


## Bathing water profile:

# Carnoustie

<p><b>Bathing water:</b> Carnoustie</p>	
<p><b>EC bathing water ID number:</b> UKS761609</p>	
<p><b>Location of bathing water:</b> UK/Scotland/Angus (Map1)</p>	
<p><b>Year of designation:</b> 1987</p>	
<p>© Copyright <a href="#">Gwen and James Anderson</a> and licensed for <a href="#">reuse</a> under this <a href="#">Creative Commons Licence</a>.</p>	
<p><b>Bathing water description</b></p> <p>The Carnoustie bathing water is situated to the south of, and accessible from, the town of Carnoustie. It is in a relatively small and shallow bay about 0.7 km in length that slopes gently towards the water (Map 1). It was designated as a bathing water in 1987.</p> <p>During high and low tides the approximate distance to the water's edge can vary from 0–300 metres. At high tide the water comes up to the sea wall on some parts of the beach leaving no sand visible. For local tide information see: <a href="http://easytide.ukho.gov.uk/EasyTide/Indea.aspx">http://easytide.ukho.gov.uk/EasyTide/Indea.aspx</a></p> <p>Our monitoring point for taking water quality samples is located at the north eastern end of the designated area (Grid Ref NO 56655 34227), as shown on Map 1.</p>	
<p><b>Monitoring water quality</b></p> <p>Please visit our <a href="#">website</a><sup>1</sup> 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</p>	

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

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 [website](#)<sup>2</sup>.

## 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 principal risks and source of wet weather driven short-term pollution at this bathing water arise from combined sewer overflow. These events are expected to last one or two 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.

Bathing is not advisable during or following (one or two days after) rainfall. Bathing or swimming after storms, floods or heavy rainfall should be avoided as the risk of illness following short-term water pollution is increased.

SEPA recently made use of new DNA tracing techniques to help identify whether sources of faecal pollution are human or animal. In 2009, this method was used at Carnoustie and at sites in the river catchment to target further investigations and identify appropriate courses of corrective action. Results indicate a fluctuation between the human and animal sources that are likely, at times, to be affecting bathing water quality.

## Cyanobacteria (blue-green algae)

Marine waters are not at risk of overproduction of cyanobacteria.

## Algae

Current information suggests that this bathing water is not at risk of excessive growth of macroalgae (seaweed) or phytoplankton.

## Jellyfish

There is a possibility of increased numbers of jellyfish in the water during the summer months. This is a naturally occurring phenomenon. Although there are a few stinging species common to the UK, most are harmless. The Marine Conservation Society advises to 'look but don't touch'.

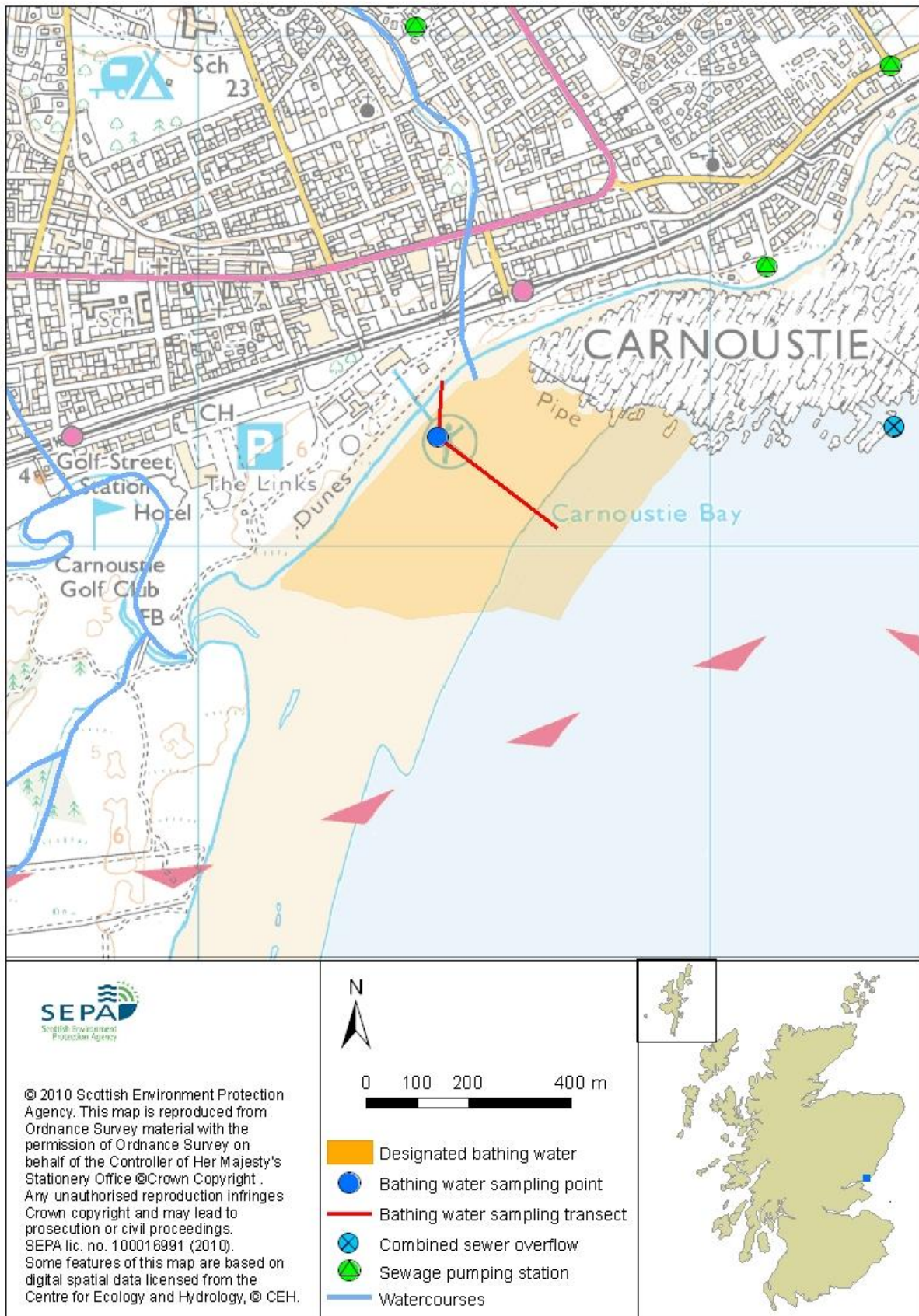
## Daily water quality forecasts

Carnoustie bathing water is not part of our signage network. Daily water quality predictions are not currently required for this bathing water.

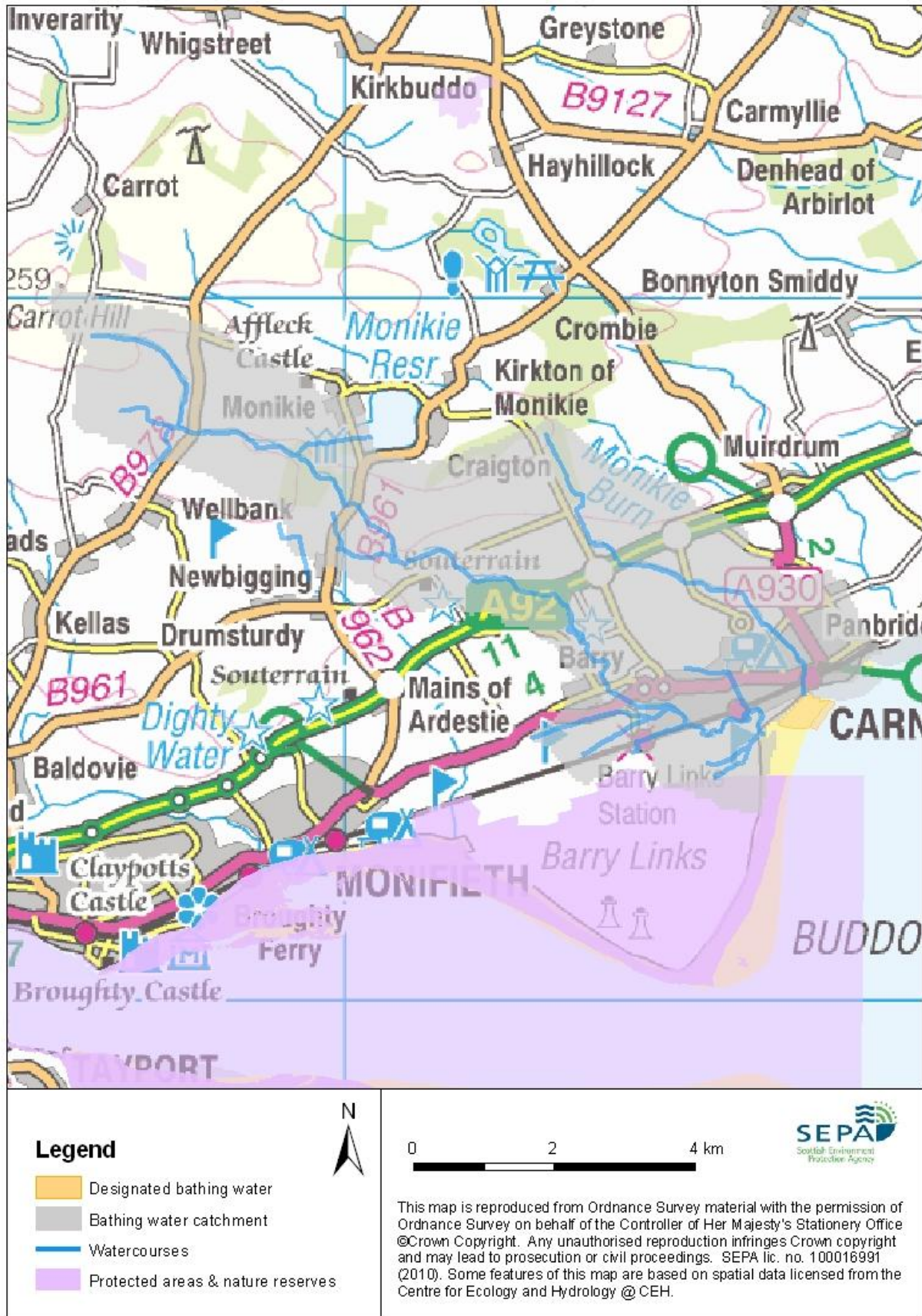
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<sup>2</sup> <http://apps.sepa.org.uk/bathingwaters/SamplingResults.aspx>

Map 1: Carnoustie bathing water



Map 2: Catchment draining into Carnoustie bathing water



## Catchment description

The catchment draining into the Carnoustie bathing water extends to 31 km<sup>2</sup>. The area varies in topography from low hills (max elevation 250 metres) in the west to the low-lying plains (average elevation 5 metres) along the coast.

The catchment is predominantly rural (91%). The major land use is arable agriculture with some soft fruit and livestock production. Approximately 9% of the bathing water catchment is urban and includes the town of Carnoustie. Population density outside of the town is generally low.

Average summer rainfall for the region is 321 mm compared to 331 mm across Scotland as a whole.

There are two water courses within the bathing water catchment: the Barry Burn, which discharges to the south west of the bathing water, and the Lochty Burn, which discharges directly into the bathing water.

The Barry Burn catchment is mainly arable but there is a piggery unit and a large poultry unit in the catchment. The burn also receives spill water from Monikie country park reservoir: an area that attracts a significant bird population.

The Lochty Burn is a smaller water course, with its headwaters in a mainly arable agricultural area. The burn flows through the centre of Carnoustie town and discharges to the sea near SEPA's bathing water monitoring point. A large surface water discharge from the eastern part of Carnoustie enters this water course.

There are several protected areas either fully or partially within the bathing water or catchment, including two Special Areas of Conservation (SAC), a Special Protection Area (SPA), a Site of Special Scientific Interest (SSSI) and a Ramsar site (Map 2). See Scottish Natural Heritage's [information service website](#)<sup>3</sup> for more information. Some of these protected areas have the potential to influence water quality at the bathing water, specifically:

- the Firth of Tay and Eden estuaries, which are of international importance for their bird populations;
- the Barry Links SSSI, with breeding populations of Little Tern.

The Strathmore/Fife area was designated as surface water Nitrate Vulnerable Zone in 2002.

## 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 [Diffuse Pollution Management Advisory Group](#)<sup>4</sup> (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](#)<sup>5</sup> (SEARS). This partnership will contribute to implementing plans for tackling diffuse pollution by providing co-ordinated education and advice to rural land managers.

<sup>3</sup> [www.snh.org.uk/snhi](http://www.snh.org.uk/snhi)

<sup>4</sup> <http://www.sepa.org.uk/environment/water/river-basin-management-planning/who-is-involved-with-rbmp/dpmag/>

<sup>5</sup> [www.sears.scotland.gov.uk](http://www.sears.scotland.gov.uk)

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.

### **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 sewage from the Carnoustie catchment is pumped to the Hatton sewage treatment works for full treatment before discharge to the Firth of Tay via a long sea outfall.

The Lochty Burn has been identified as an occasional source of bacterial pollution at the bathing water. Over recent years SEPA and Scottish Water have addressed a number of potential concerns with surface water drains, sewer overflows and a sewer leaking into the burn. With the co-operation of local residents, septic tank discharges to the Lochty Burn from the Clayholes and Carlogie areas have also been removed. The complexity and age of the sewer system in the area means that it requires continued vigilance and investigative effort.

Despite receiving discharges from Monikie sewage treatment works and associated combined sewers, the Barry Burn presents a low risk to bathing water quality. Treatment at the Monikie works includes bio-filters and humus tanks.

Scottish Water have undertaken a drainage area study to further investigate diffuse sewage pollution at this bathing water. This has identified areas of Carnoustie which require additional improvements to surface water drains, leaking sewers and sewer overflows.

### **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.

### **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 sewage 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](#)<sup>6</sup>.

Other pollutants at the beach may include plastics and litter. Beach users are encouraged to use the bins provided or to take litter home. Beach cleaning and litter clean-up is maintained for this bathing water by Angus council.

## Contact details and sources of more information

### SEPA Arbroath office

62 High Street  
Arbroath  
DD11 1AW  
01241 874370  
[www.sepa.org.uk](http://www.sepa.org.uk)

### Pollution Hotline

0800 80 70 60  
24 hours per day, 7 days per week

### Keep Scotland Beautiful

01786 471333  
[beach@ksbscotland.org.uk](mailto:beach@ksbscotland.org.uk)  
[www.keepsotlandbeautiful.org](http://www.keepsotlandbeautiful.org)

### Angus Council

Angus House  
Orchardbank Business Park  
Forfar  
DD8 1AX  
08452 777 778  
[accessline@angus.gov.uk](mailto:accessline@angus.gov.uk)  
[www.angus.gov.uk](http://www.angus.gov.uk)

### Scottish Government

Victoria Quay  
Edinburgh  
EH6 6QQ  
0131 244 0396  
[eqcat@scotland.gsi.gov.uk](mailto:eqcat@scotland.gsi.gov.uk)  
[www.scotland.gov.uk/Topics/Environment/Water/15561/bathingwaters](http://www.scotland.gov.uk/Topics/Environment/Water/15561/bathingwaters)

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

Good Beach Guide: [www.goodbeachguide.co.uk](http://www.goodbeachguide.co.uk)

Blue Flag and Seaside Awards: [www.keepsotlandbeautiful.org/coastal](http://www.keepsotlandbeautiful.org/coastal)

Version Control		
Version number:	Date:	Next review due:
1.0	Nov 2010	
1.1	April 2014	
1.2	June 2015	

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<sup>6</sup> <http://apps.sepa.org.uk/bathingwaters/Predictions.aspx>