

# Portuguese bathing water quality in 2016



# Portugal

May 2017

Photo: © Peter Kristensen



# BWD Report For the Bathing Season 2016

## Portugal

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

### 1. BWD reporting in the season 2016

In 2016 bathing season, 579 bathing waters have been reported in Portugal. For each bathing water, five groups of parameters have been delivered<sup>2</sup>:

- *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 2016	
<b>Total reported</b>	<b>579</b>
Coastal	464
Inland	115
<b>Max season period</b>	<b>135 / 154 days</b>
Coastal	1 May to 15 Oct
Inland	14 May to 30 Sep
<b>Samples taken</b>	<b>3895</b>
<b>Share of bathing waters with good or excellent water quality</b>	<b>95 %</b>
<b>Reporting under Directive 2006/7/EC since the season</b>	<b>2011</b>

The authorities of Portugal report data according to the new BWD (2006/7/EC) since the season 2011, with data delivered for the past seasons as well, enabling assessment according to the new Directive (i.e. based on four-year dataset) already for the season 2011. The data for the season 2016 were delivered to the European Commission by **28 December 2016**.

Altogether, **579 bathing waters** have been reported – 2.7% of all bathing waters in Europe. Out of all bathing waters in Portugal, 2.07% have been newly identified in 2016 season. 80% of bathing waters in

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

<sup>2</sup> See the BWD Data Dictionary for detailed explanations: [http://dd.eionet.europa.eu/datasets/latest/BWQ\\_2006](http://dd.eionet.europa.eu/datasets/latest/BWQ_2006)

Portugal are of coastal type; the other 20% are inland. **3895 samples** were taken at bathing waters throughout the season – 7 per bathing water on average.

The maximum bathing season period was from 1 May to 15 October for coastal bathing waters, with a maximum season span of 154 days<sup>3</sup>. Season duration varies for coastal bathing waters. Maximum inland bathing season period was from 14 May to 30 September, with a maximum season span of 135 days. Season duration likewise 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> and <http://snirh.apambiente.pt/index.php?idMain=1&idItem=2.1>.

## 2. Assessment methodology<sup>4</sup>

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) <sup>5</sup>;
- a minimum of four samples per season<sup>6</sup>;
- a minimum of one sample per month<sup>7</sup>.

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'. 97.6% 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.

---

<sup>3</sup> If season length in a country varies depending on bathing water, the single longest season per bathing water is indicated, and not the overall count of season days in a country.

<sup>4</sup> The methodology used by the EC and the EEA is described here, while results of assessment by national authorities may differ in individual cases.

<sup>5</sup> A pre-season sample is taken into account at total number of samples per season.

<sup>6</sup> Three samples are sufficient if the season does not exceed eight weeks or the region is subject to special geographical constraints.

<sup>7</sup> 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 shows the statistics of bathing waters according to monitoring requirements.

**Table 1: Bathing waters in 2016 according to compliance with BWD monitoring provisions**

	Count	Share of total [%]
<p><b>BWs with sampling frequency satisfied (and are not new, are not subject to changes or were not closed in 2016)</b></p> <p>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).</p>	565	97.6%
<p><b>BWs with sampling frequency not satisfied (and are not new, are not subject to changes or were not closed in 2016)</b></p> <p>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.</p>	0	0.0%
<p><b>BWs that are new, subject to changes or closed in 2016</b></p> <p>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.</p>	14	2.4%
<b>Total number of bathing waters in 2016</b>	<b>579</b>	<b>100%</b>

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<sup>8</sup>;
- new<sup>9</sup>;
- changes<sup>10</sup>;
- closed<sup>11</sup>.

<sup>8</sup> 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).

<sup>9</sup> Classification not yet possible because bathing water is newly identified and a complete set of samples is not yet available.

<sup>10</sup> Classification is not yet possible after changes that are likely to affect the classification of the bathing water.

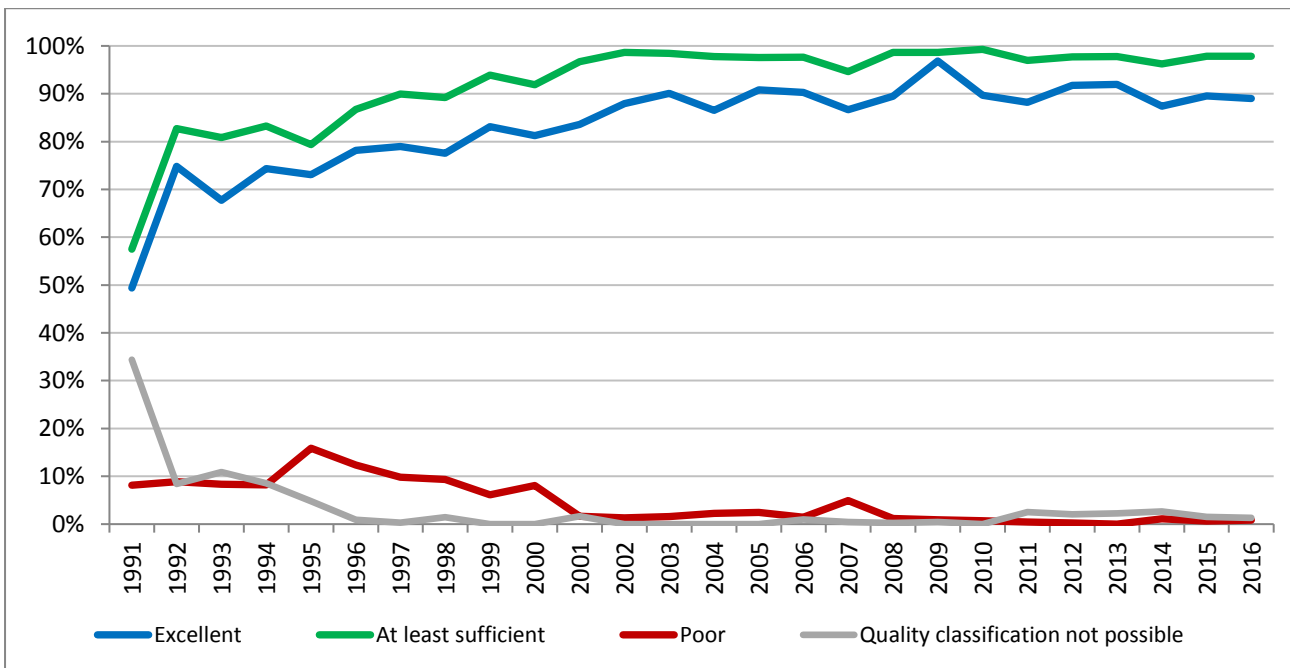
<sup>11</sup> Bathing water is closed temporarily or throughout the bathing season.

### 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<sup>12</sup> and the European Environment Agency's bathing water website<sup>13</sup>.

#### 3.1 Coastal bathing waters

In Portugal, 97.8% of all existing coastal bathing waters met at least sufficient water quality standards in 2016. See Appendix 1 for numeric data.



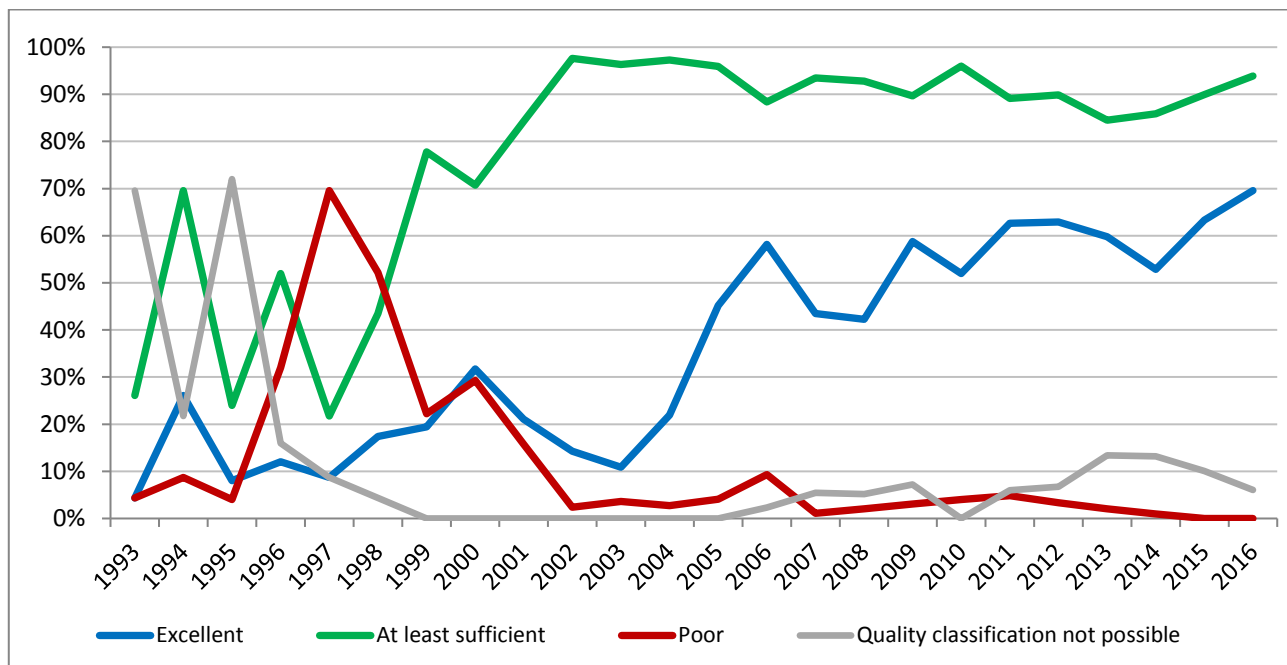
**Figure 1: Coastal bathing water quality trend in Portugal.** Note: the “At least sufficient” class also includes bathing waters of “Excellent” quality class, the sum of shares is therefore not 100%.

<sup>12</sup> [http://ec.europa.eu/environment/water/water-bathing/index\\_en.html](http://ec.europa.eu/environment/water/water-bathing/index_en.html)

<sup>13</sup> <http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water>

## 3.2 Inland bathing waters

93.9% of all existing inland bathing waters were of at least sufficient water quality in 2016. 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.

Our territory faced a very rainy month of May in 2016. Portuguese Institute for Sea and Atmosphere (IPMA) considered the month of May as “extremely rainy”, with a precipitation quantity medium value of 142.9 mm, much higher than the normal/medium value (71.2 mm), being the 5th highest since 1931 and the highest in the last 22 years. During these heavy rain events, stones, trees and other debris are transported in the river bed, in some inland bathing waters. To ensure the safety of bathers, debris removal works have to be undertaken. In the case of two inland bathing waters, PTCH3E – FRÓIA and PTCN2L - ALDEIA RUIVA, since the rains where heavy and late in the year, these conditions postponed debris removal works, which occurred later, overlapping the beginning of the bathing water season period, which was established early in the year from 15th of June to 31st of August. The works did not allow bathing activities, so access was restricted. Under these circumstances an abnormal situation was

applied, justifying the suspension of the monitoring calendar between the 7th and the 21st of June in these bathing waters. Sampling activities were restored on the 22nd of June and access to the bathing water was open for bathers on the 1st of July. Nevertheless, it was possible to collect 5 samples, one of them before the bathing activities were allowed, all samples obtained results compatible with “Excellent” quality.

### **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.

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 2016 bathing season.

Also available are sites of the Autonomous Region of Azores (<http://www.azores.gov.pt/Gra/SRMCT-MAR/menu/secundario/Zonas+Balneares/>) and Autonomous Region of Madeira (<http://dramb.gov-madeira.pt/berilio/berwpag0.listctn?pCtn=103>).

## **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](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 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 2013 to 2016

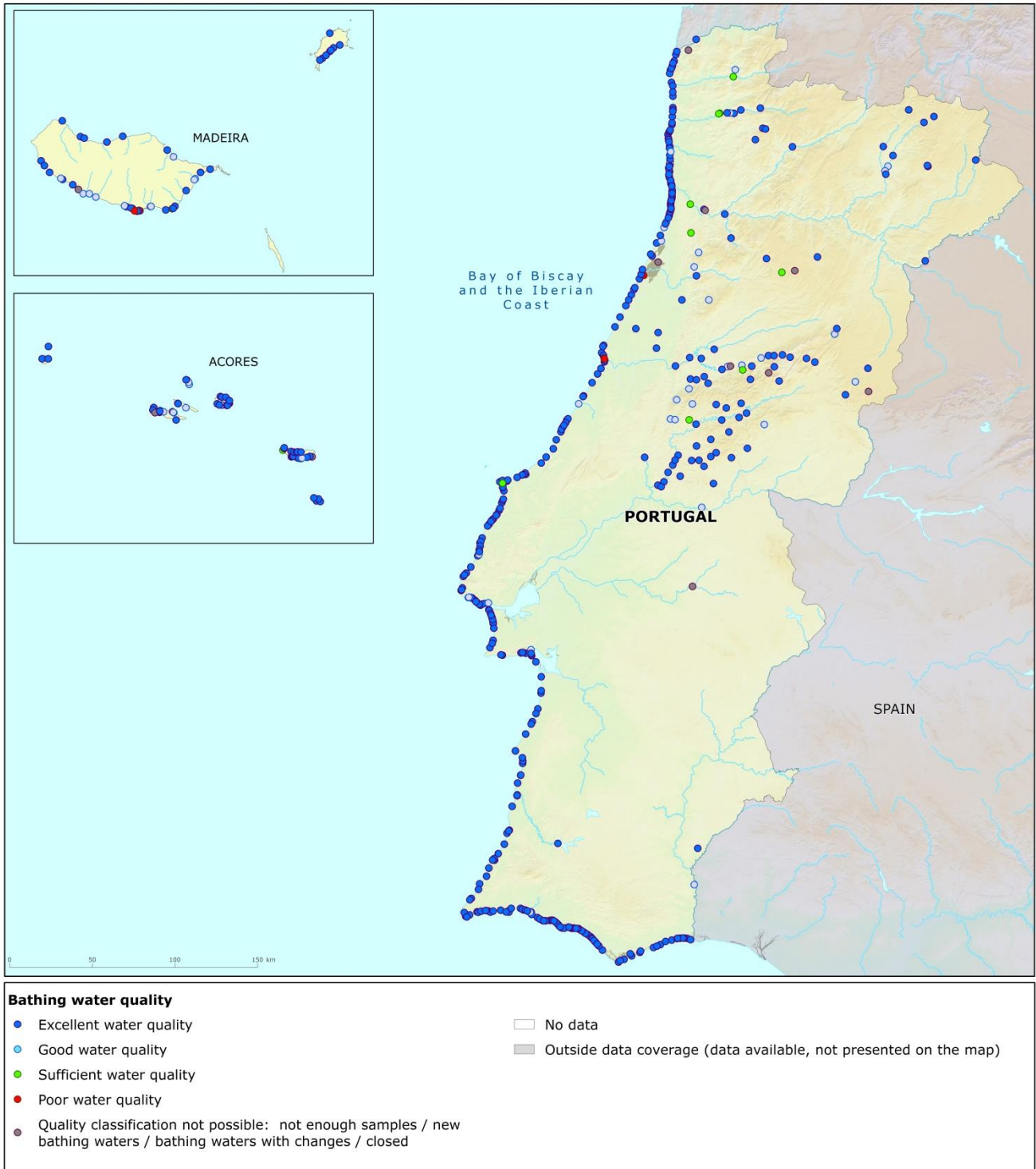
Table 2: Bathing waters in the season 2016 according to quality

		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	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
	2016	464	413	89.0	454	97.8	4	0.9	6	1.3
Inland	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
	2016	115	80	69.6	108	93.9	0	0.0	7	6.1
Total	<b>2013</b>	<b>543</b>	<b>468</b>	<b>86.2</b>	<b>518</b>	<b>95.4</b>	<b>2</b>	<b>0.4</b>	<b>23</b>	<b>4.2</b>
	<b>2014</b>	<b>558</b>	<b>451</b>	<b>80.8</b>	<b>526</b>	<b>94.3</b>	<b>6</b>	<b>1.1</b>	<b>26</b>	<b>4.7</b>
	<b>2015</b>	<b>569</b>	<b>481</b>	<b>84.5</b>	<b>548</b>	<b>96.3</b>	<b>3</b>	<b>0.5</b>	<b>18</b>	<b>3.2</b>
	<b>2016</b>	<b>579</b>	<b>493</b>	<b>85.1</b>	<b>562</b>	<b>97.1</b>	<b>4</b>	<b>0.7</b>	<b>13</b>	<b>2.2</b>

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 2016 bathing season in Portugal**



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