



Pollination Backgrounder

On June 29, 2007, Post Offices will be abuzz with the release of the Pollination stamps. The 20-stamp booklet consists of four stamps arranged in two alternate and interlocking blocks of four. The intricate design of these four beautiful stamps emphasizes the ecological relationship between pollinators and plants and suggests the biodiversity necessary to ensure the viability of that relationship.

Depicted on the Pollination stamps are four wildflowers and four pollinators. The common and scientific names of the featured flowers are purple nightshade, also known as chaparral nightshade (*Solanum xanti*); hummingbird trumpet (*Epilobium canum*); saguaro (*Carnegiea gigantea*) and prairie ironweed, also known as common ironweed (*Vernonia fasciculata*). The common and scientific names of the featured animal pollinators are Morrison's bumblebee (*Bombus morrisoni*); calliope hummingbird (*Stellula calliope*); lesser long-nosed bat (*Leptonycteris yerbabuena*) and Southern dogface butterfly (*Colias cesonia*).

Bumblebees

Bumblebees with relatively short mouthparts visit flowers that hold nectar in open cups, while those with longer tongues probe for nectar in tubular flowers with hidden nectaries (the plant glands that secrete nectar). The flowers of some plants, such as tomatoes and other nightshades, contain no nectar but produce an abundance of pollen in tubular anthers. To obtain pollen from these flowers, bumblebees employ a technique known as buzz pollination. By grasping the anthers and rapidly vibrating their flight muscles, they dislodge the pollen.

Butterflies

Butterflies use their long, narrow proboscises like straws to suck up nectar from flowers with long, narrow nectaries. Hummingbirds have long narrow bills and tongues that, along with their ability to hover in mid-air, enable them to obtain nectar from flowers with very deep nectaries. Lesser long-nosed bats feed on the fruit and nectar of night-blooming cacti, such as saguaro, as well as many species of agave.

Pollination

Pollination, the transfer of pollen within flowers, or from one flower to another of the same species, is the basis for fruit and seed production. Insects and other animals, such as birds and bats, provide pollination services for the majority of the world's food crops and flowering plants. In turn, the plants provide their pollinators with food and other nutrients in the form of energy-producing nectar and protein-rich pollen. Many plants also serve as hosts for the larvae of insect pollinators.

In economic terms, insect-pollinated plants provide us with about one-third of the foods we eat and the beverages we drink. In fact, some plant species — including red clover and other important farm crops — are pollinated only by bumblebees. Many fibers, condiments, spices, oils and medicines also come from animal-pollinated plants. And on a purely aesthetic level, we enjoy the beautiful profusion of colors and lovely fragrances that many flowers use to attract pollinators.

Populations of some animal pollinators appear to be declining. Over the past few decades, scientists and growers (farmers and orchardists, as well as backyard gardeners) have all noted this downward trend. As a result, many concerned organizations and individuals, along with some government agencies, are working to encourage pollinator research, education and awareness. They are also developing conservation and restoration projects aimed at ensuring measurable and documented increases in the numbers and health of both resident and migratory pollinating animals.

Many things can be done to help promote the health and vitality of pollinator populations. Among them are planting flower gardens that provide a continuous succession of blooms throughout the season, utilizing native plants, and using nontoxic methods to control pests and weeds. We can also protect nontarget organisms such as pollinators from inadvertent exposure to pesticides, insecticides, herbicides and other chemicals, and set aside and protect habitats suitable for wild pollinators.

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