

Culture to molecular: perceived advantages and limitation for EU waters

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Introduction

- Each year EC and EEA publish **annual report on the quality of coastal and inland bathing areas**, as reported by **EU Member States and some non-EU countries**.

(MS are obliged to provide info on bathing water locations and results of samples before 31 December).



The screenshot shows a web browser window displaying the European Commission's website for "Bathing water quality". The page features the European Commission logo and the word "ENVIRONMENT". A navigation menu includes links for Home, Who's who, Policies, Integration, Funding, Law, Resources, and News & Developments. A sidebar on the left lists various environmental topics, with "Bathing Water" highlighted. The main content area is titled "Bathing water quality" and contains introductory text about water as a precious resource and the 2006 Bathing Water Directive. A list of reports from 2011 to 2015 is visible, along with a "Photos" link. A small image of a beach is partially visible on the right side of the page.

Foreword

Diving into refreshing waters is one of the pleasures of summer for millions across Europe, and as temperatures rise, thoughts turn to the beach. But choosing between the many thousands of lakes, rivers and beaches across the continent can be difficult – so this report from the European Environment Agency (EEA) and the European Commission can help all water users find high quality bathing water across the region, whether they are swimmers, paddlers, snorkelers, kayakers or surfers.

This year's report assesses bathing water quality at more than 21 000 bathing sites in all 27 EU Member States in 2010. These assessments give an indication to where the best quality bathing is likely to be found this year.

More than nine out of 10 bathing waters met the minimum water quality standards in 2010, with 92.1 % of coastal and 90.2 % of inland bathing water bodies meeting these requirements. Only 1.2 % of coastal bathing waters and 2.8 % of inland bathing waters were found to be non-compliant. Nonetheless, bathing water quality has deteriorated since the previous year. This may be partly due to year-to-year variation, although it also indicates that further work is needed to continually improve the

The quality of bathing waters is essential not only for the bathers because of public health concerns. It is also a strong indication to the overall health of our coastal zones and inland water bodies. All efforts to improve the quality of bathing waters should therefore also be seen in the context of the good ecological and environmental status we aim for by 2015 in implementing the Water and Marine Framework Directives.

We encourage you all to make full use of all the information sources presented in this publication. We also encourage you to get more actively involved in protecting the environment and helping to improve Europe's bathing areas.

We wish you a nice summer!

Janez Potočnik

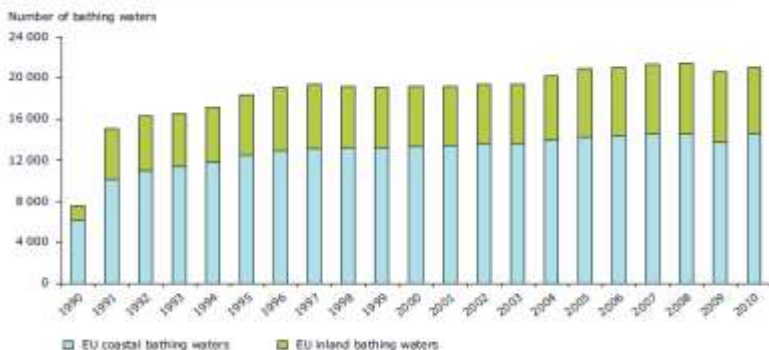
European Commissioner for the Environment

Jacqueline McGlade

Executive Director, European Environment Agency

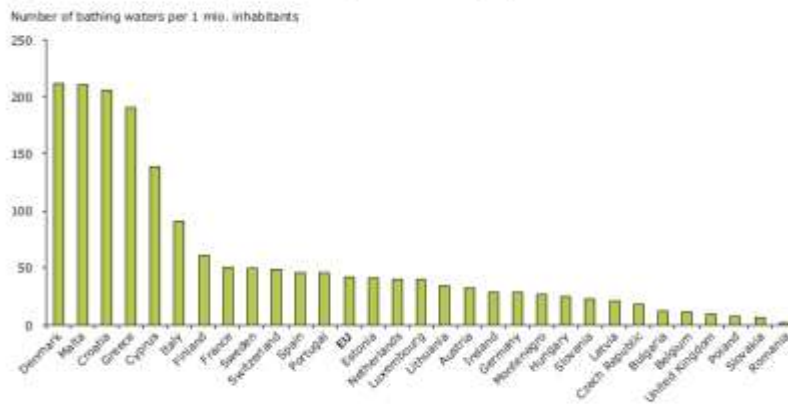


Figure 3.1 Total number of bathing waters reported in the European Union since 1990



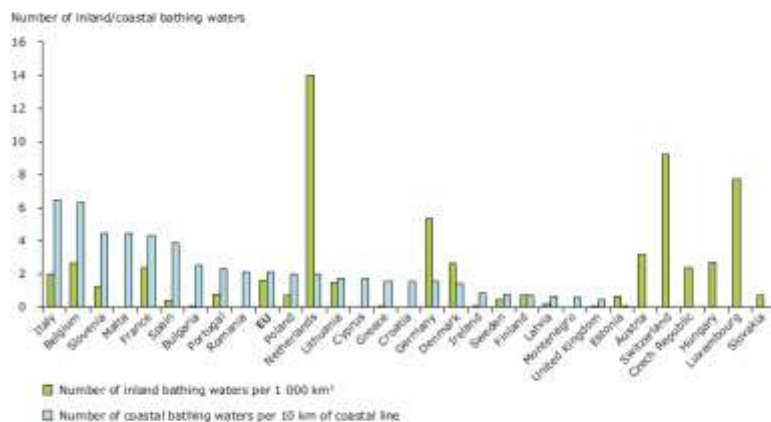
Source: WISE Bathing Water Quality database (data from annual reports by EU Member States).

Figure 3.2 Number of reported bathing waters in Europe per million inhabitants



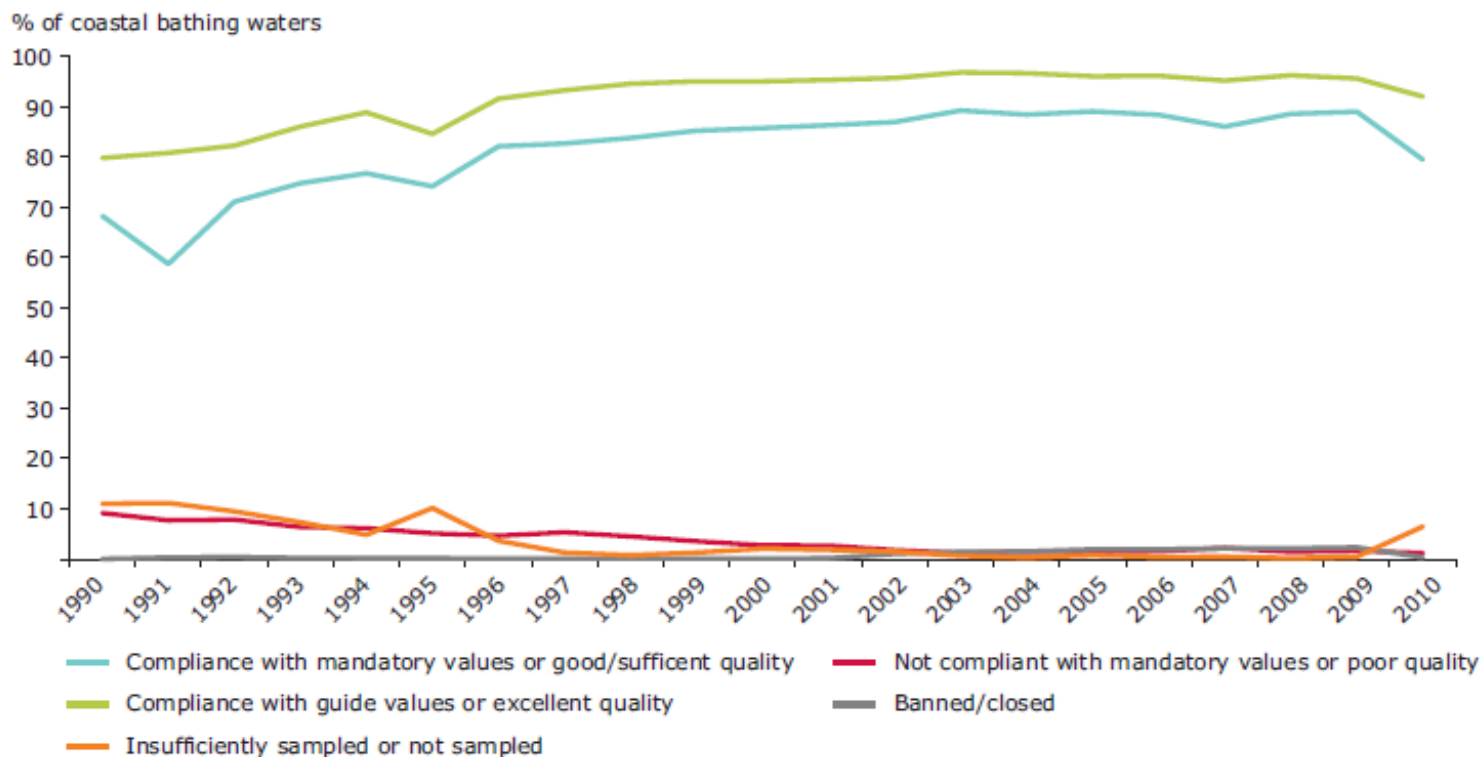
Source: WISE Bathing Water Quality database (data from annual reports by reporting countries) and Eurostat.

Figure 3.3 Number of inland bathing waters per 1 000 km² and number of coastal bathing waters per 10 km of coastline



Source: WISE Bathing Water Quality database (data from annual reports by reporting countries) and http://europa.eu/abc/european_countries/eu_members/index_en.htm.

Figure 4.2 Percentage of coastal bathing waters in the European Union per compliance category



Source: WISE Bathing Water Quality database (data from annual reports by EU Member States).



BWD reporting

- The reporting is done through EEA EIONET system (Reportnet) by nominated national reporters of data.
- Bathing Water Directive 76/160/EEC (Old BWD)
- Bathing Water Directive 2006/7/EC (New BWD)

<http://www.eionet.europa.eu/>

EEA | EnviroWindows | Login | Acronyms | Search Eionet

EIONET

European Environment Information and Observation Network

SERVICES | **REPORTNET** | TOOLS | TOPICS (ETCS)

You are here: Eionet > **REPORTNET**

- > CDR Repository
- > ROD Obligations
- > Data Dictionary
- > ETC Data Dictionary
- > Content Registry
- > Conversion service
- > Mediterranean Data Repository
- > Dam Positioning
- > UWWTD dataflow
- > Reportnet Documents
- > Priority dataflows

Local navigation

- > User directory
- > Roles
- > NFP/Eionet
- > Mails to NFP
- > SERIS
- > Workplan/...
- > Meetings &...
- > Priority dataflows

News from across the Eionet (Archive...)

«March 2012»

| Mo | Tu | We | Th | Fr | Sa | Su |
|----|----|----|----|----|----|----|
| | | | 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| 26 | 27 | 28 | 29 | 30 | 31 | |

Coming up

- 2012-02-29: 2012, 29 February - 1 March
- 2012-03-01: test

Bathing water quality assessment

- methodology: given in BWD
- Data compilation, categorisation and harmonised European level assessment done by ETC/ICM
- EU report and national reports published by EEA and EC



Assessment methodology – transition period

- 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 the following: 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, while the limit values for the classification are taken from the Directive 76/160/EEC:

| Parameters used to assess bathing water quality during the transition period | | | | |
|--|---|--------------|------------------|----------------------------|
| Parameter in Directive 2006/7/EC | Corresponding parameter in Directive 76/160/EEC | Guide values | Mandatory values | Minimum sampling frequency |
| 1. Intestinal enterococci (cfu/100 ml) | 3. Faecal streptococci/100 ml | 100 | - ^(a) | ^(b) |
| 2. Escherichia coli (cfu/100 ml) | 2. Faecal coliforms/100 ml | 100 | 2000 | Fortnightly ^(c) |

No mandatory value for FS

- First obligatory reporting of bathing water quality under Directive 2006/7/EC for MS is the 2012 season. **From the 2015 season at the latest MS have to start classification of bathing waters according to the requirements of the Directive 2006/7/EC** (including data for 2012, 2013 and 2014).

Assessment methodology – Directive 2006/7/EC

For inland waters

| | A | B | C | D | E |
|---|-------------------------------------|-------------------|--------------|------------|-------------------------------|
| | Parameter | Excellent quality | Good quality | Sufficient | Reference methods of analysis |
| 1 | Intestinal enterococci (cfu/100 ml) | 200 (*) | 400 (*) | 330 (**) | ISO 7899-1 or ISO 7899-2 |
| 2 | Escherichia coli (cfu/100 ml) | 500 (*) | 1 000 (*) | 900 (**) | ISO 9308-3 or ISO 9308-1 |

(*) Based upon a 95-percentile evaluation. See Annex II.

(**) Based upon a 90-percentile evaluation. See Annex II.

The limit values for the classification under the Directive 2006/7/EC.

For coastal waters and transitional waters

| | A | B | C | D | E |
|---|-------------------------------------|-------------------|--------------|------------|-------------------------------|
| | Parameter | Excellent quality | Good quality | Sufficient | Reference methods of analysis |
| 1 | Intestinal enterococci (cfu/100 ml) | 100 (*) | 200 (*) | 185 (**) | ISO 7899-1 or ISO 7899-2 |
| 2 | Escherichia coli (cfu/100 ml) | 250 (*) | 500 (*) | 500 (**) | ISO 9308-3 or ISO 9308-1 |

(*) Based upon a 95-percentile evaluation. See Annex II.

(**) Based upon a 90-percentile evaluation. See Annex II.

Directive 2006/7/EC, Annex I



Sampling frequency

Frequency criteria as set out in Annex IV of the Directive 2006/7/EC:

- no fewer than four (or three) samples are to be taken and analysed per bathing season including a sample to be taken shortly before the start of each bathing season.
- sampling dates are to be distributed throughout the bathing season, with the interval between sampling dates never exceeding one month.

ETC/ICM applied less strict frequency criteria for the 2010 season with an approval of the European Commission (EC):

- interval between two samples during the bathing season should not be larger than 41 days.
- the first sample could be taken even 10 days after the start of the bathing season.

The frequency criteria will be in full compliance with the Directive 2006/7/EC from the 2012 season on, when reporting under this Directive will become obligatory.

Assessment ... - steps and timing (1)

- **Data integration** (January 2012)
 - GDEM (automatic QA/QC)
 - confirmation letter
 - download of data from CDR
- **BWD DataBase** (January - February 2012)
 - QC/QA of data and compliance check by ETC/ICM with support from countries
 - BW Database filled
- **Draft Assessment** (March 2012)
- **Final Assessment** (March 2012 - April 2012)
 - National reports are produced by ETC/ICM in collaboration with countries (**national reporters for BWD check, give comments and supply additional data/information when needed**).
 - EU report produced



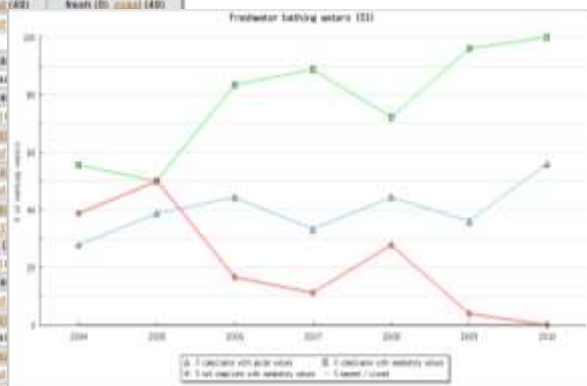
Assessment ... - steps and timing (2)

- **Visualisation in WISE**
 - WISE map and data viewer (April 2012)
- **Information to public**
 - press conference mid May - early June 2012: EU and national reports, WISE and Eye on Earth presented
- **Summer: “Near Real Time” reporting**
 - Eye on Earth portal (during current bathing season)

Online BWD assessment tool

- Draft assessment for reporting countries published on line:
 - http://www.izvrs.si/bwd_reporting/
 - MS can generate the assessment (statuses are calculated online)
 - Assessment under Directive 76/160/EEC
 - Assessment during transition period (
 - Assessment under directive 2006/7/EC (four seasons)
 - MS can check coordinates using kml files
 - Overall graphs are provided for each MS since beginning of the reporting

| Count | Country code | no. of stations (per / per) (year / year / year) | no. of stations 2009 (per / per) (year / year) | no. of stations 2008 (per / per) (year / year) | no. of stations 2007 (per / per) (year / year) | Missing coords - marked | Strong coords (click to open kml) | Duplicate coords (click to open kml) | Coordinates check | Graphs |
|--------------------------|----------------------|--|--|--|--|-------------------------|--------------------------------------|---|------------------------|------------------------|
| OLD DIRECTIVE 76/160/EEC | | | | | | | | | | |
| 1 | DE (Germany) | 87 / 87 / 87 | | | | | | | Year (45) Coast (42) | Year (45) Coast (42) |
| 2 | FR | 84 / 84 / 84 | | | | | | | Year (40) Coast (90) | Year (40) Coast (90) |
| 3 | CZ | 180 / 180 / 180 | | | | | | | Year (180) Coast (0) | Year (180) Coast (0) |
| 4 | IE | 131 / 131 / 131 | | | | | | | Year (0) Coast (122) | Year (0) Coast (122) |
| 5 | PL | 316 / 316 / 304 | | | | | | | Year (227) Coast (99) | Year (227) Coast (99) |
| 6 | RO | 49 / 48 / 48 | | | | | | | Year (0) Coast (49) | Year (0) Coast (49) |
| 7 | UK | 888 / 888 / 888 | | | | | | | Year (12) Coast | |
| NEW DIRECTIVE 2006/7/EC | | | | | | | | | | |
| 8 | AL (2006) | 268 / 268 / 268 | 0 / 0 | 0 / 0 | 0 / 0 | | | | Year (268) Coast | |
| 9 | BE (2006) (2009 new) | 30 / 30 / 30 | 38 / 38 | 38 / 38 | 38 / 38 | | | | Year (38) Coast | |
| 10 | CH (2006) | 381 / 381 / 378 | 0 / 0 | 84 / 85 | 84 / 84 | | | | Year (381) Coast | |
| 11 | CY (2006) | 113 / 112 / 112 | 0 / 0 | 0 / 0 | 0 / 0 | | | | Year (0) Coast | |
| 12 | DE (2006) | 2297 / 2291 / 2290 | 0 / 0 | 0 / 0 | 0 / 0 | | | | Year (1923) Coast | |
| 13 | DK (2006) | 1222 / 1193 / 1193 | 0 / 0 | 0 / 0 | 0 / 0 | | | | Year (12) Coast | |
| 14 | EE (2006) | 56 / 56 / 56 | 0 / 0 | 0 / 0 | 0 / 0 | | | | Year (28) Coast | |
| 15 | ES (2006) | 2144 / 2132 / 2132 | 0 / 0 | 0 / 0 | 0 / 0 | | | | Year (214) Coast | |
| 16 | FI (2006) | 348 / 328 / 328 | 0 / 0 | 0 / 0 | 0 / 0 | | | | Year (294) Coast | |
| 17 | FR (2006) | 5377 / 5095 / 5325 | 231 / 231 | 0 / 0 | 0 / 0 | | | | Year (1393) Coast | |
| 18 | GR (2006) | 2195 / 2185 / 2195 | 2107 / 2109 | 2085 / 2095 | 2065 / 2060 | | | | Year (0) Coast | |
| 19 | HR (2006) | 815 / 812 / 813 | 0 / 0 | 0 / 0 | 0 / 0 | | | | Year (0) Coast | |
| 20 | HU (2006) new | 288 / 281 / 288 | 242 / 203 | 248 / 209 | 257 / 217 | | | | Year (288) Coast | |
| 21 | IT (2006) | 5004 / 5454 / 5400 | 0 / 0 | 0 / 0 | 0 / 0 | 69 / 60 | | 3 | 104 | Year (163) Coast |
| 22 | LT (2006) | 118 / 114 / 113 | 0 / 0 | 0 / 0 | 0 / 0 | | | | Year (102) Coast | |
| 23 | LU (2006) new | 30 / 30 / 30 | 30 / 30 | 30 / 30 | 30 / 30 | | | | Year (20) Coast | |
| 24 | LV (2006) | 274 / 47 / 47 | 0 / 0 | 0 / 0 | 0 / 0 | | | | Year (228) Coast | |
| 25 | ML (2006) | 17 / 17 / 17 | 0 / 0 | 0 / 0 | 0 / 0 | | | | Year (0) Coast | |
| 26 | NL (2006) new | 87 / 87 / 87 | 87 / 87 | 87 / 87 | 87 / 87 | | | | Year (0) Coast | |
| 27 | PL (2006) | 893 / 887 / 887 | 0 / 0 | 0 / 0 | 0 / 0 | | | | Year (602) Coast (91) | Year (602) Coast (91) |
| 28 | PT (2006) | 484 / 481 / 481 | 488 / 433 | 478 / 209 | 478 / 0 | | | | Year (78) Coast (478) | Year (78) Coast (478) |
| 29 | SE (2006) | 470 / 461 / 461 | 468 / 469 | 465 / 464 | 443 / 462 | | | | Year (211) Coast (258) | Year (211) Coast (258) |
| 30 | SI (2006) | 48 / 48 / 48 | 0 / 0 | 0 / 0 | 0 / 0 | | | | Year (28) Coast (21) | Year (28) Coast (21) |
| 31 | SK (2006) | 36 / 36 / 36 | 0 / 0 | 0 / 0 | 0 / 0 | | | | Year (36) Coast (0) | Year (36) Coast (0) |

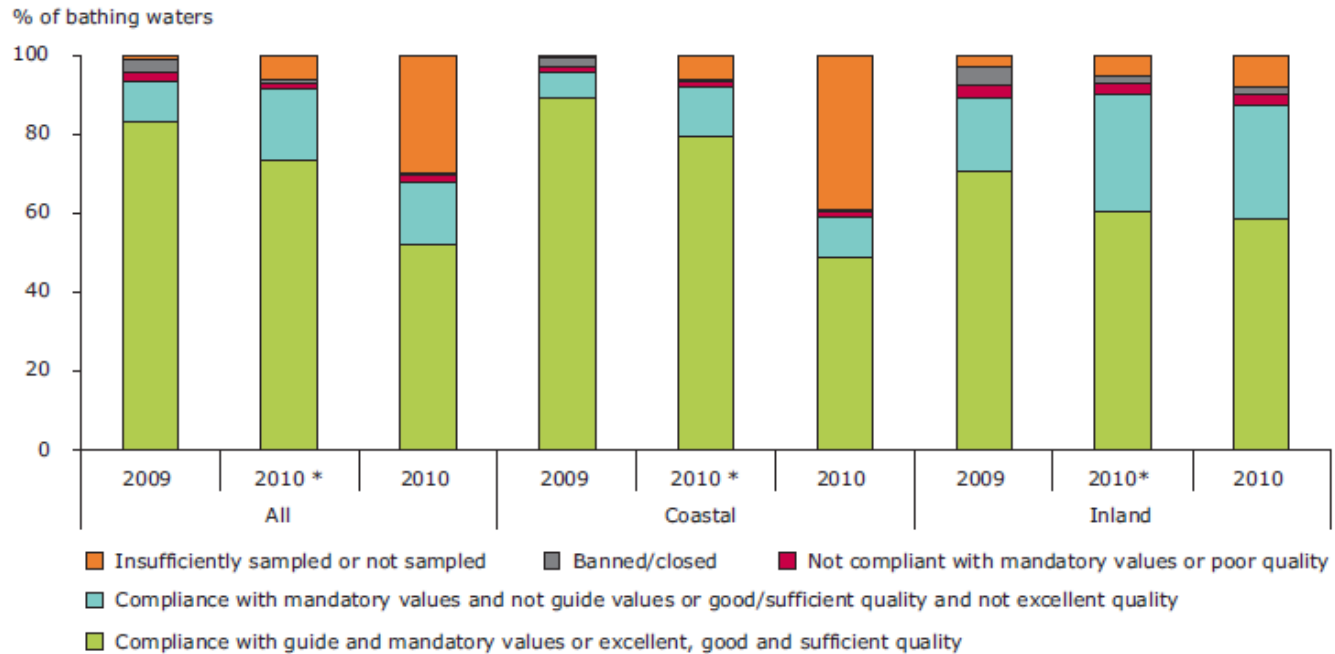


First draft results of assessment for the 2011 bathing season

- A total of 16 MS are already assessed under new Directive compared to three in 2011 (LU, MT, HU) and two in 2010 (LU, MT).
- A total of 8 MS are assessed under transitional rules (AT, BG, FR, IE, IT, NL, PL, SI) plus three non-EU countries (CH, HR, ME).
- Only three MS are assessed under old Directive (CZ, RO and UK).

Comparison with results for the 2009 and 2010 bathing seasons

Figure 4.1 Bathing water quality in the European Union in the 2009 and 2010 bathing seasons



Note: (*) *Less strict rules* in regard to frequency are implemented, that is 42 days between two samples for reporting under Directive 2006/7/EC are allowed; and bathing water quality in Greece assessed only for the period since late July when monitoring results are available.

Source: WISE Bathing Water Quality database (data from annual reports by EU Member States).

(?) Under the *less strict rules*, the assessment for Greece is based on a sampling period that begins at the end of July and runs to the end of the bathing water season. In addition, for all Member States results from monitoring at low frequency (less than 42 days between sampling dates) were accepted. With more than 42 days between sampling dates the bathing water was classified as insufficiently sampled or not sampled.

EoE reporting :

“Near Real Time” reporting of bathing water quality data

- Seasonal data on bathing water quality in Europe.
- Purpose: to make data on BW quality available as soon as possible, for the public, on the internet. The bathing water information in real-time is much more interesting to the public than by only providing the historical (annual) values.
- ETC/ICM provides data to EEA on weekly basis during the bathing season.
- Data is presented on Eye on Earth (EoE) portal.
- EoE is a two-way communication platform on the environment which brings together scientific information with feedback and observations of millions of ordinary people.
- Currently, it includes information on the current and annual bathing water quality and air quality throughout Europe.

Eye on Earth application

Built on Windows® Azure™

English | sms | about | help | providers | disclaimer

European Environment Agency

Search Bathing Water Stations | No User Feedback | Air Quality Model

2D | 3D | Road | Aerial | Bird's eye | Labels

- Information on current bathing water quality in Europe, also annual data.
- Data is available on **Eye-on-Earth (EoE) portal** <http://eyeonearth.cloudapp.net>

ZDRAVILISCE STRANJAN

| ANNUAL DATA | | | SEASONAL DATA | | |
|-------------|------|-------|---------------|------|-------|
| Year | Ours | Yours | Date | Ours | Yours |
| 2009 | | (0) | 12/07/2010 | | (0) |
| 2008 | | (3) | 28/06/2010 | | (0) |
| 2007 | | (0) | 14/06/2010 | | (0) |
| 2006 | | (0) | 02/06/2010 | | (0) |
| 2005 | | (0) | 24/05/2010 | | (0) |

STATIONS more info...
■ air stations ● water stations

bing™




4 km

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Methodology for status calculation

- if values for **all parameters** are inside **guide values** then status = 1 (CG)
- if parameters exceed **guide values** but are inside **mandatory values** then status = 5 (CI)
- if **1 parameter** exceeds **mandatory value** then status = 4 (NC)
- if **2 or more parameters** exceed **mandatory values** then status = 2 (B)
- if **2 or more parameters** are missing then status = 6 (NS) - not reported to EoE
- if **1 parameter** is missing then status = 3 (NF) - not reported to EoE

Using limit values of the Directive 2006/7/EC for parameters EC and IE.

| Current bathing season | Portal representation |
|--|---|
| 1 (CG), 5 (CI) - Good Sites with lower values than the mandatory and guide values. Those waters have excellent or good quality |  |
| 4 (NC) - Average Sites where one of analysed parameters has a higher value than mandatory value |  |
| 2 (B) - Bad sites with higher values than the mandatory values from the Bathing Water Directive. Those waters have poor quality |  |

Culture to molecular?

- BWD set the standards (WHO); stay as they are, but methods more accurate, sensitive, informative..
- Cultural: not necessary there is no health risk problem
- Molecular: promising and better tool for point source pollution detection and therefore targeted management ...the purpose of BWD!
- Molecular: BWs categorised as CG/EXCELLENT recently may become CI/GOOD (lower class). Should be efficiently and positively communicated to public, MEDIA and politics