Wales bathing water report 2022

This report presents the results of the 2022 bathing water season

Executive Summary

Good quality bathing waters are very important for coastal communities, visitors and the economy in Wales. In 2022, 105 out of the 106 designated Welsh bathing waters met the standards set by the Bathing Water Regulations. Of the 106 bathing waters assessed in Wales, 85 were of an Excellent standard, 16 achieved a Good standard and 4 were classified as the minimum, Sufficient, standard. 1 bathing water failed to achieve the standard and was assessed as Poor.

The Bathing Water Regulations introduces a classification system with stringent water quality standards and puts an emphasis on providing information to the public. Welsh Government have to inform members of the public about bathing water management, bathing water quality, and potential threats to bathing water quality and public health. Waters are classified based on samples taken from the previous four years in order to even out effects of extreme situations.

Actions are being taken by Natural Resources Wales, together with Dŵr Cymru, Local Authorities, farming organisations and landowners to improve water quality. Improvements are being made locally, such as sewerage and outfall improvements; and more broadly, such as reducing diffuse water pollution from farmland in the wider countryside.

Natural Resources Wales is responsible for monitoring and reporting against the standards in the Regulations. Samples are analysed for two types of bacteria, which indicate pollution from sewage or livestock. Polluted water can have impacts on human health, including causing stomach upsets and diarrhoea if swallowed.

This report presents the results of the 2022 bathing water monitoring programme. Our challenge is to protect and enhance our natural resources and so maintain the high standards achieved this year at our bathing waters.

Bathing waters in Wales

Bathing waters are valuable for the recreational opportunities they provide to the people of Wales, the local economy and tourism. The Wales Marine Evidence Report recorded that over 60% of the population of Wales live and work on the coast where growing coastal tourism is estimated to be worth £602 million (2013). The Wales Coast Path – another world first for Wales – runs for 870 miles and has provided an economic boost of £23.6 million.

Several of Wales's beaches such as Barafundle Bay are regularly voted Britain's best. Swimming, surfing, angling and rockpooling are popular activities all around the coastline.

When the Wales Coastal Path opened in 2012, Lonely Planet named Wales' coastline the top region to visit in the world.

The competitiveness of the Welsh tourism industry is dependent on the quality of tourist destinations, including the quality of bathing water. European water policy has played an important role in protecting water resources, and the quality of Welsh bathing sites is a good example of this.

The first European bathing water legislation, in the form of the Bathing Water Directive, came into force in 1976. The revised Bathing Water Directive was adopted in 2006, and 2015 was the first year it was fully implemented in the UK. Management and surveillance methods for bathing waters have been changed and new tighter microbiological standards brought in. More detail on the differences between the original and revised Bathing Water Directives can be found in the Wales Bathing Waters Report 2014. Since leaving the EU the Bathing Water Directive is now devolved and comes under the Bathing Water Regulations of Welsh Government.

Provision of information to the public is a key part of the regulations. Profiles have to be prepared and published for all bathing waters and made freely available. These profiles describe the physical and hydrological conditions of bathing areas and analyse potential impacts on (and potential threats to) their water quality. The bathing water profiles are both a source of information for citizens and a management tool.

In Wales, Natural Resources Wales is responsible for monitoring bathing waters and communicating the results to the public. All information, including the profiles is communicated to the public via the Bathing Water Data Explorer .

The bathing season begins in May and lasts until the end of September. During the bathing season, Natural Resources Wales monitors bathing water quality and provides information about possible health risks arising from issues such as short-term pollution episodes. At the end of each year, Natural Resources Wales sends data on bathing water quality and information on management measures to Welsh Government.

Bathing water quality in 2022

In Wales, 106 designated bathing waters were sampled and classified during the 2022 bathing season.

One bathing water, Colwyn Bay, was not sampled during the 2022 season due to ongoing coastal defence works at the location. The works impacted on the publics ability to safely access the beach, as such it was not included in NRW's monitoring programme. We expect Colwyn Bay to feature on the 2023 Monitoring calendar.

105 out of the 106 designated bathing waters met the minimum water quality standards:

- 85 achieved the highest classification of Excellent
- 16 achieved Good
- 4 achieved Sufficient
- 1 was classified as Poor

These results show that the overall water quality has remained fairly consistent compared with the classifications at the end of the 2021 season.

The Bathing Water Regulations classification in 2022 are based on two microbiological parameters: *Escherichia coli (E.coli*) and intestinal enterococci. They are calculated from four years of sample data (2019-2022).

Class	2022 - no. of bathing waters in class	2021 - no. of bathing waters in class
Excellent	85	85
Good	16	14
Sufficient	4	6
Poor	1	0
Total compliant	105	105
Total bathing waters	106	105

Non-compliant bathing waters

Marine Lake in Rhyl was the only non-compliant bathing water in 2022. Marine Lake, Rhyl failed in 2022 due to three samples with high bacterial values in 2019, 2020 and 2022.

One of these results coincided with a period of the lake being emptied for operational reasons and refilled over a short period of time. This large refill would have included significant amount of estuary freshwater and higher levels of bacteria.
The two remaining samples coincided with heavy rainfall resulting in a discharge from Westbourne Avenue CSO on an incoming tide and an abstraction into Marine Lake.

The impact of these poor samples on the mean and standard deviation of the data was enough to bring Marine Lake below the threshold for compliance on the intestinal enterococci determinand, which caused the bathing water to be classified as poor overall.

NRW is working alongside Denbighshire County Council and Dwr Cymru Welsh Water to implement changes that we hope will significantly improve the water quality at Marine Lake ahead of the 2023 season.

There continues to be signs advising against bathing at Marine Lake. These signs are erected to protect bathers' health. Advice against bathing is different to a *bathing prohibition*, which means swimming is prohibited.

Monitoring and classification in 2022

Monitoring

In Wales the bathing season runs from 15 May to 30 September. Monitoring begins from 1 May as each bathing water has one pre-season sample taken. There may also be a pre-season inspection to identify any issue. Throughout the bathing season, Natural Resources Wales collects water samples at designated bathing sites. The samples are analysed for two types of bacteria, *Escherichia coli (E.coli)* and intestinal enterococci.

Samples are taken according to a monitoring calendar set out in advance of the season. Each sample must be taken on the specified date or up to four days afterwards or the sampling opportunity is lost because samples taken outside that five day window do not count for the compliance dataset.

This calendar can be suspended if abnormal situations occur which could affect bathing water quality.

An abnormal situation is defined by the Bathing Water Regulations as an event or combination of events impacting on bathing water quality at the location concerned and not expected to occur on average more than once every four years. They are usually declared when we become aware of an unusual pollution source that could impact on the bathing water. The relevant bodies are then required to inform the public of the situation and advise them against bathing. Any routine bathing water samples will still be taken, but the sample results do not have to be included in the sample data set used to classify the beach.

There were no abnormal situations during the 2022 season.

Classification

Classifications are based on four years' worth of data. New or recently designated bathing waters may be classified on less than four years data, but with a minimum number of 16 samples. The Regulation standards use two microbiological parameters, *E.coli* and intestinal enterococci, and are based on 95th and 90th percentile values.

Samples are classified according to four categories: Excellent, Good, Sufficient and Poor.

An objective was set in the original Directive for all bathing waters to achieve sufficient status by 2015, which they did. The classifications will also be used in the periodic reviews of the bathing water profiles required by the Regulations:

- every two years for poor bathing waters
- every three years for sufficient
- every four years for good

Short-term pollution, prediction and discounting

At some bathing waters short-term pollution may be predicted by models. Beach operators then update a sign at the bathing water to warn the public on days that poor water quality is predicted. The prediction information is also shared online.

If the model has predicted poor quality, the public have been informed and a confirmation sample is taken to show if that pollution lasted less than 72 hours, then a scheduled bathing water sample taken that day may be discounted from the four year dataset.

This is possible up to a maximum of 15 percent of samples provided for in the monitoring calendars established for that period, or no more than one sample per bathing season, whichever is the greater.

The sample may, optionally, be replaced by a sample taken seven days after the end of the short-term pollution event. Bathing waters where short-term pollution has been predicted during the season can only be classified as sufficient, good or excellent quality if adequate management measures are being taken.

At the end of the 2022 season Welsh Government decided to discount and replace the following samples:

2022 Bathing Water	Discounted sample date	Replacement sample date
Swansea Bay	01/08/2022	08/08/2022
Llangrannog	05/09/2022	13/09/2022
Abergele (Pensarn)	09/09/2022	17/09/2022
Kinmel Bay (Sandy Cove)	09/09/2022	17/09/2022
Rhyl	09/09/2022	17/09/2022
Rhyl East	09/09/2022	17/09/2022

Step change

Major changes at bathing waters such as sewerage infrastructure improvements may mean that data from before the changes are no longer representative of the current bathing water quality. Data from before such changes can be excluded from classification calculations under a provision commonly known as step change.

No bathing waters in Wales were affected by step change in the 2022 season.

Results of 2022 sampling and analysis of water quality at designated bathing water sites in Wales against the Bathing Water Regulations

Bathing Water	2022 classification	2021 classification for comparison
Aberdaron	EXCELLENT	EXCELLENT
Aberdyfi Rural	EXCELLENT	EXCELLENT
Abereiddy	EXCELLENT	EXCELLENT
Aberffraw	EXCELLENT	EXCELLENT
Abermawr	EXCELLENT	EXCELLENT
Aberporth	EXCELLENT	GOOD
Abersoch	EXCELLENT	EXCELLENT
Aberystwyth South	EXCELLENT	EXCELLENT
Amroth Central	EXCELLENT	EXCELLENT
Barafundle	EXCELLENT	EXCELLENT
Barmouth	EXCELLENT	EXCELLENT
Benllech	EXCELLENT	EXCELLENT
Borth	EXCELLENT	EXCELLENT
Borth Wen	EXCELLENT	EXCELLENT
Bracelet Bay	EXCELLENT	EXCELLENT
Broad Haven (Central)	EXCELLENT	EXCELLENT
Broad Haven (South)	EXCELLENT	EXCELLENT
Caerfai	EXCELLENT	EXCELLENT
Castle Beach, Tenby	EXCELLENT	EXCELLENT
Caswell Bay	EXCELLENT	EXCELLENT
Church Bay	EXCELLENT	EXCELLENT
Cilborth	EXCELLENT	EXCELLENT
Cold Knap Barry	EXCELLENT	EXCELLENT
Col-Huw Beach (Llantwit Major)	EXCELLENT	N/A
Colwyn Bay Porth Eirias	EXCELLENT	EXCELLENT
Coppet Hall	EXCELLENT	EXCELLENT
Craig Du Beach Central	EXCELLENT	EXCELLENT
Dale	EXCELLENT	EXCELLENT
Druidston Haven	EXCELLENT	EXCELLENT
Dyffryn (Llanendwyn)	EXCELLENT	EXCELLENT
Fairbourne	EXCELLENT	EXCELLENT
Freshwater East	EXCELLENT	EXCELLENT
Freshwater West	EXCELLENT	EXCELLENT
Glan Don Beach	EXCELLENT	EXCELLENT
Harlech	EXCELLENT	EXCELLENT
Langland Bay	EXCELLENT	EXCELLENT
Little Haven	EXCELLENT	EXCELLENT
Llandanwg	EXCELLENT	EXCELLENT

Bathing Water	2022 classification	2021 classification for comparison
Llanddona	EXCELLENT	GOOD
Llanddwyn	EXCELLENT	EXCELLENT
Llandudno West Shore	EXCELLENT	EXCELLENT
Llanfairfechan	EXCELLENT	EXCELLENT
Llangrannog	EXCELLENT	EXCELLENT
Llanrhystud	EXCELLENT	EXCELLENT
Llyn Padarn	EXCELLENT	EXCELLENT
Lydstep	EXCELLENT	EXCELLENT
Manorbier	EXCELLENT	EXCELLENT
Marloes Sands	EXCELLENT	EXCELLENT
Morfa Dinlle	EXCELLENT	EXCELLENT
Morfa Nefyn	EXCELLENT	EXCELLENT
Mwnt	EXCELLENT	EXCELLENT
Newgale	EXCELLENT	EXCELLENT
Newport North	EXCELLENT	EXCELLENT
Nolton Haven	EXCELLENT	GOOD
Oxwich Bay	EXCELLENT	EXCELLENT
Pembrey	EXCELLENT	EXCELLENT
Penally	EXCELLENT	EXCELLENT
Penarth Beach	EXCELLENT	N/A
Penbryn	EXCELLENT	EXCELLENT
Pendine	EXCELLENT	EXCELLENT
Penmaenmawr	EXCELLENT	EXCELLENT
Poppit West	EXCELLENT	EXCELLENT
Port Eynon Bay	EXCELLENT	EXCELLENT
Porth Dafarch	EXCELLENT	EXCELLENT
Porth Neigwl	EXCELLENT	EXCELLENT
Prestatyn	EXCELLENT	EXCELLENT
Pwllheli	EXCELLENT	EXCELLENT
Rest Bay Porthcawl	EXCELLENT	EXCELLENT
Rhosneigr	EXCELLENT	EXCELLENT
Rhossili	EXCELLENT	EXCELLENT
Sandy Bay Porthcawl	EXCELLENT	EXCELLENT
Sandy Haven	EXCELLENT	EXCELLENT
Saundersfoot	EXCELLENT	EXCELLENT
Silver Bay Rhoscolyn	EXCELLENT	EXCELLENT
Southerndown	EXCELLENT	EXCELLENT
St Davids - Benllech	EXCELLENT	EXCELLENT
Tal-y-Bont	EXCELLENT	EXCELLENT
Tenby South	EXCELLENT	EXCELLENT
Traeth Gwyn New Quay	EXCELLENT	EXCELLENT
Trearddur Bay	EXCELLENT	EXCELLENT
Trecco Bay Porthcawl	EXCELLENT	EXCELLENT

Bathing Water	2022 classification	2021 classification for comparison
Tresaith	EXCELLENT	EXCELLENT
Tywyn	EXCELLENT	EXCELLENT
West Angle	EXCELLENT	EXCELLENT
Whitesands	EXCELLENT	EXCELLENT
Aberafan	GOOD	SUFFICIENT
Aberdyfi	GOOD	GOOD
Aberystwyth North	GOOD	GOOD
Cemaes	GOOD	EXCELLENT
Clarach South	GOOD	GOOD
Kinmel Bay (Sandy Cove)	GOOD	GOOD
Limeslade Bay	GOOD	EXCELLENT
Llandudno North Shore	GOOD	SUFFICIENT
New Quay Harbour	GOOD	GOOD
New Quay North	GOOD	GOOD
Rhyl East	GOOD	GOOD
Swansea Bay	GOOD	GOOD
Tenby North	GOOD	GOOD
Traeth Lligwy	GOOD	EXCELLENT
Whitmore Bay Barry Island	GOOD	GOOD
Wiseman's Bridge	GOOD	EXCELLENT
Abergele (Pensarn)	SUFFICIENT	SUFFICIENT
Criccieth	SUFFICIENT	GOOD
Jackson's Bay Barry Island	SUFFICIENT	SUFFICIENT
Rhyl	SUFFICIENT	SUFFICIENT
Marine Lake, Rhyl	POOR	SUFFICIENT

Parameters used for classification of coastal waters and transitional waters (such as estuarine bathing waters) under the bathing water regulations

Parameters measured are *E.coli* and IE (intestinal enterococci). Percentiles are values that should theoretically be complied with 90 or 95 percent of the time (based on the distribution of the data). They do not refer to values complied with 90 or 95 percent of samples.

Classification	E.coli 95th percentile*	IE 95th percentile*	E.coli 90th percentile*	IE 90th percentile*
Excellent	250	100	n/a	n/a
Good	500	200	n/a	n/a
Sufficient	n/a	n/a	500	185

* Colony forming units (cfu)/100ml

Poor – Fails to meet any of the above standards

Not classified – Does not have enough samples in the four year calculation window

Parameters used for classification of inland waters under the bathing water regulations

Parameters measured are *E.coli* and IE (intestinal enterococci). Percentiles are values that should theoretically be complied with 90 or 95 percent of the time (based on the distribution of the data). They do not refer to values complied with 90 or 95 percent of samples.

Classification	E.coli 95th percentile*	IE 95th percentile*	E.coli 90th percentile*	IE 90th percentile*
Excellent	500	200	n/a	n/a
Good	1000	400	n/a	n/a
Sufficient	n/a	n/a	900	330

* Colony forming units (cfu)/100ml

Poor – Fails to meet any of the above standards

Not classified – Does not have enough samples in the four year calculation window