

News from the Watershed

Butterflies: Nature's Artwork

Insects are not generally the most popular creatures around. But who doesn't enjoy the beauty and mystery of a butterfly? It is probably safe to say that of all the insects in the world, butterflies instill a sense of pleasure and admiration that is tough to beat. You'd have to look hard to find a down side to butterflies. Not only are they colorful and aesthetically pleasing and fun to watch, they are important links in the food chain. They generally don't cause damage to humans or crops; they are important pollinators; and they are good indicators of the ecological quality of a habitat. So let's find out more about this fascinating insect.

What is a butterfly? It is an insect of the order Lepidoptera. Butterflies are known for their unusual life cycle – from a larval caterpillar stage to the inactive pupal stage – emerges the beautiful and colorful butterfly (metamorphosis). Because most butterfly species fly in the day time, they attract a lot of attention. The fascinating patterns on their brightly colored wings and graceful flight have made butterfly watching a popular pass time.

Butterflies have scale covered wings. This coloration on their wings is created by tiny little scales. The iridescent look to the wings is created not by pigments, but the microstructure of the scales. The colors that you see are the result of scattering of light by the photonic crystal nature of the scales.

As part of the food chain, butterflies must protect themselves. Chemical defense is one method of defense. Some of the most brightly colored butterflies are the most toxic to predators. They feed on plants that make them poisonous to other species, thereby keeping them safe even though they are very obvious visually. Others use camouflage to keep them safe. The oak leaf butterfly resembles the leaves of the oak. In addition, behavioral defenses include perching and wing positions to avoid being conspicuous. The eyespots and tails may divert the predator's attention from the more vital head region. Or the enemy may attack the wrong end of the butterfly, allowing the insect time to flee.

Butterflies use their senses to survive. They have large, compound eyes, which allow them to see in all directions without turning their heads. In addition, they have an acute sense of smell through receptors located in the antennae, feet and other body parts. Their feet also have sense organs that actually taste the sugar in nectar, which allows them to know if something is good to eat or not. Even though they don't have ears, they do hear sounds through their wings by sensing changes in sound vibrations.

As pollinators, butterflies are a tremendous asset. The role of pollination of U.S. crops is huge. From almonds to alfalfa to apples, pollinators are key to production of 150 food crops worth \$10 billion each year. The honey bee is the most valuable pollinator, only 15% of the crops are pollinated by domestic bees; 80% are pollinated by wild bees and other wildlife, including butterflies. About 218,000 of the world's 250,000 flowering plants, including 80% of the world's species of food plants, rely on pollinators to reproduce.

Butterflies are excellent indicators of the quality of habitat. In fact, the main threat to butterflies is the destruction and loss of their habitats. The channelization of riparian areas, draining of wetlands,

lowering of water tables, growth of cities, and intensification of agriculture all contribute to habitat loss. Widespread use of pesticides may also threaten healthy butterfly populations.

Adult butterflies rely on nectar, while developing caterpillars need leaves and foliage. Both get their water from the plants. A variety of native wildflowers, trees, shrubs and grasses interspersed across the landscape offers good butterfly habitat.

Scientists are particularly concerned about habitat loss in “nectar corridors”; the migratory routes that pollinators follow in order to take advantage of a sequence of plants coming into bloom along a south-to-north gradient in the spring and the reverse in the fall. The habitat is critical to migrating Monarch butterflies, as well as hummingbirds, bats, doves and other nectar-dependent migratory animals.

You can help butterflies by planting wildflower gardens, roadsides and idle areas with native nectar-producing plants, legumes and grasses. For more information on butterflies and environmental subjects, please stop by our office at 4505 George Boulevard in Sebring, visit our website at <http://www.highlandsswcd.org/> or visit the NRCS Wildlife Habitat Management Institute’s website at www.whmi.nrcs.usda.gov or the NRCS home web site at www.nrcs.usda.gov.

DID YOU KNOW?

The Monarch is one of more than 700 butterfly species in the United States.

Land use changes and development have resulted in significant loss of their habitat.

The Monarch butterfly journeys more than 2,000 miles to winter in warmer climates.

This long migration makes the Monarch somewhat different from most butterflies, which hibernate.