

New Mexico has many naturally occurring predatory and parasitic insects that can help reduce pests. These beneficial insects can be encouraged by minimizing insecticide use, by sowing mixtures of flowers (many species need pollen and nectar as well as prey), and by providing overwintering habitat.

PREDATORY TRUE BUGS



Left to right: Pirate bug, Big-eyed bug, damsel bug, assassin bugs (from side and above), adult spined soldier bug, spined soldier bug nymph attacking squash bug nymph. This group includes some of our commonest and most effective predators, although some are so small and inconspicuous that they are easily over-looked. They all have sucking mouthparts with which they impale their prey and suck them dry. Most species attack a wide range of prey, including insect eggs, larvae, and soft-bodied adult pests such as aphids.

PARASITIC WASPS (PARASITOIDS)



Left to right: two female parasitic wasps showing ovipositor (egg-laying tube), a hornworm larva with parasitoid pupal cocoons, a parasitoid attacking squash bug eggs, and parasitized aphids. Parasitic wasps lay their eggs inside other insects, and the developing wasp larva consumes the host from within, eventually killing it. Different wasps specialize on different host insects (including many pests), and attack different stages of the host's life-cycle. They cannot sting humans.

PREDATORY WASPS



New Mexico has a wide diversity of predatory wasps, only some of which form colonies; many build solitary nests in the ground, in tree holes, or construct their own nests from mud. They do not normally sting unless provoked and many are valuable predators, attacking caterpillars, grasshoppers, 'white grubs' in turf, and other pests.

BENEFICIAL FLIES



Left to right: adult hoverfly, larval hoverfly with aphids, adult tachinid fly, and tachinid larva emerging from dying cucumber beetle host. Note the distinctive bristles on the abdomen of the adult tachinid fly. Beneficial flies include hoverflies, whose larvae eat aphids, and the tachinid flies that act as parasitoids: their larvae parasitize and kill other insects.

LACEWINGS



We have both brown and green lacewings (adults on left, eggs of green species in center). The larvae (right) are the main predatory stage.

PREDATORY BEETLES

Ladybird beetles ('Ladybugs')

Most people are familiar with the adults of these excellent predators of aphids and other soft-bodied insects, but the egg, larval and pupal stages (below) are less well-known. It is the larva that is the most voracious stage of the life-cycle.



Left to right: Convergent, Parenthesis, Ashy-grey, Asian and 7-spot ladybird beetles. The first 3 are native to New Mexico, while the last 2 are from Asia and Europe, respectively.

Ladybird life stages: eggs, larva and pupa

Ground beetles



Fast-moving, relatively large nocturnal insects that attack a variety of insect prey. Most are black, often with a metallic sheen. The larval stages develop in the soil and prey on soil-dwelling pests.

Soft-winged flower beetles



Small beetles, often brightly colored. May be found on flowers and crop plants. Both adults & larvae are predatory, with the latter being found in soil, leaf litter, etc.

Rove beetles



Small beetles with short wing-cases. Predatory as both adults and larvae; the latter are found in the soil.