Section 3

Habitat Action Plan 1:

Urban

Urban Areas

UB1: Greenspace
Good quality public greenspace provides many environmental, social and economic benefits. They offer opportunities for recreation, sport and play, social interaction, encourage healthy lifestyles, contribute to a sustainable natural environment and visually enhance the general attractiveness of an area. Many people assume that biodiversity is linked very much to the countryside, however urban areas play host to a great number of species that have adapted to our modern day living. Green open spaces therefore make it possible for people to maintain contact with nature on a daily basis.

In recent times however, urban swell has threatened biodiversity, particularly so in greenbelt areas and town fringes. Modern day practices such as development on greenbelt, removal of native trees, ripping out of hedgerows and inclusion of turf grass and exotic species in housing and industrial landscapes have severely impacted on habitat diversity and opportunities for wildlife foraging. Although statutory obligations for biodiversity are generally observed through the planning process, local developers can play a key role in optimising sites for wildlife and by adopting a more sustainable approach to construction. A more naturalistic grassland management regime should be approached to foster the growth of wildflowers and grasses. By including low/or no cost schemes such as native hedges for boundary features, native planting, wildflower meadow creation and erection of bat and bird boxes, through to medium-high cost features such as green roofs and sustainable drainage systems planted specifically for biodiversity, developers and land managers can not only help biodiversity but help play their part in green and sustainable urban development.

The benefits of having good quality greenspace are well known. East and West Dunbartonshire have three very active units working to provide high quality community greenspace through extensive community consultation and engagement in practical conservation projects: East Dunbartonshire Greenspace, West Dunbartonshire Greenspace and The Environment Trust (covering West Dunbartonshire). Such teams are members of the Dunbartonshire Biodiversity Partnership and collaborate with a number of organisations including the Countryside Ranger Service in each Council area.

Biodiversity and Greenspace projects in East Dunbartonshire

East Dunbartonshire has a number of greenspaces of differing sizes and shapes. Many are multi-functional in nature and are sites of high biodiversity value. The East Dunbartonshire's Greenspace Strategy (2005-10) sets out its aspiration for greenspace, that encourages opportunities for environmental education and enhancing the ecology of habitats. Any improvements to greenspace are designed to help meet LBAP targets to safeguard priority species and their habitats.

The main themes of the East Dunbartonshire Greenspace Strategy are to:

- Establish effective, co-ordinated partnership working for the delivery of high quality greenspace

- Provide a network of well designed multi-functional, clean, safe and accessible greenspaces that are well resourced/managed and meet the needs and aspirations of the community (of which biodiversity is a major objective)

- Encourage a sense of 'ownership' and involve local communities in the planning and management of greenspaces through meaningful community engagements

- Extend functionality and maximise the greenspace resource

- Raise awareness of greenspaces through education, interpretation, signage and events

The East Dunbartonshire Greenspace Team, supported by SNH, has been working in partnership with the Countryside Ranger Service and local community groups to carry out such improvements. Examples include:

Woodlands In and Around Towns grant scheme: 31 woodlands across East Dunbartonshire have benefited from improvements to access and biodiversity. One example is Cairnhill Woods in Westerton which has benefited from tree thinning to promote the growth of native species, rhododendron removal and path upgrades. A newly formed constituted group now proactively supports biodiversity improvements in the woodland. Bird boxes have been made and erected, along with community clean-ups. Environmental education activities with the local school have been delivered by the group in conjunction with the Countryside Ranger Service. Further plans include wild flower planting. For more information on the WIAT project please refer to the Woodland Section. **PHOTO 1**

Low Moss habitat restoration project: Low Moss is an 18ha, lowland raised bog remnant found to the north of Bishopbriggs. The integrity of the site has been compromised over the years by marginal peat cutting and incision of drains. The Council commissioned a hydrological study and the drawing up of a management plan, which identified the need to remove young, naturally regenerated trees that were drying out the bog. The timber from these trees has been used to construct small natural dams throughout the site. Greenspace staff have been working with volunteers from BTCV and the Countryside Ranger volunteer team to install the dams, which have proved remarkably successful over a short period of time. **PHOTO 2**

Merkland Local Nature Reserve: Merkland is currently the only LNR in East Dunbartonshire. Project work has been ongoing for a number of years and started with the installation of a good path network. There is a strong Management Group comprising local volunteers and Council staff. The

Merkland Conservation Volunteers group meets with a Ranger on a monthly basis to undertake biodiversity projects including tree thinning, pond creation and building hibernacula. A recent grant from the Community Environmental Renewal Scheme for 'Raising the Profile' included 2 community newsletters which highlighted to local people the importance of the nature reserve and its associated biodiversity. **PHOTO 3**

Lenzie Moss Restoration Project: Low Moss is another area of great biodiversity importance. However, active management of this site was suspended in 2003 pending results of a hydrology study of the Moss to determine what effect Lenzie Moss had on flash flooding in the area in 2002. The hydrology study has recently been completed and a new Management Plan taking into account the hydrology of the site has been finalised. The Friends of Lenzie Moss are very active in promoting the benefits of the Moss. Local schoolchildren are involved with biodiversity projects and a project to conserve locally scarce Bog Rosemary has been carried out. 2009 will see the implementation of a 5-year Management Plan which will start with birch scrub removal. **PHOTO 4**

Alternative management plans have been put in place in several parks in consultation with East Dunbartonshire local community groups. This includes the transformation from short cut grass areas to more bio-diverse rich habitats. Parks include:

- King George V Park, Bearsden. New management regimes include: wildflower meadow creation, replacement of shrub borders with native plants and native tree planting. Pupils from local primary and secondary schools along with guiding/scouting groups have been involved in the creation and maintenance of these new habitats. **PHOTO 5**
- Mains Park, Milngavie. Plans include wildflower meadow creation and woodland management. **PHOTO 6**
- Whitefield Pond, Lennoxtown. Staff from Greenspace have been supporting local residents in Lennoxtown to improve the biodiversity of Whitefield Pond, and improve the management of the surrounding area.

West Dunbartonshire Greenspace

Launched in April 2002, West Dunbartonshire Greenspace is a partnership between West Dunbartonshire Council and Scottish Natural Heritage. The project aims to improve the quality of life for residents of West Dunbartonshire by encouraging community involvement in all aspects of greenspace. The group helps to establish local volunteers who show an interest in developing and enhancing their local environment, and advises such groups on how to secure funding for greenspace and biodiversity projects, as well as providing support, technical advice, design and project management.

The remit of the work of West Dunbartonshire Greenspace is divided into 5 main categories:

Biodiversity – by developing and promoting biodiversity by conserving and enhancing wildlife habitats and species, through working in partnership with conservation stakeholders and local groups to create new habitats and take part in wildlife surveys.

Healthy Living – in partnership with the Paths to Health Project, West Dunbartonshire Greenspace organises regular health walks throughout the area.

Landscape Development and Enhancement – enhancing and developing landscape by restoring derelict land, implementing environmental improvements and landscaping road and rail corridors. Activities such as clean ups, tree planting and bulb planting are regularly included in their work programme.

Environmental Education – West Dunbartonshire Greenspace provides help and advice to schools, community organisations and members of the general public. They can help develop and deliver projects related to curricular activities as well as providing support on environmental studies. School ground improvements feature highly, as do classroom visits and field trips. Work with communities includes providing support in the development of projects such as community gardens, organising events and encouraging communities to become involved in looking after their own greenspace.

Events – development, support and promotion of programme of events and activities delivered alone or in collaboration with partnership agencies. Delivering the Earthcraft summer programme, that includes stalls such as willow weaving, wood carving, biodiversity, wildlife crime in addition to a number of fun, educational activities.

Recent projects carried out West Dunbartonshire Greenspace include:

The Saltings: Designated in 2008 as West Dunbartonshire's first Local Nature Reserve, West Dunbartonshire Greenspace and Council staff deliver the annual LNR celebrations, along with events such as pond dipping, butterfly netting, mini-beast hunts and bat nights. West Dunbartonshire Greenspace manage The Saltings and are implementing a programme of habitat management projects.

Duntocher Village Green: A new community park has been created for the local residents of Duntocher. Previously a scrap yard, the site was decontaminated in order to make it safe for reuse. After consulting with the local community and local primary schools, soft landscaping included tree and shrub planting.

Animating the Canal: West Dunbartonshire Greenspace assisted with a number of projects aimed at animating the Forth & Clyde Canal at the section where it passes through Clydebank. They led on a project that helped to create a tree trail along the canal as well as working with local young people on bulb planting.

Earthcraft Events: Earthcraft events are organised by West Dunbartonshire Greenspace to increase greater awareness of local greenspaces and biodiversity. The events generally consist of a set of stalls that offer a variety of hands-on activities for families. Activities include willow weaving, making bird and bug boxes, nature trails and biodiversity information stalls.

School work: West Dunbartonshire Greenspace regularly works with local schools and nurseries on greenspace and biodiversity improvements in schoolgrounds. Recent examples include: Braehead Primary School, Clydemuir Primary School, St. Michael's Primary School, Our Lady of Loretto Primary School and Kilbowie Primary School on wildlife garden construction projects, shrub planting, native tree and hedge planting, wildflower meadow creation, raised beds and habitat piles.

Adopt-a-beach and Beach Watch: Clean-up events are regularly carried out along West Dunbartonshire's shoreline, in collaboration with the Marine Conservation Society. For more information on these projects, please refer to the Wetland (including Coastal) section.

Clydebank in Bloom: this competition was designed to promote the imaginative planting of flowers, trees and shrubs in the local area.

Faifley Knowes: In partnership with Faifley Knowes Housing Association, West Dunbartonshire Greenspace helped deliver a landscape improvement project that included the creation of a nature trail, interpretation panels and tree and shrub planting. The Faifley Nature Trail was delivered in partnership with Community Links Scotland, Knowes Housing Association, Faifley Housing Association, West Dunbartonshire Council and local artist Madeline Leslie, and involved the Choices Programme along with Edinbarnet and St. Joseph's Primary Schools.

Woodland management: West Dunbartonshire Council will be applying for woodland management funding from the Forestry Commission's WIAT scheme in 2009. Sites include Auchentoshan Wood, Auchnacraig & Edinbarnet, Crosslet Wood, Lusset Glen, Overtoun Estate, Pappertwell Community Woodland and The Saltings. Please refer to the Woodland Section for more information.

The Environment Trust

The Environment Trust was established in 2003 to work in partnership with local communities with the following objectives:

To conserve, restore and improve the environment;
Promote environmental awareness;
Develop partnerships;
Inspire others; and
Adopt sustainable practices

To date, the Trust has primarily been concerned with medium to large-scale regeneration projects in derelict and disadvantaged communities, focusing on issues such as access and investment in play facilities. Between 2003 and 2005

the Trust produced a series of Environmental Action Plans (EAPs) resulting from community consultation workshops in Haldane, Dalmuir, Drumry, Brucehill, New Bonhill, Whitecrook including Clydebank East. In 2007/2008 two further EAPs in Bellsmyre and Castlehill were also completed.

A significant biodiversity project was the Haldane Green Corridor in collaboration with the Haldane Regeneration Group. In 2004, the project had created two new footpaths with low pollution lighting, realignment of the Ballagan burn, installation of a footbridge and a fitness/activity trail plus extensive landscaping (the latter two undertaken by the Enviro Squad). The Tullochan Trust played a major role in the tree planting element of the project as part of one of only six 'national tree planting week' schemes in Scotland. This project was recognised for its outstanding contribution to community regeneration by the Scottish Urban Regeneration Forum with its top award for environmental improvement for 'Place'.

Other major achievements for biodiversity include the Contemplation and Family Gardens at Rosshead and the community Foreshore Footpath Link at Brucehill. The improved access at Brucehill will allow visitors and residents alike to enjoy the beauty of the River Clyde shore, including the butterflies that are attracted to the Brucehill grasslands (proposed LNR). Biodiversity is planned to become an ever increasing feature in upcoming projects, particularly in relation to soft landscaping and the creation or expansion of wildlife corridors.

Recent, successful achievements and planned biodiversity projects of The Environment Trust include:

Rosshead Community Gardens: involved the removal of non-native invasive species from a local woodland and delivery of a community woodcraft day to highlight the importance of native woodlands. The work was carried out in collaboration with Rosshead Tenants and Residents Association.

Drumry Linear Park: working in partnership with The Woodland Trust Scotland, a native woodland was created in Drumry in 2007/2008, planted by local school children and volunteers. The new woodland, located along the grassy embankments surrounding Drumry will help improve biodiversity, increase community engagement in their local greenspace, help reduce the impact of pollution and increase the general attractiveness of the area. In 2009 the Trust intends to work with local school children to create wildflower mounds throughout the park along with additional tree/shrub planting to increase habitat diversity and interpretation opportunities.

Castlehill: in 2007/2008 a new play space for junior ages was designed and built next to Knowetop Farm. The next phase will include planting for biodiversity. This project has been helped with the strength and enthusiasm of the Castlehill and Westcliff Action Group. The group hopes to create a new community garden in 2009 with the help of The Environment Trust.

Learning opportunities in urban areas

Forest Schools

'Forest School' represents an alternative teaching environment that is complementary to the traditional indoor classroom, and provides an opportunity for active learning in a woodland environment. The school involves children visiting a local wood on a regular basis and over an extended period of time. Forest School is establishing itself in Scotland, and is facing increasing interest from education professionals. Already, evaluation in England and Wales has shown how the Forest School experience builds a child's confidence, self-esteem and improves social integration at the same time as broadening wildlife knowledge skills. Anecdotal evidence also suggests Forest Schools positively impact on a child's academic performance.

In May 2008, a successful pilot Forest School project in West Dunbartonshire was carried out in Balloch Country Park, with P4/5 pupils at Haldane School, Balloch. The project, funded by the Education Department and co-led by West Dunbartonshire Council staff was delivered to resounding success.

Urban Action Plan

UB1 Greenspace

Factors Causing Loss or Decline of Biodiversity of Habitats and Species

- Habitat fragmentation, inappropriate development
- Inappropriate use of ornamentals in landscaping plans and removal of native species
- Lack of maintenance that is detrimental to wildlife or unnecessary over-maintenance
- Lack of protection for urban sites of importance for nature conservation
- Lack of public information and awareness
- New development that impacts on biodiversity
- Overuse or inappropriate use of chemicals
- Spread of invasive species

Action Plan Objectives & Targets

Objectives

- To protect and enhance biodiversity within the greenspace resource in Dunbartonshire
- To improve biodiversity in urban areas
- To raise awareness of biodiversity in Dunbartonshire through environmental education, events and promotion and support of initiatives such as Eco-schools and Forest Schools
- To develop biodiversity projects with community groups and businesses
- To incorporate biodiversity in programmes of work in Council departments
- To inform Council services and other public bodies of their statutory duty to further the conservation of biodiversity

Urban - Greenspace

O = ongoing, C = completed, S = short term (2007-2010), M = medium term (2007-1012), L = long term (2007-2017)

Target 1: To identify, designate and monitor Local Nature Conservation Sites in urban areas		
Action required	Lead Partner(s)	Time-scale
Conduct Local Nature Conservation Site (LNCS) reviews in East and West Dunbartonshire	EDC, WDC	C

Target 2: To seek LNR (Local Nature Reserve) designation status for relevant sites in East and West Dunbartonshire, and to obtain funding for their respective management		
Action required	Lead Partner(s)	Time-scale
Designate Lenzie Moss (Lenzie) as a Local Nature Reserve with the site taken into active management. Explore LNR status and designation for Geelong Gardens (Lennoxtown), West Balgrochan Marsh (Torrance) along with other relevant sites	EDC	M
Seek LNR designation for Brucehill Cliffs and Faifley Knowes	WDC	M

Target 3: To develop and manage community greenspaces with an emphasis on biodiversity		
Action required	Lead Partner(s)	Time-scale
Continue to support improvements and management of Merkland Local Nature Reserve in partnership with the local management group. Carry out habitat enhancement work to support the site's wildlife	EDC	O
Continuation of support to community groups to improve their local greenspaces (e.g. biodiversity improvements at Etive, Menteith and Woodhill Parks, Bishopbriggs, Torrance, Lennoxtown, and Cadder)	EDC	O
Work with Planning and Central Scotland Forest Trust to identify at least 2 derelict sites that are suitable for environmental improvements including establishment of community woodlands	EDC, CSFT	O
Continue programme of biodiversity improvements to Mains Park, Milngavie, King George V Park, Bearsden	EDC	O
Continue and develop management work at The Saltings Local Nature Reserve (implement woodland management operations, education work, biodiversity enhancements, way marked walks, interpretation	WDC	O

panels and art trial)		
Dalmuir Park and Auchentoshan Management – support and implement habitat enhancement work in both areas, through consultation with local residents and formation of a *Friends of Dalmuir and Auchentoshan group*	WDC	L
Carry out School Ground Audit to include potential for biodiversity enhancements	Env. Trust	S
Carry out Water Vole habitat improvement work at Faifley Knowes	WDC	S
Work with local residents to enhance the habitat at Drumry Linear Park (wildflower meadow creation and additional tree/shrub planting) and Castlehill (creation of a new community garden)	Env. Trust	S

Target 4: To increase the number of biodiversity initiatives in schools		
Action required	Lead Partner(s)	Time-scale
Encourage young people to become involved with improvements to their local greenspaces (e.g. through supporting school eco-committees to develop school wildlife gardens and working with Cultural co-ordinators/Arts development workers on Biodiversity-Arts projects. Specific project to be undertaken: Bumblebee campaign in 50 schools	EDC, WDC, CSFT	O
Eco-Schools playground improvements – work towards all eco-schools including biodiversity in their project activities.	EDC, WDC, Env. Trust	M
Deliver at least 3 Forest Schools per year in West Dunbartonshire	WDC	S

Target 5: To increase environmental awareness and number of local residents and conservation groups participating in wildlife surveying and practical conservation work		
Action required	Lead Partner(s)	Time-scale
Implement restoration work at Low Moss: build 60 natural dams, remove young pine from raised bog area	EDC	M
Deliver the annual Earthcraft Events in West Dunbartonshire	WDC	O
Pappertwell Community Woodland Management – continue with appropriate woodland management, expansion of woodland, open up pathways to improve site lines, repair culverts and fly tipping	WDC	M

Community tree and bulb planting – planting of trees and spring bulbs with school groups, community groups and other agencies. Aim to work with at least 10 Dunbartonshire schools per year.	EDC, WDC, Env. Trust	O

Target 6: To continue to support and work with all Council departments on issues relating to biodiversity		
Action required	Lead Partner(s)	Time-scale
Improve verge-side and recreational grassland maintenance to enhance biodiversity, along with reviewing extent and management of hedgerow cutting. Work towards 5% of amenity grassland managed for biodiversity	EDC, WDC	M
Devise a training programme for Planners on wildlife issues in the Planning process	SNH, EDC, WDC	S
Continue participation in the Local Plan process	All	O
Take into account local biodiversity when assessing landscaping issues relating to planning developments – promote the use of native species in landscaping	EDC, WDC	O

UB2 Businesses

Engaging Business

Biodiversity conservation is an area of work that is unfamiliar to many businesses but one which has significant potential in terms of public relations, staff development, improved relationships with customers and communities, corporate responsibility and the enhancement of biodiversity, on- and off- site. Essentially businesses need to understand and acknowledge how biodiversity conservation is relevant to their business and why they should, in some cases, prioritise biodiversity conservation against other issues they have to deal with.

In general, open space associated with many businesses often consists of regularly mown grass with a variety of native and ornamental tree species. The use of flowers is generally restricted to non-native plants chosen for their colour, evergreen nature and low maintenance requirements. In real terms this setting is a poor environment for biodiversity and can be transformed into a wildlife area very easily. Simple measures such as the planting of thorny species (e.g. Blackthorn, Hawthorn, Berberis, Holly, Firethorn, Sea Buckthorn and Dog Rose can provide an important habitat for a variety of species, in addition to helping to improve the safety of a site by limiting access. Reducing the severity of grass cutting, or sowing grass mixed with wildflowers will transform an area of sterile grass into a haven for invertebrates. Encouraging the incorporation of sustainable drainage systems into business sites and associated planting up for biodiversity, construction of green roofs, hedgerow management and erection of bird and bat boxes can all play a significant part in helping biodiversity. In addition businesses should be encouraged to take part in Eco-work days, where employees can help with practical conservation and planting projects in local wildlife sites.

Recycling of building materials instead of transferring waste to landfill sites will also help address the significant amounts currently disposed of by this method. East Dunbartonshire Council is developing a Sustainable Construction Policy, Standards and Guidelines in accordance with sustainable good practice, to be applied to new construction projects, where *maximising local biodiversity* is to play a key issue. The Local Plan will be an important vehicle to take these measures forward to build on biodiversity protection currently provided by Environmental Impact Assessments. The council is also pursuing in-house sustainability through the Green Office initiative that could be extended to include enhancing workspace for biodiversity. In addition, through the Environment Partnership, sustainability has been placed on the agendas of the Twechar and Hillhead Regeneration Groups, providing an opportunity to enhance biodiversity for the good of these communities. This is already being planned in Twechar via the Twechar Landscape Masterplan.

UB2 Businesses

Factors causing Loss or Decline of Habitats and Species

- Development on sites that have an impact on biodiversity
- Fly tipping
- Higher priorities requiring funding in the business place
- Improper management of areas with invasive species
- Lack of specialised knowledge
- Lack of understanding and awareness of biodiversity issues
- Lack of education on funding opportunities
- Lack of perceived space to carry out biodiversity enhancements
- Pollution (e.g. through chemical or light pollution)

Action Plan Objectives & Targets

Objectives

- To improve knowledge and understanding of biodiversity in businesses
- To encourage businesses to incorporate biodiversity into the workplace

Urban - Businesses

Target 1: Provide advice and free, targeted advisory material to businesses		
Action required	Lead Partner(s)	Time-scale
Promote environmental enhancements with developers in the planning process through creation of an advice note for businesses; advise business grounds maintenance teams of wildlife-friendly grassland management techniques	EDC, WDC	O
Raising awareness of biodiversity with local businesses through target advisory material and delivery of talks. Deliver at least one talk to businesses/Scottish Enterprise per year	EDC, WDC	O

Target 2: Promotion of low/no-cost biodiversity enhancements in the work place or participation in practical conservation projects		
Action required	Lead Partner(s)	Time-scale
Develop employee volunteer work days with the British Trust for Conservation Volunteers. Deliver at least 2 BTCV work days with businesses per year	BTCV	O
Increase in-house sustainability in the Council by including measures of how to enhance biodiversity in the workspace (“Green Office Initiative”)	EDC, WDC	S
Develop and advise on biodiversity enhancements in local regeneration projects through the Environment Partnership, for example in Twechar and Hillhead	EDC	S
Develop the Sustainable Business sub-group of the Environment Partnership to allow ongoing liaison with the business community on a variety of sustainability issues, including biodiversity	EDC	O

UB3 Golf Courses
Golf courses can provide an excellent variety of habitats for wildlife. A wildlife-friendly course may harbour around 60 species that are recognised as important in local biodiversity plans. Some courses have extensive areas of "rough" ground that are managed for wildlife and include heathland, marshes, woodlands, species-rich grasslands, ponds, rivers and burns. Locally, our remaining Juniper trees and Sand Martin colony can only be found on golf courses. Other courses have breeding Long-eared Owls, orchids and other wildflowers, Kingfishers and Dippers. Greenkeepers and golfers are becoming evermore aware of the natural environment, with the result that Hilton Park Golf Course became the first recognised Wildlife Site in East Dunbartonshire (as designated by the Scottish Wildlife Trust). On this course, golfers and staff keep records of birds and other wildlife, and have large areas managed for nature.

Distribution
Dunbartonshire has twenty two golf courses in total, most of which are situated in lowland areas and border onto local communities for ease of access. However, some are rural and found on, or near to, upland heathland habitat.

Ecology & Management
Golf course management is not just simply cutting grass! Maintenance on a landscape basis, particularly on Scottish golf courses encompasses some, if not all, of the following:

Woodland Management
Trees provide definition for fairway edges or low maintenance areas in and around golf courses. In addition, they provide valuable wildlife habitats and corridors. In wet areas, willow, downy birch and alder are often found, whereas in well-drained soils, Scots pine, silver birch, oak and ash dominate. A mix of ages and species creates a greater variation in the genetic stock, lessening the risk of the spread of disease and the loss of trees through wind damage, while a diverse range of trees and ages provides differing canopy height and micro-habitats. Where it's safe to do so, dead timber can be left standing as this can provide habitat for insects, bats and birds, while fallen timber and branches stacked to create habitats piles encourage a variety of insects and fungi.

Grassland Management
Areas of rough grassland can have high biodiversity value and provide invaluable habitat corridors that help link other semi-natural habitats both within the golf course and beyond. Grassland also offers excellent water retention opportunities as well as preventing soil erosion. Invasive species such as bracken can also feature heavily in grassland management. For example, once bracken control is in place, areas of rough grassland can be managed to not only provide wildlife habitats, but also buffer strips of rough for water features, ditches and other sensitive areas. Rough grassland requires annual maintenance, such as one "cut and rake" in September, that lowers maintenance costs and encourages growth of wildflowers. Grasslands can be made more visually interesting and diverse with the addition of native wildflower seed mixes or native wildflower plugs. Careful planting of appropriate species adds visual stimulus and can be

valuable bird, mammal and invertebrate habitats in themselves if they adjoin rough grassland.

Ponds and Wetlands
Management of existing ponds and wetlands, together with the creation of new watercourses encourages a wide diversity of wildlife while providing course drainage and primary water treatment. Ponds and wetlands can be very aesthetically pleasing on golf courses (in addition to being golfing hazards!).

Problems associated with golf course ponds
Once established, the long-term management costs of wetland features are sometimes forgotten at great cost to both wildlife and golfer. One common mistake is to introduce Common Reedmace into ponds, where it can choke the pond and greatly reduce the wildlife value within a few years. Thereafter it can be very costly to remove.

Wetlands are important wildlife habitats that need to be protected from chemical applications and drift spray. Under Local Environment Risk Assessments for Pesticides (LERAP), 6m buffer zones have been established for some pesticide use. However this can be reduced when using LERAP-tested and approved jets. In addition, under the Groundwater Regulations, golf courses cannot flush sprayer washings down the drain or onto waste ground.

Where there is the presence of a homogenous cover of one plant type, this can be linked to the use of chemical application or spray drift. In nutrient-rich waters for example, Common Duckweed and Canadian Waterweed are highly invasive species. Where over-nutrification (eutrophication) occurs, algal blooms form which can lead to a decrease in oxygen levels and loss of wildlife.

Heathland
Heaths are characterised by nutrient poor, acid soils principally consisting of plants of the Heath family. Heather is usually one of the most prominent species, although Blaeberry is often found on upland heaths. On lowland heaths, Heather, Bell Heather and Cross-leaved Heath combine with gorse and grasses to provide a varied habitat, which like the upland heath is sensitive to a number of factors. This habitat may be home to game birds including Grey Partridge, as well as numerous other species such as moths, grasshoppers, crickets, dragonflies, and many other invertebrates, mammals, and reptiles such as the Common Lizard. Changes in golf course management can rapidly benefit heathland in terms of quality, health and species diversity, with benefits arising beyond its high biodiversity value. The slow growth of heathland species enables general maintenance costs to be kept low in comparison to woodland and grasslands. Many different management options can be used in order to regenerate heather. The options for golf courses are dependent on a number of localised factors including climate, land use, viable seed bank and budgets, to name but a few. Some of the options available include restricted burning, seeding, turfing and scarification.

UB3 Golf Courses

Factors Causing Loss or Decline of Habitats and Species

- Canalisation or culverting of burns
- Poor spraying practices and lack of buffer zones, causing loss of aquatic animals and plant life (e.g. herbicide-use for moss control can kill earthworms and other invertebrates)
- Habitat fragmentation or destruction through creation of new fairways in sensitive areas
- Inappropriate planting of trees on golf courses in open areas
- Inappropriate wildlife trapping (e.g. trapping of Water Vole instead of rats)
- Lack of thinning and subsequent loss of vegetation due to canopy closure in mature conifer areas
- Loss of habitats such as heath due to inappropriate management (for example over-use of fertiliser, pesticides, over-watering, excessive traffic on foot and by golf trolleys, self-sown non-native trees, burning and lack of control of invasive species)
- Poor management of rough grassland resulting in loss of native grasses and wildflower populations and dominance of invasive species
- Poor tree management and health resulting from damage by strimmers and stakes
- Neglect (for example valuable wetlands that are not actively managed can turn into scrub and then into woodland habitats)
- Nutrient and pesticide run-off into ponds

Action Plan Objectives & Targets

Objectives

- Maintain the current area and distribution of wildlife habitat on golf courses in Dunbartonshire and increase amount of semi-natural areas
- Promote appropriate environmental management of habitats in golf courses
- Promote awareness of the habitat, its public value and conservation issues.
- Promote the Scottish Golf Environment Group ‘Award for Environmental Excellence' and the associated benefits.
- Support and encourage species and habitat surveying of golf courses

Raising general public awareness of the value of golf course biodiversity – advice for clubs

Clubs are encouraged to use the following tips:

Organise talks, course walks and evening presentations with the local Biodiversity Officer or other wildlife experts or enthusiasts;

Display environmental documents and reports;

Involve members of all ages and abilities, in environmental projects e.g. photographic exhibitions, species sightings records, small-scale tree or wild flower planting projects;

Initiate discussions with Ranger Services, Scottish Wildlife Trust and local groups, possibly culminating in school children and teachers taking part in bird and bat box creation and monitoring, wildlife surveys, talks and displays within the school along with water sampling of invertebrates ("pond-dipping");

Promote particular management at strategic times e.g. extension of rough during highest impact flowering period;

Seek opportunities to promote examples of good environmental practice in local media;

Promote activities in a wider context e.g. contributing to the LBAP, Council waste strategy, or pertinent golfing initiative or promotional campaign;

Consider species related to, or dependent on, particular and different habitats and the importance of sequential flowering, fruiting, seeding, shelter at different times of year.

"Sell" the notion of habitat enhancement through extra information e.g. include an environmental section in newsletters, website and course guide;

Pro's encouraged to include some environmental thinking in their junior coaching sessions (e.g. respecting wildlife, litter, awareness of what is involved in looking after a golf course and its habitats.)

A comprehensive range of information can be found on www.sgeg.org.uk or in your area via the **SGEG GOLF BAG** (holdall, packed with relevant environmental/golfing information). There are books and videos covering tree planting, heather management, pond creation, scrub control, coastal erosion, management planning, pollution control, wildlife identification and habitat information. The local SGEG GOLF BAG can be obtained from Stuart Neil, Auldmarroch Road, Hilton Park Golf Club, Stockiemuir Road, Milngavie, Glasgow, G62 7HB. Tel: 0141 956 6844.

Suggested Reading and Publications

SGEG has produced several publications, which are free of charge and available for download on the SGEG website www.sgeg.org.uk or simply by contacting SGEG.

Title	Produced by	Printed By	Date
Climate Change and Scottish Golf Courses	SGEG	Golf Publishing Ltd	2004
Waste Management Toolkit for Golf Facilities	SGEG	Golf Publishing Ltd	Dec-04
Practical Ways to Improve Energy Efficiency in Golf Facilities	SGEG	L&S Litho	2003
Management Plans For Golf Courses (Integrated environmental management plans).	SGEG	L & S Litho	2003
Landscape Guidelines	SGEG	Geo. Stewart & Co Ltd	2004
Nature Conservation Guidelines	SGEG	Graphic Impressions Colour Printers	2004
Environmental Issues in Golf Course Construction	SGEG	L&S Litho	Dec-05

Urban – Golf Courses

Target 1: Encourage golf club managers to develop environmental management plans and implement habitat conservation projects on-site		
Action required	Lead Partner(s)	Time-scale
Assist golf clubs to draw up conservation management plans with all interested clubs in East and West Dunbartonshire; encourage clubs to seek external funding and implement practical projects that would benefit members and staff of the club as well as local biodiversity. Aim to work with at least 2 clubs per year in Dunbartonshire	SGEG	S

Target 2: Encourage training of Greenkeepers to raise awareness of, and promote best practice, for biodiversity on golf courses		
Action required	Lead Partner(s)	Time-scale
Ensure greenkeepers on all courses in Dunbartonshire are aware of the benefits of managing their courses for biodiversity in Dunbartonshire	SGEG	O
Promote biodiversity training and funding opportunities	SGEG	O
Encourage club staff and members to record wildlife seen on their courses. Seek to set up a standard recording mechanism for flora and fauna and ensure data is fed into the Local Biological Records Centre (Glasgow Museums).	SGEG	M

Species affected by this LBAP

Group A (denotes species for which action plans were written in the original LBAP)

Mammals:
Brown Long-eared Bat, Pipistrelle Bat
Daubenton's Bat
Natterer's Bat

Birds:
Curlew Skylark
Grey Partridge Tree Sparrow
Linnet Yellowhammer
Reed Bunting

Plants:
Bog Rosemary* Round-leaved Sundew*

Group B (denotes new LBAP priority species to East and West Dunbartonshire)

Mammal:
Badger, Otter, Water Vole

Birds:
Barn Owl

Plants:
Bluebell or Wild Hyacinth (not Spanish Bluebell)

Group C (denotes species of particular conservation concern, either at the UK or local level, or are known to be vulnerable)

Mammals:
Brown Hare, Common Shrew, Hedgehog, Weasel

Birds:
Bullfinch, Great Spotted Woodpecker, Hawfinch, House Martin, Kestrel, Kingfisher, Lesser Redpoll, Peregrine, Ringed Plover, Song Thrush, Sparrowhawk, Spotted Flycatcher, Swallow, Swift, House Sparrow, Lesser Whitethroat, Merlin, Redstart, Sand Martin, Sedge Warbler, Short-eared Owl, Tree Pipit, Water Rail, Woodcock

Amphibians and Reptiles:
Adder, Common Frog, Common Lizard, Common Toad, Palmate Newt, Smooth Newt

Invertebrates:
Dragonfly spp., Ladybird spp., Seven-spot Ladybird, Six-spot Burnet, Small Tortoiseshell

Plants/Trees:
Greater Butterfly Orchid*, Oak

*Although not an urban species, this plant has been recorded in one or more urban sites in Dunbartonshire