

BWD Report For the Bathing Season 2014

Greece

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 Greece.

1. BWD reporting in the season 2014

In 2014 bathing season, 1540 bathing waters have been reported in Greece. 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.

Bathing waters of Greece in 2014	
Total reported	1540
Coastal	1538
Inland	2
Max season period	153 days
	1 Jun to 31 Oct
Samples taken	9340
Share of bathing waters with good or excellent water quality	99 %
New BWD implemented in	2010

The authorities of Greece 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 **23 December 2014**.

Altogether, **1540 bathing waters** have been reported – 7.2% of all bathing waters in Europe. Out of all bathing waters in Greece, 1.43% have been newly identified in 2014 season. 99.8% of bathing waters in Greece are of coastal type; the other are inland (two bathing waters). **9340 samples** were taken at bathing waters throughout the season – 6 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 June to 31 October, i.e. 153 days altogether.

Detailed information on bathing waters is available from national portal at <http://www.bathingwaterprofiles.gr/>.

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'. 97.8% of bathing waters met the described monitoring requirements set by the Directive, while the rest did not satisfy monitoring requirements or 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 [%]
<p>BWs with sampling frequency satisfied and are not new, have no changes or were not closed in 2014</p> <p>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).</p>	1518	98.6%
<p>BWs with sampling frequency not satisfied and that are not new, have no changes or were not closed in 2014.</p> <p>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.</p>	0	0.0%
<p>BWs that are new, changed or closed in 2014</p> <p>These bathing waters are new or have been subject to changes that could affect bathing water quality.</p>	22	1.4%
Total number of bathing waters in 2014	1540	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 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 Greece 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 Greece, 98.6% of all existing coastal bathing waters met at least sufficient water quality standards in 2014. See Appendix 1 for numeric data.

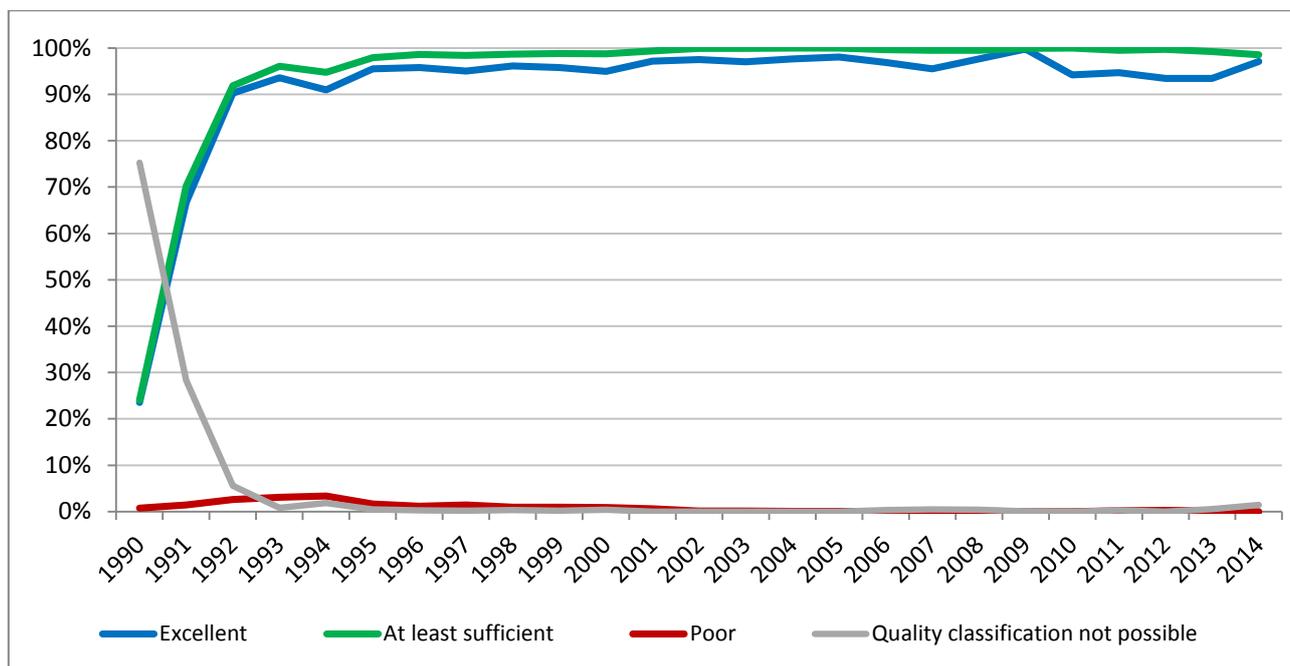


Figure 1: Coastal bathing water quality trend in Greece. Note: the “At least sufficient” class also includes bathing waters of “Excellent” quality class, the sum of shares is therefore not 100%.

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

All existing inland bathing waters met at least sufficient water quality in 2014. See Appendix 1 for numeric data.

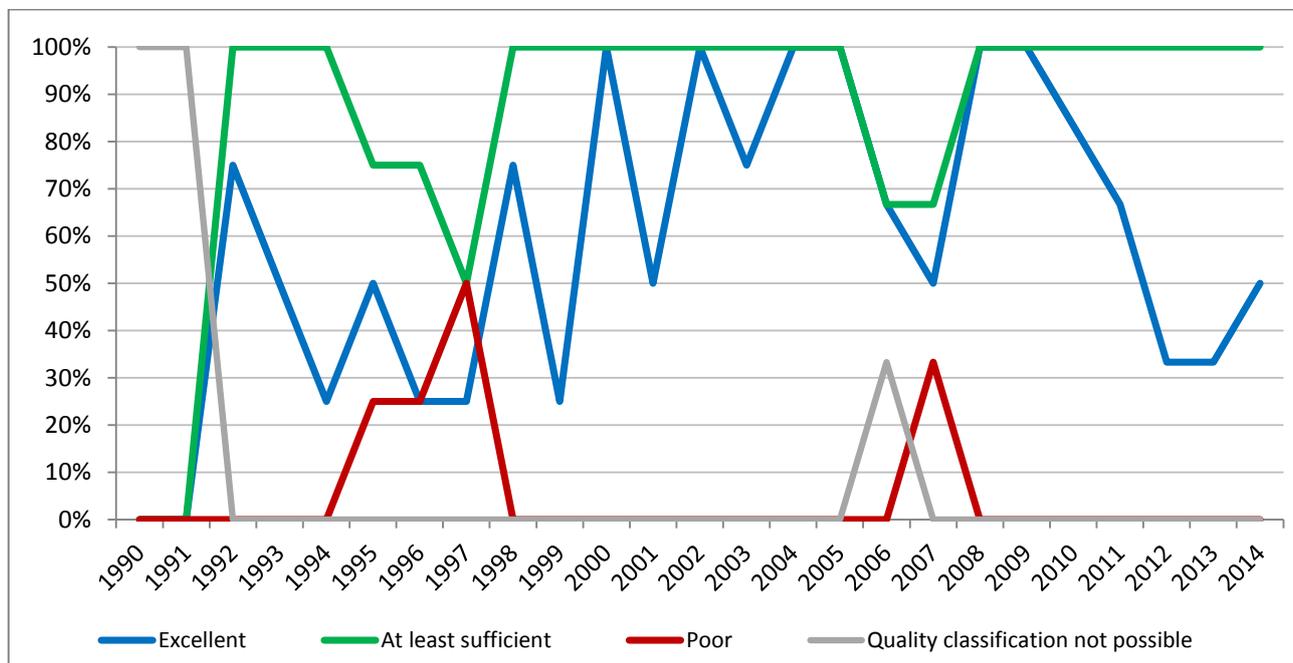


Figure 2: Inland bathing water quality trend in Greece. Note: the “At least sufficient” class also includes bathing waters of “Excellent” quality class, the sum of shares is therefore not 100%.

4. Information regarding management and other issues

Treatment of waste water

With respect to the implementation of the 91/271/EEC Directive concerning urban wastewater, a large number of wastewater treatment plants have been constructed or are under construction. The agglomerations with equivalent populations above 10000 discharging in sensitive areas and 15000 located in coastal areas are almost fully served by waste water treatment plants (WWTPs), most of them involving advanced treatment, thus contributing to the improvement of bathing water quality of these areas.

In order to meet readily follow the progress on the implementation of the Directive 91/271/EEC a National Database providing information of the Wastewater Treatment Plants is in operation since 2012 and available to the public through the link <http://astikalimata.ypeka.gr/>. The database includes general information on population served and treatment provided, environmental permits and operational data of the WWTPs.

Treatment of diffuse sources of pollution

Agriculture is, on an EU level, the largest single source of nitrate pollution through run-off, although households and industries also contribute to some extent. The nitrate pollution problem is addressed within the European Union mainly by the Nitrates Directive (91/676/EEC), regarding nitrate pollution caused by agricultural practices, supplemented by the provisions of the Urban Wastewater Directive (91/271/EC), related to sensitive recipients and the Groundwater Directive (2006/118/EC). In surface waters, particularly lakes and closed gulfs, excessive accumulation of nitrogen as well as phosphorus may lead to eutrophication, with adverse impact, due the proliferation of algae and their byproducts, on fish, oxygen levels and amenity value.

An important provision of the Nitrates Directive is the obligation of Member States to designate the so-called Nitrate Vulnerable Zones (NVZs). According to this requirement, several vulnerable zones, with respect to nitrogen pollution from agricultural run-offs have been identified in Greece (<http://www.ypeka.gr/Default.aspx?tabid=250&locale=el-GR&language=en-US>) and relevant suitable action programs have been employed, according to art. 5 of the Directive. The adoption of Good Agricultural Practice Codes, obligatory for all farmers operating in a vulnerable zone, is a key element of these programs.

River Basin Management Plans

The implementation of the WFD (Directive 2000/60/EC) offers the overall framework for the protection of all water bodies against sources of pollution. According to the provisions of article 6 and Annex IV of the WFD, all bodies of water designated as recreational waters including areas designated as bathing waters under the Directive 2006/7/EC are included in the protected areas register and as such all 1540 bathing waters identified under the Bathing Water Directive are part of the protected areas register. Specific information on bathing water protected areas and their relation to identified surface water bodies is included in the River Basin Management Plans and the relevant programme of measures (http://wfd.ypeka.gr/index.php?option=com_content&task=view&id=113&Itemid=19).

Online presentation of data

In Greece, information on bathing water quality is available on the internet through Bathing Water Profiles website. Bathing water data information contains yearly bathing waters quality assessment and the updated bathing profile in web page form and pdf file form available for downloading. Additional information on results of the monitoring program are available after the evaluation of the results, dating back to year 2007 for all bathing seasons. Current bathing water monitoring results are also available to the public through GeORSS web service (<http://bwmonitoring.gr/en/georss>).

Revision of bathing waters Monitoring Programme

There has been notable decline in the number of monitored waters in Greece, where the number of bathing water locations with established monitoring in 2014 fell by 27% compared with 2013. The reason for this abrupt decline was because the Greek bathing water monitoring network was revised for the 2014 bathing season. The main principle of this revision, as reported by Greek authorities, was to assign 'a single representative monitoring point at each bathing water'. In accordance with this principle, the Greek authorities joined together into one reporting unit some bathing waters that were previously reported as separate bathing waters. Nevertheless, 22 bathing waters have been also newly identified and included into monitoring network.

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 Greece 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	2149	2035	94.7	2138	99.5	5	0.2	6	0.3
	2012	2149	2008	93.4	2143	99.7	6	0.3	0	0.0
	2013	2156	2014	93.4	2139	99.2	5	0.2	12	0.6
	2014	1538	1493	97.1	1516	98.6	0	0.0	22	1.4
Inland	2011	6	4	66.7	6	100.0	0	0.0	0	0.0
	2012	6	2	33.3	6	100.0	0	0.0	0	0.0
	2013	6	2	33.3	6	100.0	0	0.0	0	0.0
	2014	2	1	50.0	2	100.0	0	0.0	0	0.0
Total	2011	2155	2039	94.6	2144	99.5	5	0.2	6	0.3
	2012	2155	2010	93.3	2149	99.7	6	0.3	0	0.0
	2013	2162	2016	93.2	2145	99.2	5	0.2	12	0.6
	2014	1540	1494	97.0	1518	98.6	0	0.0	22	1.4

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 Greece



Bathing water quality

- Excellent water quality
- Good water quality
- Sufficient water quality
- Poor water quality
- Quality classification not possible: not enough samples / new bathing waters / bathing waters with changes / closed
- No data
- Outside data coverage (data available, not presented on the map)

Source: National boundaries: EEA; Large rivers and lakes: EEA, WFD Article 3; Rivers in Western Balkan: TC Vode; Bathing waters data and coordinates: Greek authorities