

Bathing water microbiology



Key message

Coastal bathing water quality has been steadily improving since the new Directive was introduced (2015). Bathing waters with an excellent classification have increased from 16 (2015) to 28 (2018) and the poor classification reduced from 17 to 10. 88% of coastal bathing waters (83 bathing waters) met the EU required minimum classification in 2019.

Background

Scotland has 83 designated coastal bathing waters where the Scottish Environment Protection Agency (SEPA) monitor water quality from 15 May to 15 September in accordance with the [EU Bathing Water Directive \(2006/7/EC\)](#) and the [Bathing Waters \(Scotland\) Regulations 2008](#).

The directive states that a bathing water is one where a large number of people are expected to bathe and a permanent bathing prohibition, or permanent advice against bathing, has not been issued. Generally, a 'large' number of bathers (150 or so people) will be found at popular, well-used beaches and lakes where bathing is encouraged and facilities for bathers may have been provided.

The general water quality condition for each location is described by a [classification statement](#) - excellent, good, sufficient and poor - based on four years of monitoring data. These classifications are calculated at the end of one season for display at the start of the following season.

SEPA monitor for *Escherichia coli* and intestinal enterococci, which inform the classification, and also for cyanobacterial (blue-green algae) blooms, macroalgae (seaweed), marine phytoplankton and other waste where action may be required.



In Scotland, the primary causes of poor bathing water quality are short episodes of pollution caused by the impact of heavy rainfall on the operation of sewerage assets, surface drains, field run-off and agricultural activity.

In 2015 SEPA reported for the first time against new Directive (2006/7/EC), which replaced Directive 76/160/EEC. This assessment therefore considers the classification of bathing waters from 2015 to 2018.

Results

Since 2015 there has been an overall improvement in coastal bathing water quality, reflecting SEPA's aim to bring all bathing waters to sufficient or better (Figure 1).

This has largely been achieved by improved pollution control measures and investment to wastewater assets by the water industry and private operators, along with measures undertaken by farmers to reduce pollution risks from farm fields and compliance with new agricultural general binding rules (GBRs).

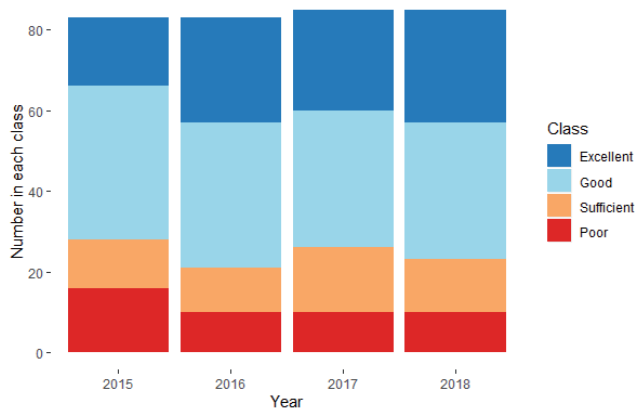


Figure 1: Number of bathing waters in each classification per year (2015-2018).

The number of coastal bathing waters with an excellent classification has increased from 16 in 2015 to 26 in 2018. The number with a poor classification has reduced

from 17 to 10 over the same period. Further improvements are expected in 2019 and future years to reflect ongoing improvement work.

Detail on specific locations, trends and results are visualised and available for download on the [Scotland's Environment website](#).

SEPA also provides daily water quality forecasts with live on-line beach signage for 30 well used bathing beaches in order to provide on the day advice to bathers and beach users. These can also provide information on any pollution warnings.

Coastal bathing waters are an integral part of Scottish Marine Regions (SMRs) (Figure 2). Of the 11 SMRs, only 8 contain designated bathing waters: Solway, Clyde, Argyll, West Highlands, North Coast, Moray, North East and Forth & Tay. Bathing water classifications are only applied to designated bathing water bodies due to the highly localised nature of microbial water pollution. It is therefore difficult to extrapolate classifications to the SMR scale.

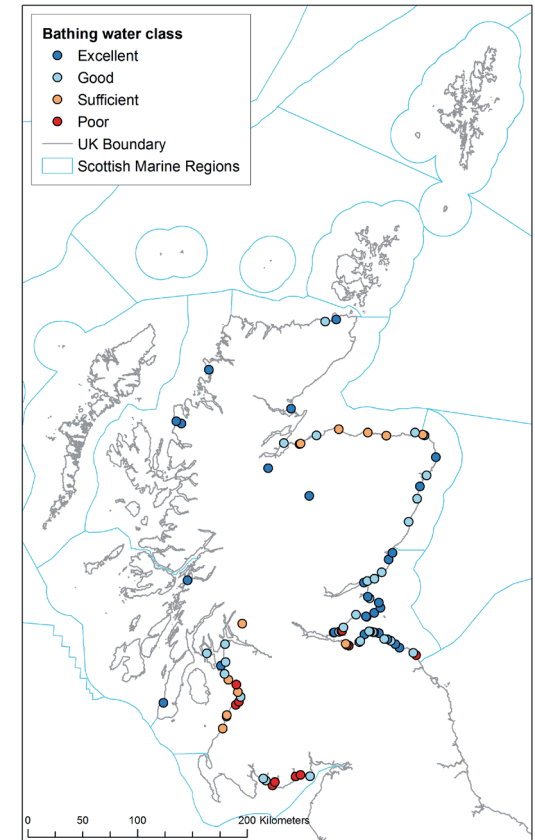


Figure 2: Location and classification of Scottish bathing waters in 2018

Conclusion

Water quality at coastal bathing waters has shown a steadily improving picture since the new Directive was introduced in 2015. Although there are failing bathing waters in the Clyde, Solway, Forth & Tay SMRs, work is planned to bring all bathing waters up to the minimum sufficient classification.



















Knowledge gaps

Bathing waters are selected for monitoring and classification when a 'large' number of bathers (usually 150 or more) use the waterbody. There are likely more waterbodies that are used by bathers but fall below the 'large' threshold for classification. There are limited data on the bathing water quality of these waterbodies.

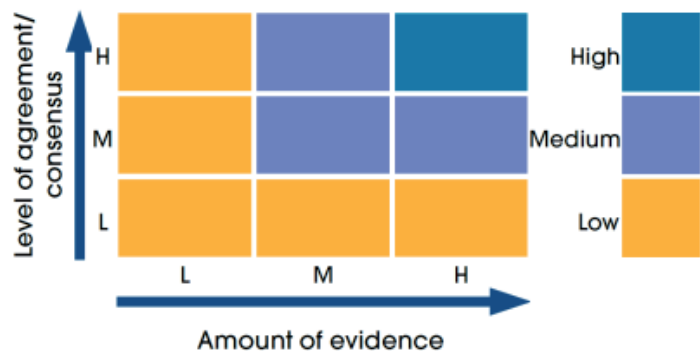
Status and trend assessment

It has not been possible to conduct regional assessments for bathing waters due to the localised nature of bathing water classification. Subsequently, traffic light assessment was not possible either.

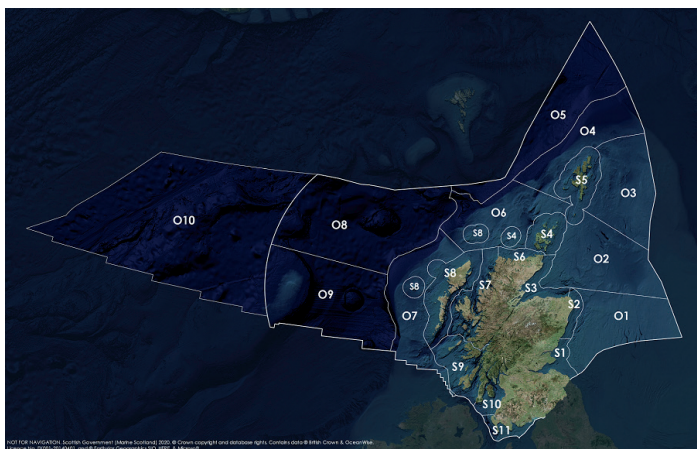
Status and trend assessment legend

Status assessment (for Clean and safe, Healthy and biologically diverse assessments)		Trend assessment (for Clean and safe, Healthy and biologically diverse and Productive assessments)	
	Many concerns		No / little change
	Some concerns		Increasing
	Few or no concerns		Decreasing
	Few or no concerns, but some local concerns		No trend discernible
	Few or no concerns, but many local concerns		All trends
	Some concerns, but many local concerns	Confidence assessment	
	Lack of evidence / robust assessment criteria		
	Lack of regional evidence / robust assessment criteria, but no or few concerns for some local areas		Low
	Lack of regional evidence / robust assessment criteria, but some concerns for some local areas		Medium
	Lack of regional evidence / robust assessment criteria, but many concerns for some local areas		High

Overall confidence

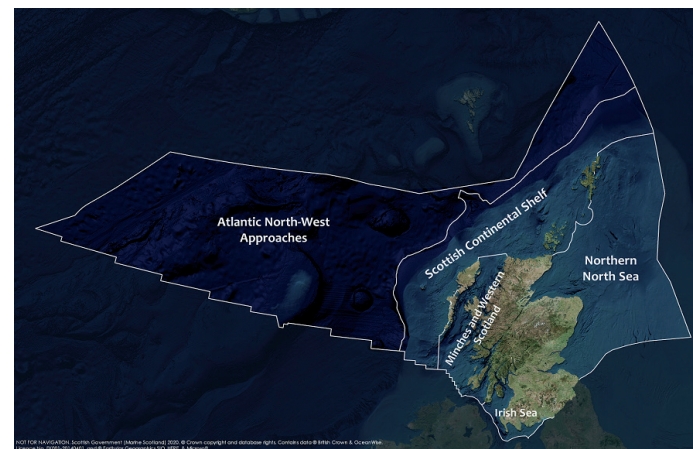


Assessment regions

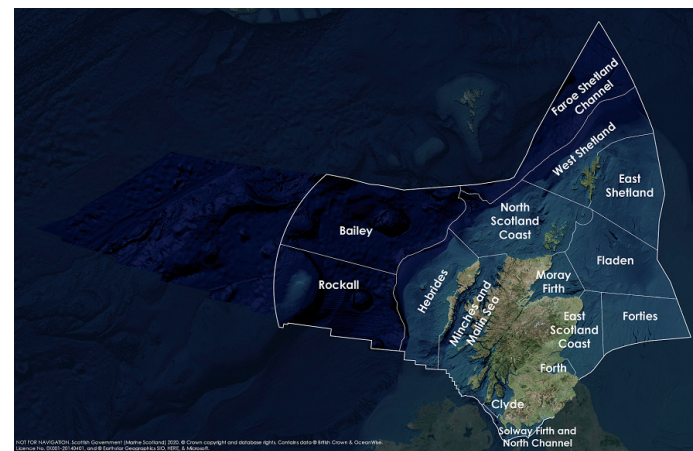


The Scottish Marine Regions (SMRs; S1 - S11) and the Scottish Offshore Marine Regions (OMRs, O1 - O10)

Key: S1, Forth and Tay; S2, North East; S3, Moray Firth; S4 Orkney Islands; S5, Shetland Isles; S6, North Coast; S7, West Highlands; S8, Outer Hebrides; S9, Argyll; S10, Clyde; S11, Solway; O1, Long Forties, O2, Fladen and Moray Firth Offshore; O3, East Shetland Shelf; O4, North and West Shetland Shelf; O5, Faroe-Shetland Channel; O6, North Scotland Shelf; O7, Hebrides Shelf; O8, Bailey; O9, Rockall; O10, Hatton.



Biogeographic, Charting Progress 2 (CP2) Regions. These have been used as the assessment areas for hazardous substances.



Scottish Sea Areas as used in Scotland's Marine Atlas 2011. These are sub divisions of the biogeographic, or Charting Progress 2 (CP2), Regions.