Country report

# German bathing water quality in 2015

# Germany

May 2016

European Environment Agency

European Environment Agency

# BWD Report For the Bathing Season 2015
# Germany

The report gives a general overview of information acquired from the reported data, based on provisions of the Bathing Water Directive[1]. The reporting process is described below, as well as state and trends of bathing water quality in Germany.

## 1. BWD reporting in the season 2015

In 2015 bathing season, 2292 bathing waters have been reported in Germany. For each bathing water, five groups of parameters have been delivered[2]:

- *identification data* – including name, location, geographic type of bathing water and availability to bathers;
- *seasonal data* – including season start and end, national quality classification in present season, potential management measures and changes in quality;
- *monitoring results* – disaggregated numerical values of two microbiological parameters – intestinal enterococci and Escherichia coli (also known as E. coli), recorded at each water sample taken;
- *abnormal situation periods* – periods of unexpected situations that have, or could reasonably be expected to have, an adverse impact on bathing water quality and on bathers' health; reporting is optional;
- *short-term pollution periods* – identifiable events that adversely affect water quality by faecal contamination; reporting is optional.

| Bathing waters of Germany in 2015 | |
|---|---|
| **Total reported** | **2292** |
| Coastal | 367 |
| Inland | 1925 |
| **Max season period** | **195 / 124 days** |
| Coastal | 9 May to 15 Sep |
| Inland | 1 Apr to 15 Oct |
| **Samples taken** | **13412** |
| **Share of bathing waters with good or excellent water quality** | **97 %** |
| **Reporting under Directive 2006/7/EC since** | **2008** |

The authorities of Germany report data according to the new BWD (2006/7/EC) since the season 2008. The data for the season 2015 were delivered to the European Commission by **10 December 2015**, with additional deliveries on 22 January 2016.

Altogether, **2292 bathing waters** have been reported – 10.6% of all bathing waters in Europe. Out of all bathing waters in Germany, 1.09% have been newly identified in 2015 season. 16% of bathing

[1] Directive BWD 2006/7/EC, available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:064:0037:0051:EN:PDF

[2] See the BWD Data Dictionary for detailed explanations: http://dd.eionet.europa.eu/datasets/3294#tables

waters in Germany are of coastal type; the other 84% are inland. **13,412 samples** were taken at bathing waters throughout the season – 6 per bathing water on average.

The maximum bathing season period was from 9 May to 15 September for coastal bathing waters, i.e. 124 days altogether. Season duration varies for coastal bathing waters. Maximum inland bathing season period was from 1 April to 15 October, i.e. 195 days. Season duration varies for inland bathing waters.

Detailed information on bathing waters is available from national portal at http://www.umweltbundesamt.de/themen/wasser/schwimmen-baden/badegewaesser/wasserqualitaet-in-badegewaessern.

## 2. Assessment methodology[3]

During the bathing season, water samples are taken and analysed for two bacteria, *Escherichia coli* and intestinal enterococci which may indicate the presence of pollution, usually originating in sewage, livestock waste, bird faeces etc. The results of the analysis are used to assess the quality of the bathing waters concerned and to provide information to the public on the quality of water in the bathing sites concerned.

The monitoring requirements under the Directive are:

- taking a pre-season sample (taken shortly before the start of the bathing season) [4];
- a minimum of four samples per season[5];
- a minimum of one sample per month[6].

If these rules are satisfied, the bathing water is categorised as 'sampling frequency satisfied'. If not all monitoring requirements are fulfilled the bathing water is categorised as 'not enough samples'. 97.9% of bathing waters met the described monitoring requirements set by the Directive, while the rest did not satisfy monitoring requirements for different reasons: being new; having changed environmental conditions that might affect water quality classification; closed; not monitored due to legal issues, physical inaccessibility to the site etc. Table 1 shows the statistics of bathing waters according to monitoring requirements.

[3] The methodology used by the EC and the EEA is described here, while results of assessment by national authorities may differ in individual cases.
[4] A pre-season sample is taken into a sum of samples per season.
[5] Three samples are sufficient if the season does not exceed eight weeks or the region is subject to special geographical constraints.
[6] If, for any reason, it is not possible to take the sample at the scheduled date, a delay of four extra days is allowed. Thus, the interval between two samples should not exceed 31 + 4 days.

**Table 1: Bathing waters in 2015 according to compliance with BWD monitoring provisions**

| | Count | Share of total [%] |
|---|---|---|
| **BWs with sampling frequency satisfied (and are not new, are not subject to changes or were not closed in 2015)**<br>These bathing waters have been monitored according to provisions and have complete dataset from the last assessment period. They have been quality-classified (excellent, good, sufficient, poor). | 2244 | 97.9% |
| **BWs with sampling frequency not satisfied (and are not new, are not subject to changes or were not closed in 2015)**<br>These bathing waters exist throughout the last assessment period but have not been monitored throughout the period according to provisions for various individual reasons. They may be quality-classified if there is an adequate volume of samples available for credible classification. | 6 | 0.3% |
| **BWs that are new, subject to changes or closed in 2015**<br>These bathing waters do not have complete dataset for the last assessment period because they are new, have been subject to changes (that are likely to affect the classification of the bathing water) or have been closed. They cannot be quality-classified. | 42 | 1.8% |
| **Total number of bathing waters in 2015** | **2292** | **100%** |

Bathing waters where sampling frequency was not satisfied can still be quality assessed if at least four samples per season (three samples if the season does not exceed eight weeks or the region is subject to special geographical constraints) are available and equally distributed throughout the season. Assessment of bathing water quality is possible when the bathing water sample dataset is available for four consecutive seasons. Bathing waters are accordingly classified to one of the bathing water quality classes (excellent, good, sufficient, or poor).

The classification is based on pre-defined percentile values for microbiological enumerations, limiting the classes given in Annex I of the Directive. The Directive defines different limit values for coastal and inland waters.

Quality assessment is not possible for all bathing waters. In these cases, they are instead classified as either:

- not enough samples[7];
- new[8];
- changes[9];
- closed[10].

[7] Not enough samples have been provided throughout the last assessment period (the last four bathing seasons or, when applicable, the period specified in Article 4.2 or 4.4).
[8] Classification not yet possible because bathing water is newly identified and a complete set of samples is not yet available.
[9] Classification is not yet possible after changes that are likely to affect the classification of the bathing water.
[10] Bathing water is closed temporarily or throughout the bathing season.

# 3. Bathing water quality

The results of the bathing water quality in Germany throughout the past period are presented in Figure 1 (for coastal bathing waters) and Figure 2 (for inland bathing waters). The previous reports are available on the European Commission's bathing water quality website[11] and the European Environment Agency's bathing water website[12].

## 3.1 Coastal bathing waters

In Germany, 96.7% of all existing coastal bathing waters met at least sufficient water quality standards in 2015. See Appendix 1 for numeric data.

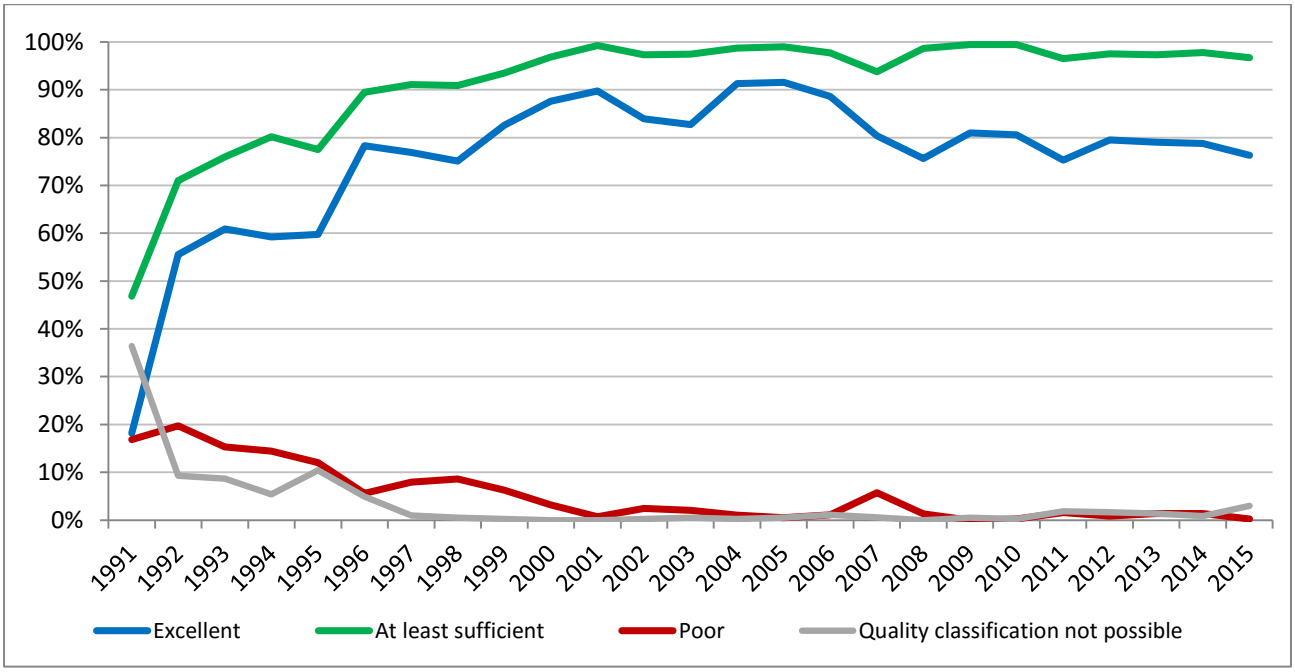



**Figure 1: Coastal bathing water quality trend in Germany.** Note: the "At least sufficient" class also includes bathing waters of "Excellent" quality class, the sum of shares is therefore not 100%.

[11] http://ec.europa.eu/environment/water/water-bathing/index_en.html
[12] http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water

### 3.2 Inland bathing waters

98.1% of all existing inland bathing waters were of at least sufficient water quality in 2015. See Appendix 1 for numeric data.

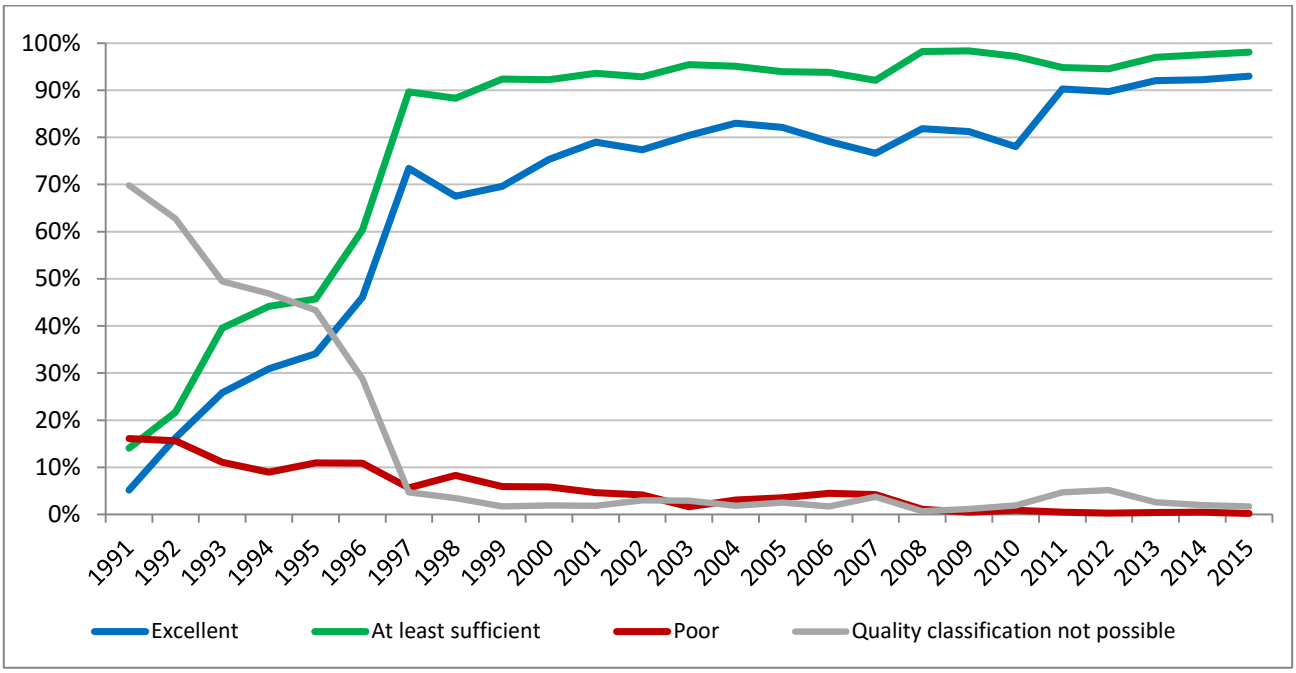



**Figure 2: Inland bathing water quality trend in Germany.** Note: the "At least sufficient" class also includes bathing waters of "Excellent" quality class, the sum of shares is therefore not 100%.

## 4. Information regarding management and other issues

Bathing water season have been shortened on three bathing waters in Baden-Württemberg state because the water of these lakes was used to dilute the river Jagst after it was contaminated with toxic water from a firefight.

Cyanobacteria blooms have been reported on approximately ten bathing waters. Public have been informed by signs, internet and other media. Due to high input of nutrients by inflow Lethe, a mass occurrence of blue-green algae occurred on bathing water Helenensee – Grossenkneten. A bathing prohibition has been introduced in this case until the lake was emptied at the end of the season. Cyanobacteria also occurred on ten bathing waters in Brandenburg state where monitoring has been extended to include the parameters chlorophyll-a and microcystin according to the recommendation of the German Federal Environment Agency (UBA).

Many bathing waters situated on lakes have been impacted by bird/goose droppings. As reported by national authorities such droppings have been removed in many cases daily during the bathing season.

Sampling on the west coast and the North Frisian islands (together 12 bathing waters) has been postponed due to a strong storm, gale-force winds and heavy rain between end of July and early August.

# 5. Bathing water quality assessment presentation in online viewers

The European bathing water legislation focuses on sound management of bathing waters, greater public participation and improved information dissemination. More on the bathing and other water legislation can be found on the European Commission's website: http://ec.europa.eu/environment/water/index_en.htm.

The bathing water section of the Water Information System for Europe (WISE) which is accessible at the EEA bathing water website (http://www.eea.europa.eu/themes/water/interactive/bathing/state-of-bathing-waters) allows users to view the bathing water quality at more than 21 000 coastal beaches and inland sites across Europe. The WISE bathing water quality data viewer combines text and graphical visualisation, providing a quick overview of the bathing water's locations and achieved quality. Having access to bathing water information, citizens are encouraged to make full use of it and participate with their comments.

# Appendix 1: Results of bathing water quality in Germany from 2012 to 2015

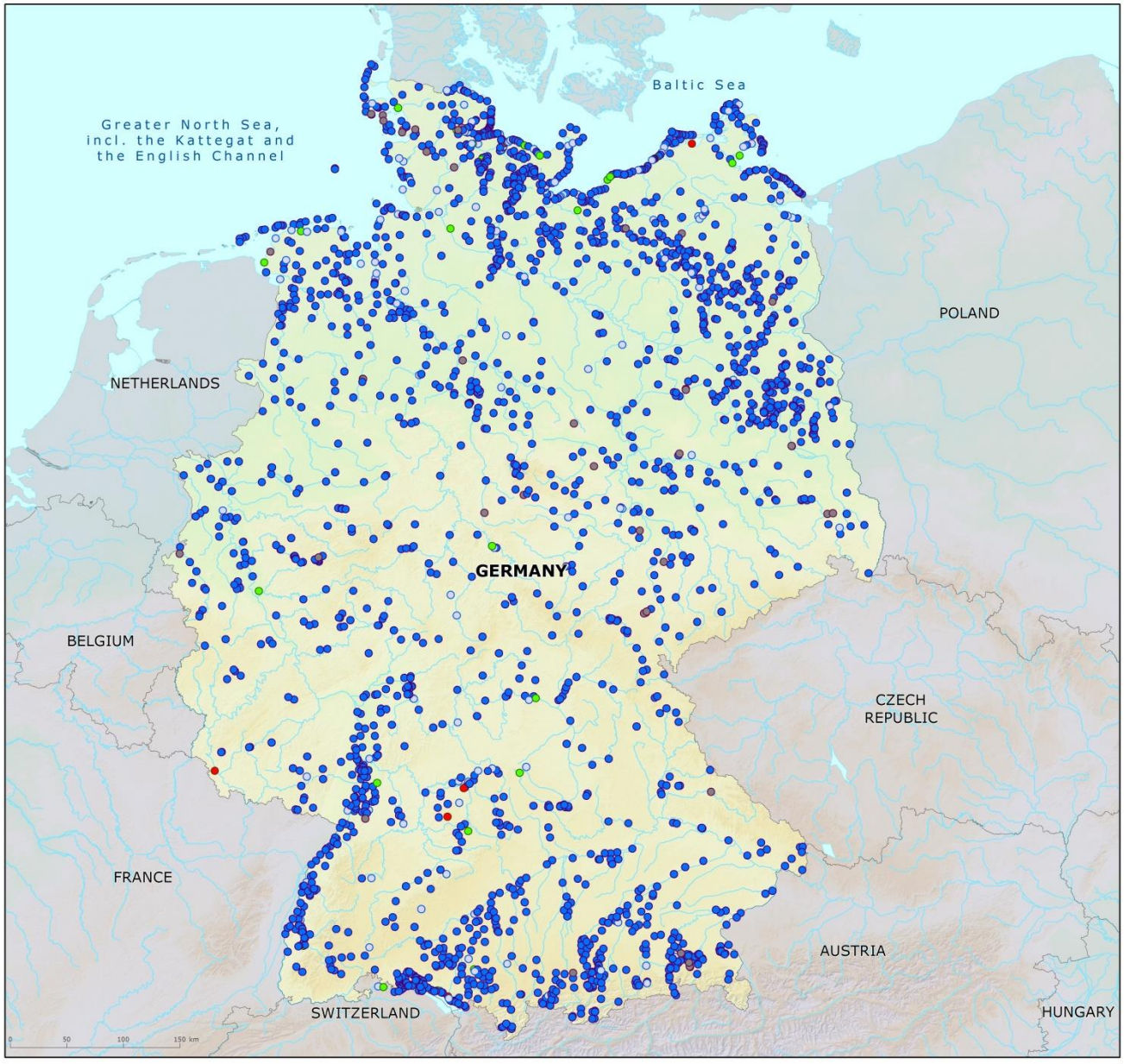
**Table 2: Bathing waters in the season 2015 according to quality**

| | | Total number of bathing waters | Excellent quality | | At least sufficient quality | | Poor quality | | Quality classification not possible: not enough samples /new bathing waters/bathing waters subject to changes/closed | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | No | % | No | % | No | % | No | % |
| Coastal | 2012 | 366 | 291 | 79.5 | 357 | 97.5 | 3 | 0.8 | 6 | 1.6 |
| | 2013 | 367 | 290 | 79.0 | 357 | 97.3 | 5 | 1.4 | 5 | 1.4 |
| | 2014 | 363 | 286 | 78.8 | 355 | 97.8 | 5 | 1.4 | 3 | 0.8 |
| | 2015 | 367 | 280 | 76.3 | 355 | 96.7 | 1 | 0.3 | 11 | 3.0 |
| Inland | 2012 | 1929 | 1731 | 89.7 | 1824 | 94.6 | 5 | 0.3 | 100 | 5.2 |
| | 2013 | 1929 | 1775 | 92.0 | 1871 | 97.0 | 8 | 0.4 | 50 | 2.6 |
| | 2014 | 1927 | 1777 | 92.2 | 1880 | 97.6 | 9 | 0.5 | 38 | 2.0 |
| | 2015 | 1925 | 1790 | 93.0 | 1888 | 98.1 | 4 | 0.2 | 33 | 1.7 |
| **Total** | **2012** | **2295** | **2022** | **88.1** | **2181** | **95.0** | **8** | **0.3** | **106** | **4.6** |
| | **2013** | **2296** | **2065** | **89.9** | **2228** | **97.0** | **13** | **0.6** | **55** | **2.4** |
| | **2014** | **2290** | **2063** | **90.1** | **2235** | **97.6** | **14** | **0.6** | **41** | **1.8** |
| | **2015** | **2292** | **2070** | **90.3** | **2243** | **97.9** | **5** | **0.2** | **44** | **1.9** |

Note: the class “At least sufficient” also includes bathing waters which are of excellent quality, the sum of shares is therefore not 100%.

# Appendix 2: Bathing water quality map

**Map 1: Bathing waters reported during the 2015 bathing season in Germany**




**Bathing water quality**

- Excellent water quality
- Good water quality
- Sufficient water quality
- Poor water quality
- Quality classification not possible: not enough samples / new bathing waters / bathing waters with changes / closed
- No
- Outside data coverage (data available, not presented on the

**Source:** National boundaries: EEA; Large rivers and lakes: EEA, WFD Article 3; Bathing waters data and coordinates: German authorities; Digital Elevation Model over Europe (EU-DEM): EEA.