

Standing
Open Water



Current action

The monitoring and protection of water quality is a key, statutory role of SEPA. In order to fulfil its aims and duties for conservation, biodiversity and sustainability SEPA has developed a national Habitat Enhancement Initiative (HEI); two guidance documents have recently been produced: Ponds, Pools and Lochans and Watercourses in the Community. SEPA is also the lead agency for the mesotrophic lochs national HAP. However standing open waters in the City are not routinely monitored.

Bishop and Possil Lochs are included within SSSI boundaries. Hogganfield Loch forms a large part of the Hogganfield Park LNR. The other larger water bodies are included within City-wide SINC boundaries and are thus afforded some protection from development pressures.

Under the Wildlife and Countryside Act (1981) the unlicensed release into the wild of non-resident or established alien animals (including mink, European pond terrapin and certain species of wildfowl, amphibia, fish and crayfish) and several plant species is prohibited.

Under National Policy Planning Guidelines (NPPG 14: Natural Heritage) lochs and ponds are noted as both valuable features and important wildlife habitats, which planning authorities should seek to safeguard within the wider framework of water catchment management.

Water bodies in public parks have been traditionally managed with primarily recreational or amenity objectives. However, recent initiatives at Springburn, Queens and Maxwell Parks have seen habitat improvement actions. Pond creation (and associate wetland management) has occurred recently at Hogganfield Park LNR and nearby Cardowan Moss.

Current factors causing loss or decline

The main threat to standing waters in Glasgow is a loss of biodiversity caused by increasing levels of nutrients. Evidence of changes in the biodiversity of Glasgow's open water is limited but some species recorded over the past 150 years are now presumed to be extinct. Some water bodies have been subject to fluctuations in water levels e.g. Possil and Frankfield Lochs are shown as dry (or marshy) on earlier maps. Conversely a number of water bodies, shown on earlier maps (several early 19th century) are now gone (e.g. Robroyston, Lochgrog and Malls "Maulds" Myre).

- Development pressure can result in the total destruction of smaller ponds and affect the hydrology of larger water bodies.
- Drainage and infilling of small farm ponds and wetlands
- Eutrophication caused by excessive nutrient input from sewage effluent, agricultural run-off (diffuse or point source), accidental spills (e.g. slurry); fish farms in lakes or feeders, and at smaller sites large wildfowl populations and people feeding ducks.
- Toxicity from pesticides, organic matter or heavy metals discharged into feeder water courses
- Land use activities such as drainage, forestry and ploughing which can result in increased water borne sedimentation.
- Vandalism causing damage to sluices, blocking of inflow channels.
- Reinforcement of banks reducing bank side vegetation
- Recreational pressures causing disturbance to wildlife, bank erosion and increased water turbidity.
- Neglect at park ponds or health and safety issues.
- Use of herbicides to control vegetation at recreational water bodies.
- Introduction and/or heavy stocking of alien or native species for recreational angling can disturb natural ecosystem.

Objectives and targets

The creation of large scale open water bodies is unlikely to be an option in the near future. Therefore, protecting the existing resource, including water quality, are the key objectives. However, there are opportunities at smaller sites for habitat improvement works and small-scale creation may be feasible at some wetland sites or other habitat mosaic sites.

Objective 1: Prevent the loss of existing areas of open water within the City.
Target 1: Retain all existing open water bodies.

Objective 2: Improve knowledge of aquatic biology of open water bodies.
Target 2: Survey main water bodies by 2005.

Objective 3: Protect and promote optimal hydrological conditions of open water bodies.
Target 3: Assess and maintain favourable hydrological conditions at key sites.

Objective 4: Promote optimal water quality to support desirable biological interest.
Target 4: Assess and maintain favourable water quality at key sites.

Objective 5: Increase area of open water and habitat quality.
Target 5: Create new ponds where practical and improve habitat interest throughout.

Objective 6: Promote awareness and understanding of open water and aquatic habitat conservation.
Target 6: Produce literature and hold events to promote awareness and appreciation.



LOCAL HABITAT ACTION PLAN

Current status

This plan covers all the areas of **standing open water** in the Glasgow City Council area. It encompasses the UK National priority habitats “mesotrophic lakes” and “eutrophic standing water”. The distinction between these two can be blurred by human induced nutrient enrichment, so that they are both treated within this single plan.

Standing open water includes natural systems of lochs and pools, as well as man-made reservoirs, ponds and quarry pools. Also included are small water bodies (less than 2 ha) such as ponds, often artificially created, in parks, farms and privately owned land. It covers the open water zone and any free-floating, submerged or floating-leaved vegetation and any emergent fringing vegetation. The plan excludes the City’s canals and also rivers and streams, which will be the subject of separate, future plans.

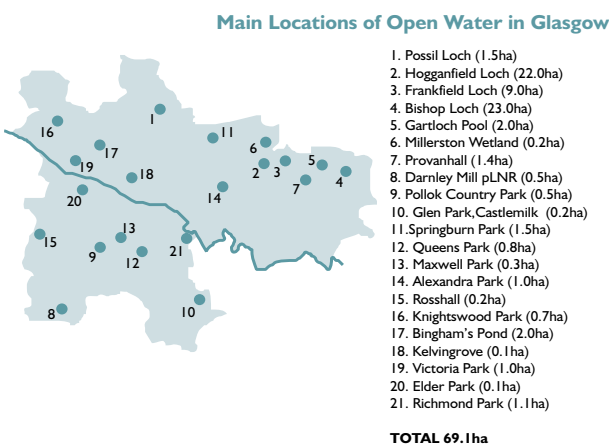
Eutrophic Open Water

Eutrophic water bodies support abundant life because of their high levels of plant nutrients (particularly phosphorous and nitrates). They are characterised by having dense, long-term populations of algae in mid-summer and mud-beds rich in organic matter. Plant communities vary but typically include Fennel-leaved Pondweed (*Potamogeton pectinatus*), Broad-leaved Pondweed (*Potamogeton natans*), Spiked Water-milfoil (*Myriophyllum spicatum*), Yellow Water-lily (*Nuphar lutea*) and duckweeds (*Lemna* spp.); there may also be marginal, emergent swamp communities. The fauna is a diverse mix of invertebrates, including snails, dragonflies and water beetles, but if nutrient levels continue to increase, the diversity may become restricted to a few groups (usually worms). Coarse fish such as Roach, Tench and Pike are typical of eutrophic waters. Nationally important bird populations can also be supported.

The high levels of nutrients in eutrophic water bodies may derive from natural, or from artificial sources. Where nutrient levels become very high the plant community may become dominated by the few species able to tolerate such conditions e.g. types of blue-green algae and filamentous algae such as blanket weed. In some cases the algae can release substances which are toxic to animals and maybe people.

Mesotrophic Open Water

Mesotrophic open water bodies contain lower levels of nutrients than eutrophic bodies, but higher levels than acidic (or base-poor) oligotrophic waters (the latter are covered within the raised bog action plan). They tend to be restricted to the north and west of Britain. Mesotrophic lochs are regarded as being of high importance for nature conservation nationally and in the City, as they support a very rich diversity of macrophytes, including a number of nationally rare or scarce species. Similarly macroinvertebrates are well represented, notable groups being dragonflies, water beetles, stoneflies and mayflies.



A number of open water bodies occur within the City. Only three form large areas exceeding 9ha, (Bishop, Hogganfield and Frankfield lochs) but a further seven exceed 1 ha. Many of the smaller sites are managed in formal public parks, and may have a reduced, relative ecological interest compared with the larger, semi-natural sites, however they can support a range of aquatic species and have an actual or potentially high local nature conservation value (see diagram).

Proposed Action with Lead Authorities

Action	Lead	Delivery	Objective
Policy and Legislation			
Ensure the importance of open water is recognised in Local Plans, district and regional Structural Plans and land-use Strategy documents.	SEPA	GCC-DRS	1
Seek to ensure Policy Planning Guidelines include adequate protection policies for water levels and quality.	SEPA	GCC-DRS, SEPA, SNH	1, 3, 4
Where ponds form part of a Sustainable Urban Drainage System ensure management plans promote biodiversity.	SEPA	GCC-DRS, SEPA, SNH	3, 4, 5, 6
Site Safeguard and Management			
Oppose, or propose alternatives to, development applications for land use, which will damage or destroy areas of open water.	SEPA	GCC-DRS, SEPA, SNH	1, 3, 4
Encourage landowners and farmers to implement sympathetic management practices of catchment areas.	SEPA	FWAG, GCC-LS, SEPA, SNH, SWT	3, 4, 5
Encourage the creation of new ponds and wetlands at urban, agricultural or other open space land; make use of SUDS scheme.	SEPA	FWAG, GCC-LS, GfC, SEPA, SNH	5, 6
Encourage owners of heavily managed ponds to increase semi-natural vegetation.	SEPA	FWAG, GCC-LS, SNH, SWT	5, 6
Advisory			
Provide guidance on pond creation and management beneficial to wildlife.	SEPA	GCC-LS(CG), SEPA, SNH	3, 4, 5
Future Research and Monitoring			
Use established monitoring techniques to collect samples to assist management work where possible.	SEPA	GCC-LS(CG), SEPA	2, 3, 5
Seek to survey sites to monitor biodiversity and hydrology and identify key sites.	SEPA	GCC-LS(CG), SEPA	2, 3, 4
Communication and Publicity			
Develop information literature and guidelines.	SEPA	SEPA, SNH	6
Promote public understanding of open water aquatic biology.	SEPA	GCC-LS, SEPA, SNH	6
Encourage public and community involvement in pond management and creation work.	SEPA	GCC-LS(CRS), GfC, SEPA, SNH	2, 5, 6
Erect signs and information points to promote awareness and appreciation.	SEPA	GCC-LS, GfC, SEPA, SNH	6
Co-operate with the implementation of associated species action plans.	SEPA	ALL	1, 2, 3, 4, 5
Liaise with Lead Agencies of national open water Habitat Action Plans.	SEPA	SEPA	1, 2, 3, 4, 5, 6
Review the progress of this Action Plan by 2006.	SEPA	SEPA	1, 2, 3, 4, 5, 6

SEPA West, 5 Redwood Crescent, Peel Park, EAST KILBRIDE G75 5PP Tel: 01355 574256 Fax: 01355 574688 email: kate.arnold@sepa.org.uk

Glasgow City Council: Development and Regeneration Services(GCC-DRS), Glasgow City Council: Land Services(Conservation Group) (GCC-LS(CG),

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 (TWISE)

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 (CfS)