

Rivers and Streams



Current action

Although the pressures of space in Glasgow mean there is little opportunity to restore our heavily modified rivers and streams to their former natural glory, fortunately, there is still time to save and improve the biodiversity resource of many of our urban rivers, and some action is already being undertaken.

1. Pollution

Effluents from most sewage works and industrial premises in Glasgow are now controlled and monitored by SEPA. However, other discharges frequently occur which are not controlled. Targets are in place to bring about some improvements to water quality throughout Scotland.

Scottish Water (SW) has created drainage plans for many rivers, and many small overloaded sewage works have already been closed as a result. In most cases the sewage is pumped to larger works where it can be treated more effectively.

Scottish Water (SW), in partnership with other groups, has also begun a public awareness campaign called 'yellow fish' which aims to make people more aware of the harm caused to wildlife by activities such as disposing of oil or paint down drains.

SEPA Pollution Hotline. 0800 80 70 60. This phone number is available for people to use to report damage or danger to the natural environment, thereby enabling it to be investigated and cleaned up more quickly.

'Friends of the River Kelvin' is a voluntary group that carries out litter clearance on the River Kelvin, and the Greenspace project also organises litter pick-ups

SEPA produces 'Pollution Prevention Guidelines', which are given to anyone applying to carry out works. These guidelines encourage people to take charge of protecting our environment, and minimise the risk of pollution occurring.

2. Engineering

SEPA now has a policy of presumption against culverting. This should make it much harder for developers to get permission to culvert a stream simply to make available more land. This should reduce habitat loss, and help prevent flooding.

'Sustainable urban drainage schemes' (SUDS) are being installed at some new developments. These include porous paving, and water retention ponds which aim to reduce the flash flooding and pollution caused when heavy rain pours off hard paving and down drains.

3. Loss of Habitat

SEPA's Habitat Enhancement Initiative (HEI) provides funding for demonstration sites which exhibit best management practice.

Current factors causing loss or decline

1. Pollution:

- a) Contaminated land. Glasgow's industrial past has left a legacy of contaminated land. Rainwater sometimes leaches toxic chemicals such as chromium from the soil into watercourses.
- b) Sewage and current industrial discharges. These are mostly controlled, but occasionally accidental or unconsented discharges occur.
- c) Pollution from diffuse sources such as hard standings in cities and road drainage.
- d) Misconnected Drains. These are a serious threat to water quality, often remaining undiagnosed for years. As well as affecting water quality, they can also introduce harmful litter to a watercourse.
- e) Climate change. One symptom of this is thought to be an increasing frequency and intensity of rainfall events. Sudden heavy rain may bring about erosion, and loss of habitat may result.

2. Engineering:

- f) Culverting. This is a very serious threat to the biodiversity of a river. All habitats are lost, although water dwelling species can often survive to pass through short culverts.
- g) Canalizing. Straightening and containment of a river channel may be carried out to control where the water goes. As well as causing loss of habitat, this will affect the natural flow regime of the river, and erosion and deposition sites further downstream may change.
- h) Building. Land values in Glasgow remain high, and bring about the desire to minimise space taken by river corridors. Development on floodplains can increase the risk of flooding as the rate of storm water run-off is increased, and less land is available to store the floodwater. This may lead to policies for further hard engineering of river channels for flood defence.

3. Loss of habitat:

- i) Introduction of fish species. Angling clubs and members of the public may purposefully or accidentally introduce species to our river. These may upset the natural balance, or outcompete native species, and bring about their demise.
- j) Alien plant species. Giant Hogweed, Japanese Knotweed and Himalayan Balsam are colonising many of our riverbanks. Though these plants are attractive in their own right, they can reduce diversity along our riverbanks, and upset the natural balance of species.
- k) Litter. This is a serious problem for wildlife. Small animals may become entangled; it is unsightly, and when removing it the habitat may become trampled.
- l) Bank strengthening. Often, eroding banks are protected using concrete or gabion baskets. It would be more beneficial to biodiversity to use natural methods such as tree planting.

Objectives and targets

Objective 1: Prevent deterioration of water quality in the city's rivers.

Target 1: Continue to assess the condition of Glasgow's rivers, and devise action plans to improve quality at priority sites.

Objective 2: Ensure new development, where possible, does not increase the risk of flooding in sensitive areas.

Target 1: Promote the value of floodplains as a means of regulating river flow.

Target 2: Encourage the installation of SUDS at new developments and retrospectively where possible.

Target 3: Promote the reopening of culverts.

Objective 3: Maximise the potential for wildlife habitat.

Target 1: Aim to reduce the amount of litter on river banks, and to manage the spread of alien species where this can be done without causing damage to native species in the process.

Target 2: Continue to protect the habitat of protected species such as water voles and otters.

Target 3: Incorporate wildlife friendly practices into river engineering.

Objective 4: Improve the public perception of rivers.

Target 1: Aim to increase the appreciation of rivers and streams as having high amenity value.

LOCAL HABITAT ACTION PLAN

Current status

Rivers and streams are flowing watercourses. Their function is to move water from uplands to the sea. In their natural state, watercourses are home to hundreds of different species of plants and animals. Clean water and an unspoilt bank supply the most diverse habitat, particularly if the yearly cycle of flood and drought is left unmanaged, but in a modern city this natural condition rarely exists.

Several watercourses pass through Glasgow City on their journey between the central uplands of Scotland, and the Firth of Clyde, and what happens to them while under our jurisdiction greatly affects their biodiversity.

Prior to 1800, rivers and streams meandered naturally through the area now covered by Glasgow, and were in a clean and healthy condition. But as the city developed, and space was needed for building, the rivers were gradually contained, and also became the accepted route for disposal of effluents. By the early 1900s, all rivers in the area were little more than open sewers.

Happily, legislation in the late 20th century meant water quality improved considerably. However, severe management of the river flows continued to bring about the city map we see today. Many of Glasgow's smaller burns are culverted throughout their length, and it is probably safe to say that all watercourses within the Glasgow City boundary have now been modified in some way to suit the requirements of our urban life.



White Cart Water

The White Cart Water is in fair condition where it enters Glasgow City. After this, its condition deteriorates as it receives sewage and industrial effluents from the city, and also water that flows through land contaminated by chromium. Chromium was dumped in the catchment from paint works in the early 20 century. However, at Pollok Country Park there is a thriving coarse and trout fishery, and there have been sightings of otters, all of which suggest that the river here is in satisfactory condition.

In recent years this river has flooded residential areas causing thousands of pounds worth of

damage. At Cathcart and Langside it goes through a number of sharp bends, and under two low bridges, and during times of heavy rain, the water runs too quickly off paving, causing pollution and flash flooding in the confined space.

The **Levern Water** is a tributary of the White Cart Water. Until the 1970s this was a very polluted burn, but the closure of many small sewage treatment works means the river now supports a good trout fishery throughout. However, this river is seriously polluted with litter.

River Kelvin

This too is an important recreational river for Glasgow, having the Kelvin Walkway in its lower reaches, and being a feature of Kelvingrove Park. The main water quality problems are sewage pollution and general street run-off, but the river still manages to be in good condition at Balmuildy Bridge, and fair condition at Kelvingrove. In 1995, salmon were reported in the Kelvin for the first time in over 100 years.

River Clyde

The slow moving Clyde still harbours contaminants from years past, and is also still the main receptor of Glasgow's present day sewage effluent. It is in fair condition as it comes into Glasgow at Cambuslang and its condition has improved significantly compared with that seen 50 years ago and salmon returned to the Clyde in 1983. Other main sources of pollution are the North Calder Water, and a number of small burns which enter the Lower Clyde - Light, Tollcross, Camlachie, Molendinar, West, Garscadden and Malls Mire Burns. These are all subject to sporadic pollution from sewage and surface water drains and industrial sites. In many cases this is due to wrong connections, which are extremely difficult to trace, particularly as much of the length of these burns are hidden in culverts. The Malls Mire Burn is polluted with chromium.

Despite these impacts, most of Glasgow's larger rivers still retain some wildlife interest. Indeed, in some parts of the city, a small river channel may be the last remaining semi-natural feature, and as such it may become a haven and refuge for many species.

Proposed Action with Lead Authorities

Action	Lead	Delivery	Objective
Policy and Legislation			
Oppose or propose alternatives to development on natural water storage areas.	SEPA	GCC-DRS, SEPA, SNH	2, 3
Encourage the use of SUDS in all new developments, and retrospectively if possible.	SEPA	GCC-DRS, GCC-LS(CG), SEPA	1, 2, 3
Site Safeguard and Management			
Aim to use natural materials and liaise with neighbouring catchments when planning engineering changes to riverbanks.	SEPA	GCC-DRS, GCC-LS, SEPA, GfC	2, 3
Produce a prioritised list of sites where water quality is poor, and seek to define the cause at top priority sites	SEPA	SEPA	1
Species Management and Protection			
Fisheries: liaise with angling clubs/trusts and develop agreements to keep records of stocking to maintain a natural balance of species.	SEPA	GCC-LS(CG)	3
Parklands: use management techniques to encourage the establishment of appropriate native plants along riverbanks	SEPA	GCC-LS, CARG	3, 4
Advisory			
Continue to promote HEI as a source of best practice information and possible source of demonstration sites.	SEPA	SEPA, SNH, GfC	4
Future Research and Monitoring			
Develop a strategy to manage riverbank vegetation to improve naturalness and biodiversity.	SEPA	SNH, GCC-LS(CG), SWT	3
Communications and Publicity			
Promote anti - litter campaigns and council waste collection facilities	SEPA	GCC-LS, GfC	1, 3, 4
Promote awareness of rivers and streams at wildlife events and visitor centres	SEPA	GCC-LS(CRS)	4
Links with other Action Plans			
Co-ordinate with other riverine species plans	SEPA	SEPA	1, 2, 3, 4
Review this plan in 2007	SEPA	SEPA	-

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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 (CIS)