Country report

Portuguese bathing water quality in 2015

Portugal

May 2016

European Environment Agency

BWD Report For the Bathing Season 2015
Portugal

The report gives a general overview of information acquired from the reported data, based on provisions of the Bathing Water Directive[1]. The reporting process is described below, as well as state and trends of bathing water quality in Portugal.

1. BWD reporting in the season 2015

In 2015 bathing season, 569 bathing waters have been reported in Portugal. For each bathing water, five groups of parameters have been delivered[2]:

- *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.

Bathing waters of Portugal in 2015	
Total reported	**569**
Coastal	460
Inland	109
Max season period	**135 / 157 days**
Coastal	1 May to 18 Oct
Inland	16 May to 30 Sep
Samples taken	**3460**
Share of bathing waters with good or excellent water quality	**94 %**
Reporting under Directive 2006/7/EC since	**2011**

The authorities of Portugal report data according to the new BWD (2006/7/EC) since the season 2011. The data for the season 2015 were delivered to the European Commission by **30 December 2015**, with additional deliveries on 2 March 2016.

Altogether, **569 bathing waters** have been reported – 2.6% of all bathing waters in Europe. Out of all bathing waters in Portugal, 2.81% have been newly identified in 2015 season. 81% of bathing waters in

[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/3294#tables

Portugal are of coastal type; the other 19% are inland. **3460 samples** were taken at bathing waters throughout the season – 6 per bathing water on average.

Season duration varies for coastal bathing waters. The maximum bathing season period correspond to 157 days altogether, from 15 May to 18 October for coastal bathing waters, although at some bathing sites it began on 1 May. Season duration varies for inland bathing waters. Maximum inland bathing season period lasted 135 days, from 16 May to 27 September, although at some bathing sites the season ended on 30 September.

Detailed information on bathing waters is available from national portal at:
http://www.apambiente.pt/index.php?ref=19&subref=906 and
http://snirh.pt/index.php?idMain=1&idItem=2.1 (mainland Portugal),
http://www.azores.gov.pt/Gra/SRMCT-MAR/menus/secundario/Zonas+Balneares (Azores), and
http://dramb.gov-madeira.pt/berilio/berwpag0.listctn?pCtn=103 (Madeira).

2. Assessment methodology[3]

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, livestock waste, bird faeces etc. 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 water in the bathing sites concerned.

The monitoring requirements under the Directive are:

- taking a pre-season sample (taken shortly before the start of the bathing season) [4];
- a minimum of four samples per season[5];
- a minimum of one sample per month[6].

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 'not enough samples'. 95.6% of bathing waters met the described monitoring requirements set by the Directive, while the rest did not satisfy monitoring requirements for different reasons: being new; having changed environmental conditions that might affect water quality classification; closed; not monitored due to legal issues, physical inaccessibility to the site etc. Table 1 shows the statistics of bathing waters according to monitoring requirements.

[3] The methodology used by the EC and the EEA is described here, while results of assessment by national authorities may differ in individual cases.
[4] A pre-season sample is taken into a sum 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 2015 according to compliance with BWD monitoring provisions

	Count	Share of total [%]
BWs with sampling frequency satisfied (and are not new, are not subject to changes or were not closed in 2015) These bathing waters have been monitored according to provisions and have complete dataset from the last assessment period. They have been quality-classified (excellent, good, sufficient, poor).	544	95.6%
BWs with sampling frequency not satisfied (and are not new, are not subject to changes or were not closed in 2015) These bathing waters exist throughout the last assessment period but have not been monitored throughout the period according to provisions for various individual reasons. They may be quality-classified if there is an adequate volume of samples available for credible classification.	6	1.1%
BWs that are new, subject to changes or closed in 2015 These bathing waters do not have complete dataset for the last assessment period because they are new, have been subject to changes (that are likely to affect the classification of the bathing water) or have been closed. They cannot be quality-classified.	19	3.3%
Total number of bathing waters in 2015	**569**	**100%**

Bathing waters where sampling frequency was not satisfied can still 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 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, limiting the classes given in Annex I of the Directive. The Directive 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 samples[7];
- new[8];
- changes[9];
- closed[10].

[7] Not enough samples have been provided throughout the last assessment period (the last four bathing seasons or, when applicable, the period specified in Article 4.2 or 4.4).
[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 that are likely to affect the classification of the bathing water.
[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 website[11] and the European Environment Agency's bathing water website[12].

3.1 Coastal bathing waters

In Portugal, 97.8% of all existing coastal bathing waters met at least sufficient water quality standards in 2015. See Appendix 1 for numeric data.

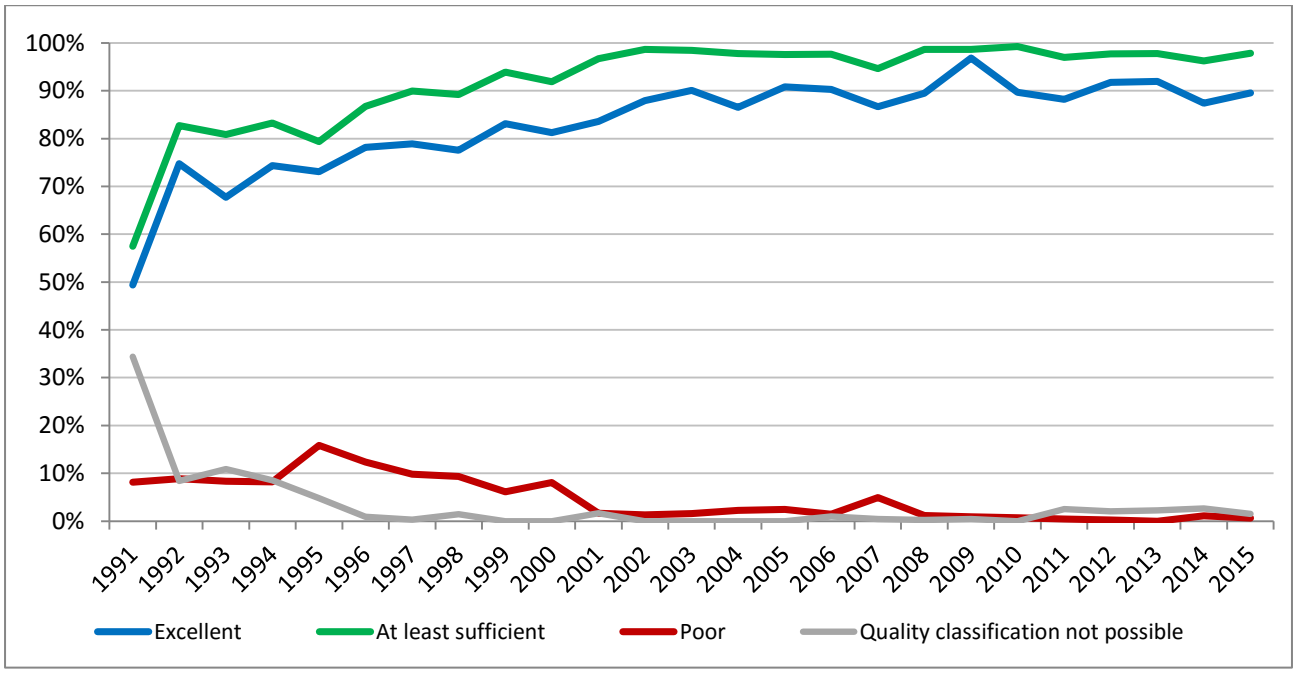

Figure 1: Coastal bathing water quality trend in Portugal. Note: the "At least sufficient" class also includes bathing waters of "Excellent" quality class, the sum of shares is therefore not 100%.

[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

89.9% of all existing inland bathing waters were of at least sufficient water quality in 2015. See Appendix 1 for numeric data.

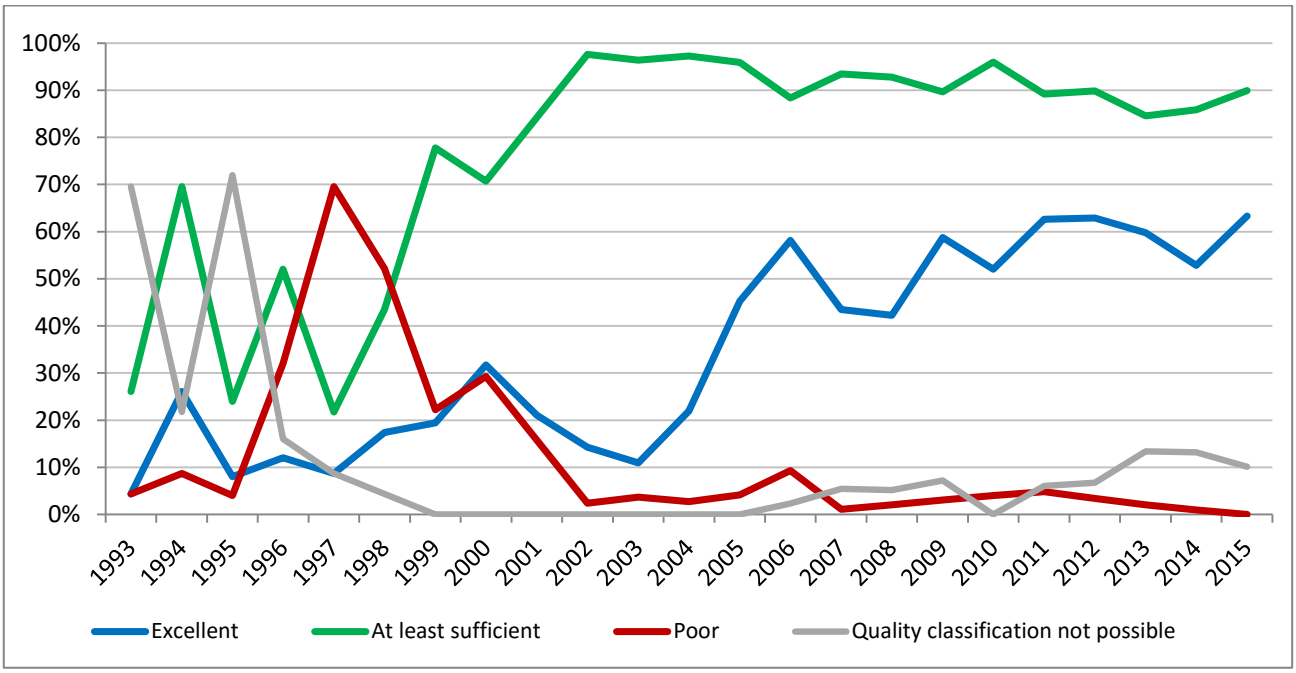

Figure 2: Inland bathing water quality trend in Portugal. Note: the "At least sufficient" class also includes bathing waters of "Excellent" quality class, the sum of shares is therefore not 100%.

4. Information regarding management and other issues

Management of bathing waters include information to the public, locally and online, the reinforcement of monitoring and surveillance 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.

Portugal faced a dry year in 2015. For example, considering specifically the month of June, Portuguese Institute for Sea and Atmosphere (IPMA) considered the month of June as "extremely hot and dry", being the hottest of the last 10 years and the 5th hottest since 1931. Moreover, a significant area of Portugal mainland presented, during the months of June, July and August, an accumulated rainfall since October (the beginning of the hydrological year) between 50% and 75% of the average of the period 1971-2000. These circumstances reduced the water flow in streams which had impact in several bathing waters and, in some extreme cases, causing the lack of water. This situation can be considered natural since a great part of the Portuguese territory is located in a Mediterranean climate geographical area, where some inland bathing waters can be subjected to lack of water in dry years.

In the case of two inland bathing waters, PTCQ3W – ALMACEDA and PTCX9C – SESMO, it was observed, from the month of July onwards, a severe reduction of water flow which implied an advice against bathing (from the 5th of August, until the 7th of September, the end of 2015 bathing season). The situation evolved to a complete lack of water which did not allow sampling and bathing in these inland bathing waters. In any case, bathers had already started to look for other alternatives.

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 previously.

The APA official website located at http://www.apambiente.pt/index.php?ref=19&subref=906 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 2015 bathing season.

5. Bathing water quality assessment presentation in online viewers

The European bathing water legislation focuses on sound 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 WISE bathing water quality data viewer combines text and graphical visualisation, providing a quick overview of the bathing water's locations and achieved quality. Having access to bathing water information, citizens are encouraged to make full use of it and participate with their comments.

Appendix 1: Results of bathing water quality in Portugal from 2012 to 2015

Table 2: Bathing waters in the season 2015 according to quality

		Total number of bathing waters	Excellent quality		At least sufficient quality		Poor quality		Quality classification not possible: not enough samples /new bathing waters/bathing waters subject to changes/closed	
			No	%	No	%	No	%	No	%
Coastal	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
	2015	460	412	89.6	450	97.8	3	0.7	7	1.5
Inland	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
	2015	109	69	63.3	98	89.9	0	0.0	11	10.1
Total	**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**
	2015	**569**	**481**	**84.5**	**548**	**96.3**	**3**	**0.5**	**18**	**3.2**

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 2015 bathing season in Portugal

Source: National boundaries: EEA; Large rivers and lakes: EEA, WFD Article 3; Bathing waters data and coordinates: Portugese authorities; Digital Elevation Model over Europe (EU-DEM): EEA.