

GARDENS ACTION PLAN

HABITAT PROFILE

Habitat Name: Household gardens.

UK Biodiversity Status: Broad habitat.

Associated Priority Species: Pipistrelle bat *Pipistrellus pipistrellus* & *Pipistrellus pygmaeus*, bullfinch *Pyrrhula pyrrhula*, spotted flycatcher *Muscipha striata*, tree Sparrow *Passer montanus*, song thrush *Turdus philomelos*.

Species of Conservation Concern: Hedgehog *Erinaceus europaeus*, waxwing *Bombycilla garrulus*, treecreeper *Certhia familiaris*, goldfinch *Carduelis carduelis*, greenfinch *Carduelis chloris*, siskin *Carduelis spinus*, house martin *Delichon urbica*, swallow *Hirundo rustica*, pied wagtail *Ficedula hypoleuca*, blue tit *Parus caeruleus*, coal tit *Parus ater*, great tit *Parus major*, dunnock *Prumella modularis*, blackcap *Sylvia atricapilla*, chiffchaff *Phylloscopus collybita*, garden warbler *Sylvia borin*, willow warbler *Phylloscopus trochilus*, common toad *Bufo bufo*, common frog *Rana temporaria*, palmate newt *Triturus helveticus*.

Statutory Protection: No designations. Conservation Areas afford protection to trees and walls.

BIODIVERSITY CONTEXT

Gardens are identified as important by the UK Biodiversity Action Plan for three reasons. They are recognised as making a significant contribution to biodiversity in the urban area, although further appropriate management could enhance this contribution. There is also a recognition that there are implications for the wider natural heritage through the use of certain garden products e.g. peat. Thirdly, that for the bulk of the population, gardens provide the main day to day contact points between people and wildlife and therefore play an important role in enhancing people's enjoyment and understanding of our biodiversity.

The biodiversity of gardens within Scotland vary according to their location, size, soils, altitude and local climate, as well as present and past management. In a survey carried out by the Lothian Wildlife Information Centre in 1996, over 50,000 gardens in the Lothian area were surveyed. 1246 species were recorded which included wild flowering plants, grasses, sedges, trees, shrubs, mosses, liverworts, lichens and fungi. The numbers of species recorded ranged from 78 in small urban gardens to 261 in large rural gardens.

The conservation direction, promoted by the UK Biodiversity group in their UK Broad Habitat Statement for urban areas, is as follows: To maintain the existing diversity and extent of wildlife in urban areas, expanding the range and distribution of rare and common species and enabling this resource to be utilised as an educational tool. This aim can be considered further in the objectives below.

OBJECTIVES

Objective 1 To maintain the existing diversity and extent of wildlife in gardens.

- Target Survey and evaluate the range of garden habitats in the Stirling Council Area in terms of their importance in maintaining wildlife interest and as a way to inform the public as to their importance for biodiversity.
- Target Encourage biodiversity friendly maintenance practises in local authority managed gardens.
- Target To provide best practise guidelines for planning authorities to safeguard and enhance existing biodiversity and for new housing.

Objective 2 To expand the range and distribution of biodiversity in gardens and the wider countryside.

- Target Encourage the integration of green urban networks linking gardens with semi-natural habitats through the greenspace initiative (see greenspace action plan).
- Target Foster the integration of biodiversity in the planning and development of garden landscaping associated with new housing. New housing developments are often adjacent to the Green Belt and good semi natural habitat and are often at an early stage in their garden development. This will help to connect the semi-natural habitat with the more developed wildlife gardens in the urban area and reduce the degree of isolation of wildlife gardens.
- Target To encourage home and community composting.
- Target Encourage the business development and local supply of biodiversity friendly garden products e.g. peat free products, organic pest control methods.
- Target To expand the number of gardens being managed for biodiversity through promotional initiatives. This will increase the connectivity between wildlife friendly gardens.

Objective 3 To enable garden biodiversity to be utilised as an educational tool and to foster community action.

- Target Encourage community action to survey, plan for and manage wildlife habitats and biodiversity in private gardens and allotments through an organic gardening promotional initiative, monitoring schemes, etc.
- Target Promote wildlife gardening in schools through the Grounds for Learning Initiative.
- Target Promote wildlife gardening through events, literature, etc as a way to inform communities about local wildlife and the need for local action to conserve biodiversity.
- Target Encourage garden centres to promote biodiversity gardening.

CURRENT STATUS AND DISTRIBUTION

There are over 36,000 households in the Stirling Council area and this number is set to increase to over 39,000 by the year 2012. The vast majority of these households have a garden. 65.4% of these households are owner occupied, a further 21.9% are local authority housing and the rest (11.3%) are either privately rented, housing associations or Scottish Homes. Two thirds of people live in urban towns and one third in rural settlements.

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CULTURE, ETYMOLOGY AND FOLKLORE

Visiting gardens and gardening have always been popular national pastimes and have become even more so with increased television coverage of garden programmes. The potential to tap into people's enthusiasm for the benefit of biodiversity is immense. Gardens increase people's sense of wellbeing through their use for relaxation and recreation outdoors as well as a place to grow some home produce and flowers. Gardens traditionally have been developed for culinary (fruit and vegetables), medicinal (herbs), cut flowers and landscape purposes.

Gardens are valuable and important areas for the interaction of people with nature. Many people enjoy seeing birds, butterflies and the odd toad in their gardens. However the perception of wildlife associated with built environments and gardens left to 'go wild' is on the whole negative, with concerns over rats *Rattus norvegicus*, house and wood mice *Mus musculus* and *Apodemus sylvaticus*, starlings *Sturnus vulgaris*, pigeons *Columba livia*, wasps Vespidae, overgrown vegetation, docks *Rumex* sp., litter and a general air of neglect. Reversing this perception and encouraging wildlife friendly gardening, which goes beyond the bird table, is the challenge.

ECOLOGY AND MANAGEMENT

Gardens can include a wide variety of habitats such as trees, areas of grass, flower and shrub borders, ponds and water features, vegetable and fruit production, walls, wood piles and compost heaps. The intimate mosaic and network of habitats found in gardens can be exploited by a number of species and provides a mixture of breeding sites, foraging areas, shelter and sustenance that many species require in urban environments in order to survive. Only recently have gardens been regarded as important for both rare as well as commonplace wildlife.

A study of the features of gardens that were particularly attractive to mammals in gardens showed that the type of house, food related features, shelter related features, diversity of habitats nearby and size of garden were the significant factors related to species richness (Ansell, Baker and Harris. 2001.) The two factors under the control of gardeners are the food sources (berry- and fruit bearing bushes and trees, bird tables, bird feeders, ponds, compost heaps, etc) and shelter features (flowerbeds, shrubberies, trees, piles of stones, woodpiles, bat boxes, hedge hog boxes, etc). These factors should be targeted as part of this action plan.

The diversity of wildlife in the garden is largely dependant on where the garden is situated with gardens showing a decreasing diversity the closer they are to the town centre and the further they are from green spaces. New housing developments often appear at the margins of towns and are often sold with minimal landscaping having been done. This increases the importance of establishing biodiversity friendly gardens in new developments as an objective.

Gardens are treated by wildlife as service stations for food and sanctuaries or refuges when some aspect of their own natural environment is sub-optimal. For example during times of drought insects will visit well-watered gardens for sources of nectar.

CURRENT FACTORS CAUSING LOSS OR DECLINE AND FUTURE THREATS

Non Native Species: Some non-native species planted in gardens have biodiversity value as food, shelter and breeding sites. Other garden plants may not be particularly damaging, but may not be particularly beneficial either and a number of species particularly those with invasive characteristics (eg. giant hogweed *Heracleum mantegazzianum*, Japanese knotweed *Reynoutria japonica*, Himalayan balsam *Impatiens glandulifera*) have impacted on biodiversity by spreading from gardens to wilder habitats and caused a consequent reduction in native biodiversity. The New Zealand flatworm *Arthurdendyus triangulatus* is an introduced species that predated earthworms. It can reduce resident earthworm populations and potentially, given time, harm the soil structure. It arrived in this country in 1963 and spreads via soil transported from garden to garden in plant pots, cuttings etc.

Garden Waste: It is common to find garden waste tipped into urban greenspaces or adjacent countryside. This practise can result in the spread of invasive non-native species along wildlife corridors, it can smother vegetation and increase soil toxicity through nitrate leaching.

Other gardeners dispose of their garden refuse at landfill sites or alongside their domestic refuse, rather than composting it. One third of landfill waste consists of organic matter, a large amount of which could have been composted at source and used within the garden to improve soils. Alongside the biodiversity impact caused by the break in the soil cycle, through the removal of vegetation, there is a significant waste management issue as landfill sites fill up.

Finally, some gardeners dispose of garden waste through winter bonfires. Bonfires can impact on biodiversity directly by incinerating hibernating wildlife (hedgehogs *Erinaceus europaeus*, slow worms *Anguis fragilis*, toads *Bufo bufo*, ladybirds Coccinellidae, etc) and indirectly through their contribution to poor air quality and global warming through releasing CO² into the atmosphere.

Use of Garden Chemicals: The liberal and unchecked use of herbicides and pesticides by gardeners can result in significant biodiversity losses throughout the wildlife food chain. Birds and animals that predate on garden pests are affected by the use of chemical controls eg. song thrushes, blackbirds *Turdus merula*, hedgehogs and ladybirds. The overall intensity of pesticide use in gardens, measured as the total weight of active substance applied per hectare, is greater than for arable land (A Hart pers.comm.) and is still on the increase. There are some good signs: most of the increase in pesticide use is accounted for by herbicides, whereas insecticide use appears to be decreasing.

Use of Peat Products: The market for peat for use in private gardens has increased dramatically and is one of the main economic forces resulting in peat extraction from this globally rare habitat.

New Housing: Developments on the edge of towns can result in isolation of older gardens from the green belt as new houses' gardens are often sold underdeveloped. Gardens are excluded from the definition of 'brownfield' land in terms of planning developments, so development proposals have to be justified and tested against inter alia loss of amenity and loss of features such as trees, hedges, etc. However planning has

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very little to do with what happens in domestic gardens. In general the trend is to have smaller gardens and there is potential to create new communal open spaces.

Gardening Trends: The fashion for changing garden designs can be to the detriment of biodiversity. For example, the fashion for water features benefits biodiversity, but ripping them out to replace them with decking doesn't. The minimalist Japanese style garden looks great, but leaves biodiversity very little room to make a home alongside.

OPPORTUNITIES AND CURRENT ACTION

- Home composting is being promoted within the council and through the landfill tax credit scheme, with pilot compost box schemes in Dunblane and community compost schemes in Kippen.
- The spread of non-native species such as giant hogweed and Japanese knotweed are being controlled by the council by a long-term eradication programme.
- The Citizens Panel could be used to gain some baseline statistics through the Stirling's sounding board questions. A resident's survey could provide statistics on composting, wildlife gardening, etc and then be resurveyed in the future to monitor change.
- There is demonstration compost areas at Plean Country Park and at the Smith Museum and training courses have been done and are planned for the future.
- Food Futures initiative could promote organic gardening.
- The Stirling Grounds for Learning initiative has support through SNH, the Council and the Kippen Environment Centre and can promote wildlife gardening in schools.
- The Stirling greenspace strategy is being taken forward and is being developed further through the council.
- The Community Environment Grant scheme run through the council supports initiatives, which help biodiversity and encourage community involvement.
- The SWT Jupiter Wildlife Project at Grangemouth is a good local supplier of wild plants and can offer help and advice on wildlife gardening.
- The planning authority produce a development advisory note on trees in the urban area and carry out monitoring and designations of tree preservation orders.
- A national partnership project called 'Garden for Life' has been started in 2001 and will be taking forward initiatives over the next three years. These initiatives include a butterfly survey, show gardens and publications. Other national promotions such as plants for wildlife have been showcased in garden centres.
- Butterfly conservation have launched a "Garden butterflies count" scheme to encourage the monitoring of butterflies and improve gardens as habitat for them.
- RSPB organise garden campaigns such as the Garden Birds Survey each year.
- RSPB leaflets "How to encourage birdlife in your garden" and "Nesting sites in and around houses".
- SNH leaflets "Garden for life – and you'll never be short of visitors".
- A local survey of garden wildlife called 'The Natural Garden' is produced and collated by the CARSE record centre.
- CARSE record centre intends to produce a bibliography of books and leaflets available on wildlife gardening by spring 2002.
- The Smith Museum is developing a showcase biodiversity garden within its grounds.

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- The bird feeding industry in Britain is worth about £120 - £130 million a year and is growing at the rate of about 20% per annum.
- B & Q have announced that they will be phasing out peat products over the next ten years.
- Gardening without peat, using peat free alternatives.
- The Mid Scotland Environmental Education Forum (a network of environmental organisations in the area) runs events, the outdoor diary and Green Scene and could promote wildlife gardening through it's work.
- The local ranger services and other environmental organisations can work with communities to promote wildlife gardening.
- No pesticide use and organic practises could be promoted to some allotments.
- Good practise guidelines could be produced and promoted within the council services. Sustainability and biodiversity is recognised as priorities for the council.
- The opportunity to use Sustainable Urban Drainage Systems (SUDS) in gardens as an alternative to impermeable hard standing.

BIOBLIOGRAPHY

Ansell R, Baker P, Harris S. 2001. **The Value of gardens for wildlife - lessons from mammals and herpetofauna.** British Wildlife Vol 13, No2.

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