

Bathing water results 2010 – Malta

1. Reporting and assessment

This report gives a general overview of bathing water quality in Malta for the 2010 bathing season. Malta has monitored under the Directive 2006/7/EC since 2006, while reported under this Directive in 2009 for the first time.

When samples of intestinal enterococci and *Escherichia coli* for bathing water are available for three or four consecutive years, the assessment is done according to assessment rules of Directive 2006/7/EC. The frequency of sampling is set out in Annex IV of the Directive. Including a sample to be taken shortly before the start of the bathing season, the minimum number of samples taken per bathing season is four. However, only three samples are sufficient when the bathing season does not exceed eight weeks or the region is subject to special geographical constraints. Sampling dates are to be distributed throughout the bathing season, with the interval between sampling dates never exceeding one month.

In the assessment of bathing water quality in 2010 the maximum days between two samples considered were 32 days in the 2010 bathing season. The new directive also requires that the first sample must be taken shortly before the start of a bathing season. However, in the assessment of bathing water quality in 2010, the first sample could be taken not later than 10 days after the start of the bathing season. If this was a case, the second sample should have been taken no later than 32 days after the start of the bathing season. The bathing water is classified as insufficiently sampled or not sampled when the pre-season sample is missing or when the difference between two consecutive samples is larger than 32 days.

To assess bathing water under the Directive 2006/7/EC in 2010, four (or three if bathing season shorter than eight weeks) samples per season must be available for the 2007, 2008, 2009 and 2010 bathing seasons.

Bathing waters assessed according to the Directive 2006/7/EC are classified as 'excellent', 'good', 'sufficient' and 'poor' quality. Some bathing waters cannot be classified according to their quality but are instead classified as 'closed' (temporarily or throughout the bathing season), 'new' (classification not yet possible), 'insufficiently sampled' or 'changes' (bathing water is not new and classification not yet possible since a set of monitoring data is incomplete).

2. Length of bathing season and number of bathing waters

For all bathing waters the bathing season lasted five months and a week, from 17 May to 24 October 2010.

Since the start of reporting in 2005, a total of 87 bathing waters were monitored by the Maltese authorities. All are coastal bathing waters.

With 87 bathing waters Malta accounts for about 0.4 % of the reported bathing waters of the European Union.

3. Bathing water quality

The results of the bathing water quality in Malta for the period 2005-2009 as reported in the past reporting years and for the bathing season of 2010 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/2005-2010 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 the 2008 and 2009 bathing seasons).

The graph shows the classification under the Directive 76/160/EEC, for coastal bathing waters from 2005 to 2008:

- 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. The numbers and percentages of insufficiently sampled or not sampled bathing waters are also presented.

The same graph shows the classification under the Directive 2006/7/EC, for 2009 and 2010:

- The percentage of bathing waters that have excellent quality (dark blue bar);
- The percentage of bathing waters that have good quality (light blue bar);
- The percentage of bathing waters that have sufficient quality (green bar);
- The percentage of bathing waters that have poor quality (red bar);
- The percentage of bathing waters that are temporarily closed or closed throughout the season (grey bar);
- The percentage of bathing waters that are insufficiently sampled (orange bar).

Table 2 shows the same information in absolute numbers and in percentages for coastal bathing waters. The numbers and percentages of insufficiently sampled or not sampled bathing waters are also presented.

Map 1 shows the locations of the reported bathing waters in Malta. The location of the bathing waters is based on the geographic coordinates reported by the Maltese authorities.

In Malta, 95.4 % of the coastal bathing waters were of excellent quality in 2010. Three bathing waters (3.4 %) were of good quality and one bathing water (1.1 %) was of sufficient quality. No bathing water had poor quality and no bathing water had to be closed during the season, the same as in 2009. The results for the 2010 season indicate an improvement: 83 bathing sites were classified as “excellent” in 2010 compared to 81 bathing sites in 2009. Three bathing sites were classified as “good” compared to four bathing sites in 2009. One bathing site was classified as “sufficient” in 2010 compared to two bathing sites in 2009.

Figure 1: Results of bathing water quality in Malta from 2005 to 2010

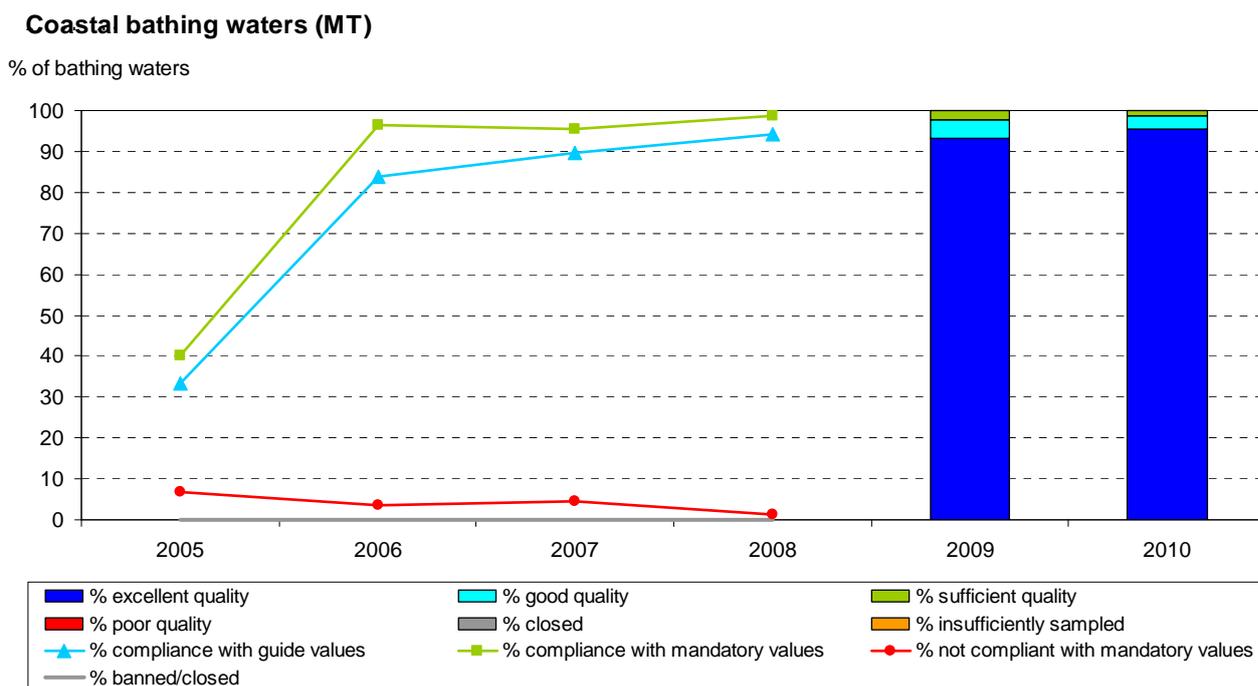


Table 1: Results of bathing water quality in Malta from 2005 to 2008. Assessment under Directive 76/160/EEC.

MT												
		Total number of bathing waters	Compliance with guide and mandatory values*		Compliance with mandatory values		Not compliant		Banned/closed temporarily or throughout the season		Insufficiently sampled or not sampled	
			number	%	number	%	number	%	number	%	number	%
Coastal bathing waters	2005	87	29	33.3	35	40.2	6	6.9	0	0.0	46	52.9
	2006	87	73	83.9	84	96.6	3	3.4	0	0.0	0	0.0
	2007	87	78	89.7	83	95.4	4	4.6	0	0.0	0	0.0
	2008	87	82	94.3	86	98.9	1	1.1	0	0.0	0	0.0

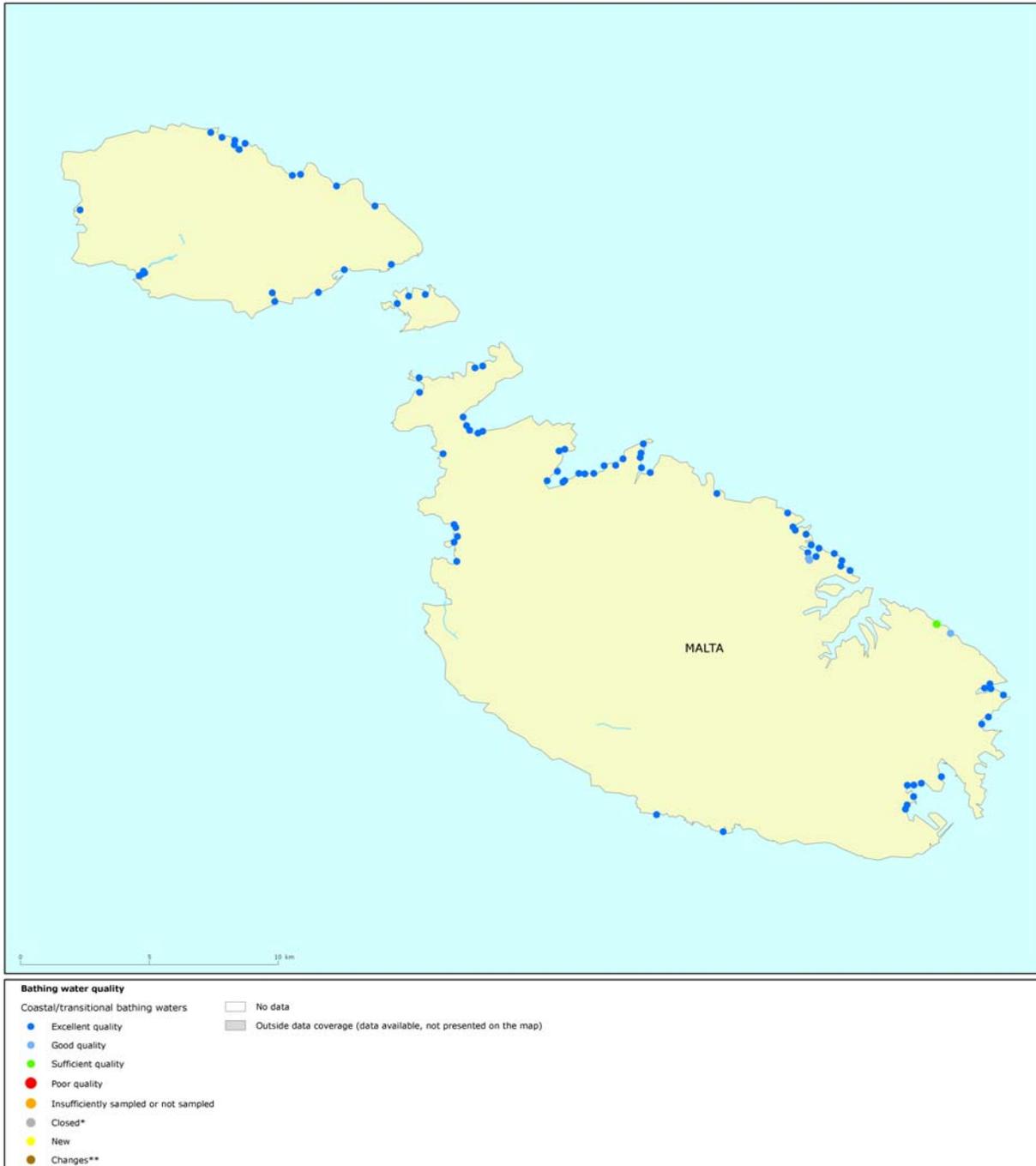
*Bathing waters which were compliant with the guide values were also compliant with the mandatory values.

Table 2: Results of bathing water quality in Malta for 2009 and 2010. Assessment under Directive 2006/7/EC.

MT												
		Total number of bathing waters	Excellent quality		Good quality Sufficient quality		Poor quality		Closed temporarily or throughout the season		Insufficiently sampled	
			number	%	number	%	number	%	number	%	number	%
Coastal bathing waters	2009*	87	81	93.1	Good: 4	4.6	0	0.0	0	0.0	0	0.0
					Suff.: 2	2.3						
	2010	87	83	95.4	Good: 3	3.4	0	0.0	0	0.0	0	0.0
					Suff.: 1	1.1						

*In the 2009 bathing season report the average status of two parameters have been taken into account (e.g.: when one parameter has "excellent" status and another status "sufficient", the overall status is "good"). In the 2010 bathing season report, the lowest status of two parameters is taken into account (e.g.: when one parameter has "excellent" status and another status "sufficient", the overall status is "sufficient"). This rule has been also considered by Maltese authorities for the 2009 bathing season and is considered in the 2010 bathing season report.

Map 1: Bathing waters reported during the 2010 bathing season in Malta



4. Important information as provided by the Maltese authorities

Monitoring

For the assessment of bathing water quality for 2010, Malta made use of monitoring data collected during the bathing seasons 2007, 2008 and 2009 for which it adopted the provisions under Article 13.3 of Directive 2006/7/EC. This Article foresees that the parameter *Escherichia coli* reported under Directive 2006/7/EC is assumed to be equivalent to the parameter Faecal coliforms of Directive 76/160/EEC. The parameter Intestinal enterococci reported under Directive 2006/7/EC is assumed to be equivalent to parameter faecal streptococci under Directive 76/160/EEC. Thus, the overall assessment of bathing water quality for 2010 is based on data for four years (2007-2010).

All 87 sites were monitored for the required minimum frequency as per Annex IV of Directive 2006/7/EC. For Malta this would amount to seven samples per bathing season. For the assessment of bathing waters for the period 2007-2010 an average of 77 samples for each site monitored have been used.

Analytical methods

The microbiological methods employed for the monitoring of bathing water during the 2010 season are as follows:

- Intestinal Enterococci - Microplate MPN technique (ISO 7899 -1 : 2000) and *Escherichia coli* - Microplate MPN technique (ISO 9308 - 3 : 2000).
- Analysis is performed at the Public Health Laboratory by suitably qualified personnel with years of experience in water analysis. The laboratory is accredited for Intestinal Enterococci and *Escherichia coli* parameters.

Short term pollution

During the 2010 bathing season, the Environmental Health Directorate issued three temporary closure health warnings at three different bathing sites. These bathing sites were closed due to localised sewage overflow and were temporarily closed for three to five days respectively. These are being reported as the short-term pollution. During the period of temporary closure, sampling from these bathing sites was carried out on a daily basis and the health warnings were only lifted after three consecutive microbiological results which confirmed that the area was once again safe for bathing as stipulated under the Management of Bathing Water Quality Regulations, 2008 (LN125/08) <http://www.doi.gov.mt/EN/legalnotices/2008/04/LN%20125.pdf>. None of these sites exceeded the three days for microbiological pollution as stipulated for the short term pollution. The general public was informed of these temporarily closed sites by press releases issued through the Department of Information to the media. Copies of the same press releases were sent to all Local Councils by e-mail and were also placed on the Environmental Health Directorate webpage https://ehealth.gov.mt/HealthPortal/public_health/environmental-health/health_inspectorate/env_hlt_risk_management/bathing_water_press_releases.aspx.

In addition, information signs were placed at these areas by environmental health officers informing the public that these sites were temporarily closed and bathing was not recommended.

Actions to prevent bathers` exposure to pollution

As part of the management programme, environmental health officers carry out routine site-inspections so as to check for any possible sources of pollution. These officers also investigate any complaints made by the public and in case of doubt extra samples are collected and sent for analysis at the public health laboratory. In the case that visual evidence of pollution is noted, the effected site will be temporarily closed for bathing.

Information to the public

During the bathing season, the Environmental Health Directorate issues a weekly report with the classification for each bathing area based on the *Escherichia coli* and Intestinal enterococci counts https://ehealth.gov.mt/HealthPortal/public_health/environmental-health/health_inspectorate/env_hlt_risk_management/envhealth_bathingwater09.aspx.

A smiley weekly report is also issued on a regular basis. The Environmental Health Directorate also posted on its webpage the raw data on a weekly basis. Copies of these reports are sent by e-mail to all those who requested to be placed on the Directorate mailing list and to all local councils. All bathing areas monitored as part of the bathing water monitoring programme are clearly identified by fixed information signs indicating the site code and stating that the area is monitored by the Environmental Health Directorate on a regular basis. These information signs are in five languages. If there will be the need to temporarily close any of these areas, a temporarily closure sign is attached at the same site and again the information is provided in five languages, namely Maltese, English, French, German, and Italian. Officials from the Environmental Health Directorate participated on television and radio programmes discussing and giving information to the general public on bathing water quality.

Further improvements

To further improve the bathing water quality, Malta has commissioned two new sewage treatment plants, one in the North of Malta and the other on the island of Gozo. Another facility is being constructed in the South of Malta and should be operational by the end of 2010. A National Plan is also in place by the relevant Competent Authority to relocate all fish farms to a site where they would not pose any possible harmful impacts on bathing areas.

5. More information on bathing water quality in Europe

Of the more than 21 000 bathing areas monitored throughout the European Union in 2010, two-thirds were in coastal waters and the rest in rivers and lakes. The largest number of coastal bathing waters can be found in Italy, Greece, France, Spain and Denmark, while Germany and France have the highest number of inland bathing waters.

During recent years, including the 2010 bathing season, majority of Member States have adjusted their monitoring programmes to meet the requirements of the new bathing water directive (2006/7/EC). Luxembourg was the first country to report under this Directive in 2007. Cyprus, Denmark, Estonia, Finland, Germany, Hungary, Latvia, Lithuania, Slovakia, Spain and Sweden started to report under the new directive in 2008. Malta and the Netherlands started to report in 2009, while Austria, Belgium - Walloon Region, France, Greece, Italy, Portugal and Slovenia reported under this Directive for the first time in 2010. Historical data of two microbiological parameters, *Escherichia coli* and intestinal enterococci were sent by Sweden (since 2005), Luxembourg and Malta (since 2006), Belgium - Walloon Region, Greece, Hungary and Portugal (since 2007), and France (since 2009). To conclude, 20 Member States and the Walloon Region of Belgium monitored and reported under the new directive (Directive 2006/7/EC) in 2010.

Assessment of the status of all bathing waters in 2010 under the rules of the new directive (Directive 2006/7/EC) is made for Luxembourg, Malta and Hungary. Assessment of the bathing water quality on a country level for the other countries that reported under the new directive has been done using transition rules. Bathing water quality for individual bathing waters having four year set of data can be seen on the interactive maps and data viewer that are described below.

Three non-EU countries, Croatia, Montenegro and Switzerland have reported monitoring results under the new directive. Switzerland sent data on *Escherichia coli* for all bathing waters but only for some data on intestinal enterococci.

Overall in 2010, 92.1 % of Europe's coastal bathing waters and 90.2 % of inland bathing waters met the minimum water quality standards set by the bathing water directives. During recent years there has been deterioration in bathing water quality but still more than nine in ten bathing waters meet the minimum quality standards. The share of non compliant bathing waters was 1.2 % for coastal bathing waters and 2.8 % for inland bathing waters. The decrease reflects in part year to year variation but also indicates that further work is necessary to ensure that the quality of bathing waters is constantly improved and maintained.

More information on bathing water quality in the European Member States, including the EU summary report, the reports for 27 Member States, Croatia, Montenegro 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 Institute for Water of the Republic of Slovenia (IWRS), a partner in the EEA European Topic Centre on Inland, Coastal and Marine Waters (ETC/ICM) has produced the reports for the bathing seasons from the 2008 bathing season on. Countries have collaborated in the assessment of bathing water quality and supplied additional information when needed.

Interactive information on bathing water quality

The bathing water section of the Water Information System for Europe (WISE), which is accessible at the EEA bathing water website, allows users to view the quality of the bathing water at more than 22 000 coastal beaches and inland bathing sites across Europe. Users can check bathing water quality on an interactive map or can download data for a selected country or region and make comparisons with previous years.

The WISE map viewer (<http://www.eea.europa.eu/themes/water/interactive//bathing>) is an online map viewer for visualisation of European spatial water data. It includes a lot of interactive layers, allowing water themes to be visualised at different scales. Broad resolutions display the aggregated data by Member State. At finer resolutions the locations of monitoring stations are displayed.

The WISE Bathing Water Quality data viewer (<http://www.eea.europa.eu/themes/water/status-and-monitoring/bathing-water-data-viewer>) combines text and graphical visualisation, providing a quick check on locations and statistics on the quality of coastal and freshwater bathing waters. It also documents how bathing waters have changed throughout Europe in recent years and provides a full summary of Europe's bathing water quality. Users can search information at three spatial levels - country, region and province - and observe specific bathing water locations on the Google Earth, Google maps or Bing maps.

The Eye On Earth - Water Watch application (<http://www.eea.europa.eu/data-and-maps/explore-interactive-maps/eye-on-earth>) allows users to zoom in on a given section of the coast, riverbank or lake, both in street map or, where available, bird's eye viewing formats. A 'traffic-light' indicator (red, amber, green) of bathing water quality, based on the official bathing water data, is put alongside the ratings of people who have visited the bathing site, including any comments users wish to make. For historical data Water Watch uses a simplified index of bathing water quality data. The Czech Republic, Estonia, Finland (one municipality), Hungary, Lithuania, Luxembourg, Malta, the Netherlands, Norway (one municipality), Slovenia, Slovakia and England and Wales were also sending near real time information on bathing water quality to the Eye On Earth application. The bathing water quality from Austria, Belgium, Bulgaria, Croatia, Denmark, France, Germany, Ireland, Italy, Poland, Portugal, Spain, Sweden and Scotland and Northern Ireland was also presented on Eye on Earth Water Watch.

National and local information on bathing water quality

In order to make information to the public more effective, all EU countries have national or local web portals with detailed information for each bathing water. Websites generally include a map search function and public access to the monitoring results both in real time and for previous seasons.

Information on EU bathing water legislation

EU Member States will have to comply with the stricter and more ambitious requirements laid out in Directive 2006/7/EC by 2015 at the latest. The new legislation requires more effective monitoring and management of bathing waters, greater public participation and improved information dissemination. By March 2011 Member States have to have established bathing water profiles. More on the new legislation can be found on the European Commission's websites and on <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:064:0037:0051:EN:PDF>.