

# Zebra Longwing

## *Heliconius charitonía*



The Zebra Longwing is unmistakable with its long narrow wings striped in black and pale yellow. It flies slowly and gracefully.

It is common year round in Central America, most of Florida and some areas of Texas. Occasionally it wanders farther north as far as South Carolina and some of the central states, but it is not likely to survive the cold.

Then governor Lawton Chiles designated the Zebra Longwing as Florida's state butterfly in 1996.

One unusual longwing feature is that the adults are relatively long lived.

Most other butterfly species adults live only two to three weeks, but adult heliconians continue to live and to lay eggs for up to eight months.

Their tropical or semi-tropical habitat helps, but other species of butterflies exist in the same habitat and aren't as long lived. It is the feeding habits of the adult longwings that are important in prolonging their lives.

They feed on nectar of flowers, just like most other butterflies, but a special characteristic allows them to eat pollen. Most butterflies can only sip fluids with their specialized mouth parts.

Longwings secrete an enzyme in their saliva which enables them to break down pollen stuck to their proboscis. Then they suck the pollen up with any nectar they are eating and to take the nutrients. The digested pollen contains amino acids that provide extra food and energy. This allows caterpillars to develop relatively rapidly since they do not need to store their own nutrients for adult egg and sperm production.

Pollen is very nutritious and rich in proteins, unlike nectar which contains almost no proteins, just sugars.

This diet allows the butterflies to prolong their lives and enables them to continue producing eggs for several months. As a consequence they are more dependent on flowers than other types of butterflies, which makes them good pollinators.

Longwings feed on a wide range of flowers. Some favorites are Lantana, Firebush, Butterfly Bush, and Pentas. They seem to be especially attracted to red flowers.

Zebra Longwings have a reputation for being very intelligent insects. They gather in roosts to spend the night returning to the same place daily, and they have a social order when roosting where the oldest ones choose the best places, and they gently nudge the others early in the morning to get going.

Another uncommon characteristic of longwings is that they can remember

their food sources and return daily to the plants where they fed previously. The memory is so strong that if one shrub in their route is cut down, they keep returning to the location searching for that plant.

Their mating behavior is somewhat unique as well, called pupal-mating.

Males search larval food plants for female pupae. The males then sit on the pupae a day before emergence, and mating occurs the next morning, before the female has completely eclosed.

After mating, the female lays yellow, bead-like eggs on leaves of one of several species of passion vine plants. She can lay up to 1,000 eggs at a time, but due to spiders and other predators, many eggs won't develop to maturity.



The caterpillars feed on passion vine plants and acquire some of their toxins; this makes them distasteful to predators. The colors and pattern of the adults advertise their toxicity.

In most butterflies and moths, 100% of eggs derive from the efforts of the larval stage and eggs are laid quickly after adult emergence. For longwings, 80% of a female's egg production comes from amino acids from pollen she collects. Only 20% comes from amino acids acquired by the caterpillars feeding on passion vines.

Longwings learn the locations of pollen plants and establish home ranges based on pollen foraging routes. It appears that the pollen plants are more significant than larval hosts in determining a female's assessment of the habitat. Do as long as she knows the locations of a network of pollen plants, she will stay in the area.

Most herbivorous insects move on when suitable oviposition sites are scarce, but *Heliconius* females are content to stay put as long as her plants produce pollen. Moreover, the pollen promotes a long reproductive life so that females can wait many weeks for the opportunity to resume egg-laying.

### Brush Footed Fact

Zebra Longwings are part of a group called brush-footed butterflies. The first set of their six legs are modified into brushes that can "taste" plants. The female uses these brushes to identify which plants will be able to provide food for her larva when they hatch. She will only lay eggs on those plants.