

MASTERING

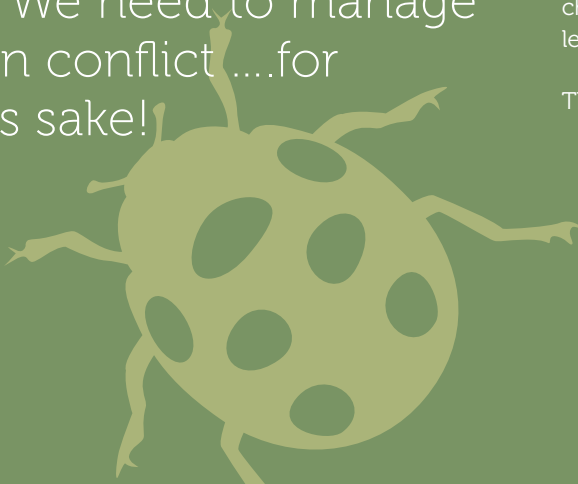
Garden Pests *...naturally*

Numerous insects, reptiles, birds and other animals visit your garden daily. Most are welcome, but some can become a nuisance. Before you declare war on these intruders, perhaps learn to live with some incursions whilst heading off the main offenders. **That's the natural way!**



Your garden is a living place, green with the plants you like to grow and home to a wide variety of birds and local wildlife. It also hosts symbiotic species of mostly unseen fungi, bacteria and micro-organisms, all of which are essential to your garden's health. This is nature at its best and most beautiful. It's a managed environment but it is not controlled.

Problems arise when we try to exercise absolute command of our gardens and to anticipate total success for our ventures. Perhaps we are growing a bed of broccoli in winter or apples over summer. We are now at odds with local wildlife who see these young plants and bountiful trees as their local feeding spot or even a nursery for their young. No gardener wants to waste time, energy, water and money to simply watch plants being eaten by caterpillars or fruit being plundered by possums and birds. We need to manage this garden conflictfor everyone's sake!



What is a Garden Pest?

Only a tiny fraction of the wildlife that enters your garden could be considered pests and in fact the opposite will often apply. Ladybirds, spiders, dragonflies, frogs, lizards and many birds are predators that hunt and eat the pest insects in your garden. Their presence is keeping everything under control.

Generally the wildlife that does become problematic is not a single individual but part of a larger infestation. A couple of aphids on a rose bush is not going to cause you a problem, but a thick colony of aphids is unsightly and can seriously damage your plant.

In an environmentally sustainable garden total pest control is never an objective. By obliterating one pest completely you will simply leave the gate open for other pests to arrive. Determine what your tolerance levels are to the problems you face. Is the pest really doing that much damage? Does the loss of a few leaves affect the overall beauty of the plant? Is there more upside than downside to the 'pest' e.g., butterflies are pollinators but their progeny are very hungry caterpillars.

Integrated Pest Control (IPM) in the garden

IPM is a system that manages garden pests by learning more about them and their role in the environment. Tolerance levels for pest activity are set and, if necessary, the most environmentally sensitive control methods are chosen to keep the pest activity below these tolerance levels.

These controls may be a combination of

- **Mechanical** e.g. hand removal of pests or by building barriers
- **Cultural** e.g. reducing fertilisers or planting decoy and repellent plants
- **Biological** e.g. attracting predatory insects or using bacterial sprays
- **Chemical** e.g. spraying with botanical oils or natural soaps



APHIDS

WHAT: Sap sucking insects that attack a wide range of garden plants. Also transmit plant viruses. Adults and young look similar. Populations reproduce rapidly from spring to autumn. Survive winter as unhatched eggs. Includes Green Peach Aphids, Black Aphids and Cabbage Aphids.

PLANTS AFFECTED: Stone fruit trees, apple trees and many ornamental plants. Vegetables including brassicas (broccoli, cauliflower, cabbages, kale etc) and alliums (onions, leeks, chives etc).

DAMAGE CAUSED: Growing tips of plants become misshapen. Leaves, flowers and fruit are distorted.

Yellowing and wilting can occur. Plant parts become sticky from honeydew secretions leading to sooty mould. Vegetables become unappealing.

CONTROL METHODS: Aphids rapidly develop resistance to chemical controls. Natural controls include:

- Squashing aphids with a gloved hand.
- Hosing off with a water jet.
- Spraying with a homemade garlic and oil spray.
- Using a botanical soap.
- Encouraging predatory insects e.g., ladybirds, wasps and lacewings by growing companion plants.



CABBAGE WHITE BUTTERFLY

WHAT: Female white butterfly has 2 grey spots on each forewing. Lays eggs on the underside of plants from which tiny caterpillars emerge. Larger caterpillars hide on leaf veins during the day. Caterpillars eat soft leaf tissue and can decimate young seedlings.

PLANTS AFFECTED: Brassicas including cabbages, cauliflower, kale, broccoli, Brussels sprouts etc. Also rocket and Asian greens.

DAMAGE CAUSED: Young seedlings lose most or all of their leaves which are essential for photosynthesis. Plants cease to grow.

CONTROL METHODS: Protect plants by using a

variety of controls such as:

- Planting scented herbs e.g., mint, sage or dill nearby to mask the scent of brassicas.
- Planting a decoy crop such as rocket nearby that can be sacrificed to protect the brassicas.
- Planting white violas amongst brassicas to mimic other adult butterflies and act as a deterrent.
- Removing eggs and young caterpillars by hand and feeding to chooks.
- Enclosing the brassica patch with bird friendly netting.
- Spraying plants with *Bacillus thuringiensis* bacteria, a stomach poison for caterpillars.



CITRUS GALL WASP

WHAT: A native insect that is a serious pest of citrus trees. The adult female wasp emerges from the gall in late winter and lays her eggs in the soft stems of the same tree. The larvae grow within the stems for 9-12 months until they too pupate and reinfest the tree.

PLANTS AFFECTED: Citrus, especially oranges, limes lemons and grapefruit.

DAMAGE CAUSED: Infected trees defend themselves by forming ugly calluses or galls around the growing pupae.

CONTROL METHODS: Difficult but damage can be minimised by:

- Avoiding high nitrogen fertilisers in late winter and spring.
- Removing all newly formed galls before the end of winter. Old galls have already been vacated by the adult wasps.
- Hanging yellow sticky traps on infected trees in late winter to trap emerging adult wasps.
- Destroying infected stems by burning or bagging.



CITRUS LEAF MINER

WHAT: The larva of a moth that lives beneath the leaf cuticle of citrus leaves.

PLANTS AFFECTED: Citrus trees.

DAMAGE CAUSED: Larvae tunnel in the soft underside of new leaves, particularly in late summer and autumn. Leaves appear silvered. Leaf rolling occurs just before pupation of the mature larvae into adult moths. Most damaging to younger trees.

CONTROL METHODS: Protect plants by using a variety of controls such as:

- Avoiding high nitrogen fertilisers.
 - Removing infected leaves by hand and bagging.
 - Spraying leaves with a botanical oil spray.
- Note** – Do not spray in high temperatures.





EUROPEAN EARWIGS

WHAT: Chocolate coloured insects with distinctive pincers on their rear. Adults and young look similar and are usually seen in groups. Raise their pincers aggressively if disturbed. Active at night and hide in organic mulches or under rocks during the day.

PLANTS AFFECTED: Flower and vegetable seeds and seedlings. Ornamental shrubs and fruit trees. Note – also eat other insects, caterpillars and woolly aphids.

DAMAGE CAUSED: Growing tips, stems, leaves, flowers and fruits are damaged. Young seedlings are eaten leaving bare stalks. Leaf edges on older plants appear torn or jagged.

CONTROL METHODS:

Trapping earwigs is the most effective control method. Try:

- Filling upturned pots with crumpled newspaper and emptying each morning.
- Placing covered snail traps with fish oil or linseed oil in garden beds. Empty every few days.
- Putting rolled up newspapers in garden beds and empty daily.



MITES

WHAT: Mites are very tiny spiders. Young mites emerge from eggs laid on the underside of leaves. Empty egg casings and other detritus are easier to spot than mites themselves. Webbing on the tips of plants and silverying of the leaves are typical of mites.

PLANTS AFFECTED:

Ornamental shrubs, roses, fruit trees and most vegetables.

DAMAGE CAUSED: Leaves appear speckled or silvered. Due to the loss of chlorophyll from mites feeding, leaves go yellow and drop off. Plant looks tired and grimy.

CONTROL METHODS:

Mites are highly resistant to chemical controls, particularly the unhatched eggs. Natural controls include:

- Keeping plants clean by hosing down with a jet of water if mite presence is suspected.
- Removing infected leaves and plant parts and bagging.
- Using crop rotation and mixed plantings to avoid mites becoming endemic.
- Cleaning up weeds and leaf litter from around the base of plants.
- Spraying with botanical oils or soaps.



PEAR AND CHERRY SLUG

WHAT: Dark muddy-green and slimy larva of a sawfly wasp. The adult wasp lays eggs on tree leaves in late spring. Larvae feed on the leaf surfaces and when mature, drop to the ground and pupate in the soil at the base of the tree. Adults re-emerge the following spring.

PLANTS AFFECTED: Both ornamental and productive pears, cherries, quinces and plum trees.

DAMAGE CAUSED: Larvae rasp across the upper leaf surface peeling off the cuticle. The leaf appears skeletonised and young plants can lose vigour. Leaves dry out and turn brown. Trees are unsightly.

CONTROL METHODS:

Protect plants by using a variety of controls such as:

- Squashing or removing larvae with a gloved hand
- Dusting leaves with a small amount of lime or potash when larvae first appear. Repeat a month later. Do not overuse as it may alter the soil pH.
- Hosing larvae off trees with a strong water jet. Immediately allow chooks to forage around and eat the fallen slugs.



SCALES

different species of these tiny insects that suck sap from plant leaves. Each scale lives beneath its own hard, soft or even fluffy 'bump' that appears on leaves and stems. Tiny exit holes show where the mature adult has left the scale to mate.

PLANTS AFFECTED:

Different scales attack different plants. Commonly affected are citrus, olives, pears, roses, daphnes, bay, gardenias and orchids. Honeydew secretions can also lead to sooty mould problems.

DAMAGE CAUSED: Scales suck sap from the young plant tissue.

control of scales is effective through a combination of:

- Flicking scales off the plant or brushing off with a soft toothbrush.
- Spraying with botanical oils or soaps.
- Cutting off heavily infested plant parts and destroying.
- Encouraging predatory insects and small birds to visit your garden by growing companion plants like alyssum, marigolds, cosmos, parsley and dill.



SNAILS AND SLUGS

WHAT: Grey brown molluscs with or without a shell. Adults and young look similar and are usually seen in groups. Active at night and hide in moist, shady places or under rocks during the day.

PLANTS AFFECTED: All leafy garden plants, particularly in shady areas of the garden. Flower and vegetable seedlings are particularly vulnerable to attack.

DAMAGE CAUSED: Entire leaves are eaten and young seedlings are decimated. Larger plants have holes in the leaves or shredded leaves.

CONTROL METHODS: Many natural controls are successful. These include:

- Removing and squashing snails by hand and feeding to chooks.
- Spraying plants regularly with black coffee.
- Sprinkling used coffee grinds around young seedlings.
- Placing snail traps with beer or soapy water at soil level.
- Mulching beds with strong smelling herbs like wormwood, mint, tansy or lemon balm.
- Creating barriers around plants with an exclusion band of copper tape.



WEEVILS

WHAT: There are many species of these long nosed insects. Female weevils lay hundreds of eggs in the soil in spring and the young larvae pupate in mid-summer. Both adults and larvae feed at night and shelter during the day. They are active throughout the year.

PLANTS AFFECTED: Ornamentals, flowers, vegetables, apple trees and cane fruit. Brassicas (broccoli, cauliflower, cabbages, kale etc) are attacked in the colder months.

DAMAGE CAUSED: Larvae feed on plant roots whereas adult weevils feed on the green stems and leaves of young plants. Damage

typically causes scalloped edging on leaves or the death of young seedlings.

CONTROL METHODS: Weevils can be difficult to eradicate from the garden as they live mainly in the soil. Control can be attempted by removing the feeding opportunities of the larvae. If weevils were evident last season try:

- Growing a non-susceptible crop such as peas or beans in winter instead of brassicas.
- Turning over the soil to disrupt the pupating larvae.
- Allowing beds to go fallow for a season but take care to also prevent weeds from growing.



WOOLLY APHIDS

WHAT: Sap sucking insects that rapidly increase their populations. Protect themselves by secreting white fluffy frass. Heavy infestations look like cotton wool on tree parts including fruit stems. Adults lay eggs in bark fissures before winter. Can also live in the soil and feed on tree roots.

PLANTS AFFECTED: Apple trees.

DAMAGE CAUSED: Suck sap from branches, stems and leaves. Can weaken the tree and cause galls to form. Infestations are unsightly and quality of fruit can be affected. Can also lead to sooty mould problems.

CONTROL METHODS: Ironically European Earwigs are a very effective predator of woolly aphid. If this is not an option try a combination of controls such as:

- Planting apple trees that are grafted onto M102 or MM106 rootstock. These are resistant to woolly aphid.
- Wiping off infestations with a soft cloth.
- Spraying with botanical oil to smother insects and eggs.
- Painting aphid colonies with methylated spirits.
- Encouraging predatory insects to visit your garden by growing companion plants like alyssum, parsley, marigolds, cosmos and dill.



WHITE FLY

WHAT: Sap sucking insects closely related to aphids. Appear in large numbers in early summer. Two main species found in gardens i.e., Greenhouse Whitefly and Silver leaf Whitefly. Whiteflies are killed off by cold weather.

PLANTS AFFECTED: Vegetables particularly tomatoes, beans and cucurbits e.g., zucchini, pumpkin, cucumber etc.

DAMAGE CAUSED: Silvering of leaves potentially causing leaf curling and wilting of plants. Affects vigour of the plant and fruit production. Also transmit plant viruses.

CONTROL METHODS: Whiteflies can be difficult to control as they swarm about when disturbed. Natural control methods include:

- Hanging yellow sticky traps in infected trees to trap airborne whiteflies.
- Vacuuming whiteflies from the plant.
- Encouraging predatory wasps by growing companion plants like alyssum, marigolds, cosmos, parsley and dill.
- Using a botanical oil. This method can be effective but it may be difficult to make contact with the airborne whiteflies.

Companion Planting

Growing masses of any single plant species (a monoculture) will result in an infestation of a single pest species. A healthy biodiverse garden will have a broad mixture of different plants that attract, feed and shelter beneficial and predatory insects, birds and lizards. Whilst these plants may play host to the predators, it is the pests that are the main food source of the predator. To keep predators in the garden some pest activity must be tolerated in return for chemical free pest control.

Some of the plants that attract predatory insects include alyssum, dianella, dill, coriander, cosmos, lemon balm, feverfew, marigolds, parsley, tansy and yarrow.



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Sustainable Gardening Australia (SGA)

6 Manningham Road West,
Bulleen, Vic 3105
Telephone: (03) 8850 3050
Fax: (03) 9852 1097
Email: info@sgaonline.org.au
Website: www.sgaonline.org.au

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