



MINISTRY OF  
ENVIRONMENT  
ENERGY &  
CLIMATE  
CHANGE

Special Secretariat for Water

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# BATHING WATER QUALITY IN GREECE

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Reference year 2013

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MAY 2014

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### INTRODUCTION

Bathing water quality for the year 2013 was monitored and assessed in the framework of the *Monitoring Programme of Bathing Water Quality* that was implemented under the supervision of the Special Secretariat for Water of the Ministry for the Environment, Energy and Climate Change. This project was announced and assigned for the years 2013 to 2015.

The implementation of the 2013 monitoring programme was based on the provisions of the Directive 2006/7/EC concerning the management of bathing water quality and repealing Directive 76/160/EEC, which is incorporated to Greek national legislation with the Common Ministerial Decision 8600/416/E103/2009 (Official Government Gazette 356B/2009).

The *length of the bathing season for 2013* was identified with a common ministerial decision from June 1<sup>st</sup> to October 31<sup>st</sup>.

In total, *2162 bathing water sites* were monitored, six of which are located in inland waters (lakes), while the rest 2156 bathing water sites are located in coastal waters.

The monitoring *quality parameters* have been selected in accordance to the obligations of the Directive 2006/7/EC and they are distinguished in two groups:

- ✓ *Microbiological*: “Escherichia coli” and “Intestinal enterococci”, determined in accordance to the reference methods

of analysis of Annex I of the Directive 2006/7/EC and

- ✓ *Physicochemical*: color, mineral oils, tarry residues, seaweed, jelly-fish and floating material.

The programme was implemented as scheduled during the bathing water season for 2013, without delays and with the frequency that is specified in the Directive 2006/7/EC.

At each bathing water site, *a minimum number of 6 samples* was collected, one pre-seasonal and the other samples are distributed throughout the bathing season, with the interval between sampling dates never exceeding 31 days.

All monitoring sites were reviewed in terms of their coordinates and the description in order to enable the bathers and public authorities to locate and approach the desired bathing water.

## RESULTS ASSESSMENT 2013

The *bathing water quality assessment* was performed with statistic analysis, according to the provisions of article 4 and Annex I of the Directive 2006/7/EC, for the set of bathing water quality data compiled for 2013 in relation to that bathing season and the three preceding bathing seasons (i.e. 2010-2012).

As a result of the aforementioned analysis bathing waters have been classified to the following categories/classes:

Class	Definition
1	Excellent quality
2	Good quality
3	Sufficient quality
4	Poor quality

*From the 2162 bathing waters, 2150 were assessed*, as 12 points were monitored for the first time in 2013. The new points have not been evaluated for 2013 since the minimum number of samples required by the Directive has not yet been collected. However, from the initial results of 2013 it is evident that the concentrations of microbiological parameters are low and the corresponding bathing waters are classified as of "excellent quality". For the remaining 2150 bathing waters, the results are the following:

- ↪ **2016** bathing waters are classified as "**excellent quality**". Two of them are located in inland waters and the 2014 in coastal waters.
- ↪ **111** bathing waters are classified as "**good quality**". Four of them are located in inland waters and 107 in coastal waters.
- ↪ **18** bathing waters are classified as "**sufficient quality**", which are in coastal waters.
- ↪ **5** bathing waters are classified as "**poor quality**", which are in coastal waters.

At the following figure and table *the results of the assessment of 2013 bathing season* are presented.



*Figure 1: Bathing waters classification according to Directive 2006/7/EC for year 2013*

From the total number of monitoring sites evaluated **98,9% is of excellent or good water quality, while 99,8% met at least sufficient quality.**

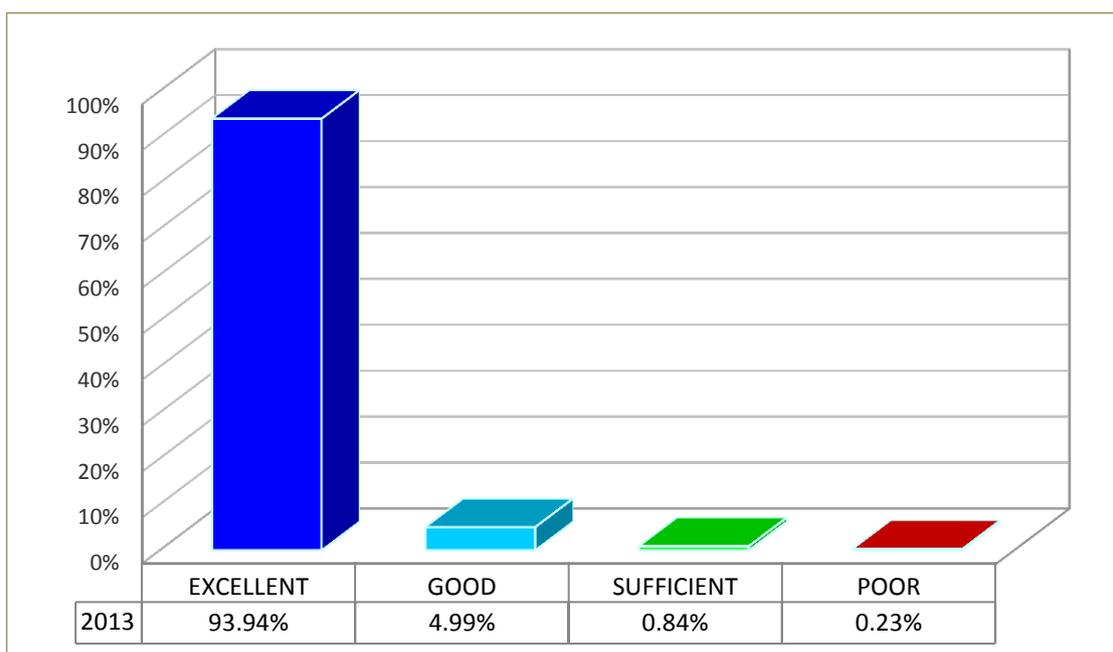
*Table 1: Classification of bathing waters for the year 2013 according to the requirements of the Directive 2006/7/EC*

Numbers of monitoring points	Class	Quality	% Percentage
<b>2016</b>	Class 1	excellent quality	<b>93,77%</b>
<b>111</b>	Class 2	good quality	<b>5,16%</b>
<b>18</b>	Class 3	sufficient quality	<b>0,84%</b>
<b>5</b>	Class 4	poor quality	<b>0,23%</b>

From the 2150 bathing waters, 2144 are located in coastal waters and are classified in the following categories:

*Table 2: Classification of Coastal bathing waters for the year 2013 according to the requirements of the Directive 2006/7/EC*

Numbers of monitoring points	Class	Quality	% Percentage
<b>2014</b>	Class 1	excellent quality	<b>93,94%</b>
<b>107</b>	Class 2	good quality	<b>4,99%</b>
<b>18</b>	Class 3	sufficient quality	<b>0,84%</b>
<b>5</b>	Class 4	poor quality	<b>0,23%</b>



*Figure 2: Coastal bathing waters classification according to Directive 2006/7/EC for year 2013*

In the monitoring network of the year 2013, six bathing sites in inland waters are included, four of which are in Vouliagmeni Lake and two are in Vegoritida Lake. The classification of inland bathing waters in the assessment of the year 2013 is presented below.

*Table 3: Classification of inland bathing waters for year 2013 according to the requirements of the Directive 2006/7/EC*

Numbers of monitoring points	Class	Quality	% Percentage
<b>2</b>	Class 1	excellent quality	<b>33,33%</b>
<b>4</b>	Class 2	good quality	<b>66,67%</b>
<b>0</b>	Class 3	sufficient quality	<b>0%</b>
<b>0</b>	Class 4	poor quality	<b>0%</b>

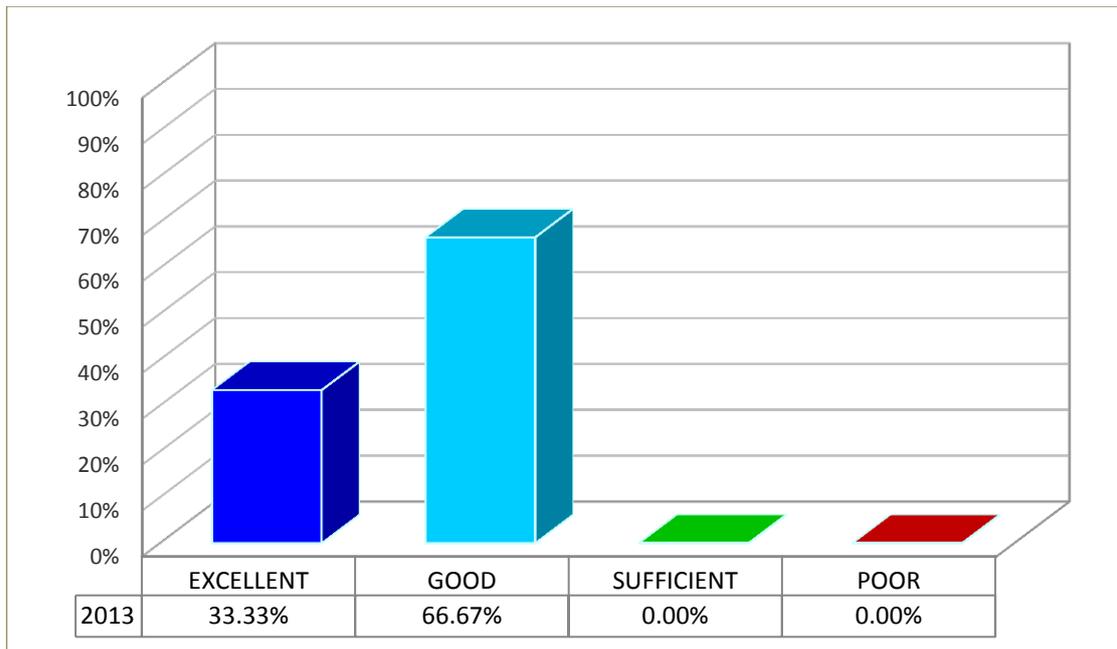


Figure 3: Inland bathing waters classification according to Directive 2006/7/EC year 2013

## REGISTRY OF THE GREEK BATHING WATER PROFILES

In 2013 the *Registry of the Greek Bathing Water Profiles*, which has been established for the first time in 2012, was updated under the supervision of the Special Secretariat for Water.

The aim of the *Registry of Bathing Water Profiles* is to describe and present the key characteristics of the coasts, identify the pollution sources that may affect water quality and assess the magnitude of the effects. The Registry serves also as a guide for



selecting appropriate measures in order to minimise the impact of pressures in bathing waters and allows for a more efficient management of resources.

For this purpose an *interactive website* is operational since 2011 and presents the **1480 Greek bathing water profiles**, in order on the one hand to inform the public regarding the bathing water quality and the appropriate measures taken and additionally to accommodate comments by the website visitors.

The main target of all the efforts made is related to the *achievement of at least sufficient bathing water quality by the end of 2015*. All relevant data and information are available through the web-site <http://www.bathingwaterprofiles.gr/>.

## EVOLUTION OF BATHING WATER QUALITY IN GREECE

Greece, since 1990, has systematically monitored the bathing water quality under the provisions of the Directive 76/160/EEC. The quality of the coastal bathing waters since 1990 is presented in Figure 4 clearly presenting that the compliance to the stricter guide values of the Directive 76/160/EEC exceeds 93% since 1995. The quality of the inland waters (Figure 5) has sharp fluctuations due to the small number of the monitored points (only 6 points).

Since 2010, Special Secretariat for Water assesses bathing waters in accordance with the Directive 2006/7/EC, demonstrating *a high level of compliance, exceeding 98% (excellent and good quality) and close to 100% (at least sufficient quality)*. It is noted that excellent quality as defined in the Directive 2006/7/EC corresponds to compliance with guide values of the Directive 76/160/EEC, while current at least sufficient quality corresponds to compliance with the mandatory values.

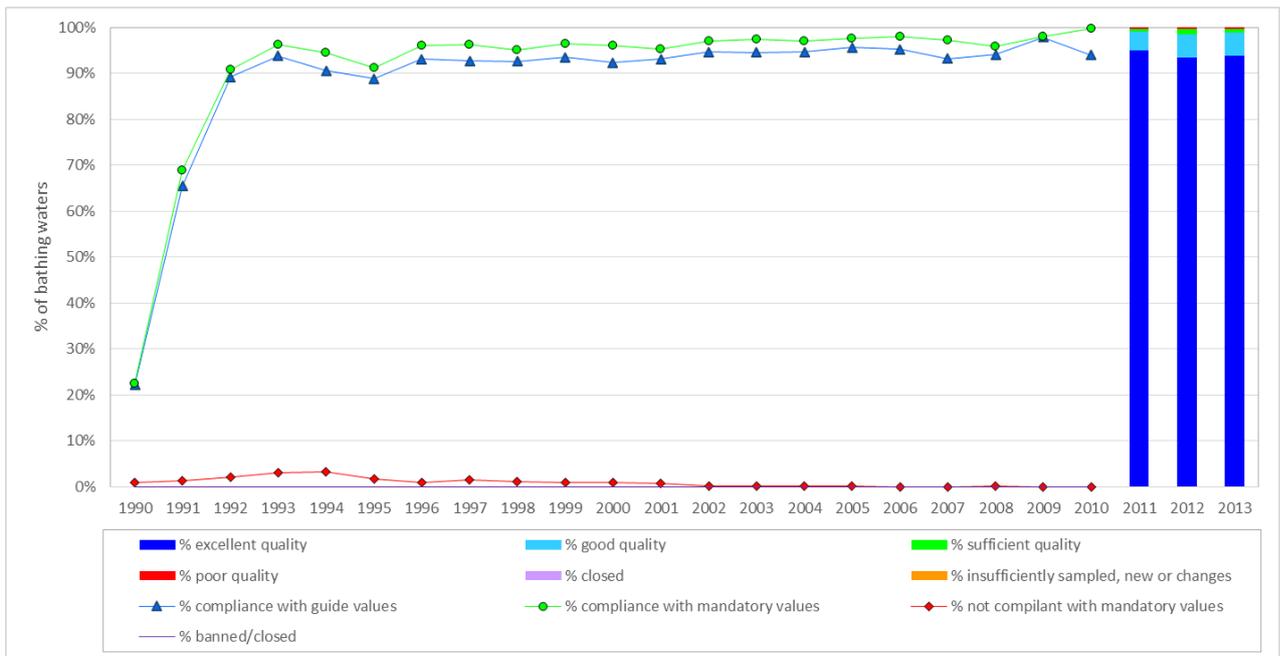


Figure 4: Coastal bathing water quality for the period 1990-2013

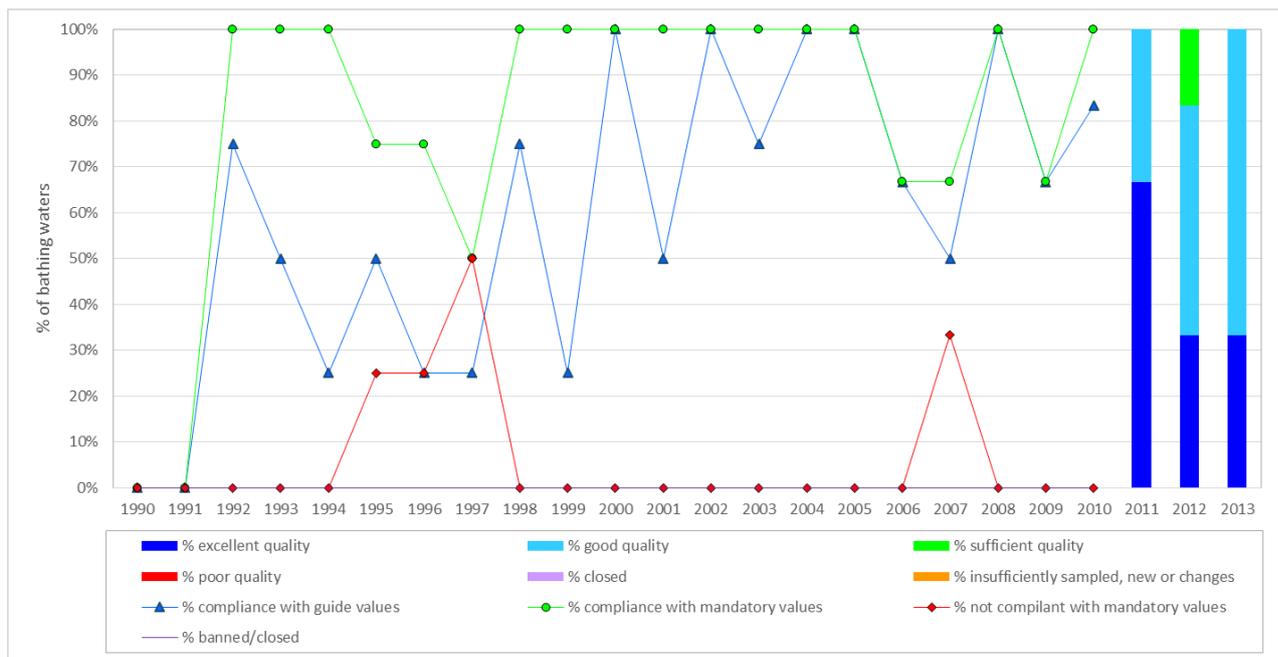


Figure 5: Inland bathing water quality for the period 1990-2013

## REVISION OF BATHING WATERS MONITORING NETWORK

In 2013 the revision of the monitoring network was initiated and it is expected to be completed in 2014. The main principle of the revision is to assign a single representative monitoring point at each bathing water, according to the provisions of the Directive 2006/7/EC. In accordance with this principle, a bathing water with more than one monitoring points should be monitored at one representative site.

In the updating process of the bathing water monitoring network, the sampling points were relocated to more representative positions, maintaining nevertheless the historical background. The selection of the representative sampling point follows the provisions of Articles 1 and 3 of the Directive 2006/7/EC.

Following this process, the revised network will include **1540 monitoring sites at respective bathing waters.**

## USEFUL LINKS

Ministry of Environment, Energy and Climate Change (MEECC)- Aquatic Environment – Bathing Waters	<a href="http://www.ypeka.gr/Default.aspx?tabid=253&amp;locale=el-GR&amp;language=en-US=el-GR">http://www.ypeka.gr/Default.aspx?tabid=253&amp;locale=el-GR&amp;language=en-US=el-GR</a>
MEECC - Greek Bathing Water Profiles Registry	<a href="http://www.bathingwaterprofiles.gr/">http://www.bathingwaterprofiles.gr/</a>
MEECC–Bathing Water quality in Greece- Reference year 2012	<a href="http://www.ypeka.gr/LinkClick.aspx?fileticket=Fu3RRKBOI0%3d&amp;tabid=253&amp;language=el-GR">http://www.ypeka.gr/LinkClick.aspx?fileticket=Fu3RRKBOI0%3d&amp;tabid=253&amp;language=el-GR</a>
MEECC- National Environment Information Network (NEIN)	<a href="http://amappl1.e-per.gr/">amappl1.e-per.gr/</a>
European Commission – Bathing water quality	<a href="http://ec.europa.eu/environment/water/water-bathing/index_en.html">http://ec.europa.eu/environment/water/water-bathing/index_en.html</a>
European Environmental Agency- Country reports	<a href="http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water">http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water</a>
European Environmental Agency – Guidelines on assessment under the New Bathing Water Directive and transition period	<a href="http://glossary.en.eea.europa.eu/terminology/sitesearch?term=guidelines+on+assessment+under+the+Bathing+water+directive+and+transition+period">http://glossary.en.eea.europa.eu/terminology/sitesearch?term=guidelines+on+assessment+under+the+Bathing+water+directive+and+transition+period</a>
European Environmental Agency - Central Data Repository	<a href="http://cdr.eionet.europa.eu/gr/eu/nbwd">http://cdr.eionet.europa.eu/gr/eu/nbwd</a>
European Environment Agency – Interactive map	<a href="http://www.eea.europa.eu/data-and-maps/explore-interactive-maps/state-of-bathing-waters">http://www.eea.europa.eu/data-and-maps/explore-interactive-maps/state-of-bathing-waters</a>

## CONTACT DETAILS

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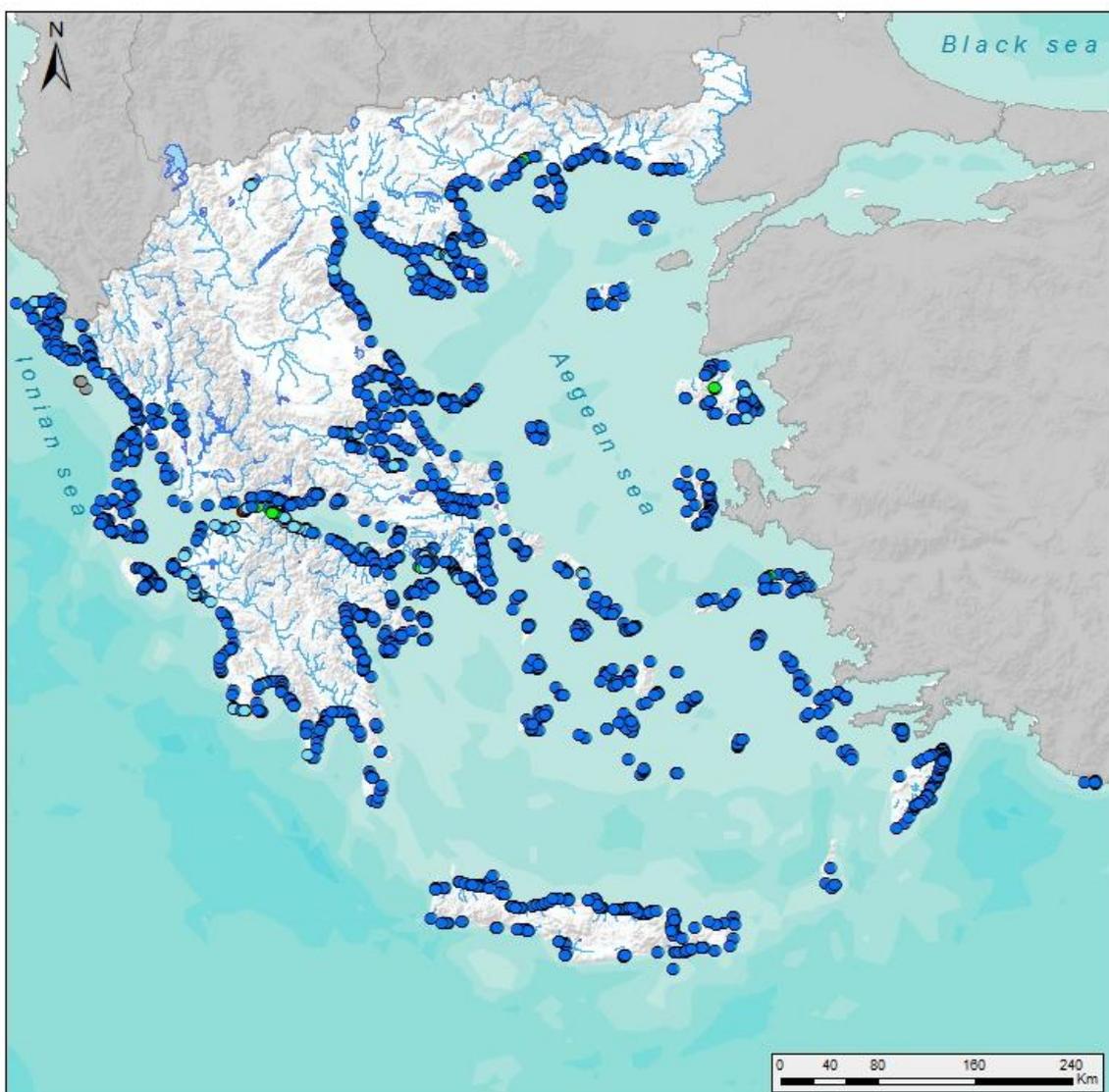
**Tel:** (+30210) 6931298-9, (+30210) 6931262, (+30210) 6931254

**Email:** [bathingwaterprofiles@prv.ypeka.gr](mailto:bathingwaterprofiles@prv.ypeka.gr)

**Web:** <http://www.ypeka.gr/Default.aspx?tabid=253&locale=el-GR&language=en-US=el-GR>

<http://www.bathingwaterprofiles.gr/>

Map with the monitoring sites of the 2013 bathing season



**Bathing water quality**

- Excellent quality
- Good quality
- Sufficient quality
- Poor quality
- New bathing water or bathing water with changes (assessment not yet possible)