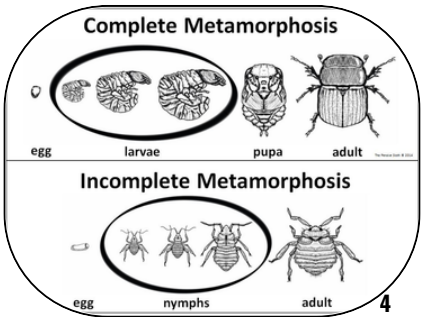
Are there beneficial insects in my garden other than pollinators?

The diversity of beneficial insects supporting healthy gardens is wide. Gardeners are most familiar with pollinators, including bees, butterflies, wasps & many flies but there are a host of beneficial insects that are also natural enemies, also called biological control agents, of pest insects. This paper focuses on these lesser known garden heroes.



The life cycle of most insects is either complete or incomplete metamorphosis.

PREDATORS

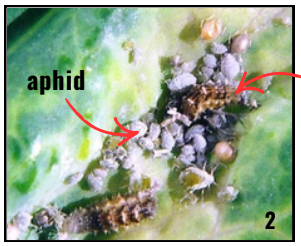
Predators, both larvae and/or adults, capture and eat other bugs. For many, only the larvae and/or juvenile stages are predatory.

Aphid midge – single species in BC

- Adults:
  - lay eggs in aphid colonies and the orange larvae eat the aphids
  - delicate long-legged brown flies
  - active at night and so rarely seen
- Overwinter as pupae in the soil
- Several generations per year

Adult: 3 mm long

Orange larva eating an aphid



Larvae: 10-15 mm long

Syrphid (hover) fly – over 400 species in the PNW

- Adults lay eggs on leaves with insect prey present and larvae feed primarily on aphids
- Adults:
  - resemble 'small yellow jackets'
  - key features of flies: i) short antennae; ii) large eyes ("ski goggle like"); iii) 1 pair of wings
  - hover before landing to feed on nectar and pollen
- Larvae:
  - flattened, legless maggots with tapered body
  - no distinct head
  - colors range from yellow to green to brown
- Eggs:
  - small, white and laid singly among aphids
- Depending on species
  - Overwinter as larvae, pupae or adults
  - Several generations per year

Adult: 8-15 mm long

Lady beetles – AKA Ladybugs (12 species in BC)

- Adults lay eggs in aphid colonies
- Adults & larvae feed on aphids, whiteflies, scales, mealybugs and other soft-bodied insects
- Many species that vary in size, color and pattern
- Adults:
  - Black, red, orange-red to almost yellow
  - Most have colored spots or markings on their back
- Overwinter as adults
- Usually one generation per year

Adult: 4-8 mm long

Larva: 1-7.5 mm long

Minute Pirate Bugs, Big-eyed Bugs and Predatory mites

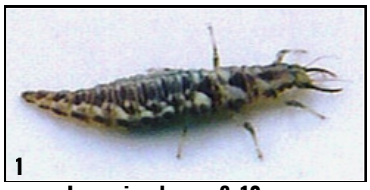
- Adults are so tiny (2 to 3 mm) you may never see them
- Adults feed on a variety of small, soft-bodied insects and their eggs

Minute pirate bug

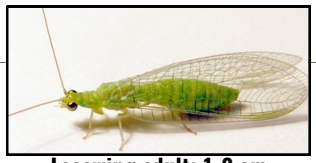
Big-eyed bug

Lacewings – (36 brown & 28 green species in the PNW)

- Adults lay eggs on long stalks on the undersides of leaves and branches
- Green lacewings (larvae only) and brown lacewing (both adults and larvae) feed on aphids, spider mites, whiteflies, thrips, leafhoppers, scales, mealybugs, pysllids, small caterpillars, and insect eggs
- Overwinter as adults or pupae
- Up to four generations per year



Lacewing larva: 6-10 mm


Lacewing adult: 1-2 cm


Lacewing eggs


Stiletto fly larva: up to 2 cm long

Stiletto fly (single species in BC that eats wireworms)

- Eggs are laid in soil near grass or grass-like plants
- White larvae
  - feed on tan, orange or light brown wireworms in the soil.
  - are legless with a tiny head, cylindrical, very long and thin, and with tapered ends.
- Overwinter as mature larvae
- One generation per year


Wireworm: up to 3.8 cm long

Note: Wireworms are the larvae of the click beetle that feed on root crops such as potatoes. The stiletto fly larvae closely resemble the wireworms except for colour.

Ground beetles – (over 700 species in PNW)

- Eggs and larvae live entirely in the soil
- Both adults & larvae feed on soil-dwelling pests (caterpillars, cutworms, slugs, etc.). Many also feed on weed seeds.
- Adults emerge from the soil in early summer and are active until overwintering in the fall
- All forms thrive in mulched and undisturbed soil
- All forms active primarily at night

Ground beetle: 0.7-66 mm long

Adult: 3-25 mm long

Rove beetles – (about 1000 species in PNW)

- Adults:
  - lay tiny eggs in soil rich in organic matter, decaying leaves or animal dung or compost
  - generalist that feed on a variety of insect pests as well as beneficial insects
  - have a long abdomen that will curve upward when feeding or disturbed
  - found under debris and rocks, near water, or in compost piles
  - overwinter in protected environments

Predatory mites

- Eggs opaque and oval whereas pest mite eggs are round
- Adults feed on other tiny, plant-feeding pest mites like spider mites, thrips, fungus gnat larvae
- Distinguished from their prey by their larger size, pear-shaped body and translucent coloration. They are very active and fast-moving compared to pest mites
- Extremely tiny. Adult: .25-.4 mm; mature nymph slightly smaller
- Overwinter as adults, becoming active in the spring, producing several generations per summer depending on temperature.

Adult feeding on a thrips

PARASITOIDS

Parasitoid adults lay their eggs on or in a host. Depending on the species, eggs may be laid on all stages (larvae, nymphs, pupae, adults). The larva consumes the host from the inside before emerging as an adult.

Parasitic wasps – about 1000 species in PNW

- Adults:
  - lay their eggs on aphids, caterpillars and whiteflies
- various shapes and sizes
  - Adults 1-2.4 cm; larvae 1-2.6 cm

Adult wasp ovipositing eggs in aphid

Aphid mummy after emergence of parasitic wasp

Adult: 6-17 mm long

Tachinid flies – over 400 species in the PNW

- Usually lay their eggs on caterpillars
- Adults feed on pollen and nectar, contributing to pollination as they move from flower to flower

Eggs on caterpillar

Larva on caterpillar
Larvae: 0.2-5 mm long

BOTH PREDATORS AND POLLINATORS

Yellow Jackets – over 100 species in PNW

- Adults:
  - feed on insects and other meat sources to regurgitate for larvae in the nest.
  - elongated, smooth, black and yellow body with narrow waist
  - diet also includes fruit, flower nectar and tree sap, making them important for pollination

Adult: 11-20 mm long

Adult: 18-22 mm long

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European Paper Wasp – single species

- Adults:
  - feed on small, soft-bodies insects (many of them pests) to regurgitate for larvae in the nest
  - long slender body and legs that dangle as they fly
  - antennae orange above and black below
  - diet also includes pollen and nectar, making them important for pollination
  - non-aggressive, only eat critters they have killed themselves so won't come to your barbecue to scavenge

How do I help the beneficial insects in my garden?

- To attract these insects to your garden, **plant flowers**!
  - Adults of most of these insects need nectar and/or pollen to stay alive longer and lay more eggs
  - Tiny flowers for tiny mouth parts.
- Provide small, shallow dishes of water
- Minimize cultivation by using no-till methods to avoid disturbing nests
- Provide layers of vegetation, including fallen leaves and dead branches, for nests, shelter, hunting
- Don't use poison! This includes insecticides, miticides, fungicides, and herbicides. They kill indiscriminately, good bugs along with the bad
- **Tiny places for tiny critters**

Flowers to attract beneficial insects

yarrow
sweet alyssum
dill
cilantro,
calendula
candytuft
thymes
daisies
goldenrod

RESOURCES

1. Gilkeson, L.A. (2026). Beneficial Insect. lindagilkeson.ca
2. Photos by Elizabeth Cronin (cited in L. A. Gilkeson's website under Beneficial Insects)
3. Schulz, K. (2017). iNaturalist observation: inaturalist.org. Accessed May 18, 2026. Licensed under CC BY.
4. Microscopia IWM. (2026). Metamorphosis and its types. Microscopia IWM.
5. B.C. Ministry of Agriculture. (2016). Beneficial Insects Predators, Parasitoids and Pollinators. Beneficial Insects
6. Alexander, Yurika, (2012). https://www.bugguide.net/node/659366

PHOTO CREDITS: Numbered by resource. All other images VIMGA members