

LOCAL HABITAT ACTION PLAN

Current factors causing loss or decline

All of the raised bogs within Glasgow have suffered from degradation over the past centuries. It is of critical importance that raised bogs remain waterlogged and that nutrient input levels remain minimal. A number of factors are recognised as being a threat to raised bogs, these include:

Peat Extraction – the extraction of peat and/or underlying mineral deposits for horticultural and fuel uses.

Forestry – loss of surface vegetation due to deep drainage, fertilising and heavy shading from planted trees (usually exotic conifers).

Development – opencast mining or built developments can result in the total destruction of bogs or in serious damage to their hydrology.

Agricultural Intensification – drainage, burning, heavy grazing, trampling and surface contamination from stock droppings or feed can all lead to severe degradation of the bog vegetation.

Dereliction/Neglect – all sites have suffered from past disturbance such as cutting and draining and any recovery process may be hampered by the lack of sympathetic management. Many bogs are also currently burnt as a result of vandalism or accidents.

Regional Drainage Pressures - perimeter drainage resulting in a lowered water table can adversely affect the hydrology of the raised bog.

Pollution – contamination of ground water, deposition of atmospheric pollutants and fertiliser drift may all impact on the surface vegetation.



Round-leaved Sundew (*Drosera Rotundifolia*)

Current action

Raised bogs are noted as being internationally important habitats and are listed in Annex 1 of the EC Habitats Directive and the UK Government is determining areas that it considers qualify as Special Areas of Conservation (SAC) under the Directive. A number of sites in adjoining authorities are designated as SSSI's or SAC's. There are no such designated raised bogs in Glasgow, but the five main sites are recognised as City-wide Sites of Importance for Nature Conservation (SINC's); additionally Saughs Moss is recognised as a Local SINC, due mainly to the small area within the City boundary. However all of the sites remain vulnerable to further damage, neglect or destruction.

There is much information available on raised bogs within the UK and also locally. SNH funded a survey of peatlands in mid-Strathclyde in 1989 and maintain an inventory of the area and condition of land covered by this habitat. The City Habitat Survey in 1991 produced Phase 1 maps and more detailed site maps of the Glasgow raised bogs, and more recent surveys have occurred as part of the SWT SWAP programme. The SWT, as part of an EU Life funded project, surveyed the remaining sites within Scotland, including the Glasgow sites (1998), and have published a best practice guide on management and rehabilitation of lowland raised bogs.

The FC have produced National Guidelines on forestry and bogs, signalling a presumption against new planting on active raised bogs and guidelines have also been produced by the FC, jointly with CSCT and SNH, on the assessment of peatlands during woodland planting schemes in central Scotland.



Common Cotton-grass (*Eriophorum angustifolium*)

Objectives and targets

An assessment of the condition of the various raised bogs in the City area will help to inform the preparation of management actions to help conserve and restore the remaining areas.

Objective 1: Establish the extent and assess conditions of all raised bogs within the City.
Target 1: Survey all the sites by 2005.

Objective 2: Ensure no loss in area or reduction in quality of the current sites.
Target 2: Retain all existing sites and ensure no further damage occurs.

Objective 3: Increase the current area of active raised bog through restoration and positive management.
Target 3: Introduce restoration work and sympathetic management over at least 25% of the current resource by 2006.

Objective 4: Promote awareness and value of raised bogs to landowners, farmers and general public.
Target 4: Produce literature and hold events to promote awareness and appreciation.

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Current status

Lowland **Raised Bogs** are peatland ecosystems that develop in areas of poor drainage, such as topographic depressions and along river flood-plains. Peatlands form when waterlogged ground conditions inhibit the normal microbial breakdown of organic material resulting in the formation of peat. Initially the wet conditions result from mineral enriched ground water (often termed minerotrophic) and the peatlands are then called fens or mires (see Fen HAP).

In areas such as central and western Scotland, high rainfall allows the waterlogged peat to accumulate above the groundwater table. As the surface of the peat grows above the ground water, rainfall, which is very low in minerals or nutrients, becomes the only source of water (often termed ombrotrophic). This process can continue for many thousands of years producing a characteristic dome shape and a great depth of peat (some exceed 10 metres). Such peatland ecosystems are called bogs or mosses, and typically they can be divided into raised and blanket bogs (the latter more typical of upland and western areas).

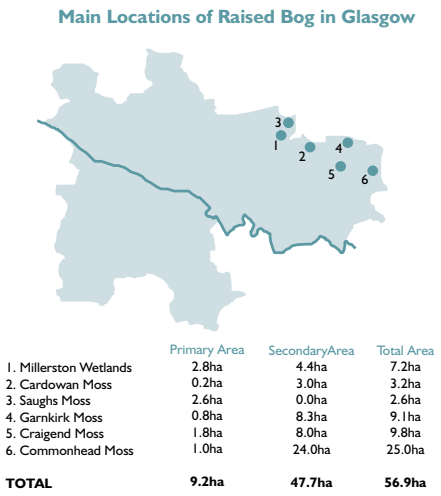
Active bogs are dynamic systems where new peat is continually forming from the organic remains of the highly adapted flora that can tolerate the harsh conditions of waterlogging and nutrient deficiency. Bog-mosses (*Sphagnum* spp.) are crucial in the formation of the acidic conditions characteristic of ombrotrophic bogs. The typical flora of such sites consists of a range of bog mosses, forming colourful thick carpets or characteristic raised hummocks, generally with a number of other mosses, liverworts and lichens. Vascular plants are limited in number but typically include cotton-grasses (*Eriophorum* spp.) and ericoid shrubs (heathers), with other colourful and specialist associate species such as Bog-asphodel, Cranberry and Round-leaved Sundew. In addition to the floral interest, there is a large number of specialist animals, notably invertebrates, associated with bogs.

Raised bogs are classified into primary and secondary types, reflecting degrees of disturbance. Primary raised bogs retain their characteristic shape and surface vegetation, although the latter can be degraded by drainage, grazing and burning. Secondary bogs have been subject to much degradation, caused by peat extraction, intensive draining and enrichment for afforestation or intensive agricultural use but still retain a high water table and surviving elements of the bog flora, and may be capable of recovery.

Raised bogs were once a common feature of the flood-plains of the Clyde and its major tributaries, extending from the Linwood area, west of Paisley, to the uplands east of Glasgow; raised or intermediate bogs are also an important feature of depressions across the upland, central belt of Scotland. Today relic raised bogs can still be found in the northeast of the city, but all of the sites have suffered from many centuries of disturbance, such as drainage, cutting, burning and intensive agricultural use. Boglands formerly occurred to the south of the Clyde but have long since vanished and their legacy rests in place names such as Mosspark, Bogside, Moss Road and Honeybog.

The remaining boglands or fragments of deep peat are listed in Diag 1. There are six main sites, all of which have suffered from varying degrees of disturbance, but most support areas of good quality bog vegetation, showing signs of recovery and retain considerable nature conservation interest. Several of these boglands extend beyond the City boundary into neighbouring authorities.

The stratified layers of deep peat forming a raised bog represent a valuable historical archive, stretching back some 6000 years. The remains of plants and animals, atmospheric dust and occasional human artefact, are preserved in the peat and can be used to assess changing patterns of vegetation, climate and human activities.



Proposed Action with Lead Authorities

Action	Lead	Delivery	Objective
Policy and Legislation			
Ensure the importance of raised bogs is recognised in Local Plans, district and regional Structure Plans and landuse Strategy documents.	GCC-LS(CG)	GCC-DRS	2
Ensure Policy Planning Guidelines include adequate protection and restoration policies.	GCC-LS(CG)	GCC-DRS, SNH	2
Promote raised bogs as priority habitats for management funding under agri-environment schemes.	GCC-LS(CG)	FWAG, SNH	2
Encourage landowners/tenants to enter peatland management schemes or agreements.	GCC-LS(CG)	FWAG, GCC-LS, SNH	2
Review the use of peat-based products, investigate alternatives and begin phased withdrawal where practical.	GCC-LS(CG)	GCC-LS	2
Site Safeguard and Management			
Oppose development applications for land use, forestry or agricultural activities which will damage or destroy raised bogs.	GCC-LS(CG)	FC, GCC-DRS, SNH	2
Encourage landowners and farmers to implement sympathetic management.	GCC-LS(CG)	FWAG, GCC-LS, SNH, SWT	2, 3
Encourage implementation of restoration management.	GCC-LS(CG)	GCC-LS(CG), SNH, SWT	3
Develop conservation management plans for all main raised bogs.	GCC-LS(CG)	FWAG, GCC-LS(CG), SNH, SWT,	3
Advisory			
Promote training on conservation management and restoration of raised bogs, targeting key agencies, landowners and voluntary bodies.	GCC-LS(CG)	FWAG, SNH, SWT)	3, 4
Provide advice on use of peat and encourage use of alternatives.	GCC-LS(CG)	GCC-LS, SNH, SWT	2, 4
Promote early management work as demonstration project.	GCC-LS(CG)	GCC-LS(CG), SNH, SWT	2, 3, 4
Future Research and Monitoring			
Survey all sites to monitor trends, with emphasis on assessment of conditions.	GCC-LS(CG)	GCC-LS(CG), SWT	1, 2, 3
Use established monitoring techniques and sampling to assist management work.	GCC-LS(CG)	GCC-LS(CG)	2, 3
Communication and Publicity			
Liaise with other authorities to develop information literature and guidelines.	GCC-LS(CG)	FWAG, GCC-LS, RSPB, SNH	4
Publicise value and interest of peatlands to schools and general public.	GCC-LS(CG)	GCC-LS(CRS), SNH, SWT	4
Encourage all retailers to sign-up to action to promote peat free alternatives.	GCC-LS(CG)	ALL	4
Liaise with Lead Agency of national Lowland Raised Bog Habitat Action Plans.	GCC-LS(CG)	GCC-LS(CG)	1, 2, 3, 4
Review the progress of this Action Plan by 2006.	GCC-LS(CG)	GCC-LS(CG)	1, 2, 3, 4

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Glasgow City Council: Culture and Leisure Services (**GCC-CLS**), Glasgow City Council: Education Services (**GCC-ES**), Glasgow City Council: Land Services Countryside Ranger Service (**GCC-LS(CRS)**),

Scottish Ornithologists' Club (**SOC**), Greenspace for Communities(**GFC**), British Waterways (**BW**), Forestry Commission (**FC**), Farming Wildlife Advisory Group (**FWAG**), The WISE Group (**WISE**)

Glasgow Natural History Society (**GNHS**), Royal Society for the Protection of Birds (**RSPB**), Scottish Environment Protection Agency (**SEPA**), Scottish Natural Heritage (**SNH**), Scottish Wildlife Trust (**SWT**).

Clyde Amphibian and Reptile Group (**CARG**), Butterfly Conservation (**BC**), Concern for Swifts (**CIS**)