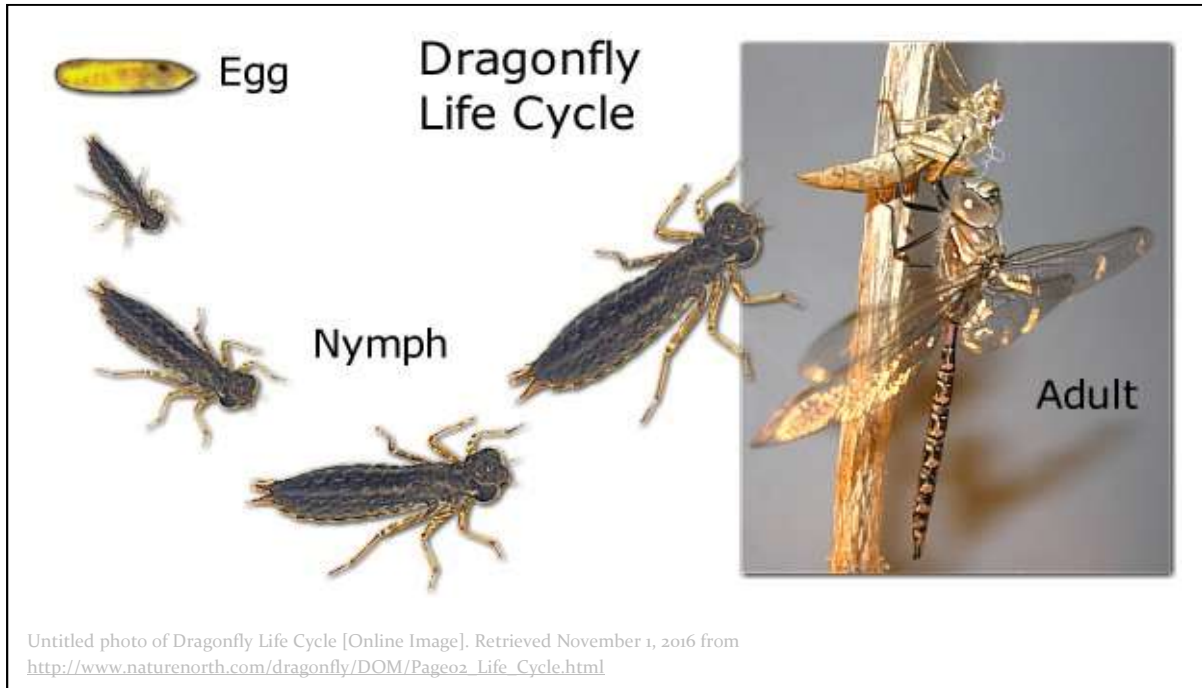


Fotolia\_1704510\_xs [Online Image]. Retrieved October 31, 2016 from [http://labs.blogs.com/its\\_alive\\_in\\_the\\_lab/2009/04/why-dragonfly.html](http://labs.blogs.com/its_alive_in_the_lab/2009/04/why-dragonfly.html)

proficient fliers, and tend to only catch prey and eat while flying. They come in a variety of colors and are considered to be mostly beneficial because of their ability to control the population of other nuisance bugs such as mosquitos, termites, gnats, flies and other flying insects.

# The Life Cycle

There are three stages in the life cycle of all species of dragonflies. The egg, the nymph (or larva), and the adult.



## 1. EGG

The dragonfly begins life in or near the water, as an egg. After mating, the female dragonfly will often lay her eggs while still holding on to the male, or while the male guards her from predators and other males. Rarely, she will lay her eggs alone. The eggs are normally dropped directly into the water, on or inside aquatic

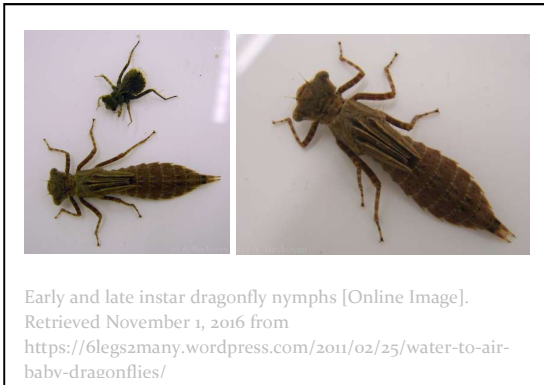


plants, or into the damp ground near the water. They will typically hatch in one to five weeks, depending on species. A female can lay several thousand eggs in her lifetime, usually in several different batches over a few days or weeks.

## 2. NYMPH



Dragonfly Nymph [Online Image]. Retrieved November 1, 2016 from <http://australianmuseum.net.au/image/dragonfly-nymph>



Early and late instar dragonfly nymphs [Online Image]. Retrieved November 1, 2016 from <https://6legs2many.wordpress.com/2011/02/25/water-to-air-baby-dragonflies/>

After the incubation period, tiny creatures with six legs, wing-sheaths, hinged jaws, and the ability to breathe while underwater will emerge from the eggs. This is the longest life stage of the dragonfly, and it is important to note here that because of this, dragonflies spend most of their lives underwater.

These larvae will also usually molt, or shed their skin to make way for new growth, within a few hours. During this time as a larva, the dragonfly will catch and eat live prey as often as possible, with insect larva, worms, snails, leeches, tadpoles and small fish included on the menu. They will also molt as often as necessary to reach full growth, sometimes molting as many as 14 times. Larval development can last anywhere from two months, up to one or two years, depending on species and environment. Whether the eggs are laid in cooler waters where food is scarce, or in an area where the climate is warm and food is plentiful, development can be sped up or slowed down resulting in the possibility of more than one generation per year in some areas.

## 3. ADULT

Adulthood is triggered by a major event for the dragonfly, one called Emergence. Unlike butterflies, dragonflies do not have a cocoon stage, and emerge as an adult through a final molting stage that takes place outside of the water.

The larva that are in the final stages will gather near the water's edge for several days preparing for this final molt and will begin to learn to breathe air at this time. The trigger for this occurrence is day length and temperature, and can vary from species to species. Once ready, the dragonfly larva will travel to find vegetation on which they can prepare to emerge as an adult. Some may travel as far as several meters over dry land to find an appropriate area with enough support to keep them safe during their final molt into adulthood. Once this perfect place is found, they begin the process of emerging by first redistributing the fluids in their body. This is no small feat, and requires them to push their newly developed body out of the old shell of their larval self slowly, leaving enough time between each portion for the new

body to dry and harden enough to move forward. This process can take from one to three hours and leaves a cast shell of their former selves, called an exuvia, behind.



Berman, Laura, Emerging Green Darner Dragonfly from late instar larval nymph stage (Anax Junius) [Online Image]. Retrieved November 2, 2016 from <http://greenfustock.photoshelter.com/image/1000003u2xbn1zzE>

Dragonflies that are newly emerged are commonly very pale in color, and have reflective wings. They will hunt and feed on other flying insects as often as possible during this time, and will spend about a week hunting far away from the water in preparation for maturity.

Once mature, the dragonfly adults will move back towards the water in preparation for breeding. The males are territorial and will fight other males that come into their area

to maintain control over the females that come near the water's edge that they are patrolling. This is when mating takes place and the entire process of creating a brand new generation of dragonflies begins again.

## IN SUMMARY



Untitled Photo [Online Image]. Retrieved November 2, 2016 from <http://www.jetwhine.com/2013/04/dragonfly-vision-hungry-midair-meetings/>

The dragonfly is a unique and beautiful insect that has a life cycle that is very different from other species of insects.

Some important notes about each phase of the dragonfly life cycle can be found below:

1. Egg
  - Eggs are laid under or near the water by the female during, or immediately after, the mating process.
  - The incubation period of dragonfly eggs can last from one to five weeks.
2. Nymph
  - This is the longest stage in the life of the dragonfly and is spent entirely underwater.
  - Dragonflies can molt up to 14 times during this stage.
3. Adult
  - The emergence event is what begins the adult stage of the dragonfly.
  - Dragonflies mate in mid-air and often lay eggs while still attached to their mate.
  - Dragonflies eat other flying insects and are often considered beneficial because they can drastically lower the population of other nuisance insects.

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