

BWD Report For the Bathing Season 2014

Portugal

The report gives a general overview of information acquired from the reported data, based on provisions of the Bathing Water Directive¹. The reporting process is described below, as well as state and trends of bathing water quality in Portugal.

1. BWD reporting in the season 2014

In 2014 bathing season, 558 bathing waters have been reported in Portugal. For each bathing water, five groups of parameters have been delivered²:

- *identification data* – including name, location, geographic type of bathing water and availability to bathers;
- *seasonal data* – including season start and end, national quality classification in present season, potential management measures and changes in quality;
- *monitoring results* – disaggregated numerical values of two microbiological parameters – intestinal enterococci and Escherichia coli (also known as E. coli), recorded at each water sample taken;
- *abnormal situation periods* – periods of unexpected situations that have, or could reasonably be expected to have, an adverse impact on bathing water quality and on bathers' health; reporting is optional;
- *short-term pollution periods* – identifiable events that adversely affect water quality by faecal contamination; reporting is optional.

Total reported	558
Coastal	452
Inland	106
Max season period	135 / 156 days
Coastal	1 May to 19 Oct
Inland	17 May to 30 Sep
Samples taken	3012
Share of bathing waters with good or excellent water quality	91 %
New BWD implemented in	2010

The authorities of Portugal report data according to the new BWD (2006/7/EC) since the season 2010. The data for the season 2014 were delivered to the European Commission by **9 January 2015**.

Altogether, **558 bathing waters** have been reported – 2.6% of all bathing waters in Europe. Out of all bathing waters in Portugal, 4.48% have been newly identified in 2014 season. 81% of bathing waters in Portugal are of coastal type; the other 19% are inland. **3012 samples** were taken at bathing waters throughout the season – 5 per bathing water on average.

¹ Directive BWD 2006/7/EC, available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:064:0037:0051:EN:PDF>

² See the BWD Data Dictionary for detailed explanations: <http://dd.eionet.europa.eu/datasets/3151#tables>

The maximum bathing season period was from 1 May to 19 October for coastal bathing waters, i.e. 156 days altogether. Season duration varies for coastal bathing waters. Maximum inland bathing season period was from 17 May to 30 September, i.e. 135 days. Season duration varies for inland bathing waters.

Detailed information on bathing waters is available from national portal at <http://www.apambiente.pt/index.php?ref=19&subref=906> (mainland Portugal), <http://www.azores.gov.pt/Gra/SRMCT-MAR/conteudos/livres/Perfis+das+%C3%81guas+Balneares+dos+A%C3%A7ores.htm> (Azores) and <http://dramb.gov-madeira.pt/berilio/berwpag0.desenvctt?pCtt=2082> (Madeira).

2. Assessment methodology³

During the bathing season, water samples are taken and analysed for two bacteria, *Escherichia coli* and intestinal enterococci which may indicate the presence of pollution, usually originating in sewage or livestock waste. The results of the analysis are used to assess the quality of the bathing waters concerned and to provide information to the public on the quality of the water in the bathing sites concerned.

The monitoring requirements under the New Bathing Water Directive are:

- taking of a pre-season sample (taken shortly before the start of the bathing season)⁴;
- a minimum of four samples per season⁵;
- a minimum of one sample per month⁶.

The conditions described above must be met for all bathing waters. If these rules are satisfied, the bathing water is categorised as 'sampling frequency satisfied'. If not all monitoring requirements are fulfilled the bathing water is categorised as 'sampling frequency not satisfied'. 95.3% of bathing waters met the described monitoring requirements set by the Directive, while the rest was either new, changed or closed. Table 1 shows the statistics of bathing waters according to satisfied BWD monitoring requirements.

³ The methodology used by the EC and the EEA is described here, while results of assessment by national authorities may somewhat differ. However, the provisions of the Directive should be followed in any case.

⁴ A pre-season sample is taken into account at total number of samples per season.

⁵ Three samples are sufficient if the season does not exceed eight weeks or the region is subject to special geographical constraints.

⁶ If, for any reason, it is not possible to take the sample at the scheduled date, a delay of four extra days is allowed. Thus, the interval between two samples should not exceed 31 + 4 days.

Table 1: Bathing waters in 2014 according to compliance with BWD monitoring provisions

	Count	Share of total [%]
BWs with sampling frequency satisfied and are not new, have no changes or were not closed in 2014 These bathing waters have been monitored according to BWD provisions (monitoring frequency satisfied and have pre-season sample. They have been quality-classified (excellent, good, sufficient, poor).	532	95.3%
BWs with sampling frequency not satisfied and that are not new, have no changes or were not closed in 2014. These bathing waters have not been monitored according to BWD provisions (monitoring frequency not satisfied). They may be quality-classified if there is a reasonable volume of samples available.	0	0.0%
BWs that are new, changed or closed in 2014 These bathing waters are new or have been subject to changes that could affect bathing water quality.	26	4.7%
Total number of bathing waters in 2014	558	100%

Bathing waters can be quality assessed if at least four samples per season (three samples if the season does not exceed eight weeks or the region is subject to special geographical constraints) are available and are more or less equally distributed throughout the season. Assessment of bathing water quality is possible when the bathing water sample dataset is available for four consecutive seasons. Bathing waters are accordingly classified to one of the bathing water quality classes (excellent, good, sufficient, or poor).

The classification is based on pre-defined percentile values for microbiological enumerations, falling in the certain class given in Annex I of the Directive. This defines different limit values for coastal and inland waters.

Quality assessment is not possible for all bathing waters. In these cases, they are instead classified as either:

- not enough samples⁷;
- new⁸;
- changes⁹;
- closed¹⁰.

⁷ Not enough samples have been provided for the 2014 season or throughout the whole assessment period.

⁸ Classification not yet possible because bathing water is newly identified and a complete set of samples is not yet available.

⁹ Classification is not yet possible after changes affecting bathing water quality have been implemented.

¹⁰ Bathing water is closed temporarily or throughout the bathing season.

3. Bathing water quality

The results of the bathing water quality in Portugal throughout the past period are presented in Figure 1 (for coastal bathing waters) and Figure 2 (for inland bathing waters). The previous reports are available on the European Commission's bathing water quality website¹¹ and the European Environment Agency's bathing water website¹².

3.1 Coastal bathing waters

In Portugal, 96.2% of all existing coastal bathing waters met at least sufficient water quality standards in 2014. See Appendix 1 for numeric data.

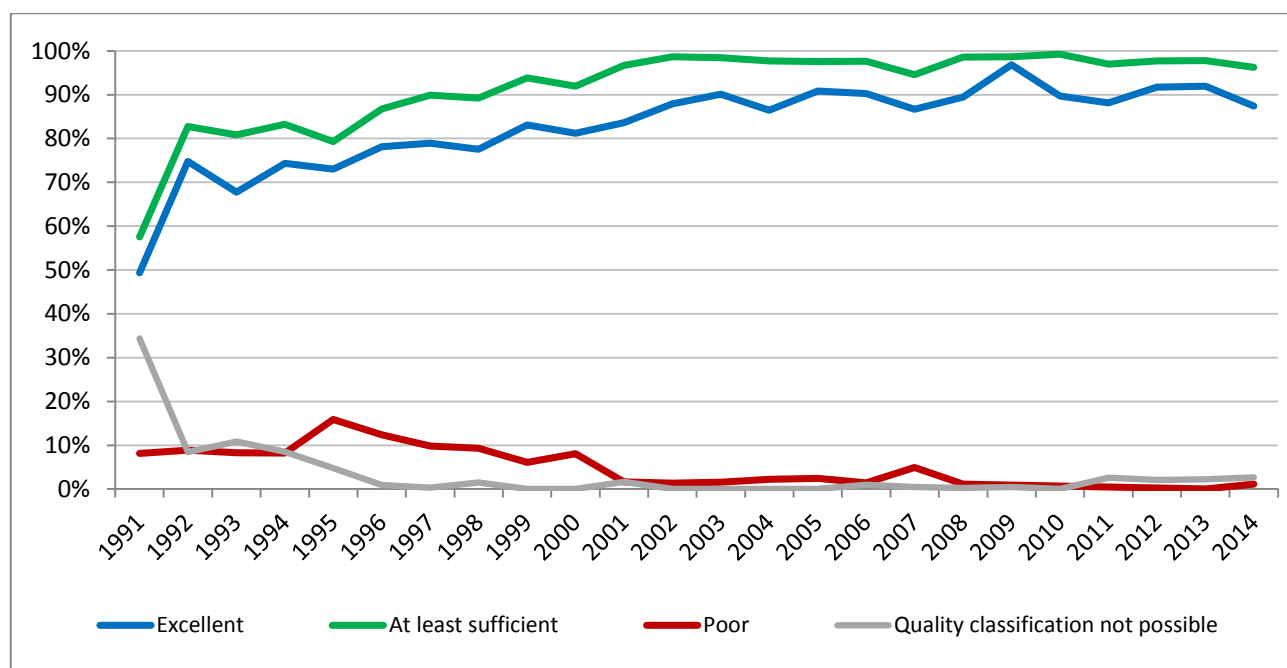


Figure 1: Coastal bathing water quality trend in Portugal. Note: the “At least sufficient” class also includes bathing waters of “Excellent” quality class, the sum of shares is therefore not 100%.

¹¹ http://ec.europa.eu/environment/water/water-bathing/index_en.html

¹² <http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water>

3.2 Inland bathing waters

85.8% of all existing inland bathing waters met at least sufficient water quality in 2014. See Appendix 1 for numeric data.

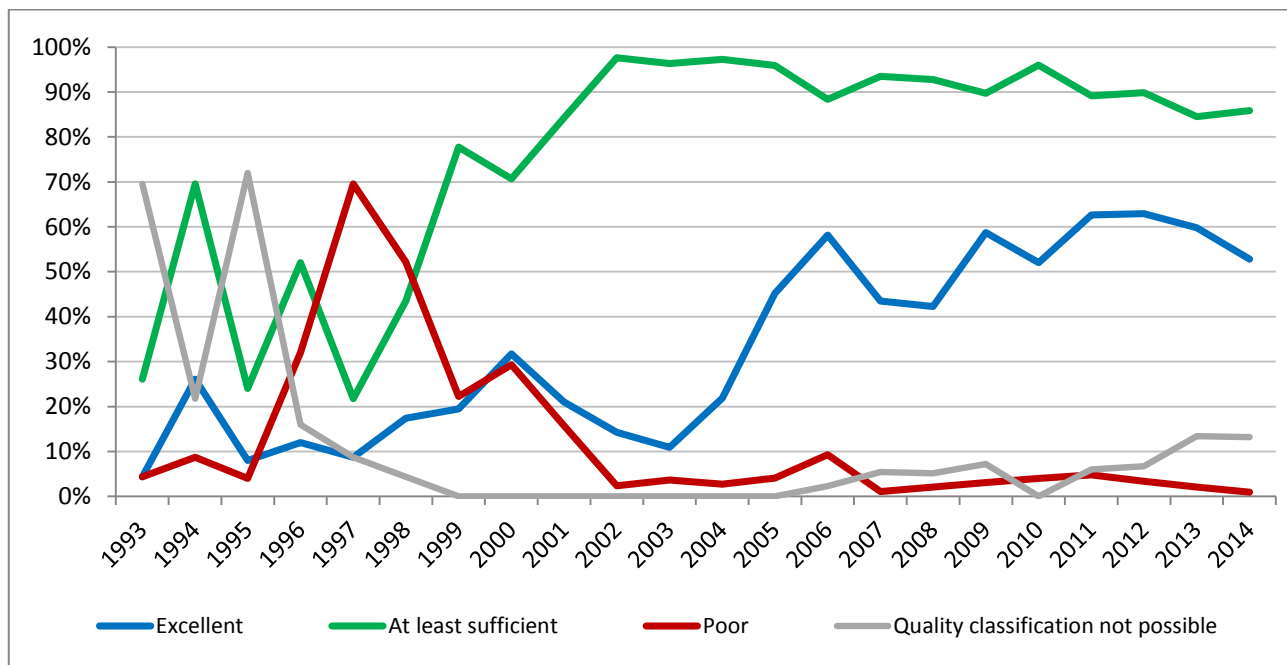


Figure 2: Inland bathing water quality trend in Portugal. Note: the “At least sufficient” class also includes bathing waters of “Excellent” quality class, the sum of shares is therefore not 100%.

4. Information regarding management and other issues

Management of bathing waters includes information to the public, locally and online (see section 5), the reinforcement of monitoring and surveillance/inspection actions, the control and improvement of urban wastewater systems, the public awareness, among other measures. Bathing waters with classification of sufficient or poor are subjected to reinforcement of monitoring. These measures were carried out by different institutions, in articulation, at national, regional and local level, involving Environment, Health and Maritime authorities, as well as municipalities, taking into account bathing water profiles, but also specific conditions of the bathing season.

During the 2014 bathing season, unusual rainfall was observed in Portugal mainland, as well as in Azores and Madeira Autonomous Regions. Concerning Portugal mainland, the month of July 2014 was the 8th rainiest since 1931 and the rainiest of this century. In fact, during July precipitation values were, in general, much higher than normal values (IPMA: https://www.ipma.pt/resources.www/docs/im.publicacoes/edicoes.online/20140818/EQfjclBFsBFH QknBBdzi/cli_20140701_20140731_pcl_mm_co_pt.pdf), with rainfall values being 50 to 400% higher when compared to 1971-2000 period.

The month of September was also characterized by very high rainfall values, being this month considered as extremely rainy. In fact, the rainfall values in September were much higher than the

normal value in almost all the territory (IPMA: https://www.ipma.pt/resources.www/docs/im.publicacoes/edicoes.online/20141007/zgNvpGnyPyUPdbnExdNM/cli_20140901_20140930_pcl_mm_co_pt.pdf), being the 5th rainiest September since 1931, with rainfall values being 150 to 400% higher when compared to 1971-2000 period.

This unusual rainfall registered during 2014 bathing season resulted in many advices against bathing, particularly as a precautionary measure, but also in some short term pollution episodes (STP) and some situations of bathing prohibitions by the Health Authority. The STP occurred mainly as a result of intense rainfall events that carried microbiological contamination resulting namely from illegal discharges of domestic wastewater into rivers and urban pluvial drainage systems, and from diffuse pollution from runoff. Other causes for the STP comprise unusual accidental malfunction of urban wastewater treatment systems. In the case of a STP measures were taken to prevent the contact of bathers with the potentially contaminated water. The information about the risk was usually put on the internet or visitors have been discouraged from bathing with a notice on a beach. Additional water monitoring was performed to confirm the end of the pollution event.

Local authorities have implemented other measures, such as the control of illegal waste dumping or discharges, improvements of urban wastewaters collections and treatment and improve the information and public awareness on issues and their activities.

The extreme weather events during the winter and early spring, especially strong storms, also caused some difficulties to bathing water monitoring. One of the flagrant examples occurred in the bathing water Alteirinhos (PTCU7Q – ALTEIRINHOS). The extreme weather destroyed the stair access to the beach and eroded the cliff, requiring the repair of the stairs and the stabilization of the cliff, and therefore limiting the access to the beach. Not only bathers, but also sampling teams were disabled going to the beach.

Information provision in internet – Portugal Mainland and Autonomous Regions

The online provision of information on bathing water is performed by the Portuguese Environment Agency (APA), integrated in two websites: the APA official website and the site linked with the database. Besides, and concerning Autonomous Regions of Azores and Madeira, there are regional websites as explained below.

The APA official website <http://www.apambiente.pt/index.php?ref=16&subref=7&sub2ref=922> presents information about the bathing water classification in previous years, as well as the European Environment Agency reports and a link to the information concerning 2014 bathing season.

5. Bathing water quality assessment presentation in online viewers

The new legislation requires more effective monitoring and management of bathing waters, greater public participation and improved information dissemination. More on the bathing and other water legislation can be found on the European Commission's website: http://ec.europa.eu/environment/water/index_en.htm.

The bathing water section of the Water Information System for Europe (WISE), which is accessible at the EEA bathing water website (<http://www.eea.europa.eu/themes/water/interactive/bathing/state-of-bathing-waters>), allows users to view the bathing water quality at more than 21 000 coastal beaches and inland sites across Europe. The data on bathing water quality in 2014 and previous years can also be viewed in WISE bathing water data viewer, an application prepared by TC Vode (<http://bwd.eea.europa.eu/>). The WISE bathing water quality data viewer combines text and graphical visualisation, providing a quick overview of the bathing water's locations and achieved quality.

Citizens have now access to more bathing water information than ever and are encouraged to make full use of disseminated information.

Appendix 1: Results of bathing water quality in Portugal from 2011 to 2014

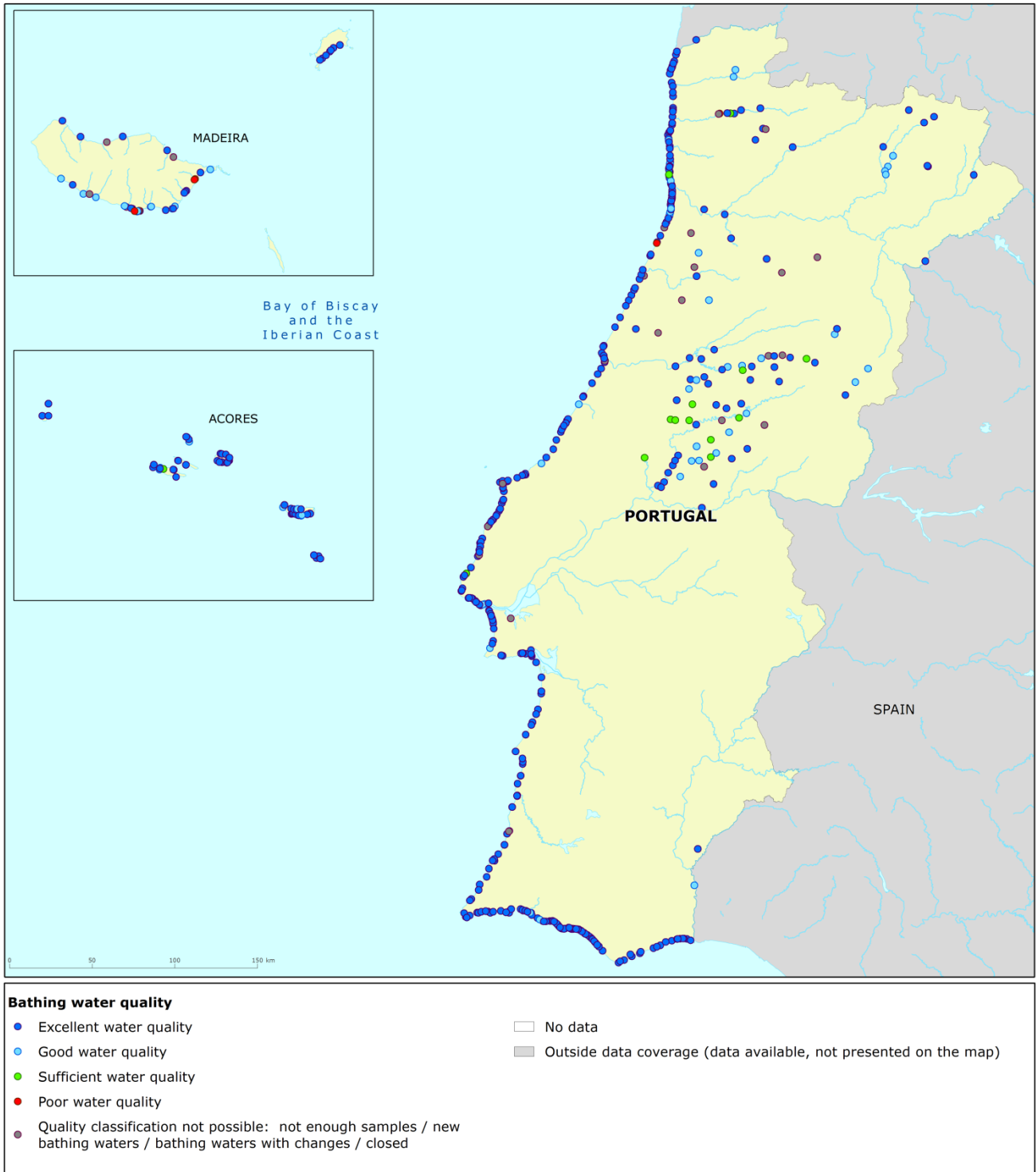
Table 2: Bathing waters in the season 2014 according to quality

		Total number of bathing waters	Excellent quality or compliant with guide values		At least sufficient quality or compliant with mandatory values		Poor quality or non-compliant		Quality classification not possible: not enough samples /new bathing waters/bathing waters with changes/closed	
			No	%	No	%	No	%	No	%
Coastal	2011	431	380	88.2	418	97.0	2	0.5	11	2.6
	2012	437	401	91.8	427	97.7	1	0.2	9	2.1
	2013	446	410	91.9	436	97.8	0	0.0	10	2.2
	2014	452	395	87.4	435	96.2	5	1.1	12	2.7
Inland	2011	83	52	62.7	74	89.2	4	4.8	5	6.0
	2012	89	56	62.9	80	89.9	3	3.4	6	6.7
	2013	97	58	59.8	82	84.5	2	2.1	13	13.4
	2014	106	56	52.8	91	85.8	1	0.9	14	13.2
Total	2011	514	432	84.0	492	95.7	6	1.2	16	3.1
	2012	526	457	86.9	507	96.4	4	0.8	15	2.9
	2013	543	468	86.2	518	95.4	2	0.4	23	4.2
	2014	558	451	80.8	526	94.3	6	1.1	26	4.7

Note: the class "At least sufficient" also includes bathing waters which are of excellent quality, the sum of shares is therefore not 100%.

Appendix 2: Bathing water quality map

Map 1: Bathing waters reported during the 2014 bathing season in Portugal



Source: National boundaries: EEA; Large rivers and lakes: EEA, WFD Article 3; Bathing waters data and coordinates: Portuguese authorities