



# Monarchs and Milkweed

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## Life Cycle of the Monarch

The poster illustrates the complete life cycle of the Monarch butterfly, *Danaus plexippus*. The four stages visible on the poster are the egg, the larva (caterpillar), the pupa (chrysalis) and the adult (butterfly).

### **Metamorphosis**

The word "metamorphosis" literally means "changing form." Some insects, such as Lepidoptera, undergo what is termed a complete metamorphosis, meaning they completely change form from one stage to another. There are four distinct stages in butterflies:

- egg - embryonic stage
- larva ( caterpillar) - growing and feeding stage
- pupa (chrysalis) - resting stage when the larva turns into an adult
- adult (butterfly) - flight and reproductive stage

The average life span of a monarch depends on the time of the year it lives and on the individual. It takes about a month for the egg to develop into an adult. During the spring and summer months, an adult lives from two to six weeks. Monarchs that migrate live about eight months, from about August to April, in order to complete the migration.

### **Migration**

Monarchs reproduce from four to five times a year. The spring generations begin as adults and larvae in the southern United States. Each generation moves farther north until by summer, monarchs are breeding in great numbers in the northern states and southern Canada in places where milkweed can be found. As temperatures drop and days shorten, monarchs stop the breeding cycle and begin the long journey south across the United States into the fir forests of central Mexico. Those that survive the perilous journey overwinter in Mexico from November until March when they begin their return journey to the southern United States to find the host plant for their eggs, the milkweed. *For information about migration through Texas and the Texas Monarch Watch, visit Texas Parks and Wildlife's website at [www.tpwd.state.tx.us](http://www.tpwd.state.tx.us).*



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## Life Cycle of the Milkweed

The milkweed represented in the poster is *Asclepias tuberosa*, commonly called Butterfly-weed or Butterfly milkweed, a species that grows throughout Texas in sandy open woods or silty clay prairies. The poster illustrates the life cycle of the plant that is critical to Monarch butterflies – the milkweed. You can see the mature flowering plant complete with a fruit. The milkweed fruit is a follicle, or seed pod, containing many feathery seeds with long silky hairs that aid in wind dispersal of the seeds. Milkweed flowers have an interesting and complex pollination mechanism dependent on butterflies, moths, bees, ants and moths for the dispersal of pollen.

A monarch depends exclusively on the milkweed as the host plant for its young. A monarch will deposit its eggs on the plant so that the larvae can feed on its foliage. The adult uses its nectar as a food source. Most milkweed species are poisonous, containing resinoids, cardiac glycosides and alkaloids in their leaves and stems. Monarch butterflies feed as larvae on milkweed and obtain cardiac glycosides which are absorbed into the wings and exoskeletons of adults. The toxin provides both larvae and adults with protection from bird predators that have learned that Monarchs taste bad and make them sick.

Milkweeds are perennial plants in the genus *Asclepias* with about 100 species in the Americas. These plants have been used as medicinal plants since early times and today are cultivated as ornamentals. Historically, milkweeds were common on prairies, but habitat loss has reduced their range and population, which has a direct affect on migrating monarchs, both in breeding and in migration. Some of the milkweeds that monarchs now must use contain fewer toxins and thus provide less protection to the butterflies.

### *Want to learn more?*

For more information about monarchs and milkweed, contact: Monarch Watch, [www.monarchwatch.org](http://www.monarchwatch.org); Journey North, [www.learner.org/jnorth](http://www.learner.org/jnorth); or Texas Parks and Wildlife, [www.tpwd.state.tx.us](http://www.tpwd.state.tx.us). For information about milkweed and other Texas plants and for conservation education programs, see the *Illustrated Flora of North Central Texas* and the website of the Botanical Research Institute of Texas at [www.brit.org](http://www.brit.org).