

State of bathing water

European bathing water quality in 2019



Bathing is an extremely popular and important leisure activity in Europe. This annual assessment of European bathing sites shows how well environmental protection measures are implemented, allowing people to make informed decisions on where to go to best enjoy Europe's inland and coastal bathing sites.

Key messages

The number of bathing waters in Europe is increasing every year. In 2019, countries identified 22 295 bathing sites, 164 more than the previous year and 813 more than in the 2015 bathing season. Two thirds of bathing sites are located along the seacoasts of Europe.

Bathing water quality in Europe remains high. The minimum water quality standards were met at 95 % of sites. The share of excellent sites grew continuously from the adoption of the Directive until 2015, when it stabilised at around 85 %. In 2019, it was 84.6 % across Europe and 84.8 % in the EU countries.

The quality of coastal sites is generally better than that of inland sites. In 2019, 87.4 %, of coastal bathing sites were classified as of excellent quality compared to 79.1 % of inland sites in the EU.

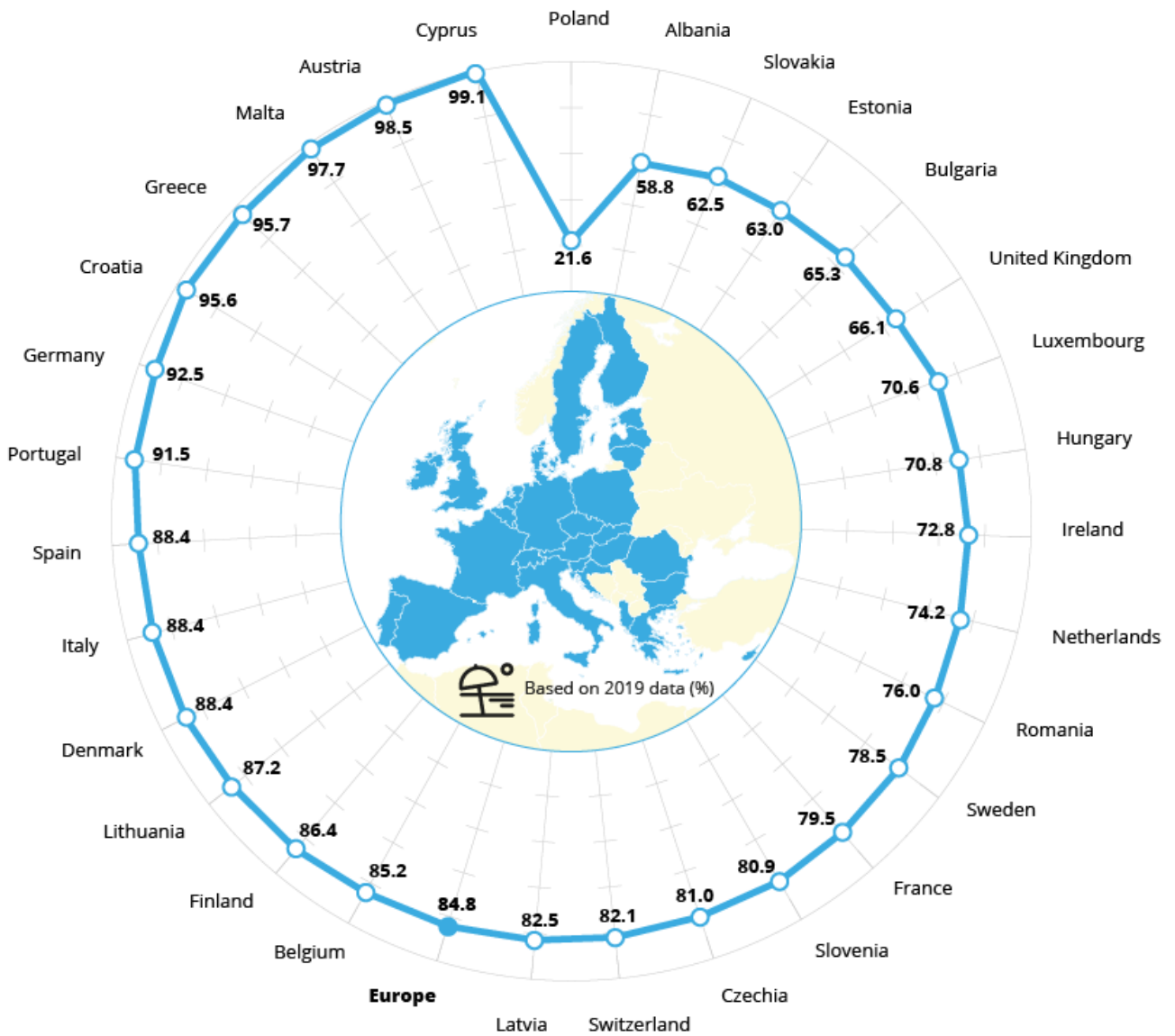
The share of poor-quality sites has dropped since 2013. In 2019, poor bathing waters constituted 1.3 % of all sites in the EU, compared to 2 % in 2013. This shows improvements in management of poor bathing sites in Europe.

Quality of European bathing waters remains high

Bathing water quality in Europe has improved markedly over the last decades. Systematic monitoring and management introduced under the Bathing Water Directive, (EU, 2006) large investments in urban waste water treatment plants and improvements in waste water networks have led to a drastic reduction in pollutants released through untreated or partially treated urban waste waters. Thanks to these continuous efforts, bathing is today feasible in urbanised and formerly heavily-polluted surface waters. This suggests how solid and well-implemented policies can make a difference.

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Figure 1: Proportion of bathing waters with excellent quality in European countries in 2019



Source: WISE bathing water quality database (data from 2019 annual reports by EU Member States ¹, Albania and Switzerland).

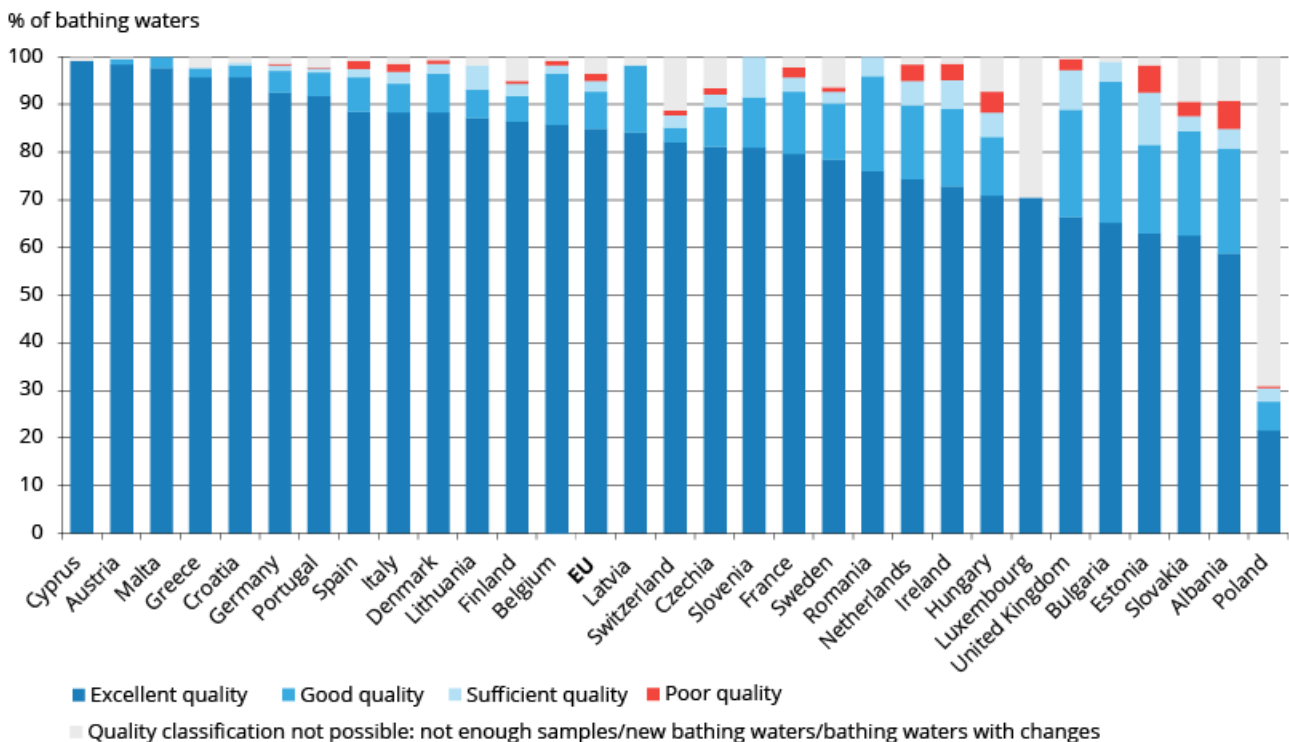
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Note: The assessment covers 22 295 bathing waters in Europe that were reported to EEA for the 2019 season. In the EU Member States, there were in total 21 981 bathing waters (Austria: 261, Belgium: 115, Bulgaria: 95, Croatia: 988, Cyprus: 113, Czechia: 153, Denmark: 1 022, Estonia: 54, Finland: 301, France: 3 348, Germany: 2 291, Greece: 1 634, Hungary: 257, Ireland: 147, Italy: 5 535, Latvia: 57, Lithuania: 117, Luxembourg: 17, Malta: 87, The Netherlands: 724, Poland: 606, Portugal: 614, Romania: 50, Slovakia: 32, Slovenia: 47, Spain: 2 234, Sweden: 438, The United Kingdom: 644). Outside the EU, 314 bathing waters were reported (Albania: 119 and Switzerland: 195). In Poland, only 187 out of 606 bathing waters were quality assessed which explains the low proportion of excellent quality in this country. The majority of them were newly identified and did not have complete sets of samples yet.

Out of 22 295 bathing sites in Europe in 2019 (Table 1), 84.6 % were of excellent quality (**Figure 1**). In five countries, 95 % or more, of bathing waters were of excellent quality: Cyprus, Austria, Malta, Greece, and Croatia. Additionally in Greece, Latvia, Lithuania, Luxembourg, Romania and Slovenia, all assessed bathing water sites were of at least sufficient quality in 2019 (**Figure 2**).

One of the main requirements of the Directive is to ensure that all bathing water sites were at least of 'sufficient' quality by 2015. In the bathing season 2019, this minimum quality standard was met by 95.0 % of all EU bathing water sites, which means a minor drop compared to 2018 (95.4 %) (Figure 2). However, this drop can be explained by the opening of new bathing water sites that cannot be classified yet.

Figure 2: Bathing water quality in European countries in the 2019 season (EU countries, Albania, and Switzerland)



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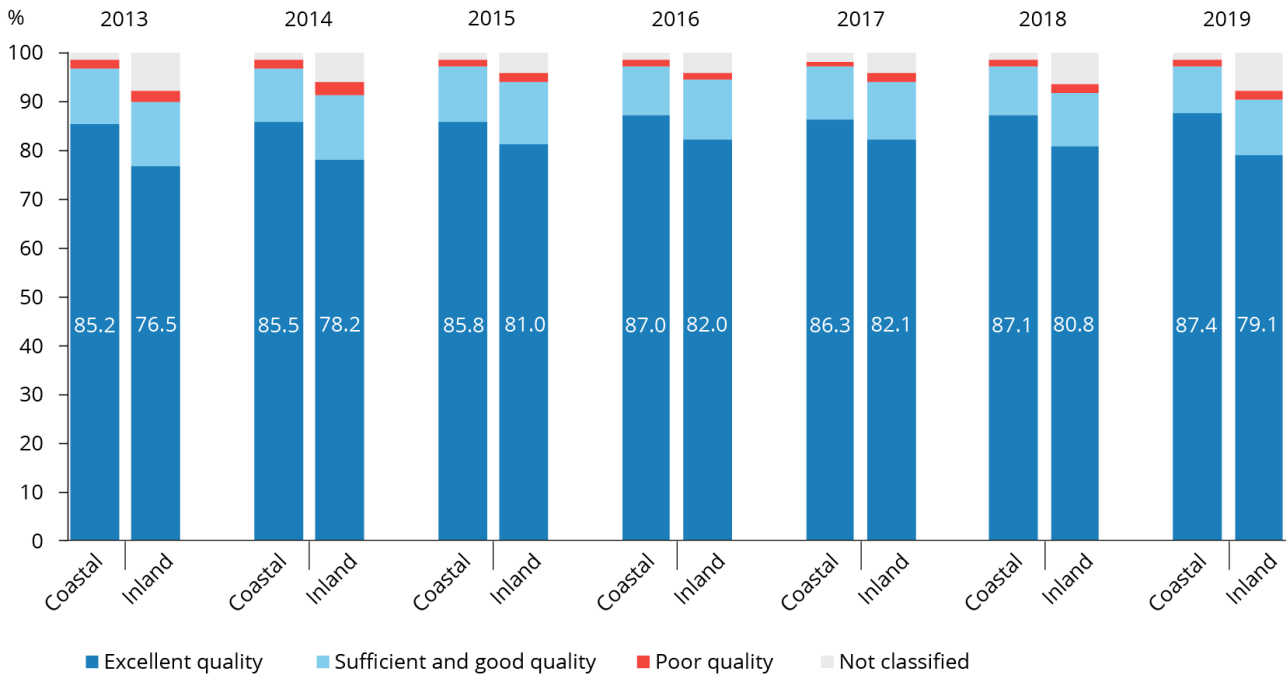
Source: WISE bathing water quality database (data from 2019 annual reports by EU Member States ¹, Albania and Switzerland).

Note: The assessment was done under the provisions of Annex I and Annex II of the Directive and based on a set of adequate number of samples of E. coli and intestinal enterococci per assessment period – the last four bathing seasons. The monitoring requirements are set in Annex IV of the Directive. For newly identified sites or sites where management measures to improve water quality were implemented, the assessment period might be shorter than four years. Bathing water sites for which quality assessment is not possible are classified as either: 'not enough samples' (not enough samples were provided for the 2019 season or throughout the whole assessment period); 'new bathing waters' (classification not possible yet because bathing water is newly identified and a complete set of samples is not yet available); 'bathing waters with changes' (classification is not possible yet after changes affecting bathing water quality were implemented). In Poland, 419 out of 606 (70 %) of bathing waters were not classified. The majority of them were newly identified and do not have complete sets of samples yet.

The share of excellent bathing waters in the EU changed slightly since 2013, increasing from 85.2 % to 87.4 % for coastal bathing waters and from 76.5 % to 79.1 % for inland bathing waters. The quality of coastal sites was generally better than that of inland sites due to the better self-purification capacity of coastal areas. Moreover, many central European inland bathing water sites are situated on relatively small lakes and ponds as well as low flow rivers, which, especially in the summer, are more susceptible than coastal areas to short-term pollution caused by heavy summer rains. Tables showing the 2019 bathing water results per country are available for coastal and inland bathing waters separately.

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Figure 3: Coastal and inland bathing water quality in the EU between 2013 and 2019



Source: WISE bathing water quality database (data from 2019 annual reports by EU Member States ¹).

Note: There were 15 032 coastal and 6 949 inland bathing waters in the EU in the 2019 season. In the previous years, the share of coastal and inland bathing waters was similar to 2019: two thirds were coastal and one third were inland bathing waters. The exact numbers can be found in European Bathing Water Quality in 2018.

Some water quality problems still exist

In 2019, 294 or 1.3 % of bathing water sites in the EU were of poor quality (Figure 3). While the share of poor-quality sites dropped slightly since 2013, problems persist at bathing waters of poor quality or bathing waters that are often affected by short-term pollution. It is imperative to assess the sources of pollution in their catchment area and implement integrated water management measures. At bathing sites for which the origins or causes of pollution are difficult to identify, special studies of pollution sources are needed.

In six European countries, 3 % or more of bathing waters were of poor quality: Albania (seven bathing waters or 5.9 %), Estonia (three bathing waters or 5.6 %), Hungary (10 bathing waters or 3.9 %), Ireland (five bathing waters or 3.4 %), the Netherlands (24 bathing waters or 3.3 %) and Slovakia (one bathing water or 3.1 %). In Albania, the number of poor bathing sites dropped significantly since 2015, when 31 bathing water sites (or 39.1 %) were assessed as poor. This improvement can be linked to the construction of five waste water treatment plants in Albania in

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recent years.

Swimming at bathing sites with poor water quality can result in illness. Bathing water sites classified as poor must be closed throughout the following bathing season and must have measures in place to reduce pollution and eliminate hazards to the health of bathers.

Management measures are primarily expected to be implemented at those bathing water sites where water quality is sufficient or poor. The Directive requires Member States to:

- Introduce adequate measures, including bathing prohibition or advice against bathing, with a view to preventing bathers' exposure to pollution;
- Identify the causes and sources of pollution, and reasons for the failure to achieve sufficient quality status;
- Take adequate measures to prevent, reduce or eliminate the causes of pollution such as implementation of the Urban Waste Water Treatment Directive and a focus on reducing sewer overflows;
- Alerting the public through a clear and simple warning sign, and informing them of the causes of the pollution and measures taken;

According to the Bathing Water Directive, bathing must be permanently prohibited or permanent advice against bathing put in place at bathing water sites that have been classified as poor for five consecutive years or more. In 2019, this was the case for 55 bathing waters: 36 in Italy, eight in Spain, four in the United Kingdom, two in France, and one in Czechia, Denmark, Ireland, the Netherlands and Sweden respectively.

In 2018, 289 bathing water sites in the EU were of poor quality, while 190 of these bathing waters remained poor in 2019. Of the 99 remaining bathing sites, 61 improved their water quality to at least sufficient between 2018 and 2019, while the remaining 38 bathing sites were either excluded from the monitoring programme or could not be assessed due to implemented measures which might affect bathing water quality or the lack of sufficient number of samples.

Management of bathing waters in Europe

During the 2019 bathing season, European countries managed their bathing waters according to the provisions set out in the Directive. Before the start of the bathing season, they identified national bathing water sites, defined the length of the bathing season for each site and established monitoring calendars in accordance with the Directive.

During the bathing season, local and national authorities took bathing water samples and analysed them for the types of bacteria (*E. coli* and intestinal enterococci) that indicate pollution from sewage and livestock breeding. Polluted water can have impacts on human health, causing stomach upsets and diarrhoea if swallowed. Based on the levels of bacteria detected, bathing water quality

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was then classified as 'excellent', 'good', 'sufficient' or 'poor'.

Thanks to successful environmental policy and management measures required by the Directive, the percentage of European bathing waters achieving at least 'sufficient' quality (the minimum quality standards set by the Directive) increased from just 74 % in 1991 to over 95 % in 2003, and has remained quite stable since then (see the EEA report *European Bathing Water Quality in 2018*).

The EEA's upcoming 'Bathing Water Management in Europe' report will present examples of improvements in bathing water quality over the past four decades made possible thanks to the Bathing Water Directive. The report aims to celebrate the value and importance of bathing waters in the lives of the European citizens; and to outline how we might protect and restore bathing sites for decades to come, taking into account emerging pressures such as climate change and plastic pollution.

Box 1: European bathing waters and COVID-19 information

Does the Bathing Water Directive monitor viruses?

The European Bathing Water Directive requires national authorities to regularly monitor the presence of microbial fecal indicators (*E. coli* and intestinal enterococci) in bathing waters in order to assess health risks. There are currently no viral indicators as parameters in the Directive.

Is it safe to swim at European bathing sites?

Effluents of waste water to coastal areas and other sensitive areas are subject to very strict standards of treatment (including disinfection) in the EU under the Urban Waste Water Treatment Directive. The World Health Organization states that there is no evidence that the COVID-19 virus has been transmitted via sewerage systems with or without wastewater treatment (WHO, 2020a; WHO, 2020b), while the Centers for Disease Control and Prevention of the United States (CDC) suggests that, based on the available information, the risk of transmission of the virus SARS-CoV-2 through properly designed and maintained sewerage systems is thought to be low (CDC, 2020).

Can COVID-19 spread at the beach?

Information about the safety of bathing sites and safety measures in place at respective open bathing sites in the coming bathing season should be sought from the beach operators, beach managers and/or competent national and local authorities. In addition, visiting bathing sites might be regulated and access to some sites might be restricted this year due to risk of spreading COVID-19.

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According to current evidence, the COVID-19 virus is primarily transmitted between people through respiratory droplets and contact routes (WHO, 2020c). The risks of spreading COVID-19 at the beach depends on the number of people visiting the site, and the implementation of the guidance provided by the national authorities (e.g. social distancing, hygiene measures such as hand cleaning). Members of the public should always follow the guidance and instructions from their local and national authorities.

As bathing water sites increase in number, so do requirements for management

People expect greater opportunities for bathing in natural waters in local environments, as well as improvements of quality at existing sites. During the 2019 bathing season, 306 new bathing sites were identified throughout Europe. It is encouraging to note that 60 % of these bathing sites are situated on rivers and lakes where control of water quality is very challenging. The quality of newly identified bathing sites is determined only when enough samples are available. This can happen as early as the first year of operation if the monitoring frequency is high enough.

The highest number of newly opened bathing sites in 2019 are in Poland (130, out of which 101 are inland). Overall, Poland has 606 bathing sites, 130 of excellent quality. However, as many as 419 are not quality classified. They are either new sites or do not have enough samples due to other reasons. This explains the low overall share of excellent sites in Poland (Figure 1).

Bathing water quality mirrors the success of implementing many water-related environmental policies. Measures have been implemented over many years and in many fields, e.g. in the management of waste water from settlements and industry and the control of pollution from agricultural activities. The pressures on bathing waters by waste water are substantially lower today than in the past, with the share of European population and industry connected to waste water treatment rising in many regions of Europe, as well as a share of treated water receiving tertiary treatment (EEA, 2017).

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Box 2: Monitoring requirements as set by the Directive

Member States establish their respective monitoring calendars which must follow the provisions of Annex IV of the Bathing Water Directive:

- one pre-season sample is to be taken shortly before the start of the bathing season;
- no fewer than four samples (including the pre-season sample) are to be taken and analysed in the most recent season;
- an interval between sampling dates should not exceed one month.

If all three requirements are fulfilled, the monitoring calendar status is considered as 'implemented'. In 2019, full monitoring requirements were implemented at 98 % of EU bathing waters. In Austria, Bulgaria, Finland, Ireland, Luxembourg, Malta, Romania and Slovenia the monitoring calendar was implemented at all reported bathing waters.

Find your local beach

Member States are required by the Directive to use 'appropriate media technologies, including the Internet' to actively disseminate information. Today, countries maintain **national or local websites** with detailed information on each bathing water site. These websites generally include a map-search function and allow a user to see monitoring results, both in real time and for previous seasons.

At the European level, bathing water information is made available to the public through the EEA's bathing water web pages. Users can check bathing water quality on an interactive map, download data and individual country reports, explore details through a link to the national online bathing water profile and make comparisons with previous years.

Footnote and references

1. This briefing presents data from 2019 when the UK was still an EU Member State, therefore data about the UK bathing waters are included under 'EU Member States'.

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Table 1: Bathing water quality in 2019

| Country | Total number of bathing waters | Quality | | | | | | | | | | Monitoring calendar implemented | Management | | |
|----------------------|--------------------------------|--------------|-------------|-------------|------------|------------|------------|------------|----------|----------------|------------|---------------------------------|------------------------|-----------------|---|
| | | Excellent | | Good | | Sufficient | | Poor | | Not classified | | | New sites 2017 – 2019* | Quality changes | |
| | | Number | % | Number | % | Number | % | Number | % | Number | % | | | | |
| AT (Austria) | 261 | 257 | 98.5 | 3 | 1.1 | 0 | 0 | 0 | 0 | 0 | 1 | 0.4 | 100 | 1 | 0 |
| BE (Belgium) | 115 | 98 | 85.2 | 13 | 11.3 | 2 | 1.7 | 1 | 1 | 1 | 0.9 | 99.1 | 2 | 1 | |
| BG (Bulgaria) | 95 | 62 | 65.3 | 28 | 29.5 | 4 | 4.2 | 0 | 0 | 1 | 1.1 | 100 | 1 | 1 | |
| CY (Cyprus) | 113 | 112 | 99.1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.9 | 98.2 | 0 | 0 | |
| CZ (Czechia) | 153 | 124 | 81 | 13 | 8.5 | 4 | 2.6 | 2 | 1 | 10 | 6.5 | 95.4 | 3 | 0 | |
| DE (Germany) | 2291 | 2120 | 92.5 | 103 | 4.5 | 27 | 1.2 | 8 | 0 | 33 | 1.4 | 99.4 | 23 | 8 | |
| DK (Denmark) | 1022 | 903 | 88.4 | 84 | 8.2 | 20 | 2 | 9 | 1 | 6 | 0.6 | 97.6 | 29 | 1 | |
| EE (Estonia) | 54 | 34 | 63 | 10 | 18.5 | 6 | 11.1 | 3 | 6 | 1 | 1.9 | 94.4 | 0 | 0 | |
| EL (Greece) | 1634 | 1564 | 95.7 | 31 | 1.9 | 0 | 0 | 0 | 0 | 39 | 2.4 | 99.9 | 97 | 0 | |
| ES (Spain) | 2234 | 1974 | 88.4 | 160 | 7.2 | 38 | 1.7 | 38 | 2 | 24 | 1.1 | 99.3 | 71 | 8 | |
| FI (Finland) | 301 | 260 | 86.4 | 16 | 5.3 | 8 | 2.7 | 2 | 1 | 15 | 5 | 100 | 5 | 2 | |
| FR (France) | 3348 | 2662 | 79.5 | 441 | 13.2 | 100 | 3 | 72 | 2 | 73 | 2.2 | 98.7 | 67 | 7 | |
| HR (Croatia) | 988 | 945 | 95.6 | 26 | 2.6 | 5 | 0.5 | 0 | 0 | 12 | 1.2 | 99.9 | 36 | 0 | |
| HU (Hungary) | 257 | 182 | 70.8 | 32 | 12.5 | 13 | 5.1 | 10 | 4 | 20 | 7.8 | 96.9 | 19 | 0 | |
| IE (Ireland) | 147 | 107 | 72.8 | 24 | 16.3 | 9 | 6.1 | 5 | 3 | 2 | 1.4 | 100 | 7 | 0 | |
| IT (Italy) | 5535 | 4894 | 88.4 | 326 | 5.9 | 140 | 2.5 | 97 | 2 | 78 | 1.4 | 93.2 | 60 | 12 | |
| LT (Lithuania) | 117 | 102 | 87.2 | 7 | 6 | 6 | 5.1 | 0 | 0 | 2 | 1.7 | 97.4 | 4 | 0 | |
| LU (Luxembourg) | 17 | 12 | 70.6 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 29.4 | 100 | 6 | 0 | |
| LV (Latvia) | 57 | 47 | 82.5 | 9 | 15.8 | 0 | 0 | 0 | 0 | 1 | 1.8 | 98.2 | 1 | 0 | |
| MT (Malta) | 87 | 85 | 97.7 | 2 | 2.3 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | |
| NL (The Netherlands) | 724 | 537 | 74.2 | 112 | 15.5 | 38 | 5.2 | 24 | 3.3 | 13 | 1.8 | 99.9 | 26 | 10 | |
| PL (Poland) | 606 | 131 | 21.6 | 37 | 6.1 | 17 | 2.8 | 2 | 0 | 419 | 69.1 | 99.8 | 399 | 0 | |
| PT (Portugal) | 614 | 562 | 91.5 | 31 | 5 | 6 | 1 | 1 | 0 | 14 | 2.3 | 99.8 | 41 | 0 | |
| RO (Romania) | 50 | 38 | 76 | 10 | 20 | 2 | 4 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | |
| SE (Sweden) | 438 | 344 | 78.5 | 51 | 11.6 | 11 | 2.5 | 4 | 1 | 28 | 6.4 | 93.6 | 4 | 0 | |
| SI (Slovenia) | 47 | 38 | 80.9 | 5 | 10.6 | 4 | 8.5 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | |
| SK (Slovakia) | 32 | 20 | 62.5 | 7 | 21.9 | 1 | 3.1 | 1 | 3 | 3 | 9.4 | 96.9 | 0 | 0 | |
| UK (United Kingdom) | 644 | 426 | 66.1 | 146 | 22.7 | 53 | 8.2 | 15 | 2 | 4 | 0.6 | 99.7 | 15 | 8 | |
| EU | 21981 | 18640 | 84.8 | 1727 | 7.9 | 514 | 2.3 | 294 | 1 | 806 | 3.7 | 97.6 | 917 | 58 | |

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| | | | | | | | | | | | | | | |
|------------------|--------------|--------------|-------------|-------------|------------|------------|------------|------------|----------|------------|------------|-------------|------------|-----------|
| AL (Albania) | 119 | 70 | 58.8 | 26 | 21.8 | 5 | 4.2 | 7 | 6 | 11 | 9.2 | 0 | 19 | 1 |
| CH (Switzerland) | 195 | 160 | 82.1 | 6 | 3.1 | 5 | 2.6 | 2 | 1 | 22 | 11.3 | 69.2 | 9 | 0 |
| Europe | 22295 | 18870 | 84.6 | 1759 | 7.9 | 524 | 2.3 | 303 | 1 | 839 | 3.8 | 96.8 | 945 | 59 |

This briefing presents data from 2019 when the UK was still an EU Member State, therefore data about the UK bathing waters are included under 'EU Member States'.

Notes: * If a bathing water site was newly identified during the last assessment period and before the complete four-year dataset of 2016–2019 could be collected – i.e. identified not earlier than 2017 – it is counted as “newly identified”; this is also true if enough samples were collected in a shorter period. ** If a bathing water was subject to changes described in BWD Article 4.4.b within the last assessment period, it is assigned management status “Quality changes”. Such status is assigned until the complete four - year dataset of samples taken after changes took effect is available.

Identifiers

Briefing no. 01/2020

Title: **European Bathing Water quality in 2019**

PDF TH-AX-20-001-EN-N - ISBN 978-92-9480-229-3 - ISSN 2315-1846/2467-3196 -
doi: 10.2800/26350

HTML TH-AX-20-001-EN-Q - ISBN 978-92-9480-230-9 - ISSN 2315-1846/2467-3196 -
doi: 10.2800/364429

The withdrawal of the United Kingdom from the European Union did not affect the production of this briefing. Data reported by the United Kingdom are included in all analyses and assessments contained herein, unless otherwise indicated.

Published on 08 Jun 2020