BENEFICIAL INSECTS

Table of Contents

Introduction: The Unseen Gardeners

We tend to notice insects when they cause problems. A caterpillar on a cabbage, aphids massing on a beautiful, blooming flower, and slugs in the lettuce. But for every problem insect, a world of beneficial species is quietly going about its work: pollinating flowers, preying on pests, breaking down organic matter, and aerating the soil. Understanding and supporting these creatures may be the single most powerful thing a gardener can do. Studies suggest that a healthy temperate garden can support over 2,000 insect species. The vast majority are neutral or actively beneficial to gardeners. Only around 1% are considered pests.

Three Guilds of Beneficial Insects

Scientists and gardeners alike divide beneficial insects into three broad guilds, each performing a distinct and essential role in garden ecology:

- Pollinators
  - Insects that transfer pollen between flowers, enabling fruit and seed set. Without them, most food crops and many ornamentals could not reproduce.
- Predators & Parasitoids
  - These insects feed on or parasitise pest species, providing free, chemical-free pest control that targets harmful insects while sparing the rest of the garden ecosystem.
- Decomposers & Soil Builders
  - These unseen heroes break down organic matter, recycle nutrients, and create the rich, living soil that healthy plants depend on.

The Pesticide Problem

Broad-spectrum pesticides (including many organic options) kill beneficial insects alongside pests. A single application can devastate local pollinator and predator populations, triggering pest outbreaks weeks later as the natural controls are removed. The most powerful step any gardener can take is simply to stop reaching for the spray bottle and let nature restore its own balance.

Pollinators

Pollinators are the most celebrated beneficial insects, and with good reason. Around 75% of flowering plants — including the majority of our fruit and vegetable crops — depend on animal pollinators to reproduce. In temperate gardens, a diverse cast of insects shares this vital role.

Bees

The bee tribe is far more diverse than most gardeners realize. Beyond the familiar honeybee, the PNW alone is home to over 600 bee species — most of them solitary. Mason bees, leafcutter bees, mining bees, and carder bees are all prodigious pollinators, often more effective than honeybees for specific crops. Solitary bees are also completely harmless — they have no colony to defend and rarely, if ever, sting.

Hoverflies

Often mistaken for bees or wasps, hoverflies are in fact true flies that have evolved to mimic stinging insects for protection. They are superb pollinators and, in some studies, are second only to bees in overall pollination value. Their larvae are also voracious aphid predators, giving the adults double billing as both pollinator and pest controller.

Butterflies & Moths

While butterflies are less efficient pollinators than bees per flower visit, their wider foraging range means they transfer pollen between more distant plants, promoting genetic diversity. Moths are the overlooked heroes of the pollinator world, working through the night to service pale, fragrant flowers.

Other Pollinators

- Solitary wasps: Often visit flowers for nectar while transporting pollen.
- Beetles: Ancient pollinators, particularly important for magnolias and water lilies.
- Flies: Blowflies and flesh flies pollinate many early spring flowers.
- Lacewings: Adults feed on pollen and nectar; larvae are predatory.

Spotlight: The Bumblebee

Of all the beneficial insects in the temperate garden, the bumblebee is perhaps the most beloved and the most ecologically important. Large, furry, improbably aerodynamic, and endlessly industrious, bumblebees are the workhorses of the pollinator world.

Biology & Behaviour

Unlike honeybees, bumblebees are annual colony insects. Each spring, a mated queen emerges from hibernation to found a new colony alone. She must find food, a nest site, and raise her first workers entirely by herself. This early spring period is the most critical and precarious of the bumblebee year. By midsummer, a successful colony may number up to 400 workers. Come autumn, new queens and males are produced; they mate, old workers and the original queen die, and new queens seek hibernation sites.

Species in Your Garden

- Bombus vosnesenskii (Yellow-faced bumblebee): Very common, yellow markings on face make this species easy to spot!
- Bombus occidentalis (Western bumblebee): A white stripe at the back of its abdomen makes this species easy to identify.
- Bombus melanopygus (Black-tailed bumblebee): A notable native species.
- Bombus mixtus (Fuzzy-horned bumblebee): As described, it is most well-known for its prominent fuzzy horn-like antennae.

Safety

Female bumblebees do occasionally sting, but are extraordinarily reluctant to do so. They will only sting if directly handled or the nest is threatened.

How to Help Bumblebees

- Plant a continuous succession of flowers from February to November.
- Provide south-facing bare soil or log piles for underground nesters.
- Never use neonicotinoid or pyrethroid insecticides.
- Leave winter stems and leaf litter for queen hibernation sites.

Predators & Pest Controllers

Nature has provided every garden with a standing army of pest controllers, if we allow them to operate. Predatory and parasitic insects are very effective at managing pest populations, targeting exactly the species that cause harm.

Ladybugs

Perhaps the best-known beneficial insect, a single adult ladybug can consume up to 5,000 aphids in its lifetime. Their larvae are even more voracious than the adults. The seven-spot ladybug is the most familiar, but over 90 species in the PNW.

Lacewings

Lacewings are exquisite insects. Delicate, pale green, with enormous iridescent wings. Their larvae, nicknamed 'aphid lions', are among the most ferocious predators in the garden, consuming aphids, thrips, caterpillar eggs, whitefly, and small caterpillars. Adults feed on pollen, nectar, and honeydew.

Ground Beetles

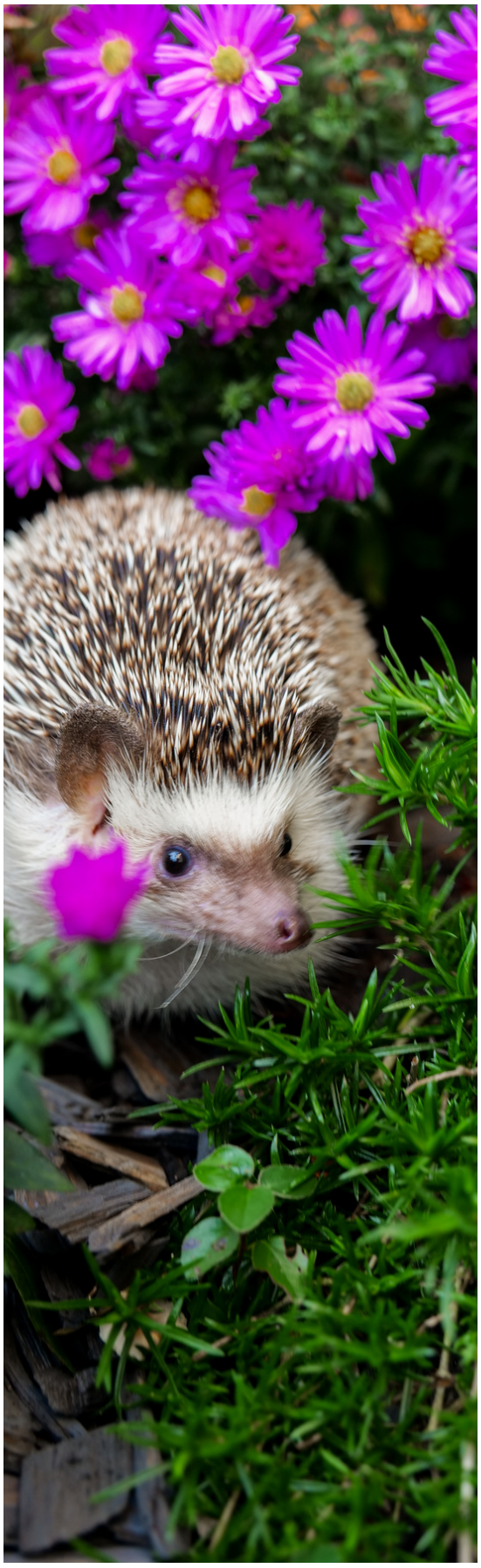
The large, dark, fast-running beetles you disturb when turning compost are almost certainly ground beetles, and they are tireless pest hunters. Working primarily at night, they chase down and consume slugs, slug eggs, vine weevil larvae, cabbage root fly pupae, and a wide range of soil-dwelling pests.

Parasitic Wasps

The parasitic wasps are among the most effective and most overlooked biological control agents in the garden. Wasps lay their eggs inside caterpillars, aphids, and other pests; the larvae develop inside the host, eventually killing it.

Decomposers & Soil Builders

Beneath the visible garden, an entire ecosystem of insects, mites, and other invertebrates is doing the slow, unglamorous, utterly essential work of turning dead organic matter into the living soil that feeds your plants. The presence of slow worms, hedgehogs, and toads in your garden is a direct measure of the health of your beneficial insect populations, because these animals depend on a thriving invertebrate food web.



Dung Beetles & Burying Beetles

Often overlooked, dung and burying beetles perform critical decomposition services. Burying beetles locate and inter small animal carcasses, recycling nutrients back into the soil. Their presence is an excellent indicator of garden health. Dung beetles are similarly valuable in gardens that host chickens, rabbits, or other animals.

Springtails & Mites

Springtails are among the most abundant soil invertebrates on earth — a healthy square meter of garden soil may contain 100,000 or more. They shred leaf litter into smaller fragments, dramatically accelerating decomposition and creating the conditions in which beneficial fungi and bacteria flourish. Predatory mites help control pest mite populations in the soil and on plants.

Creating Habitat & Insect-Friendly Planting Guide

Insects need the full range of resources (food, water, shelter) to maintain stable populations. However, the single most impactful thing you can do for beneficial insects is to aim for a garden filled with continuous blooms from late winter through autumn, with a diversity of flower shapes to serve different feeding styles.

*Pro tip? Water is overlooked as a resource! A shallow dish, refreshed regularly, is an incredibly helpful and easy way to support bees, wasps, and hoverflies!

Insect Hotels & Nest Sites

A well-made insect hotel provides a range of tube diameters for different species, positioned in full sun facing south or south-east.

- Mason bees prefer 6–8mm holes drilled in untreated hardwood.
- Leafcutter bees use 7–10mm tubes and line them with leaf fragments.
- Mining bees need areas of bare, south-facing, well-drained soil
- Bumblebees may colonize upturned flowerpots filled with dry moss.

Insect-Friendly Planting Guide

Borage

- Benefits: Bumblebees, honeybees
- Season: Summer; continuous self-seeding
- Notes: Nectar rapidly refills

Echinacea

- Benefits: Bees, butterflies, beetles
- Season: Summer–Autumn
- Notes: Leave seed heads for overwintering insects

Hellebore

- Benefits: Early bumblebees, mining bees
- Season: Late Winter–Spring
- Notes: Flowers when almost nothing else is open

*Planting Tip

While beautiful, avoid double-flowered cultivars if your goal is to support insects. Their extra petals block access to nectar and pollen.