

BATHING WATER QUALITY		
Ocean, Seas and Coasts	Coastal Zone	

1. INDICATOR

(a) **Name:** Bathing Water Quality.

(b) **Brief Definition:** The indicator describes the changes over time in the quality of designated bathing waters (inland and marine) in terms of compliance with standards for microbiological parameters (total coliforms and faecal coliforms) and physicochemical parameters (mineral oils, surface-active substances and phenols).

(c) **Unit of Measurement:** The data are expressed in terms of percentage of inland and marine water bathing waters complying with the mandatory standards and guide levels for microbiological and physicochemical parameters.

(d) **Placement in the CSD Indicator Set:** Ocean, Seas and Coasts/Coastal Zone.

2. POLICY RELEVANCE

(a) **Purpose:** Particulate organic pollutants discharged into coastal waters around outlets of insufficiently treated wastewater lead to an excess of dissolved oxygen consumption, resulting in high environmental degradation of coastal waters.

(b) **Relevance to Sustainable/Unsustainable Development (theme/sub-theme):** Microbiological pollution of coastal waters and substances produced by pathogenic micro-organisms in the sea can cause diseases in humans and marine animals. The main impact on human health concerns gastric-intestinal infections from seafood, including salmonella, gastro-enteritis and hepatitis. Some marine animal diseases have been reported, related to infection by a morbillivirus (fish and sponge diseases, the deaths of dolphins in the 1990s). Human enteric viruses are the most likely pathogens responsible for waterborne diseases from recreational water use but detection methods are complex and costly for routine monitoring, and so the main parameters analysed for compliance with the Directive are indicator organisms; total and faecal coliforms. Compliance with the mandatory standards and guide levels for these indicator organisms does not therefore guarantee that there is no risk to human health.

(c) **International Conventions and Agreements:**

The EU directive on the quality of bathing waters (76/160/EEC) aims to ensure that coastal and inland waters commonly used for bathing do not contain bacteriological or chemical contamination at levels that could pose a health risk. Adopted in 1976, the directive is one of the EU's oldest environmental laws and has been the driving force behind a steady improvement in bathing water quality around Europe, as shown by the Commission's annual bathing water reports published every spring.

Following agreement between the Council and European Parliament in October 2006, a revised bathing water directive has been adopted which updates and simplifies the current standards. This new EU Directive on bathing water (2006/7/EC), concerning the management of bathing water quality and repealing Directive 76/160/EEC, will be implemented progressively.

Each of the Regional Seas has its own convention or action plan; details of these can be found at <http://www.gpa.unep.org/>.

(d) International Targets/Recommended Standards:

Standards from EU Directive on bathing water (2006/7/EC), EEC Directive on quality of bathing waters 76/160/EEC and criteria of the World Health Organization (WHO).

(e) Linkages to Other Indicators: This indicator can be linked to many of the CSD core indicators, especially those relating to coastal population and coastal development, fisheries, biodiversity, fresh water quality and fertiliser use. It also has significant implications for human and animal health.

3. METHODOLOGICAL DESCRIPTION

(a) Underlying Definitions and Concepts: The bathing water are classified as following:

- C(I): percentage of bathing areas sufficiently sampled which comply with mandatory values
- C(G): percentage of bathing areas sufficiently sampled which comply with both guide values and mandatory values
- NF: percentage or number of bathing areas not sufficiently sampled
- NB: percentage or number of bathing areas where bathing was prohibited throughout the bathing season
- NC: percentage or number of bathing areas that do not comply with mandatory values
- NS: percentage or number of bathing areas not sampled or for which no data are available
- DY: percentage or number of bathing areas de-listed during this bathing season (year) with respect to the previous one
- DA: percentage or number of bathing areas de-listed during previous bathing seasons (accumulated)

(b) Measurement Methods: Guidelines have been produced by WHO : “Monitoring bathing waters: A practical guide to the design and implementation of assessments and monitoring programmes”

(c) Limitations of the Indicator: The major constraints to the use of this indicator will be the availability of appropriate data and the consistency of sampling and

measurement methods over time as well as adequate data synthesis methods. The measurement

(d) **Status of the Methodology:**

(e) **Alternative Definitions/Indicators:**

4. ASSESSMENT OF DATA

(a) **Data Needed to Compile the Indicator:** Standardised quantitative data on bathing water quality from an appropriately distributed network of monitoring stations.

(b) **National and International Data Availability and Sources:** Limited data are available at the national level under the. Except in Europe, these data are not collected in standardised format.

(c) **Data References:** Data for the European countries are available at EEA

5. AGENCIES INVOLVED IN THE DEVELOPMENT OF THE INDICATOR

(a) **Lead Agency:** The lead agency is the United Nations Environment Programme (UNEP)/GPA Coordination Office. The contact point is the GPA Coordination Office, tel. no. (+31 70) 311.4467 , fax no. (+31 70) 345.6648 and email gpa@unep.nl.

(b) **Other Contributing Organisations:** Other organisations interested in the further development of this indicator would include:

World Health Organization

UNEP/MAP : United Nations Environment Programme/ Mediterranean Action Plan
MED POL: The Programme for the Assessment and Control of Marine Pollution in the Mediterranean Region,
Blue Plan: Blue Plan Regional Activity Centre.

European Commission, Directorate-General Environment
EEA : European Environment Agency.

6. REFERENCES

(a) **Readings:** Monitoring bathing waters: A practical guide to the design and implementation of assessments and monitoring programmes Edited by Jamie Bartram and Gareth Rees, WHO 2000

(b) **Internet sites:**

http://www.who.int/water_sanitation_health/bathing/en/index.html

<http://www.gpa.unep.org/>

<http://www.unepmap.org/>

<http://www.planbleu.org/>

http://ec.europa.eu/water/water-bathing/index_en.html

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

<http://www.un.org/esa/sustdev/agenda21.htm>