

Ecosystem Gardening for Biodiversity



Ecosystem Gardening is about sustainable gardening, conservation of natural resources, and to create welcoming habitat for wildlife in your garden so that you will attract more birds, butterflies, pollinators, frogs and toads, bats, and other wildlife to your garden. Ornamental plants can play their part too but remember What's for the Garden stays in the Garden: <https://www.argyll-bute.gov.uk/planning-and-environment/guidance-gardeners-invasive-or-harmful-plants>



Ecosystem Gardening Components:

Sustainability, soil conservation, water conservation, the importance of native plants, the dangers of invasive plants, the essential role of insects, pollinator conservation, butterfly conservation, bird conservation, amphibian conservation, and mammal conservation.

Doing your bit for biodiversity.

The more we keep in balance and harmony with nature the better it is for our gardens. The natural food chain allows



predators to keep pests under control without the need for chemicals.

Healthy populations of birds, amphibians, and small mammals are dependent upon healthy populations of native insects as their primary food source.



Planning your garden for all year round interest.

Our choice of plants and garden features can reward us by looking attractive and stimulating wildlife activity all year round. It is important to provide food and shelter for those species that live in our gardens as well as the seasonal visitor

Fragrant plants attract pollinators, berries provide food for winter along with well stocked bird feeders and good vegetative cover provides shelter.

Use native plants to create a balance between ornamental planting and provide harmony with nature. See attached list on page 2.

If you're buying new pots/ planters go for the plastic ones with water reservoirs which store water underneath and the run off isn't wasted or make use of your clay pots by putting plastic pots inside terracotta to cut down on water loss through evaporation

Plant up using water retaining products which store water for the drier days but do follow the instructions on the pack.

Soil Conservation- sets out to conserve our soil through a series of management techniques in order to stop erosion, over use and chemical contamination. The addition of organic matter and nutrients can cost very little see composting. Please do not use peat or peat based products.

Composting- is an inexpensive, natural process that transforms your kitchen and garden waste into a valuable and nutrient rich food for your garden.

Water conservation-

Water is essential for all life so why not provide a simple bird bath or for the more ambitious a pond for wildlife to live in, drink and wash. Mulches can help retain soil moisture and stop competition for water and nutrients from weeds. Harvesting rain water from your roof by using a water butt is a valuable way of capturing this resource for use during dry weather.

To compensate for dry spells use drought tolerant plants and on lawns reduce your mowing effort.



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Homes for Birds

Encourage Birds to nest in your garden by providing nest boxes. They come in various sizes so make sure you choose the right one for your favourite species.



Plants for Insects



Trees: Quercus robur (oak), Salix spp. (willows), Betula spp. (birch), Crataegus monogyna (hawthorn), Prunus spinosa (sloe), Populus spp. (poplar), Pinus sylvestris (Scots pine), Alnus glutinosa (alder), Ulmus spp. (elm), Malus sylvestris (crab apple), Corylus avellana (hazel), Fagus sylvatica (beech), Fraxinus excelsior (ash)



Shrubs: Berberis darwinii (barberry), Crataegus spp. (hawthorns), Erica spp. (heaths), Hedera helix (ivy), Hypericum calcycinum (rose of Sharon), Ilex aquifolium (holly), Lonicera periclymenum (honeysuckle), Mahonia aquifolium (Oregon grape), Photinia villosa (photinia), Prunus avium (wild cherry), Prunus spinosa (blackthorn), Pyracantha angustifolia (firethorn), Ribes sanguineum (flowering currant), Rosa spp. (rose), Rubus fruticosus (bramble), Syringa vulgaris (lilac)

Herbs: Ajuga reptans (bugle), Centaurea spp. (knapweeds), Cirsium arvense (creeping thistle), Foeniculum vulgare (fennel), Fragaria vesca (wild strawberry), Lotus corniculatus

(bird's foot trefoil), Nepeta x faassenii (catmint), Origanum vulgare (marjoram), Sedum spectabile (ice plant), Rumex crispus (dock), Taraxacum officinale (dandelion), Thymus drucei (thyme), Tropaeolum spp. (nasturtium), Vicia sepium (vetch)



Plants for Birds and Mammals



Trees: Alnus glutinosa (alder), Betula spp. (birch), Corylus avellana (hazel), Fagus sylvatica (beech), Fraxinus excelsior (ash), Malus sylvestris (crab apple), Pinus sylvestris (Scots pine), Prunus avium (wild cherry), Quercus robur (oak), Sorbus aucuparia (rowan), Taxus baccata (yew)

Shrubs: Berberis darwinii (barberry), Buxus sempervirens (box), Cornus sanguinea (dogwood), *Crataegus spp. (hawthorns), Euonymus europaeus (spindle), Ilex aquifolium (holly), Ligustrum vulgare (privet), Lonicera periclymenum (honeysuckle), *Prunus spinosa (blackthorn), Rhamnus

catharticus (buckthorn), Rosa spp. (rose), Rubus fruticosus (bramble), *Sambucus nigra (elderberry), Ulex europaeus (gorse), *Viburnum opulus (guelder rose)
Herbs: Centaurea spp. (knapweeds), Cirsium spp. (thistle spp.), Daucus carota (wild carrot), Rumex spp. (dock spp.), Urtica dioica (stinging nettle)

Plants and places for wildlife in your garden .



Moist and Shady

Trees: Betula pendula -7, Salix spp. -1, Sorbus aucuparia- 4,5
Shrubs: Cornus alba 2,5, Ligustrum sp. 4, Viburnum bodnantense 4,5, Skimmia jap. 1,5
Perennials: Digitalis 1, Ligularia dentata 2, Primula veris 4,
Climbers: Hedera helix vars 1-5
Dry and Sunny
Trees: Taxus baccata 5,
Shrubs: Berberis darwinii 1,4,5, Corylus avellana 4,5, Contoneaster simonsii 4,5

Ilex sp. 1,4,5
Climbers: Chaenomeles 5, Lonicera peric. 1,5,7, Pyracantha sp. 4,5
Perennials: Geranium pyrenacum 5, Heleborus 1, Alchemilla alpine 1,2
Annuals: Myosotis 1,2, Malcolmia 1,2

Sunny and Moist

Trees: Amelanchier 5, Betula 7, Sorbus 4,5
Shrubs: Sambucus nigra 4,5, Viburnum opulus 3,4,5, Rosa rugosa 4,5
Climbers: Clematis tangutica 5
Perennials: Delphinium 1,

Monarda 1, Aster novi-belgii 1,3,4, Adjuva 1.

Sunny and Dry

Trees: Malus sp. 4,6, Prunus padus 4,6, Cham. law. Green-hedger 6,
Shrubs: Escalonia sp. 4, Rosa sp. 4,5, Cytisus sp. 1, Olearia 1,2,4,
Climbers: Ceanothus sp. 1,4
Perennials: Centaurea 1, Echinops 1,2,5, Sedum 1, Thymus 1,2/
Annuals: Anthirrinum 1, Eshscholzia 3,4,7, Dianthus 1, Petunia 1, Verbena 2,7
And many more.....

1. Bees, 2. Butterflies, 3. Birds, Hoverflies, 5. Nectar, 6. Shelter, 7. Moths.



Creating suitable Habitats– General Principles

Wild' areas can add a new dimension to the garden and encourage owners to learn more about the conditions and plants suitable for a variety of species. For most people a formal and tidy appearance is what they want this can be achieved by maintaining neat lawns and flowerbeds only in certain areas e.g. next to paths and patios and leaving other areas for the habitat and species to flourish as well as accommodate them during hibernation. Here are some of the areas you can encourage wildlife and increase the biodiversity of your garden

Boundaries: Hedges are valuable wildlife habitats in their own right, the combination of shrubs, trees and hedge bottom vegetation providing food and shelter for an enormous range of animals, from the smallest insects to a variety of bird species.

Ground preparation: control competitive grasses , dig trench spade depth and width, add well rotted compost,

Plant selection: see * and plants in red on previous page for examples, plant at between 20-30 cm apart in a single row or and 45 cm apart in a double row planted alternatively. Protect from rabbits and voles by using tree tubes of netting.

Ponds: They are vitally important for a wide range of wildlife, particularly if they are associated with other habitats such as reedbed, willow/alder woodland or in the garden situation wet grassland. Good pond design - extensive areas of very shallow water sloping gently down to a deeper area of water. emergent vegetation to provide shelter and food for insects, birds and amphibians.

Vegetable and Fruit plots:

Embrace organic growing principles by :

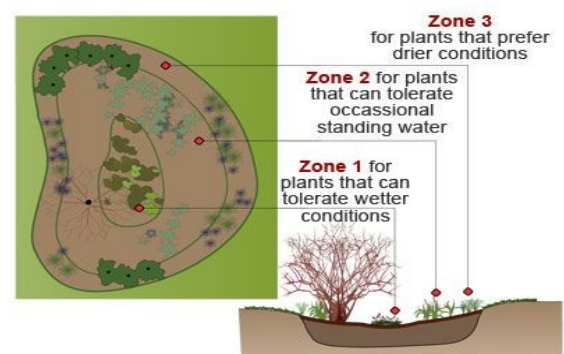
1. Adding Compost: improves soil condition; 2. Rotating vegetable crops: reduces impact soil and nutrients ; 3. Growing a range of fruit, vegetables and herbs: keeps variety throughout the seasons; 4. Companion planting : Leeks and onions– keep carrot fly at bay 5. Plants native to Scotland flourish in our climate and soil conditions, producing flowers, berries and seeds.

Rain Gardens.

A rain garden offers the opportunity to manage rainwater runoff from hard and soft surfaces after downpours by planting an attractive, low maintenance, wildlife-friendly space.

Benefits of rain gardens

- Low maintenance garden – no watering once plants have established
- Can absorb up to 30% more water than a lawn
- Offers opportunities to plant a wide range of perennials
- Reduces erosion by slowing heavy rainfall
- Increased planting attracts insects and birds
- Avoids the need to sink a soakaway



Further advice can be found on: <https://www.rhs.org.uk/advice/profile?PID=1009>

Some useful links:

https://www.buglife.org.uk/activities-for-you/wildlife-gardening?gclid=EAlalQobChMlyOHcnKm2lQIV4r3tCh2zcAx6EAAYASAAEgKuTvD_BwE

<http://www.rspb.org.uk/birds-and-wildlife/bird-and-wildlife-guides/ask-an-expert/previous/gardening.aspx>

<https://scottishwildlifetrust.org.uk/things-to-do/attract-wildlife-to-your-garden/>

<http://butterfly-conservation.org/292/gardening.html>



Common Native Trees and Shrubs



Common Native Trees and Shrubs	Soil Preference					Exposed Sites	Comments
	Wet	Light, dry	Heavy Soils	Acid	Neutral or alkaline		
Alder (<i>Alnus glutinosa</i>)	✓				✓		Medium Tree
Ash (<i>Fraxinus excelsior</i>)		✓	✓		✓	✓	Large Tree
Downy Birch (<i>Betula pubescens</i>)	✓	✓	✓	✓	✓	✓	Medium Tree
Blackthorn (<i>Prunus spinosa</i>)	✓	✓	✓		✓	✓	Shrub
Wild Cherry (<i>Prunus avium</i>)			✓		✓		Large Tree
Crab Apple (<i>Malus sylvestris</i>)		✓	✓		✓		Medium Tree
Elder (<i>Sambucus nigra</i>)		✓	✓		✓		Shrub
Gorse (<i>Ulex europaeus</i>)		✓		✓	✓	✓	Shrub
Guelder Rose (<i>Viburnum opulus</i>)	✓		✓		✓		Shrub
Hawthorn (<i>Crataegus monogyna</i>)		✓	✓	✓	✓	✓	Shrub
Hazel (<i>Corylus avellana</i>)		✓	✓		✓	✓	Shrub/shade tolerant
Holly (<i>Ilex aquifolium</i>)		✓		✓	✓		Shrub/shade tolerant
Sessile Oak (<i>Quercus petraea</i>)		✓		✓	✓	✓	Large Tree
Pedunculate Oak, (<i>Quercus robur</i>)	✓		✓	✓	✓	✓	Large Tree
Rowan (<i>Sorbus aucuparia</i>)		✓		✓		✓	Medium Tree
Spindle (<i>Euonymus europaeus</i>)			✓		✓		Shrub
Goat Willow (<i>Salix caprea</i>),	✓		✓		✓	✓	Shrub/Medium Tree
Grey Willow (<i>Salix cinerea</i>)	✓			✓	✓	✓	Shrub
Purple Willow (<i>Salix purpurea</i>)	✓				✓	✓	Shrub
Bay Willow (<i>Salix pentandra</i>)	✓				✓		Shrub/Medium Tree

Wildlife Gardening - Suggestions for each month of the year

January

Check on trees planted in last few years eg. how is the tree-tie, are leader branches intact? Carry out any necessary repair work to sheds, tools, machinery etc.

February

For least disturbance to birdlife, trim or lay hedges in late winter, on rotation if possible important to continue feeding birds well into spring.

March

Last opportunity to plant bare root trees before next season Time to begin sowing seeds of wildflowers and vegetables. Cut back shrubs.

April

Prepare ground and plant wildflower area. Plant out shrubs. Good time to construct a wildlife pond: <http://www.wildaboutgardens.org.uk/thingstodo/inaweekend/put-in-a-pond.aspx>

May

Sow wildflower meadow. Mulch young trees and shrubs. Spot treat/weed out problem plants such as dock, invasive bramble

June

Cut spring meadow, first cut for last year's summer meadow observe wildlife with the help of some identification books on birds, butterflies...

July

Wildflower seed collection of spring species. Maintain/mow a path through the garden for access and enjoyment. Water plants as necessary.

August

Cut summer meadow this or next month. Simply enjoy the garden!

September

Wildflower seed collection of summer flowering species Optimum time to sow wildflower meadow for next year Prune and/or dead-head shrubs Clean out bird boxes for winter roosting

October

If needs be, weed your pond to maintain open water or control some plants Plan hedgerow and tree planting projects Check the compost bin is adequately protected from rain or dig-in to garden

November

Tree planting season begins Leave areas undisturbed in the garden for hibernating insects and animals

December

If bird bath/pond freezes over, break some of the ice creating open water for wildlife

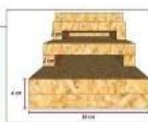
Feed the birds– a wide variety of feeds are available for wildbirds



Thinking about building Bird or Bat Boxes– check out the following links for guidance and construction details:

https://www.rspb.org.uk/Images/Nestbox%20pdf_tcm9-173857.pdf

<https://www.rspb.org.uk/birds-and-wildlife/read-and-learn/helping-birds/nestboxes/smallbirds/making.aspx>



http://www.bats.org.uk/data/files/publications/Bat_Box_Information_Pack_FINAL.pdf

<http://www.gardenersworld.com/how-to/diy/how-to-make-a-bat-box/>

