


Bathing water profile:

Luss

<p>Bathing water: Luss</p>	
<p>EC bathing water ID number: UKS7616033</p>	
<p>Location of bathing water: UK/Scotland/Argyll and Bute (Map1)</p>	
<p>Year of designation: 1999</p>	
<p>Bathing water description</p> <p>Luss Bay is a relatively small freshwater bay of about 400 metres long situated on the midwest shore coast of Loch Lomond west of Inchlonaig Island (Map 1). It is located at the conservation village of Luss and is owned by Luss Estates. The area is part of the Loch Lomond and Trossachs National Park. It was designated as a bathing water in 1999.</p> <p>The sandy beach is ideal for paddling and is often used by families with young children; however, the northern portion of the beach is privately owned and is not accessible to the public.</p> <p>Our monitoring point for taking water quality samples is located at the midpoint of the designated area (Grid Ref NS 36015 93296) as shown on Map 1.</p>	
<p>Monitoring water quality</p> <p>Please visit our website¹ for details of the current EU water quality classification and recent results for this bathing water.</p> <p>During the bathing season (1 June to 15 September), designated bathing waters are monitored by SEPA for faecal indicators (bacteria) and classified according to the levels of these indicators in the water. The European standards used to classify bathing waters arise from recommendations made by the World Health Organisation and are linked to human health. More information on bathing water monitoring, health and classification can be found on our website².</p>	

¹ <http://apps.sepa.org.uk/bathingwaters/>

² <http://apps.sepa.org.uk/bathingwaters/SamplingResults.aspx>

Risks to water quality

In general, most natural waters will be affected to some extent during and following rainfall as pollutant loads may be increased due to run-off from agricultural or urban land in the catchment. In addition, at some locations waste water discharges from combined sewer overflows, which then drain into the bathing water and can reduce water quality.

Faecal pollutants can come from human sewage, farming activities and livestock (e.g. cattle, sheep), industrial processes, surface water urban drainage, domestic animals (e.g. dogs) and wildlife (e.g. birds) and can enter bathing waters via:

- direct discharges into the marine environment at, or in the vicinity of, the beach;
- the freshwater network draining into a bathing water, which can be prone to elevated bacterial levels as a result of diffuse pollution and/or point source inputs upstream.

The potential relevant pollution sources at, or near, this bathing water are highlighted on Map 1.

The significant number of roosting birds in the area (including swans) may at times contribute to the microbiological load in the water.

The principal risks and source of wet weather driven short term pollution at this bathing water arise from surface water urban drainage and agricultural run-off. These events are expected to last 1–2 days depending on the duration of the rainfall and may result in elevated bacteria levels compared to dry conditions.

Our regulatory and scientific assessment indicates that potential sources of short-term faecal indicator pollution at this bathing water can at times originate from human or animal sources.

Cyanobacteria (blue-green algae)

In certain weather conditions, particularly warm still weather, algal blooms can form on the loch. Sometimes the blooms are formed of blue-green algae which can be harmful if swallowed and may cause skin rashes. If a blue-green algal bloom occurs the public shall be informed and advised not to bathe through signage at the loch and through the relevant local media.

Algae

Current information suggests that this bathing water is not at risk of an overproduction of filamentous algae or phytoplankton. Any such bloom, whilst unsightly, is believed to be no risk to human health although fish kills may occur.

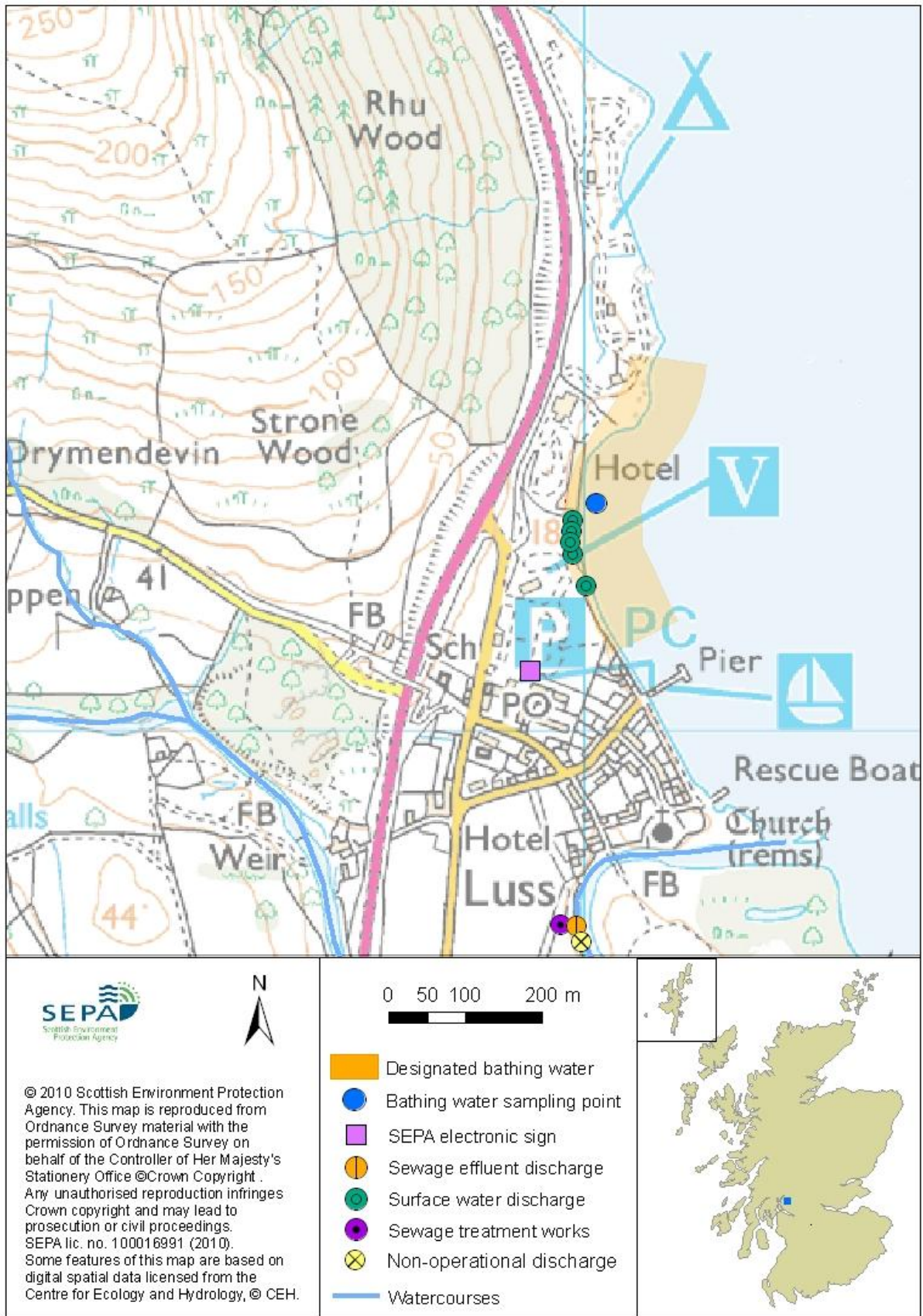
Daily water quality forecasts

Luss bathing water bathing water is part of our daily water quality prediction and signage network.

Throughout the bathing season we display daily water quality predictions on the electronic message sign (Map 1). These water quality predictions are also available on our [website](http://apps.sepa.org.uk/bathingwaters/Predictions.aspx)³ or via the Beachline phone number (08452 30 30 98).

³ <http://apps.sepa.org.uk/bathingwaters/Predictions.aspx>

Map 1: Luss bathing water

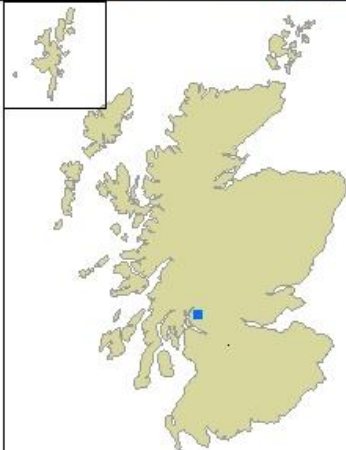


0 50 100 200 m



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- Designated bathing water
- Bathing water sampling point
- SEPA electronic sign
- Sewage effluent discharge
- Surface water discharge
- Sewage treatment works
- Non-operational discharge
- Watercourses



Map 2: Catchment draining into Luss bathing water



Catchment description

The catchment draining into the bathing water extends to 37 km². The area is mountainous with the highest peaks in the catchment being Beinn Eich at 703 metres in the north-west and Deinn Chaorach at 713 metres to the west of the bay. These two peaks form the steep valley along which Luss Water flows towards the bathing water.

The area is predominantly rural (99%) with agriculture the major land use. The catchment supports mixed sheep and cattle farming. Less than one percent of the bathing water catchment is urban. The main population centre is Luss.

Average summer rainfall for the region is 392 mm compared to 331 mm across Scotland as a whole.

The main rivers within the bathing water catchment are the Luss Water, Auchengavin Burn, Sron an Laoigh Burn and Molloch Burn.

There are several protected areas near the bathing water catchment, the closest being the Special Areas of Conservation at Loch Lomond woods which support otter populations. Inchlonaig island is a Site of Special Scientific Interest due to the number of fallow deer and common scoter which frequent the site (Map 2). See Scottish Natural Heritage's [information service website](#)⁴ for more information.

The large bird population in the area may at times contribute to the bacterial loading of the bathing water.

Measures to improve bathing water quality

High quality bathing waters are important so that people can enjoy Scotland's environment safely. They are also important for Scotland's tourism industry.

Recent years have seen considerable improvements in Scotland's bathing water quality, not least due to substantial investment in the sewerage system. SEPA and our partners are fully committed to continuing to improve bathing water quality.

Improving diffuse pollution from agricultural sources

Diffuse pollution from agricultural sources is normally the result of cumulative inputs of pollutants from several different sources on farms within the catchments draining to the bathing water. Consequently, tackling diffuse agricultural pollution requires concerted action across catchments. We will ensure this by working with farmers to raise awareness about the requirement to prevent and reduce pollution, and to help them identify appropriate actions for doing so.

To help co-ordinate our work to encourage and ensure action, SEPA participate in the [Diffuse Pollution Management Advisory Group](#)⁵ (DPMAG), which is a partnership of relevant authorities, land manager representatives and voluntary organisations.

The Scottish Government has also brought together nine public bodies to form [Scotland's Environmental and Rural Services](#)⁶ (SEARS). This partnership will contribute to implementing plans for tackling diffuse pollution by providing co-ordinated education and advice to rural land managers.

Additional targeted efforts will be made to improve management of diffuse pollution within catchments identified as 'priority' catchments. These are catchments where the scale of the pollution reduction needed will require planned and targeted actions to be identified and discussed with farmers concerned. Assistance will be given in these areas to identify pollution hotspots, and one-to-one advice will be provided on following the agricultural codes of good practice, which in themselves lead to compliance with these regulations. Action in priority catchments will be phased.

There are a few farms in the catchment draining to the bathing water. The majority of the farms support sheep but there is also some cattle farming in the area. Pollution from agricultural run-off may occur in Luss Water, Auchengavin Burn, Sron an Laoigh Burn and the Molloch Burn.

This bathing water is within the River Leven (Loch Lomond) priority catchment. Any remedial work within this catchment is expected to be completed by 2021.

⁴ www.snh.org.uk/snhi

⁵ <http://www.sepa.org.uk/environment/water/river-basin-management-planning/who-is-involved-with-rbmp/dpmag/>

⁶ www.sears.scotland.gov.uk

Improving pollution from sewage and other discharges

Most waste water collection and treatment services in Scotland are provided by Scottish Water. It has invested substantially in waste water collection and treatment provision over recent years to protect public health and the environment. Public investments in the sewerage network and in treatment works will continue to be co-ordinated through the national investment and planning process for Scottish Water, known as 'Quality and Standards'.

The original sewage works in Luss was designed to serve a population of 500 people, however due to an increase in visitor numbers Scottish Water installed an additional treatment unit. In 2004 several more improvements were made to the works including the installation of inlet pumps and a sand filter. The combined sewer overflow was also blocked off and no longer discharges to the vicinity of the bay (Luss Water). In 2006 Luss sewage treatment works began treating final sewage effluents with ultraviolet disinfection. Feedback from Scottish Water and our compliance monitoring confirmed that the new treatment is effective.

Scottish Water has recently undertaken a drainage assessment of Luss bathing water to determine whether further asset improvements are required to meet the revised Bathing Waters Directive. The assessment concluded that further Scottish Water asset enhancement would be unlikely to generate additional benefit and that ongoing sewer maintenance and rehabilitation work would continue to protect the bathing water from impacts associated with Scottish Water assets.

Although most of Luss is connected to the sewerage system, there are a small number of properties with private septic tanks which discharge to rivers and soakaways. We have assessed the risk to the water environment from the cumulative impacts of these discharges and their contributions are not thought to be significant to bathing water quality.

Most of the effluent from the caravan, campsite and local hotels is discharged into the Scottish Water sewerage network.

Small-scale forestry operations occur at two of the farms within the catchment however the Luss Estates Company has been advised to follow pollution prevention methods to minimise surface water run-off from these activities.

Improving pollution from diffuse urban sources

Urban diffuse source pollution comes from rainwater falling onto urban areas (roads, pavements, yards and roofs) becoming contaminated with pollutants on those areas, washing into surface water drains and discharging from those drains to the water environment.

Tackling this type of pollution requires substantial changes in the way urban areas are drained, and efforts to reduce the quantity of pollutants deposited on urban surfaces. Since the mid 1990s, Sustainable Urban Drainage Systems (SUDS) have increasingly been used to drain new developments. They are designed to avoid pollution of the water environment and include permeable surfaces that allow infiltration of rainwater into the ground, slowing the rate at which it drains to the water environment and trapping and breaking down pollutants. Artificial ponds or wetlands provide a final stage of treatment. Local authorities, Scottish Water and SEPA are working together to co-ordinate efforts to tackle pollution from diffuse urban sources, incorporating SUDS into local plans and encouraging partner organisations to retrofit SUDS where possible.

Luss Water, which discharges into the bay south of the bathing water, is not known to be affected by surface water run-off from the urban area through which it runs.

Responding to pollution incidents

Although rare, pollution incidents affecting bathing water quality can happen. Pollution incidents tend to be unpredictable, for example a slurry spill or sewerage network failure, and can result in elevated levels of faecal indicators.

To report a possible pollution incident please use our 24 hour pollution hotline (0800 807060). In response we will investigate the incident and contact other relevant organisations. That may include Scottish Ministers, Scottish Water, the local authority and the relevant health board. Where necessary measures will be put in place to resolve the problem.

Whenever our routine sampling of bathing waters identifies elevated levels of faecal indicators there is an

immediate response to check all relevant potential sources and major discharges in the immediate catchment, as well as our hydrometric information to determine whether the levels may be due to high river flows. Follow-up microbiology sampling is also undertaken of the bathing water and local water courses.

If beach users or bathers are considered to be at risk the local authority will warn the public by erecting signs at the bathing water. Information will also be available on our [website](#)⁷.

Other pollutants at the beach may include plastics and litter. Beach users are encouraged to use the bins provided or to take litter home. Loch Lomond and the Trossachs National Park Authority undertake regular inspections of this beach and are also responsible for beach cleaning and litter clean-up at this bathing water.

Contact details and sources of more information

SEPA Balloch office

Carrochan Road
Balloch
West Dumbartonshire
G83 8EG
01389 727 770
www.sepa.org.uk

Argyll and Bute Council

Kilmory
Lochgilphead
PA31 8RT
01546 602 127
enquiries@argyll-bute.gov.uk
www.argyll-bute.gov.uk

Pollution Hotline

0800 80 70 60
24 hours per day, seven days per week

Scottish Government

Victoria Quay
Edinburgh
EH6 6QQ
0131 244 0396
eqcat@scotland.gsi.gov.uk
www.scotland.gov.uk/Topics/Environment/Water/15561/bathingwaters

Keep Scotland Beautiful

01786 471333
beach@ksbscotland.org.uk
www.keepsotlandbeautiful.org

Luss Estates Company

Arnburn
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Argyll and Bute
G83 8RH
01389 850 642
www.lussestates.co.uk

Loch Lomond and the Trossachs National Park Authority

Carrochan
Carrochan Rd
Balloch
G83 8EG
01389 722 600
info@lochlomond-trossachs.org
www.lochlomond-trossachs.org

Further information about the condition of our water environment and the actions needed to deliver improvement can be found in:

- the Scotland river basin management plan <http://www.sepa.org.uk/environment/water/river-basin-management-planning/>
- the Clyde area management plan <http://www.sepa.org.uk/environment/water/river-basin-management-planning/who-is-involved-with-rbmp/area-advisory-groups/clyde/>

Good Beach Guide: www.goodbeachguide.co.uk

Blue Flag and Seaside Awards: www.keepsotlandbeautiful.org/coastal

⁷ <http://apps.sepa.org.uk/bathingwaters/Predictions.aspx>

Version Control		
Version number:	Date:	Next review due:
1.1	April 2013	
1.2	April 2014	
1.3	June 2015	