

Biodiversity and Allotments



Growing in harmony with nature

Introduction

Biodiversity is the total array of all living things on earth. A healthy biodiversity is an indicator of a healthy planet for humans, animals and plants alike.

As allotment holders and gardening enthusiasts we recognise that we are just one of many species in the natural world of an allotment or garden. This potentially diverse habitat can form a partnership from which both humans and wildlife alike can benefit when we follow good gardening practices.

Allotments and gardens, especially those located in urban areas, can provide important habitats for wildlife through the provision of food, shelter and breeding sites. Allotments are becoming an increasingly important resource for wildlife. Whatever is grown on an allotment or garden, one can minimise harm to wildlife and maintain a natural balance by using organic methods.

In essence, allotments and gardens provide an opportunity to increase biodiversity and promote sustainable development.

Beneficial Creatures



Allotment sites and gardens can provide the perfect environment or habitat for many types of beneficial creatures and in return these creatures can assist the allotment-holder and gardening enthusiast in a number of ways:

- Birds, insects and other creatures eat garden pests such as aphids,
- Insects pollinate the flowers of fruit and vegetable plants while looking for nectar,
- Earthworms help maintain the soil's quality.

There are many ways in which we can encourage beneficial creatures to stay in our allotments and gardens:

- Avoid the use of chemicals. Although these products destroy unwanted pests, they can also kill off beneficial creatures,
- Provide water – Mammals, birds, amphibians and insects all need access to water. A container with small stones topped up with water allows them to drink safely,
- Provide shelter - Shrubs and hedges can provide a home or protection for small birds and fledglings. Shady, damp undisturbed places can provide hiding in summer and shelter in winter for insects. Only prune hedges and brambles in winter after any berries are gone, outside of the nesting season. If possible only do a bit each year to leave some mature growth in place.

Insect Pollinators		
Butterflies & Moths	Pollinate a wide variety of plants as they feed on the nectar of flowers.	Grow plants with purple, violet, orange or yellow flowers such as buddleia, hebe and most herbs. The small tortoiseshell butterfly's caterpillar will only eat nettles.
Bumble Bees	Great pollinators, better than honey bees.	Plant native wildflowers as well as cultivated varieties. Breed and hibernate in rough, undisturbed areas.
Insect Predators		
Ladybirds	Adults and larvae consume a lot of aphids, mealy bugs, whiteflies, mites and scale insects.	Grow yarrow, cosmos, and coreopsis.
Ground Beetles	Eat slugs, snails, cutworms, flat worms and root maggots.	Create a pile of logs or stones in a corner to provide them with shelter.
Hoverflies	Good pollinators. Larvae feed on aphids & mealy bugs.	Plants such as French marigold, yarrow and marguerite can be grown. Herbs such as rosemary, thyme and lavender can also be grown.
Lacewings	Adults are useful pollinators. Larvae eat aphids, mites, thrips and other small pests.	Plant yarrow and asters.
Other Predators		
Birds	Eat snails (thrushes), aphids, caterpillars and other insects.	Plant hedges with native species - hawthorn, bramble and bird cherry, which provide both food and shelter.
Frogs and Toads	Eat any living thing, especially insects, slugs and snails.	Provide a small pond somewhere on your plot or in your garden. (NB, it is against the law to take frogspawn from the wild without a license. If frogs are present they'll come to your pond.)
Hedge-hogs	Eat slugs, snails, beetles and worms.	Hedgerows are their preferred habitat but you can provide shelter such as piles of leaves or grass.
Bats	Eat craneflies, aphids, moths and midges.	Feed at night so grow night-scented flowers to attract insects that will provide food. Leave ivy on healthy trees for shelter.
Insect Parasites		
Parasitic Wasps	Lay their eggs inside other creatures such as caterpillars which are then killed when the larvae develop.	There are many species of parasitic wasp. Some are very tiny. Most are attracted by fruit or flowers.

Companion Planting

Companion planting is putting particular plants alongside others for a mutual benefit. It is a natural way of pest control. By incorporating a variety of native plants and shrubs into your allotment or garden with certain fruit and vegetables can provide a habitat for a wide range of beneficial creatures. Companion planting in turn reduces damage done by pests by either attracting predators or act as hosts for such insects as ladybirds, lacewings or hoverflies who feed on aphids. Although there is little scientific evidence that it works, the technique has been used by gardeners around the world for centuries. The following are examples of the benefits from this technique.

Carrots and onions

Where onions and carrots are grown together (and onions out-number carrots four to one), attacks of carrot fly are far less severe. It is believed that the smell of the onions masks that of the carrots, literally throwing the carrot flies 'off the scent'. Onions and carrots make good companion plants for another reason – carrots are long-rooted and onions short-rooted, so there is less competition for nutrients and water.

Yarrow and broccoli

If yarrow is planted with broccoli, then the flowers will attract aphid-eating insects such as ladybirds, and this will help control the number of aphids on the broccoli.

Cabbages and beans

If cabbages are grown with unrelated plants like runner beans, there's a reduced incidence of cabbage aphid and cabbage root fly.

Plants which need pollination to produce their fruit or vegetables, such as courgette and pumpkin, can be planted alongside comfrey or flowering herbs. These will attract good pollinators such as bumble-bees. Other plants are known to exude chemicals that suppress pests - planting rows of strong-smelling garlic and chives between other crops. Marigold roots are known to release a nematode repellent so, in theory, help repel against potato cyst. Another advantage of planting flowers like Marigolds is their bright blooms helps to attract beneficial insects such as hoverflies and bees. Strong-smelling French Marigolds are also said to repel whitefly. Other useful plant companions are legumes, such as Lupins, that fix nitrogen with their roots for the benefit of nearby crops.

Soil Life

Soil life is a generic term for all the organisms living within the soil. Good healthy soil provides vegetables, fruits and plants with the right amount of nutrients, air and water.

The presence of organic matter and soil life is important for its composition and fertility. When soil has plenty of plant matter broken down in it it has a dark crumbly texture like well-rotted compost and is called humus. This has plenty of nutrients for plants in it and good water retaining properties, all-important for growing fruit and vegetables.

Earthworms are one of the most important beneficial creatures that live in the soil. They break down dead plant material, such as found in mulches, grass clippings and compost, which helps create the humus layer. This assists in making nutrients available to the plants. Earthworms also help aerate the soil through burrowing holes in it. Air is also needed to break down nutrients. The holes also provide channels for water to reach the roots of plants.

The soil also contains beneficial bacteria and tiny fungi called mycorrhiza. These too help to make nutrients available to plants. It is thought by some that digging breaks up the mycorrhiza and disturbs bacteria, reducing their effectiveness. Therefore a 'no-dig' method of cultivating is used, whereby the soil is disturbed minimally, just enough to plant seeds and seedlings. Compost, well-rotted manure, etc. is spread on the surface as a mulch, when plants are well grown or later in the year, and left to rot into the soil naturally, including being pulled into the soil by worms.

Mulching also provides a habitat for beneficial creatures such as beetles who will eat pests such as slugs and maggots, as well as reducing water evaporation from the soil in dry weather. Don't be overly tidy in the Autumn when clearing dead plant matter. Leave some debris on the soil to break down naturally. This provides shelter for over-wintering beneficial insects as well as food for worms.

It is thought that in the long term artificial fertilizers do not work well with soil biodiversity and eventually the soil loses its structure and fertility.

Compost

Composting is part of the natural cycle of growth and decay and plays a very important role in the workings of an allotment or garden site. As part of the process, vegetable matter is broken down into various nutrients by numerous microscopic organisms of both animal and vegetable matter, i.e., bacteria and fungi, which in return release these nutrients into the soil in a form which benefits the growth of vegetables and plants. Plants in turn then provide food for insects in which then become food for birds. Thus compost is both a beneficial way of reusing waste plant material while on the other hand plays a very important in conditioning the soil.

For composting to function well the material that goes into a compost heap or a compost bin/container should be chemical-free. This encourages a productive and diverse range of microscopic organisms to work efficiently. Micro-organisms break down the vegetable waste into a brown crumbly material called humus.

A compost heap is both good for the garden and wildlife alike. It can provide shelter for insects and other small animals such as Hedgehogs who in turn help to eat the slugs and snails which prey on plants.

Many of the invertebrate species that live in your compost heap or bin/container will actively contribute to the compost process while others, such as ground beetles and centipedes, will use it as a temporary refuge. These invertebrates will in turn, attract useful predators to the allotment/garden such as birds, frogs, etc.

Compost can take months to break down, and often on in an allotment or garden can be seen as two heaps or bins, one being currently added to and the second one being left to mature. It is always good to put layers of different material into a compost heap – leafy green plants, more woody or twiggy items and even shredded paper and light cardboard. This stops the compost from getting too soggy or smelly and gives it a good texture.

For more information on composting see the 'Resources' section near the end of this leaflet.

Biodiversity at a National Level

The United Nations Convention on Biological Diversity (CBD) was ratified by Ireland in 1996 to promote conservation and the sustainable use of biodiversity.

The Irish government's commitment to biodiversity was further strengthened with the publication of the National Biodiversity Plan (NBP) in 2002. This includes measures to enhance biodiversity involving a wide range of sectors, such as natural resources, agriculture, fisheries, forestry and economic development.



Courtesy Richard Steel, <http://wildlifephotographic.blogspot.com>

A New NBP is currently being drafted and will be published later this year. The aim of the NBP is to conserve a wide range of habitats to safeguard the future of collections of species, such as woodlands and peatlands.

Biodiversity is very important because it provides a source of significant economic, environmental, health and cultural benefits both for Ireland as well as the rest of the world.

Ireland has a varied landscape from mountain areas to coastlines and with a mild wet climate, contributes to a diversity of habitats. The resulting biodiversity living in these habitats provide pollinators, natural predators of pests and soil organisms essential for plant growth.

A good range of plants and animals surviving well in the wild is an indicator that the environment is clean and healthy, with little or no pollution. This shows that it is healthy for humans to live in too.

From an agricultural perspective, biodiversity provides Ireland with a varied food supply, which is needed for balanced human nutrition. The conservation of genetic biodiversity in domestic plants and animals is essential to ensure that they can adapt to thrive in local conditions.

In growing fruit and vegetables on allotments and in gardens the benefits of drawing on genetic biodiversity can be seen in new varieties of plants that are better adapted to cooler climates. These include varieties of sweetcorn and tomatoes that can be grown outdoors in Irish summer weather.

For further information about Ireland's national awareness campaign on biodiversity, check out: <http://www.noticenature.ie>.



2010 - International Year of Biodiversity

The United Nations has declared 2010 to be the International Year of Biodiversity, and people all over the world are working to safeguard this irreplaceable natural wealth and reduce biodiversity loss. This is vital for current and future human wellbeing. The International Year of Biodiversity is a unique opportunity to increase understanding of the vital role that biodiversity plays in sustaining life on Earth. For further information, check out: <http://www.cbd.int/2010>



The Notice Nature website (<http://www.noticenature.ie>) will be the focal point and notice board for any biodiversity related events during International Year of Biodiversity. This Website will be regularly updated with events that can be accessed by the public.

South Dublin Allotments Association

The South Dublin Allotments Association (SDAA) is a voluntary association for all those who support allotments in South Dublin County.

Membership is open to all people who are gardening enthusiasts, allotment holders on SDCC sites, those individuals on waiting lists for a site or any other persons who are committed to and interested in allotments. For further information contact:

E-mail: sdaa@eircom.net

Website: <http://www.southdublinallotmentsassociation.ie>

Resources

<http://www.noticenature.ie>, a website of the Department of the Environment, Heritage and Local Government.

<http://www.askaboutireland.ie/reading-room/environment-geography/environmental-information> or <http://www.enfo.ie> - An information service of the Department of the Environment, Heritage and Local Government.

<http://www.biodiversityireland.ie>, The National Biodiversity Data Centre is the national centre dedicated to the collation, management, analysis and dissemination of data and information on Ireland's biological diversity.

<http://www.naturescalendarireland.com>, an independent resource dedicated to people in Ireland interested in the influence of our weather and climate on plants, animals and ecosystems.

<http://www.biology.ie>, an independent resource dedicated to people in Ireland interested in wildlife, biodiversity and habitats.

<http://www.iwt.ie>, Irish Wildlife Trust.

<http://www.birdwatchireland.ie>, BirdWatch Ireland.

<http://www.ipcc.ie>, Irish Peatland Conservation Council.

<http://www.botanicgardens.ie>, National Botanic Gardens of Ireland.

<http://www.rhisi.ie>, Royal Horticultural Society of Ireland.

<http://www.theorganiccentre.ie>, The Organic Centre.

<http://www.giyireland.com>, Grow it Yourself Ireland.

www.bumblebeeconservationtrust.co.uk Bumblebee Conservation Trust UK

Check out your local library or bookshop for the following:

'Ireland's Garden Birds', Oran O'Sullivan & Jim Wilson (Collins Press, 2008)

'Collins Wildlife Gardiner', Stefan Buczacki, (Collins, 2007)

'Wildlife-friendly Garden', Michael Chinery (Collins, 2006)

'No Nettles Required, the reassuring truth about wildlife gardening', Ken Thompson (Eden Project, 2006)

'Creating Small Habitats for Wildlife in Your Garden', Josie Briggs (Guild of Master Craftsmen, 2001)

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This leaflet is produced and compiled by the South Dublin Allotments Association as part of its contribution to 2010 - United Nations International Year of Biodiversity.

While every effort has been made to ensure the accuracy of this leaflet's contents we are open to correction or clarification – please contact us at the email above.

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