

# Greek bathing water quality in 2018



Greece 

June 2019

Photo: © Peter Kristensen/EEA



## Bathing Water Quality in the Season 2018

# Greece

Under the provisions of the [Bathing Water Directive](#), more than 21 000 bathing waters are monitored in Europe each season. The monitoring data and other information regarding bathing water management are reported to the European Environment Agency by 30 reporting countries in Europe, to be assessed for the annual European report and more detailed national reports.

### 1. BWD reporting in the season 2018

In the season 2018, Greece identified and reported **1598 bathing waters**, which is 7.2% of all bathing waters in Europe. No bathing waters in Greece have been newly identified for the season 2018.

Bathing waters of Greece in the season 2018		Bathing water quality in the season 2018	
<b>Total reported</b>	1598	<b>Excellent</b>	1550 (97%)
Coastal	1595	<b>Good</b>	18 (1.1%)
Inland	3	<b>Sufficient</b>	0 (0%)
		<b>Poor</b>	0 (0%)
<b>Total reported samples</b>	9634	<b>Not classified</b>	30 (1.9%)

The bathing waters are quality classified according to the two microbiological parameters (Escherichia coli and Intestinal enterococci) defined in the Bathing Water Directive. 98.1% of reported bathing waters are in line with the minimum quality standards of the Directive, thus classified “sufficient” or better.

More detailed information on bathing waters of Greece is available at the national bathing water portal <http://www.bathingwaterprofiles.gr/>.

## 2. BWD monitoring

Each bathing water that is identified by the reporting country needs to have a monitoring calendar established before the bathing season. The monitoring calendar requirements can be summarised as follows: (1) a pre-season sample is to be taken shortly before the start of each bathing season; (2) no fewer than four (alternatively, three for specific cases) samples are to be taken and analysed per bathing season; and (3) an interval between sampling dates never exceeds one month.

From the reported data, the assessment also designates effective implementation of the monitoring calendar. In Greece, monitoring calendar for 2018 was not implemented at six bathing waters.

**Table 1: Bathing waters in 2018 according to implementation of the monitoring calendar**

	Count	Share of total [%]
<b>Monitoring calendar implemented</b> A bathing water satisfies monitoring calendar conditions listed above.	1592	99.60%
<b>Monitoring calendar not implemented</b> A bathing water does not satisfy monitoring calendar conditions listed above. They may be quality-classified if enough samples are available in the last assessment period.	6	0.40%

In addition to the monitoring calendar, management specifics of the last assessment period of four years are also assessed. The status primarily indicates whether the complete dataset of four seasons is available, but also points out the reasons as to why the bathing waters do not have the complete last assessment period dataset. The latter may indicate developing conditions at the site – most importantly, whether the bathing water has been newly identified within the period, or any changes have occurred that are likely to affect the classification of the bathing water.

**Table 2: Management specifics in the last assessment period of 2015–2018**

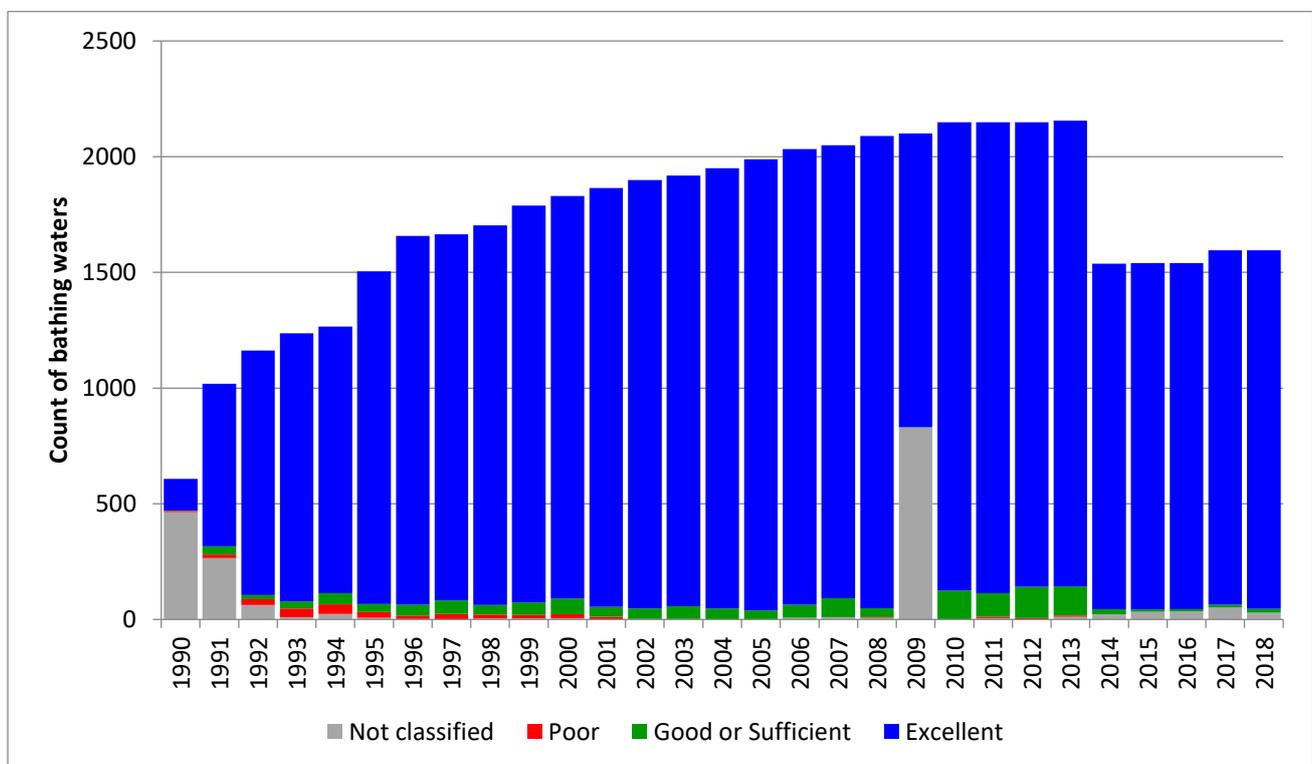
	Count	Share of total [%]
<b>Continuously monitored</b> A bathing water has been monitored in each bathing season in the last assessment period.	1539	96.30%
<b>Newly identified</b> A bathing water was identified for the first time within the last assessment period. Such status is assigned until the complete four-year dataset is available, i.e. for three years after the first reporting.	58	3.60%
<b>Quality changes</b> A bathing water was subject to changes described in BWD Art. 4.4 within the last assessment period. Such status is assigned until the complete four-year dataset of samples taken after changes took effect is available.	0	0%
<b>Monitoring gap</b> A bathing water was not monitored for at least one season in the last assessment period. No quality	1	0.10%

classification is made if no samples are reported for the most recent season.

### 3. Bathing water quality

#### 3.1 Coastal bathing waters

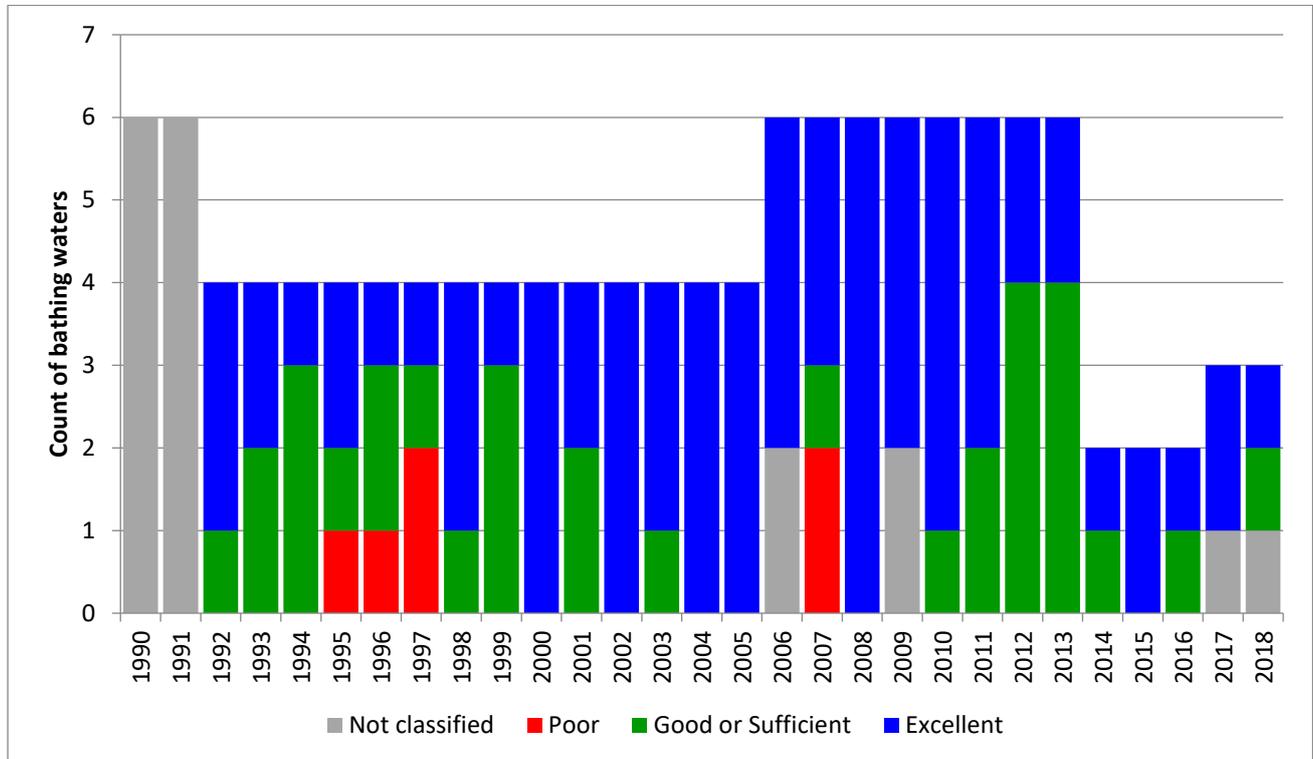
Coastal bathing waters are situated on the sea or transitional water coastline, with respective parameter thresholds defined in Annex I of the Directive. They are subject to more strict thresholds than the inland bathing waters. Quality trend in Greece for the period 1990–2018 if historical data are available is shown in Figure 1. Count of bathing waters by quality class for the last assessment period 2015–2018 is given in Annex I.



**Figure 1: Trend of coastal bathing water quality in Greece. Notes:** Each column represents an absolute count of bathing waters in the season. Quality classes “good” and “sufficient” are merged for comparability with classification of the preceding Bathing Water Directive 76/160/EEC.

### 3.2 Inland bathing waters

Inland bathing waters are situated at rivers and lakes, featuring fresh water and with respective parameter thresholds defined in Annex I of the Directive. Quality trend in Greece for the period 1990–2018 if historical data are available is shown in Figure 2. Count of bathing waters by quality class for the last assessment period 2015–2018 is given in Annex I.



**Figure 2: Trend of inland bathing water quality in Greece.** Notes: Each column represents an absolute count of bathing waters in the season. Quality classes “good” and “sufficient” are merged for comparability with classification of the preceding Bathing Water Directive 76/160/EEC.

## 4. Bathing water management in Greece

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In addition to monitoring data, reporting countries also provide information on bathing water management in the country. The information is used to exchange good practices, discuss issues on the European level, and understand the specifics of implementation of the Directive.

The quality of bathing waters in Greece is systematically monitored since 1988 according to Directive 76/160/EEC "on the quality of bathing waters". Since 2010, the quality of bathing water is monitored in accordance with the new Directive 2006/7/EC "on the management of bathing water quality".

The quality parameters monitored have been selected in accordance with the provisions of Directive 2006/7/EC and are grouped into two categories:

- microbiological (E. coli and intestinal enterococci),
- visually monitored (tarry residues, glass, plastics, rubber or any other waste).

There was a temporary closure and prohibition against bathing to prevent bathers' exposure to pollution; information was given to public on media and on the site; additional measures were cleaning, observing and additional monitoring of the pollution.

### **Treatment of waste water**

With respect to the implementation of the 91/271/EEC Directive (Urban Waste Water Treatment Directive), 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 follow the progress on the implementation of the Urban Waste Water Treatment Directive, a national database providing information on 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 the 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 to proliferation of algae and their by-products, 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 programmes 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.

### **Online presentation of data**

In Greece, information on bathing water quality is available on the internet through Bathing Water Profiles website (<http://www.bathingwaterprofiles.gr>). 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.

## Annex I Bathing water quality in Greece in 2015–2018

Table 3: Bathing water quality by water category and season

		Total count of bathing waters	Excellent		Good		Sufficient		Poor		Not classified	
			Count	%	Count	%	Count	%	Count	%	Count	%
Coastal	2015	1540	1497	97.2	9	0.6	0	0.0	0	0.0	34	2.2
	2016	1540	1495	97.1	9	0.6	1	0.1	0	0.0	35	2.3
	2017	1595	1531	96.0	11	0.7	1	0.1	0	0.0	52	3.3
	2018	1595	1549	97.1	17	1.1	0	0.0	0	0.0	29	1.8
Inland	2015	2	2	100.0	0	0.0	0	0.0	0	0.0	0	0.0
	2016	2	1	50.0	1	50.0	0	0.0	0	0.0	0	0.0
	2017	3	2	66.7	0	0.0	0	0.0	0	0.0	1	33.3
	2018	3	1	33.3	1	33.3	0	0.0	0	0.0	1	33.3
Total	2015	1542	1499	97.2	9	0.6	0	0.0	0	0.0	34	2.2
	2016	1542	1496	97.0	10	0.6	1	0.1	0	0.0	35	2.3
	2017	1598	1533	95.9	11	0.7	1	0.1	0	0.0	53	3.3
	2018	1598	1550	97.0	18	1.1	0	0.0	0	0.0	30	1.9

## Annex II Bathing water quality map

**Map 1: Bathing waters reported during the 2018 bathing season in Greece**



**Bathing water quality**

- Excellent water quality
- Good water quality
- Sufficient water quality
- Poor water quality
- Quality classification not possible
- 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; Digital Elevation Model over Europe (EU-DEM): EEA.