

# Winter in the Desert

Winter has arrived in the Chihuahuan Desert. The grasses are golden-brown, the leaves are falling, and temperatures are dropping. But the thing that really says “winter” is the stillness. The trill of the ground squirrel is gone. Butterflies rarely sail by anymore and lizards no longer scamper through the leaves. It’s so quiet. Where has everything gone?

Winter in the northern Chihuahuan Desert region is both cold and very dry. Both of these climatic conditions make it difficult for plants and animals to survive.

For some animals, the answer is to pack up and migrate. Turkey vultures head south for the winter. As does the rufous hummingbird, a blustery late-fall visitor to our hummingbird feeders. The Davis Mountains are only a stopover for this tiny bird before it continues its journey from Alaska to its winter home in the Yucatan in Mexico. Some birds make a round-trip flight of 12,000 miles during their annual migration!

Most people associate migration with birds. But even some butterflies cope with winter conditions by flying south. The monarch butterfly is perhaps the best known of these.

In the late summer, as the nights grow cooler and the days grow shorter, a generation of Monarchs emerge from their chrysalides that are biologically and behaviorally different from the generation before them. These Monarchs won’t mate or lay eggs until the following spring. All they want to do is find food and fly south.

They travel in pulses, often driven by cold fronts that bring the wind from the north, sometimes traveling 400 miles in a single day. When the winds are unfavorable they stay on the ground, nectaring on goldenrods, gayfeather, and mistflower. These nectaring stops allow the Monarchs to build up the fat reserves that will sustain them on their journey of up to 3,000 miles and then throughout the winter.

By late September, all the Monarchs from the 8.3 million square km breeding grounds east of the Rockies are funneling into Texas. The butterflies are headed for the mountains west of Mexico City—a place that none have been before, but that millions will find.

In November, the Monarchs pour into their winter haven—the fir forests of the Transverse Neovolcanic Belt of Mexico. The Monarchs gather in the trees, forming 30 colonies on nine separate mountains. Colonies contain immense numbers of butterflies—some estimate that there are ten million butterflies per acre and a single colony may cover 10 acres.

In the spring, as the days begin to warm, the monarchs begin to fly again. These individuals, many of whom have traveled thousands of miles and are now approxi-



▲ In a migration that took them much further west than normal, approximately 30,000 monarchs roosted in the salt cedars at Balmorhea in late September, 2009. Photo courtesy Greg Lasley.

◀ Winter snow in Modesta Canyon. Photo by C. Hoyt.

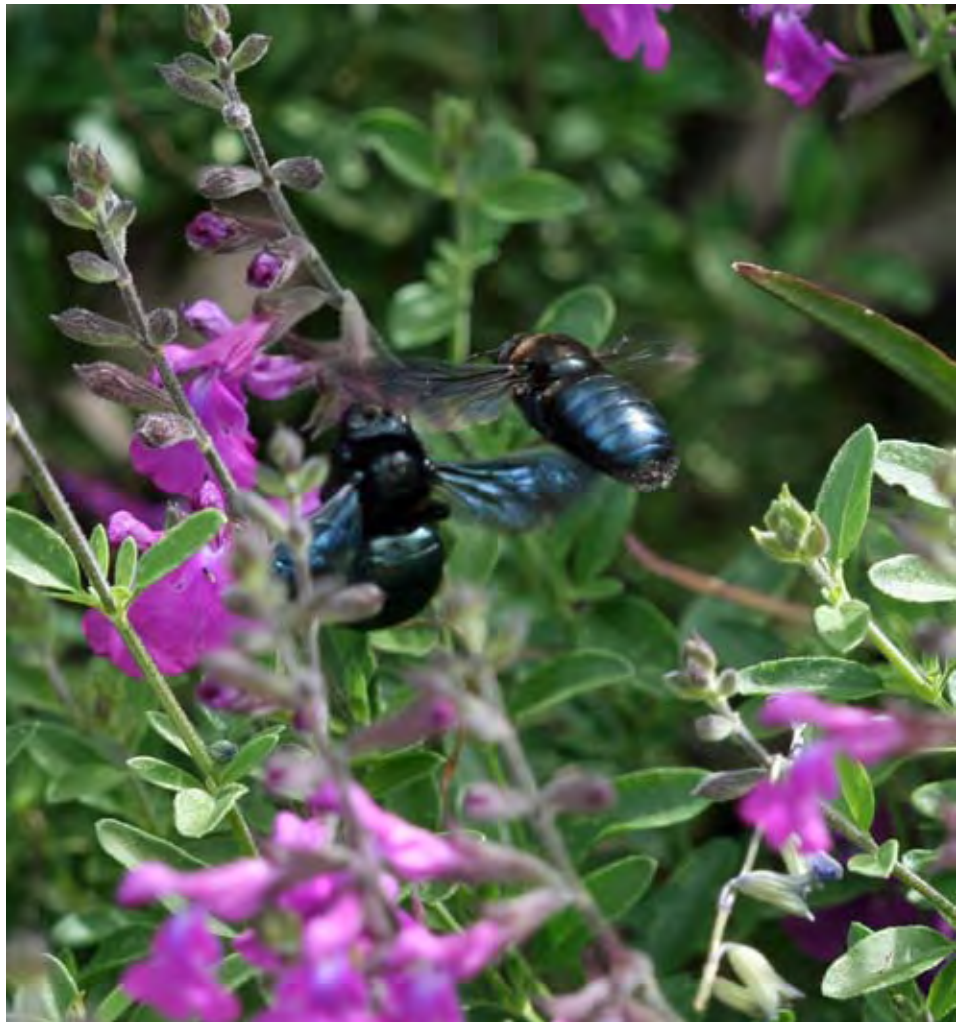
mately 8 months old, will begin to head north, towards their summer breeding grounds to begin the cycle again.

Most animals don't have the luxury of spending the winters in Mexico though. They need to find other ways to survive the cold, dry months. To many insects, this means spending the winter as an embryo.

The preying mantid is one example. This common resident of our summer gardens is nowhere to be found as an adult during the winter. Instead, the next generation of mantids spends the winter in a hardened egg sac attached to a plant stem, rock, or sometimes even a windowpane. In the spring, the eggs hatch and hundreds of young mantids emerge. Often their first meal is a sibling.

Other animals spend the winter in burrows or protected places. The pallid bat, a frequent visitor to the front porches of the Chihuahuan Desert Nature Center in the summer, is rarely seen in the winter. Instead, they wedge themselves into narrow cracks in canyon walls or buildings and hibernate.

Carpenter bees, those large, shiny black bees that are so common in the garden during the spring and summer, spend the winter in nest tunnels. As the name implies, carpenter bees are wood nesters. The female uses her strong jaws to excavate a clean-cut, round entrance hole in a piece of wood. She bores into the wood perpendicular to the grain for about 1 to 2 inches, then makes a 90 degree turn and continues to excavate along the wood grain for about four more inches. She can excavate about one inch every six days.



She then places a food ball made of pollen and regurgitated nectar into the end of the tunnel and lays an egg on it. She walls off the egg and pollen ball with a plug of chewed wood pulp and begins the process again, eventually creating six to 10 partitioned brood cells in a row. The female usually dies shortly after her nest is completed.

In late August, the new adults emerge from their nests and busily begin to prepare to overwinter by gathering pollen and provisioning the tunnels. When the temperatures begin to drop, the carpenter bees huddle together in the protection of the old



nest galleys. In April or early May, they emerge, mate, and begin the cycle again.

Other animals, such as ground squirrels and lizards, hibernate in burrows underground. Their body temperature drops to only one or two degrees higher than the temperature outside. Their breathing slows and their heart beats only a few times a minute. Their bodies slow down so much they don't need much energy to survive. The energy they do need comes from fat stored on their bodies at the end of the summer and early fall. In the spring, the animals emerge thinner and ready to eat!

As you explore the desert in winter, be sure not to disturb any hibernating animals that you find. Being rudely awakened causes them to use up their fat reserves faster, often leaving them without enough stored fat to survive the winter.

*This Nature Notes script was written by Cathryn A. Hoyt and broadcast on Marfa Public Radio, KRTS 93.5 on December 3, 2009. All photographs by C. Hoyt unless otherwise noted.*



▲ Groundsquirrels spend the winter in cozy burrows underground.

◀ Large, shiny black carpenter bees are frequent visitors to flowers during the summer months. They overwinter as adults, in tunnels they have created in dead wood such as sotol stocks or, occasionally, structural timbers.

▼ Preying mantids survive the winter as eggs, encased in a hardened egg sac that is attached to a plant stem or the wall of a building.

