Radius HOUSING

KEEP NORTHERN IRELAND BEAUTIFUL ECO-SCHOOLS

Communities Biodiversity Project

INSECTS & BIODIVERSITY

Northern Ireland Executive | T:buc | Housing for all | Housing Executive

3 IMPORTANT POINTS TO BEGIN

First of all, we have to realize insects are not pests in their own right, they only are labelled ‘pests’ when they interfere with our cultivated plants and food.

In our situation we need to nurture ‘insects’ as part of the whole ecosystem – as food for birds, bats and small mammals and as pollinators for the greater good of plant life.

We can’t create high populations if we can’t sustain them –
soil and other growing conditions producing suitable food plants
must be established and available for future generations.

Species by numbers

Mammals	**4,500 of which humans are 1**
Birds	**8,600**
Mites	**30,000**
Spiders	**50,000**
Insects at least	**4,000,000**

Insects form the diet of many birds, bats and small mammals.

Earthworms, slugs and snails provide food for foxes, badgers, birds and small mammals.

Their habitats or environments dictate whether or not they and their predators survive and establish.

If the conditions are not suitable then establishment will not be sustained and there will be a population crash.

The links between plants (wood, deadwood*, leaves, roots) and insects have been long established but do not happen overnight.

The soil conditions (pH, moisture content etc) have to be right and remain consistent to produce successive populations.

Insects of course provide a vital role in plant reproduction.

Their decomposing activities also help to recycle nutrients and clear ground debris permitting new growth.

Two Key Takeaways:

1.

2.

Life cycle of an insect

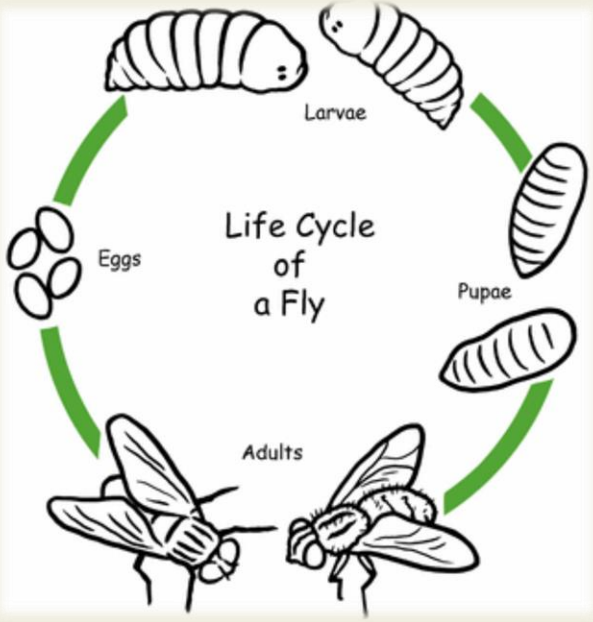
Insects go through a simple life cycle – egg, larva *or nymphal stages*, pupa and adult.

The eggs have to be laid on a suitable food source.

There has to be enough food to allow the total larval development. Once fully fed the larvae seeks out a suitable pupal site.

These stages can last from three weeks to three years.

The adult stage is usually the shortest and the most important as they have to refuel, find a mate (usually), and seek out a suitable food source to lay the eggs on.



What plants do we need to grow to attract and sustain insect variety?

Trees – willow (early flowering for early emerging species) poplar, hazel, apple, cherry, Oak, lime. Dead fallen wood is a long term sustainable source of food and shelter.

Bushes – hawthorn (berries and leaf), beech, spindle(plum), buddleia, rose, privet, cotoneaster.

Ground plants – ivy, primroses, dandelion,
dock, nettle, cow parsley, buttercup, thistles, clover (red and white), grass, cereals, wild flower varieties.

Peacock and red admiral caterpillars both feed on nettles

Fully fed cabbage white caterpillars on their way to pupate in soil below plant. They will feed on any form of brassica.

Hummingbird hawk moth larva feeding on bedstraws

Adults feed on thistle, buddleia and red valerian

Two Key Takeaways:

1.

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INEDIBLE CATERPILLARS

Garden tiger moth larva

Cinnabar moth

Pale tussock moth larva

Peppered moth larva

Brown line bright eye tomato moth

Poplar hawk moth

Winter moth

Small ermine moth

BEETLES

Cockchafer beetle – ‘May or June bug



Stag beetle



Dung beetle



Wood boring beetle






FLIES

Leather jacket

Adult crane fly

Fever flies

AQUATIC FLIES

Caddis fly larva

Adult caddis fly

May fly larva

May fly adult

Dragon Flies

Mature nymph

Adult emerging from last nymphal skin

Adult

Lough Neagh fly

Pond Skater

Water boatman

Great diving beetle

Top of the food chain eating small fish and tadpoles

Horse leech

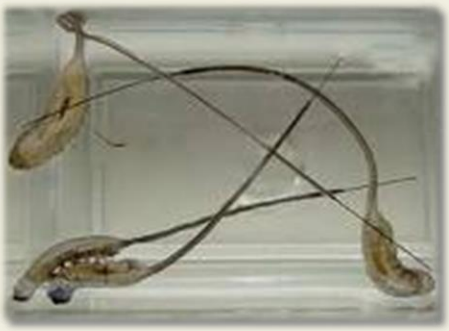
Will attack fish and tadpoles

Attacking a slug

Ladybird beetle and larva eating greenfly

SYRPHIDS OR HOVER FLIES

Drone flies – Adults of rat tailed maggot



Adults feeding on nectar

Larva feeding on greenfly

Golden eyed Lacewing

Larva feeding on caterpillar.

Hawthorn shield bug nymph

Adult

Squash bug and eggs sap suckers

Local grasshopper found at Ballysillan

House spider

Orb spider

Woodlouse spider

Silverfish

Firebrat

Ants start to move around temperature increases

Winged males in search of Queen

WASPS

Paper wasp

Tree wasp

Nest

PARASITIC WASPS

Laying egg in moth larva

Laying egg on greenfly

Attacking whitefly

Attacking sawfly larva

BEES – IMPORTANT PLANT POLLINATORS

Bumblebees are generally black with varying degrees of yellow banding. Look closely at flowering plants and you'll probably spot several species at the same time. Common bumblebees include garden, buff-tailed, red-tailed, white-tailed and field bumblebees.

They are social insects, living in tunnel colonies of up to 200 workers. Queens hibernate underground during the winter, emerging in spring to find suitable nest sites – for example, abandoned mouse holes. Each queen builds a nest of dried grasses and then lays about a dozen eggs that hatch into workers – sterile females.

The workers gather pollen and nectar to feed later batches of grubs. New queens and males hatch at the end of the season and mate. The males, workers and old queens die; new queens hibernate.

Bumblebees are not aggressive and will only sting if they feel threatened. They are important pollinators of many plants and fruiting trees.

MINING AND SOLITARY BEES

A hole is mined in suitable sandy soil and eggs laid in galleries filled with nectar and pollen. The adults will utilise bee hotels over the Winter.

Why build a bee hotel?

Solitary Bees are facing an unprecedented crisis. They've lost much of their natural habitat in the past 60 years – including many of our wildflower-rich meadows.
They are also under assault from pesticides, intensive farming and climate change leading to an increase in diseases.
By creating bee-friendly spaces where we live, we can start to replace and restore some of this lost habitat and help Britain bloom for bees.

Where to put a bee hotel?

In full sun, facing south or south east.

Locate your bee hotel at least a metre off the ground, with no vegetation blocking the entrance. Keep it dry at all times, to prevent the contents going mouldy.

Secure it firmly to a wall, fence or free-standing post while in use. As this is a temporary design, you'll need to move your bee hotel in the autumn and winter to protect the bee eggs inside.

You can move it into a garden shed or similar. Basically, somewhere dry and unheated. Do this from October to February, and then put it outside again in March.

Then, after the new generation of solitary bees has emerged (you'll see if they've made their way out of the hollow stems in the springtime as any mud covering the hollows will be opened up), you can replace the stems with fresh materials for a new year. You can even try a more permanent design to attract more solitary bees

Two Key Takeaways:

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CENTIPEDE – A PREDATORY SPECIES




MILLIPEDE – DECOMPOSERS AND HERBIVORES




COMMON WOODLOUSE

SLUGS AND SNAILS. Plant pests and compost producers – Food for hedgehogs and birds.

New Zealand Flatworm – exotic earthworm killer