Module 05

Importance of Habitat Provision and Biodiversity

Module Significance

Suitable habitat can be provided by leaving uncultivated areas, careful garden management or it can be 'man-made'. Man-made habitat may include: the appropriate choice of garden features, use of certain materials, suitable plant choices and the provision of varied habitat that encourages a diversity of wildlife.

Organic gardeners strive for a balanced ecosystem which can only be achieved by providing suitable habitat; this in turn results in a diverse range of flora and fauna - biodiversity.

Biodiversity is important to the gardener because it means that the natural balance is struck, pest numbers are naturally controlled by predators and no single species becomes a significant pest. There will be also be an abundance of insects, ensuring crop pollination.

This module introduces the importance of habitat provision and biodiversity.

Learning Outcomes

Learning outcomes are statements that describe the knowledge and skills that you should acquire from undertaking this module of study.

There are 4 learning outcomes for this module; they are:

1. **Describe how to enhance the habitat of an existing garden to improve biodiversity**
2. **Describe how to propagate a range of plants for habitat provision**
3. **Explain how to establish and maintain plants used for habitat provision**
4. **Explain how to establish and maintain a wildlife pond**

Content

The following topics will be covered in this module:

- Natural habitat - natural topographical features, e.g. earth banks, uncultivated areas, native trees, shrubs, perennial, biennials and annuals
- ' Man-made' habitat - mini woodland, living boundaries, wildflower/meadow area, compost heaps, long grass, beetle banks, bird boxes, bug hotels, hedgehog shelters, log piles, leaf piles, bee boxes/tubes
- Garden features - dry stone walls, bog garden, ponds/water features, gravel areas
- Materials - wood, rock, stone gravel, corrugated iron
- Plant selection - diversity (mixed planting), different forms of plants, inclusion of native species, plants as food sources
- Propagation methods – seed, division and cuttings
- Plant establishment and aftercare – planting/transplanting, watering, weeding, pruning, providing support and mulching

Total Learning Time

Total Learning Time is defined as the minimum number of hours that a learner will reasonably spend in preparation and study or any form of education or training that takes place to achieve this module. The Total Learning Time for this module is 6 hours.

Assessment

This unit will be assessed by carrying out practical activities and by the completion of a multiple choice test.

Resources

We list some resources which you may find useful, in many instances they contain supplementary information or can be used for reference. They include:

The Principles of Organic Gardening – on-line version available:
http://www.gardenorganic.org.uk/principles

Dorling Kindersley 'Encyclopaedia of Organic Gardening'- ISBN: 978-1405334433

Dorling Kindersley 'Grow Organic' – ISBN: 978-1405330916

Royal Horticultural Society 'Organic Gardening' – ISBN: 978-184001587

Garden Organic Factsheets (available to members only)

Wildlife gardening series: GG10 Nettles, GG12 Ladybirds, GG13 Lacewings, GG29 Setting up a pond, GG30 Creating a wildflower meadow, Flowers for the wildlife garden, GG42 Shrubs and climbers for the wildlife garden, GG43 trees for the wildlife garden, GG44 Attracting beneficial insects

GG33 Living willow structures

WC2 Mulches, weed prevention and control

Frances Lincoln 'RHS Companion to Wildlife Gardening' Chris Baines - ISBN 978-0711237919

Aquamarine 'How to Create an Eco Garden: The Practical Guide to Greener, Planet-friendly Gardening' John Walker – ISBN 978-1903141892

Brambleby Books 'Making Garden Meadows' Jenny Steel - ISBN 978-1908241221

Eden Books 'No Nettles Required' Ken Thompson – ISBN 978-10905811144

Topics

Background Information

In light of current problems such as climate change and rapid species decline, there is an increasing awareness of the importance of gardens as habitat for wildlife, but this is not a new idea. From the late 1960s, there has been a Europe-wide wildlife gardening movement, focussed on designing gardens to be as good as they possibly can be for wildlife, incorporating diverse habitats and native plants. The German Naturgarten eV (Nature Garden Association) was founded in 1990 with the philosophy that gardens should be designed as places to experience nature and remedy the deficit felt by many modern urban dwellers.

In the UK, the first printing of Chris Baines' book 'How to make a Wildlife Garden' was published in 1985 and the number of gardeners interested in managing their plots with nature in mind has steadily increased. The Wildlife Gardening Forum was founded by Natural England in 2005 and 2016 saw Chris Baines' book republished as the 'Companion to Wildlife Gardening', fully updated and revised, incorporating the latest research from the RHS.

Wildlife Gardening Forum website - http://www.wlgf.org/

In recent years, these ideas have become more widely acknowledged and increasingly accepted in mainstream gardening design and by the media. Gardens offer a wonderful opportunity to create vibrant habitats that are good for people and wildlife alike. Improved biodiversity results in a functioning ecosystem where the natural balance is struck, so no creature reaches 'pest' proportions.

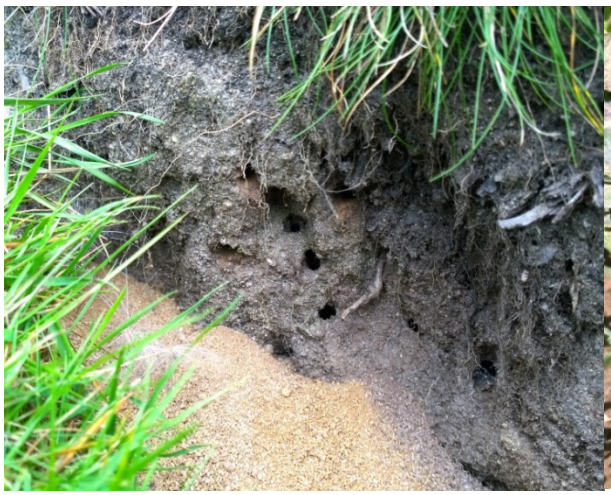
Natural habitat

The value of any naturally-occurring habitat within a garden should always be considered, and where possible, such features should be retained.

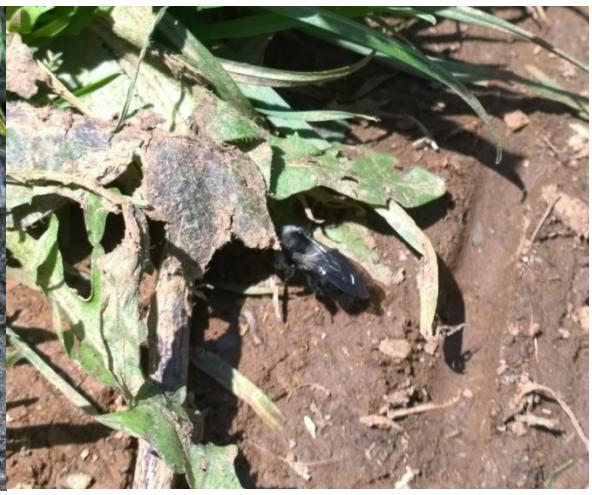
Earth banks

Where natural earth banks are present in gardens they provide valuable shelter. Being raised up, the ground is less prone to water logging and quicker to warm in spring, making it an ideal over winter hibernation site for creatures like beetles and queen bumblebees.

If bare earth is present, especially where the soil is sandy in character, there is an ideal nesting opportunity for several of the UK's 240+ species of solitary bee.



Earth bank with solitary bee holes



Ashy mining bee

Uncultivated areas

Where space allows, uncultivated areas really can enhance the value of a garden to wildlife. Even just two or three square metres where wild plant species are able to flourish can make a big difference, especially if this area adjoins similar pieces of ground in neighbouring gardens, and helps form wildlife corridors.

- Dandelions (***Taraxacum officinale***) are a very rich food source for many insect species. In particular, they produce large amounts of food during April, before many other plant are in flower.

- Nettles (***Urtica dioica***) are an important larval food plants for several butterfly species such as the small tortoiseshell, painted lady and peacock.

- Teasels (***Dipsacus fullonum***) produce pollen and nectar in abundance, feeding a wide range of insects. In winter, the seeds are important food for birds, especially goldfinches.

Mason bees on dandelions

Teasel seed heads

Nesting

In addition to manmade nest boxes, garden shrubs and hedging provide valuable nesting habitat for many birds. With this in mind, care should be taken when carrying out garden maintenance: avoid cutting hedges between late February and September, and if pruning shrubs after summer flowering, check for the presence of birds and their nests.

Nest in a hedge

Nest box

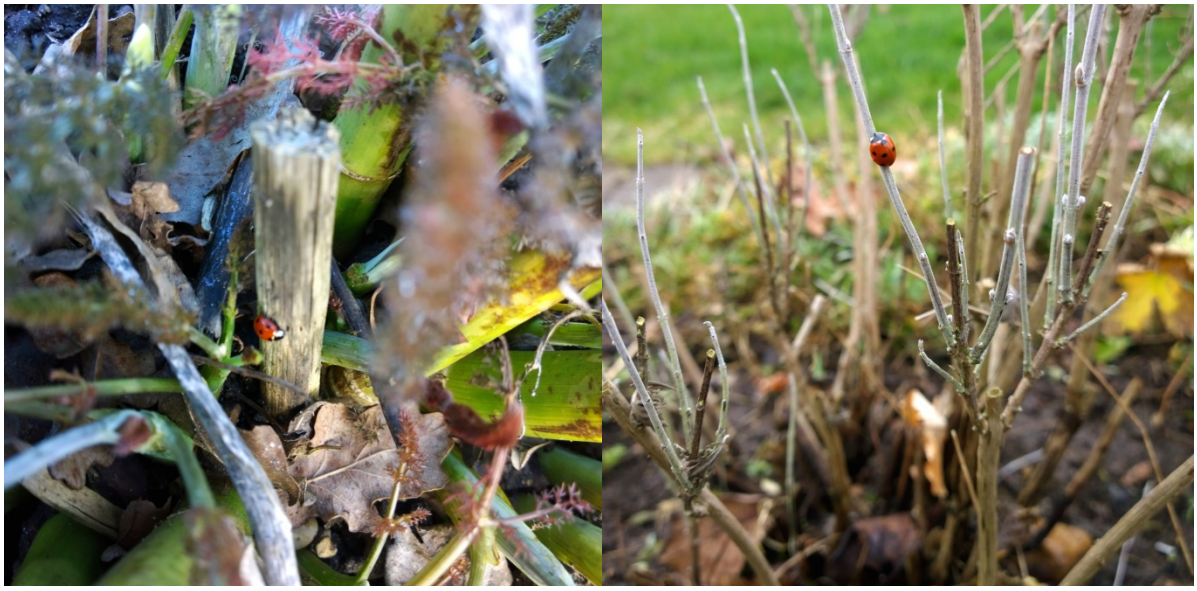
It is possible to provide nesting boxes to suit a range of birds, because each species will have different requirements. For example a Robin likes to have an box with a wide entrance – an 'open' box.

See http://www.wildlifetrusts.org/wildlife for various wildlife gardening factsheets, including Basically Boxes Pt1 and Pt 2.

See https://www.rspb.org.uk/birds-and-wildlife/read-and-learn/helping-birds/nestboxes

Dead stems

Dead flower stems are often cut back as soon as the flowers have faded, but if left standing over winter they can provide a valuable habitat for overwintering insects and help protect the crown of perennial plants. The seeds within many dead stems also provide food for birds in cold weather and add decorative interest, looking particularly good in a frost.



Ladybird on dead stems

Examples of dead stems

Our native fauna co-evolved with our native flora, so it stands to reason that native plants will help support wildlife populations in gardens. In 2015, the RHS published the results of its four year 'Plants for Bugs' study which compared three groups of plants:

1. Native - plants native to the UK

2. Near native – non-UK, but northern hemisphere plants that resemble UK flora*

3. Exotic - plants from the southern hemisphere

The study confirmed that native plants are very important, but that similar species from elsewhere in the northern hemisphere can play a similar role as part of a garden ecosystem.

The study also identified that whilst southern hemisphere flowers might not be the first choice for many insects, they often provide pollen and nectar later in the season when many native plants have gone to seed (for example, *Verbena bonariensis*).

Verbena bonariensis

In conclusion, there should be a strong emphasis on native plants, but plants from other parts of the world can be incorporated and are useful for extending flowering periods, particularly as our seasons become more unpredictable.

*It is worth noting that certain plant species are not termed native but may have been present prior to the last ice age, which depleted the flora of the British Isles significantly in comparison to the near continent.

More information about the RHS Plants for Bugs project - https://www.rhs.org.uk/science/conservation-biodiversity/wildlife/plants-for-bugs

The following are examples of native plants with significant garden merits that are also beneficial to wildlife: