

# Bathing water results 2008 – Greece

## 1. Introduction

This report gives a general overview of bathing water quality in Greece during the 2008 bathing season.

Greece reported 8 parameters under the Directive 76/160/EEC (1 Total coliforms, 2 Faecal coliforms, 3 Faecal streptococci, 7 Colour, 8 Mineral oils, 9 Surface-active substances reacting with methylene blue, 10 Phenols (phenol indices), 13 Tarry residues and floating materials).

The parameters to be taken into account for assessment according to the assessment rules of the Directive 76/160/EEC are microbiological (1 Total coliforms, 2 Faecal coliforms) and physico-chemical (8 Mineral oils, 9 Surface-active substances reacting with methylene blue, 10 Phenols (phenol indices)).

The bathing waters are classified in the following categories:

- Compliant with mandatory values of the Directive for the 5 parameters (class CI)
- Compliant with mandatory and more stringent guide values of the Directive for the 5 parameters (class CG)
- Not compliant with mandatory values of the Directive for the 5 parameters (class NC)
- Banned (temporarily closed) or closed throughout the season (class B)

## 2. Length of bathing season and number of bathing waters

For all bathing waters the bathing season lasted five months, from 1 June to 31 October 2008.

A total of 2,094 bathing waters were monitored in Greece during the 2008 bathing season, of which 2,088 were coastal bathing waters and 6 freshwater bathing waters on lakes. Eight coastal bathing waters were insufficiently sampled. The number of freshwater bathing waters is very low compared to the number of coastal bathing waters reported.

With 2,094 bathing waters Greece accounts for about 9.8 % of the reported bathing waters of the European Union.

The evolution of the reported number of bathing waters since monitoring of the water quality began under the Directive 76/160/EEC is presented in Table 1. Remarkably is the increase in number of coastal bathing waters since the start of the reporting from 683 in 1990 to 2088 in 2008. There were 39 more coastal bathing waters in 2008 than in the previous year: 41 new bathing waters were added to the list and two were de-listed. The number of freshwater bathing waters increased from four since 1992 to six in 2006. It remained the same afterwards.

## 3. Results of bathing water quality

The results of the bathing water quality in Greece for the period 1990-2007 as reported in 2008 report and for the bathing season of 2008 are presented in Figure 1.

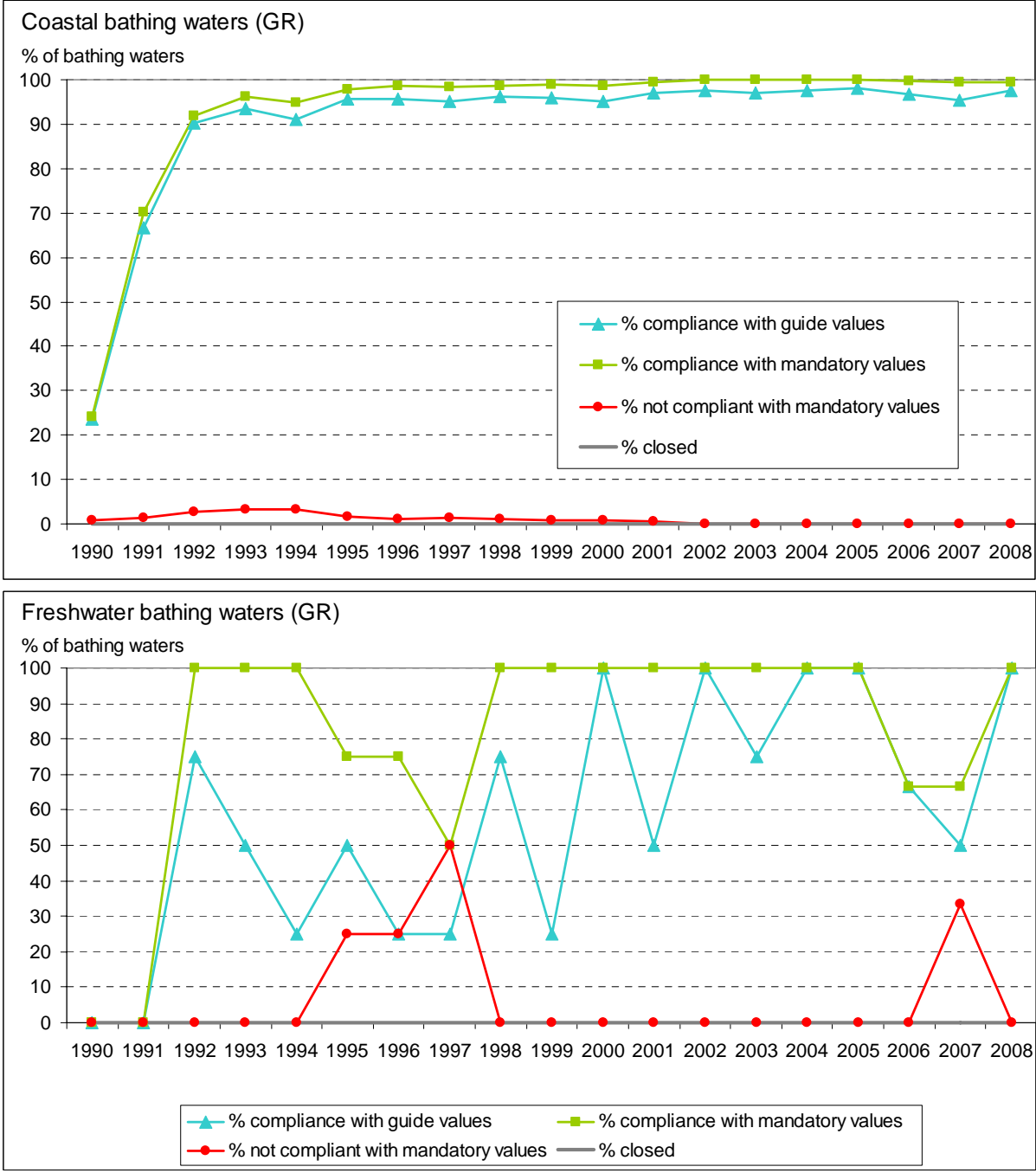
The graphs show, for coastal and freshwater bathing waters separately:

- The percentage of bathing waters that comply with the guide values (class CG, blue line)
- The percentage of bathing waters that comply with the mandatory values (class CI, green line)
- The percentage of bathing waters that do not comply with the mandatory values (class NC, red line)
- The percentage of bathing waters that are banned (temporarily closed) or closed throughout the season (class B, grey line)

Table 1 and Table 2 show the same information in absolute numbers and in percentages, separately for coastal and freshwater bathing waters. Table 3 shows the bathing water quality results for 2008 season in Greece for all bathing waters.

Map 1 shows the location of the reported bathing waters in Greece. The location of the bathing waters is based on the geographic coordinates reported by the Greek authorities.

**Graph 1: Results of bathing water quality in Greece from 1990 to 2008**



**Table 1: Results of bathing water quality in Greece from 1990 to 2008 as absolute numbers**

		GR				
		Total number of bathing waters	Compliance with guide values	Compliance with mandatory values	Not compliant	Banned/closed throughout the season
Coastal bathing water	1990	683	161	164	5	0
	1991	1096	731	770	16	0
	1992	1203	1086	1105	31	0
	1993	1250	1170	1201	39	0
	1994	1281	1165	1214	43	0
	1995	1526	1458	1494	25	0
	1996	1690	1619	1666	20	0
	1997	1701	1616	1674	24	0
	1998	1733	1666	1710	17	0
	1999	1816	1740	1795	17	0
	2000	1858	1765	1835	16	0
	2001	1887	1833	1875	12	0
	2002	1914	1866	1912	2	0
	2003	1933	1876	1931	2	0
	2004	1965	1918	1964	1	0
	2005	2006	1967	2005	1	0
	2006	2047	1983	2040	0	0
	2007	2049	1957	2039	0	0
2008	2088	2039	2078	2	0	
Fresh water bathing water	1990	6	0	0	0	0
	1991	6	0	0	0	0
	1992	4	3	4	0	0
	1993	4	2	4	0	0
	1994	4	1	4	0	0
	1995	4	2	3	1	0
	1996	4	1	3	1	0
	1997	4	1	2	2	0
	1998	4	3	4	0	0
	1999	4	1	4	0	0
	2000	4	4	4	0	0
	2001	4	2	4	0	0
	2002	4	4	4	0	0
	2003	4	3	4	0	0
	2004	4	4	4	0	0
	2005	4	4	4	0	0
	2006	6	4	4	0	0
	2007	6	3	4	2	0
2008	6	6	6	0	0	

Note: Bathing waters which were insufficiently sampled or not sampled according to the Bathing Water Directive were not included in this table. Therefore, in some cases, the sum of the different categories will not be equal to the total number of bathing waters.

**Table 2: Results of bathing water quality in Greece from 1990 to 2008 as percentages**

		GR				
		Total number of bathing waters	% compliance with guide values	% compliance with mandatory values	% not compliant	% banned/closed throughout the season
Coastal bathing water	1990	683	23.6	24.0	0.7	0.0
	1991	1096	66.7	70.3	1.5	0.0
	1992	1203	90.3	91.9	2.6	0.0
	1993	1250	93.6	96.1	3.1	0.0
	1994	1281	90.9	94.8	3.4	0.0
	1995	1526	95.5	97.9	1.6	0.0
	1996	1690	95.8	98.6	1.2	0.0
	1997	1701	95.0	98.4	1.4	0.0
	1998	1733	96.1	98.7	1.0	0.0
	1999	1816	95.8	98.8	0.9	0.0
	2000	1858	95.0	98.8	0.9	0.0
	2001	1887	97.1	99.4	0.6	0.0
	2002	1914	97.5	99.9	0.1	0.0
	2003	1933	97.1	99.9	0.1	0.0
	2004	1965	97.6	99.9	0.1	0.0
	2005	2006	98.1	100.0	0.0	0.0
	2006	2047	96.9	99.7	0.0	0.0
	2007	2049	95.5	99.5	0.0	0.0
2008	2088	97.7	99.5	0.1	0.0	
Fresh water bathing water	1990	6	0.0	0.0	0.0	0.0
	1991	6	0.0	0.0	0.0	0.0
	1992	4	75.0	100.0	0.0	0.0
	1993	4	50.0	100.0	0.0	0.0
	1994	4	25.0	100.0	0.0	0.0
	1995	4	50.0	75.0	25.0	0.0
	1996	4	25.0	75.0	25.0	0.0
	1997	4	25.0	50.0	50.0	0.0
	1998	4	75.0	100.0	0.0	0.0
	1999	4	25.0	100.0	0.0	0.0
	2000	4	100.0	100.0	0.0	0.0
	2001	4	50.0	100.0	0.0	0.0
	2002	4	100.0	100.0	0.0	0.0
	2003	4	75.0	100.0	0.0	0.0
	2004	4	100.0	100.0	0.0	0.0
	2005	4	100.0	100.0	0.0	0.0
	2006	6	66.7	66.7	0.0	0.0
	2007	6	50.0	66.7	33.3	0.0
2008	6	100.0	100.0	0.0	0.0	

Note: Bathing waters which were insufficiently sampled or not sampled according to the Bathing Water Directive are not included in this table. Therefore, in some cases, the sum of the percentages is not equal to 100%.

**Table 3: Results of bathing water quality for all bathing waters in Greece in 2008**

		GR				
		Total number of bathing waters	Compliance with guide values	Compliance with mandatory values	Not compliant	Banned/closed throughout the season
Bathing Waters	2008	2094	2045	2084	2	0

Note: Bathing waters which were insufficiently sampled according to the Bathing Water Directive were not included in this table. Therefore the sum of the different categories is not equal to the total number of bathing waters.

## 4. Development of bathing water quality

### Coastal bathing waters

99.5% of the coastal bathing waters (2078) met the mandatory values in 2008, the same as in the previous year. The rate of the compliance with the guide values increased by 2.1%, reaching 97.7% (2039 bathing waters). The compliance with the guide values almost equals to the compliance with the mandatory values. The difference is 1.9% of bathing waters. Two bathing waters (0.1%) were not compliant compared to zero in the previous year. Since the start of the reporting in 1990, no coastal bathing water had to be closed during the season.

The compliance rate was low for the coastal bathing waters in the early 90's. From 1992 the compliance with mandatory and even guide values was always higher than 90%. The mandatory water quality was met in 98% of the bathing waters since 1996 and since 2001 in over 99% of the bathing waters. It took Greece till the 2002 bathing season to reach a level of non compliant freshwater bathing waters below 0.5%.

### Freshwater bathing waters

All six reported freshwater bathing waters were in compliance with the mandatory and more stringent guide values in 2008. This is an increase compared to the previous year, when four bathing waters met the mandatory values and tree bathing waters met the guide values. Since the start of the reporting in 1990, no freshwater bathing water had to be closed during the season. Because of the low number of reported freshwater bathing waters, the compliance rate is fluctuating largely from year to year.

## 5. General information as provided by the Greek authorities

### Public information

The citizens can always contact the Ministry of Environment for detailed information or any complaints. The following activities have been carried out during the previous bathing season:

- Information on the situation of bathing areas is also made available via the Internet ([www.edpp.gr](http://www.edpp.gr) and [iason.minenv.gr/akti](http://iason.minenv.gr/akti)).
- Answers to all requests from citizens, or tourists, for being informed about the bathing water quality of their interest via phone or per post.

### Treatment of waste water

Concerning the implementation of the 91/271/EEC Directive for the urban wastewater treatment, a large number of WWTP's has already been constructed or is under construction. The agglomerations of A and B priority located at coastal areas are almost fully equipped with waste water treatment plants (WWTP's) discharging in the nearby coastal areas and contributing to the improvement of bathing water quality of these specific areas. Five large cities with p.e. of more than 150.000 inhabitants (Athens, Thessaloniki, Metamorphosis, Patra and Iraklio) and forty four agglomerations also of priority A and B discharging in coastal areas are equipped with WWTP's which operate in compliance with the

91/271/EEC Directive requirements. Five new WWTP's (Malia, Kalymnos, Megara, Nea Kydonia-Crete and Poros-Galatas) will also operate in the year 2008.

In addition, the waste water collecting systems of the agglomerations Preveza and Igoumenitsa were completed in 2005 and of the agglomerations Zakynthos and Paroikia Parou in 2006. Both have a positive impact on the bathing water quality of the respective coastal areas.

Furthermore, the agglomerations of Iraklio and Touristic Zone of Thessaloniki have the waste water collecting systems. completed at the end of 2007. For the agglomerations of Poros-Galatas, Litochoro (S. Pieria), Nea Kydonia-Crete, Lefkimm ad Megara the waste water collecting systems. are almost completed. The agglomeration of Elefsina-Aspropyrgos will be equipped with WWTP till the end of 2009.

### **Treatment of diffuse sources of pollution**

In implementation of the Nitrates Directive (91/676/EEC), seven vulnerable zones have been designated. During 2006, action programs aiming to prevent and reduce the pollution caused from agricultural sources have been developed for the Area of Thessaloniki-Kilkis (is expected to contribute to the high bathing waters' quality in Thermaikos Gulf), the Area of Strymonas river basin, (is expected to contribute to the high bathing waters' quality in Strymonikos Gulf) and the Area of Arta Preveza (is expected to contribute to the high bathing waters' quality in Amvrakikos Gulf).

## **6. More information on bathing water quality in the European Union**

More information on bathing water quality in the European Member States, including the reports for 27 Member States and the EU summary report, can be found on the bathing water quality website ([http://ec.europa.eu/environment/water/water-bathing/index\\_en.html](http://ec.europa.eu/environment/water/water-bathing/index_en.html)).

By 2015, Member States will have to comply with the stricter and more ambitious requirements laid out in the new Bathing Water Directive (Directive 2006/7/EC). This Directive requires more effective monitoring and management of bathing waters, greater public participation and improved information. More information on the new Directive can be found on the bathing water quality website and on <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:064:0037:0051:EN:PDF>.

Cyprus, Denmark, Estonia, Finland, Germany, Hungary, Latvia, Lithuania, Slovakia, Spain and Sweden started to report according to more stringent new requirements in 2008 bathing season, while Luxembourg already started in 2007 bathing season.

WISE - Water Information System for Europe ([www.water.europa.eu](http://www.water.europa.eu)) is a gateway to all water related information. Among other water related data, information on individual bathing water quality can be found in the WISE Map viewer and WISE Data viewer through interactive maps and graphs (<http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water>).

**Map 1: Bathing waters reported during the 2008 bathing season in Greece**

