

Bathing water results 2009 – Cyprus

1. Introduction

This report gives a general overview of bathing water quality in Cyprus during the 2009 bathing season. Cyprus reported under the Directive 2006/7/EC in 2008 and 2009 bathing season.

Before the necessary data set for assessment of bathing water quality under the Directive 2006/7/EC is compiled (data for three or four consecutive years) the rules for transition period assessment is done. This means that the classification of bathing waters is defined on the basis of concentrations of intestinal enterococci and *Escherichia coli* that are reported under the Directive 2006/7/EC. The limit values for the classification are taken from the Directive 76/160/EEC. For the conversion of reported parameters under the Directive 2006/7/EC, Article 13.3 of the Directive 2006/7/EC foresees that the parameter *Escherichia coli*, reported under the Directive 2006/7/EC, is assumed to be equivalent to the parameter faecal coliforms of the Directive 76/160/EEC. The parameter intestinal enterococci reported under the Directive 2006/7/EC is assumed to be equivalent to the parameter faecal streptococci.

The results are classified in the following categories:

- Compliant with the mandatory value of the Directive 76/160/EEC for *Escherichia coli* and not compliant with the guide values of the Directive 76/160/EEC for *Escherichia coli* or intestinal enterococci (class CI);
- Compliant with the mandatory value of the Directive 76/160/EEC for *Escherichia coli* and the more stringent guide values for the *Escherichia coli* and intestinal enterococci (class CG);
- Not compliant with the mandatory value of the Directive 76/160/EEC for *Escherichia coli* (class NC);
- Banned or closed (temporarily or throughout the season) (class B).

This year the interval between two samples during the bathing season should not be larger than 41 days. The interval is longer than 31 days as defined in the Directive 2006/7/EC, since we are approaching the year 2012 only when the assessment rules will be in full compliance with the rules of this Directive. Furthermore, the first sample that should be taken shortly before the start of the bathing season could be taken even 10 days after the start of the bathing season.

2. Length of bathing season and number of bathing waters

For all bathing waters the bathing season lasted six months, from 1 May to 31 October 2009.

A total of 111 bathing waters were monitored in Cyprus during the 2009 bathing season, all coastal waters.

With 111 bathing waters Cyprus accounts for about 0.5% 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 and the Directive 2006/7/EC is presented in Table 1. The number of reported bathing waters increased since the start of the reporting from 100 in 2004 to 111 in 2008 and 2009. One new bathing water was added to the list in 2009 compared to the previous year and one was de-listed.

3. Results of bathing water quality

The results of the bathing water quality in Cyprus for the period 2004-2008 as reported in the past reporting years and for the bathing season of 2009 are presented in Figure 1. The previous reports are available on the European Commission's bathing water quality website (http://ec.europa.eu/environment/water/water-bathing/index_en.html; Water and Health/Bathing Water/2005-2009 reports) and the European Environment Agency's bathing water website (<http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water>; reports for 2008 bathing season).

The graph shows, for coastal bathing waters:

- 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 or closed (temporarily or throughout the season) (class B, grey line).

Table 1 shows the same information in absolute numbers and in percentages for coastal bathing waters.

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

Figure 1: Results of bathing water quality in Cyprus from 2004 to 2009

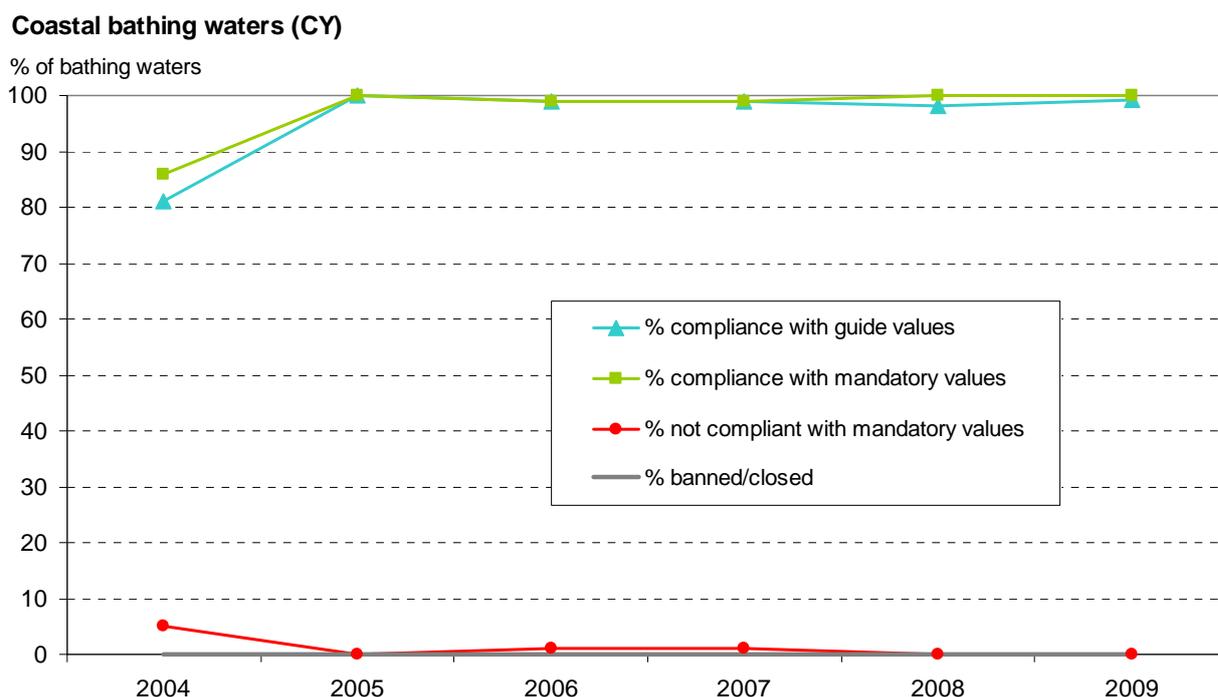


Table 1: Results of bathing water quality in Cyprus from 2004 to 2009

		CY								
		Total number of bathing waters	Compliance with guide values		Compliance with mandatory values		Not compliant		Banned/closed temporarily or throughout the season	
			Number	%	Number	%	Number	%	Number	%
Coastal bathing waters	2004	100	81	81.0	86	86.0	5	5.0	0	0.0
	2005	100	100	100.0	100	100.0	0	0.0	0	0.0
	2006	100	99	99.0	99	99.0	1	1.0	0	0.0
	2007	100	99	99.0	99	99.0	1	1.0	0	0.0
	2008	111	109	98.2	111	100.0	0	0.0	0	0.0
	2009	111	110	99.1	111	100.0	0	0.0	0	0.0

Note: Bathing waters which were insufficiently sampled or not sampled according to the Bathing Water Directive or the New 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. Bathing waters which were compliant with the guide values were also compliant with the mandatory values for five parameters under the Directive 76/160/EEC (2004-2007) or the mandatory value for *Escherichia coli* (2008, 2009).

4. Development of bathing water quality

In Cyprus, 100% of the coastal bathing waters met the mandatory water quality in 2009, the same as in 2008. The rate of compliance with the guide values increased from 98.2% to 99.1%. Since the start of reporting in 2004, no coastal bathing water had to be closed during the season.

Cyprus has excellent bathing water quality since 2005. In 2006 and 2007, only one bathing water was not compliant with the mandatory values. In 2005, 2008 and 2009, all bathing waters met the mandatory water quality. In 2005, all bathing waters were also compliant with the guide values. Since then, one bathing water did not comply with the guide values, except in 2008 (two bathing waters).

5. General information as provided by the Cypriot authorities

Monitoring

For the 2009 bathing season, Cyprus has implemented monitoring of bathing water quality under the new Directive 2006/7/EC for the parameters “intestinal enterococci” and “*Escherichia coli*”. The monitoring calendar, established before the start of the 2009 bathing season was uploaded to the website of Environment Service for easy public access. Monitoring took place no later than 4 days after the date specified in the monitoring calendar.

A total of 111 coastal areas were monitored in Cyprus during the 2009 bathing season. The coastal areas monitored cover all the coastal area of the Republic of Cyprus in which the Government of Cyprus exercises effective control and are used for bathing.

All 111 bathing areas were monitored monthly and once before the start of the bathing season without missing any samplings. For the blue flag bathing areas (58 sites) that correspond to 52% of the bathing water sites monitoring took place fortnightly. A total of 1 266 samples were collected and analyzed using the standard reference methods specified in the Directive 2006/7/EC. At least 7 samples were selected for all bathing areas. For the blue flag areas at least 14 samples were selected.

In the case of non-compliance with the guide values, the sampling was repeated within 72 hours of the event to investigate possible pollution problem. In case of compliance, another sample was taken 7 days after the end of the short term pollution in order to replace the initial sample. Additionally for the cases of non-compliance with the standards of excellent quality, an effort was made to repeat the sampling within 72 hours to investigate if there was a possible pollution problem and take appropriate measures. Short term pollution was reported in 31 cases at 27 bathing areas.

Analytical methods

For the “*Escherichia coli*” analysis the ISO 9308-3:1999 Water quality – Detection and enumeration of *Escherichia coli* and coliform bacteria – Part 3: Miniaturized method (Most Probable Number) for the detection and enumeration of *E. coli* in surface and waster water” is used.

For the “intestinal enterococci” analysis, the ISO 7899-2 (2000) Water quality- Detection and enumeration of intestinal enterococci – Part 2: Membrane filtration method” is used.

Results

It can be observed that all bathing areas continued to be sufficiently sampled. The results indicate that all (100%) of the bathing areas continued the excellent record of compliance with the mandatory values. All but one (99.1%) of the bathing areas were also in compliance with the more stringent guide values.

Public consultation

For the 2009 bathing season, Cyprus has implemented the requirements of the Directive 2006/7/EC regarding the review and updating of the list of bathing areas. The procedure for public consultation used in Cyprus included the following steps:

1. Written communications with all local authorities involved.
2. Uploading the list of 2008 bathing waters to the website of the Environment Service for a period of 4 weeks (28/2/09-31/3/09), in order for the public to have the opportunity to formulated suggestions remarks or complains.
3. Press releases to local newspapers to inform the public of the procedure urging the public to participate in the preparation of the list of 2009 bathing waters.
4. Three district conferences (Larnaka-Ammochostos, Lemesos, Pafos-Nicosia) with the participation of involved municipalities and communities, District Administration, National Jury of Blue Flag, implementing authorities (Environment Service, Department of Medical and Public Health Services and the General Laboratory).
5. Communications with involved local authorities and site visits to the proposed new bathing waters.

6. National conference of all parties involved including Governmental Departments, the Union of Cyprus Communities, the Union of Cyprus Municipalities, NGOs, Cyprus Tourism Organization, National Jury of Blue Flag, etc.
7. Meeting of the Committee of the implementing authorities (Environment Service, Medical and Public Health Services and the General Laboratory) to evaluate the suggestions and proposals and to prepare a draft list of bathing areas.
8. Establishment of the final list of bathing waters.
9. Notification of the EC of the list of bathing waters before the start of the 2009 bathing season (30th April 2009) and report through EIONET (identified bathing water excel sheet).
10. Uploading of the list of bathing waters to the website of Environment Service.

Comparing the list of 2009 bathing areas to that of 2008, 110 bathing waters remained the same, one new bathing water was added and one bathing water was abandoned. The bathing water area "Pachyammos 2" (CY000601000000124) was proposed for addition in the list of bathing waters by local authorities due to increased use of the sites by bathers. The abandonment of the bathing area "Psarolimano" (CY000400000000044) from the list of bathing waters was proposed by the competent authority during public consultation procedure and adopted. In that case, the bathing water was abandoned since the number of bathers has reduced significantly due to the promotion of other activities (fishing) and the fact that the distance to a nearby sampling point is only 50 m.

Public information

The list of bathing areas was established following the public consultation procedure as described above. The monitoring calendar was uploaded at the beginning of the bathing season on the website of the Environment Service.

All monitoring results and other related information are available to the public on registers held by the Department of Medical and Public Health Services and the Environment Service or through the website of the Environment Service.

The 2009 Annual Report on the quality of bathing water in Cyprus to the E.U will be published and will also be uploaded on the Internet through the web site of the Environment Service.

Additionally a press release of the bathing water 2009 results and media publication is planned in the spring of 2010.

Improvement schemes

In case of one bathing area not complying with the more stringent guide values for "intestinal enterococci" parameter, the investigation revealed a pollution incident that ended 4 days later. No land based source of pollution was detected. The pollution was most probably due to an illegal dumping of wastes from a boat or a ship.

It is worth mentioning that the Cyprus climatic conditions (increased sunlight and high temperature) and the salinity of the coastal waters in the Eastern Mediterranean are quite unfavourable to the survival of microorganisms.

Wastewater treatment

Wastewater treatment plants are in operation for the 4 large agglomerations on the coast of Cyprus. Wastewater effluent is almost entirely reused for irrigation. There is no disposal of untreated wastewater (municipal or industrial) to the sea. Two of these treatment plants, i.e. the Limassol/ Amathousa STP and the Larnaca STP, periodically dispose tertiary treated effluent to the sea during the winter months. The Urban Wastewater Treatment Directive (91/271/EEC) is under full implementation. Two sensitive areas have been designated.

Treatment of diffuse sources of pollution

In implementing the Nitrates Directive (91/676/EEC) in 2009, five nitrate-vulnerable zones have been designated. An action programme has been developed for these areas, aimed at preventing and

reducing nitrate pollution from agricultural sources. The analysis of pressures to water bodies performed under Article 5 of the WFD, has verified the occurrence of sea water intrusion in groundwater bodies in the coastal areas and, therefore, the limited influx of nutrients from aquifers to the sea. There is, however, some influx from runoff from agricultural areas during periods of heavy rainfall. Implementation of the action programme of 2008 to 2012 will further reduce this source of pollution to the sea.

The report by the Cypriot authorities in regard to bathing water quality in Cyprus for 2009 bathing season can be obtained from

http://cdr.eionet.europa.eu/cy/eu/bathing/envszslla/Bathing_Water_Quality_Cyprus_Report_for_2009.doc.

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

More information on bathing water quality in the European Member States, including the EU summary report, the reports for 27 Member States, Croatia and Switzerland, can be found on the European Commission's bathing water quality website (http://ec.europa.eu/environment/water/water-bathing/index_en.html) and the European Environment Agency's bathing water website (<http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water>). The reports for the bathing seasons of 2008 and 2009 have been produced by the Institute for Water of the Republic of Slovenia (IWRS), a partner in the EEA European Topic Centre on Water (ETC/W). Countries have collaborated in the assessment of bathing water quality and supplied additional information when needed.

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. Malta and the Netherlands started to report in 2009 bathing season under the new requirements. Sweden and Malta also sent data for three previous bathing seasons under the new requirements. Luxembourg started to monitor under the new requirements in 2006 bathing season, while reported for the first time in 2007 bathing season.

WISE - Water Information System for Europe (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 Bathing Water Quality 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 2009 bathing season in Cyprus



Bathing water quality

- | | |
|---|--|
| Coastal/transitional bathing waters | □ No data |
| ● Compliant with guide values | ■ Outside data coverage (data available, not presented on the map) |
| ● Compliant with mandatory values | |
| ● Closed* | |
| ● Insufficiently sampled or not sampled | |
| ● Not compliant with mandatory values | |

Note: * banned or closed (temporarily or throughout the season)
 More data on bathing water quality on: <http://www.eea.europa.eu/themes/water/mapviewers/bathing>

Source: National boundaries: GISCO; Large rivers and lakes: EEA, WFD Article 3; Bathing waters data and coordinates: Cypriot authorities