The web of survival.

Prairie Insects

All plants and animals have specific habitat requirements. Many endangered prairie insects take this a step further, requiring a single species of plant, or group of plants, to survive on the Illinois prairie—a habitat that is endangered in itself. Conversely, some prairie plants depend on one or a few insects to complete their life cycle.

A Hawk moth

(Photo courtesy Michael Jeffords.)

Larvae of the regal fritillary (*Speyeria idalia*), a threatened butterfly, need prairie violets for food in early spring. But when the adults emerge in June, their food source shifts to the nectar of prairie milkweeds and sunflowers.

An example of a plant that depends on just one insect is the endangered Eastern prairie fringed orchid (*Platanthera leucophaea*) and a species of hawk moth—now possibly extirpated in Illinois—needed to pollinate this orchid. The flower's nectar spurs and the tongue of this native hawk moth are nearly the same length. When the moth inserts its tongue for a sip of nectar, the orchid's pollen sacs stick to its face for transfer to and pollination of the next flower.

In addition to the loss of the native moth, researchers have discovered that non-native, long-tongued hawk moths are stealing the nectar and failing to pollinate the orchids.

Eastern prairie fringed orchid

(Photo courtesy Carol Freeman.)

For successful recovery of any rare or endangered species, the intricate web of life upon which that species is dependent needs to be fully understood. Solving the puzzle around some species is just now beginning.

—**Randy Nÿboer**, Illinois Endangered Species Protection Board

Is this orange-spotted wonder fluttering toward extinction?

Karner Blue Butterfly

Adult

(Photo courtesy Carol Freeman.)

The orange-spotted blue wings of the Karner blue butterfly (*Lycaeides melissa samuelis*) once fluttered among wild lupine plants from New England to Minnesota. Now listed as federally endangered by the U.S. Fish & Wildlife Service, Karner blue population numbers have dropped nearly 99 percent in the last 100 years—with 90 percent of that loss occurring in the last 15 years.

The loss and degradation of oak savanna habitats to agriculture and development, coupled with degradation of these savannas by fire suppression and invasion by non-native plant species, have led to the decline of this butterfly. These habitats support wild lupine, the only known host plant for the Karner blue caterpillar. This graceful butterfly species produces two generations each year, with adults emerging in the spring and again mid-summer. A diverse habitat with savanna, prairie and wetland plant species is required to provide nectar sources for the adults throughout the two flight periods. Although large, high-quality landscapes required by this species are rare in the Midwest, reintroduction of the Karner blue butterfly in suitable landscapes in Indiana has been successful, and is under consideration at Adeline Jay Geo-Karis Illinois Beach State Park.

—**Debra Nelson**, Natural Heritage Biologist, DNR Division of Natural Heritage, Spring Grove

Caterpillar

(Photo courtesy Mitch Magdich, The Toledo Zoo.)