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European bathing water quality in 2015

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European Environment Agency

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Foreword — EU marks 40 years protecting your bathing water

Every summer, European holiday resorts fill up with tourists eager to enjoy the warmer weather and the beautiful natural surroundings of this diverse continent. For many, the summer vacation is synonymous with swimming in the sea or in a lake, so it is natural that water quality is an important factor in choosing a destination.

To help citizens make informed choices, the European Environment Agency (EEA) and the European Commission publish the annual European bathing water quality report. The information contained in this edition — which covers bathing water quality in 2015 in the EU Member States, Albania and Switzerland — indicates where good quality bathing water is likely to be found in 2016.

Photo: Costa del Sol, Spain © Peter Kristensen

More than 21 000 European coastal and inland bathing water sites reported on their water quality in 2015. As in recent years, we are pleased to report that the vast majority can confidently claim to have good quality water. In fact, figures show a slight increase in 2015, with 96 % of sites meeting the minimum quality requirements set out in the EU's Bathing Water Directive.

Moreover, more than 84 % of bathing water sites satisfied the directive's more stringent 'excellent' bathing water quality standards, while less than 2 % of sites were rated as having 'poor' water quality.

This year marks a significant moment in Europe's attempts to tackle water pollution and provide clean bathing water for its citizens. The Bathing Water Directive — which sets quality standards and provides monitoring guidelines — was first issued 40 years ago, in 1976, and revised in 2006. The progress made over these 40 years proves the value of continuous water quality monitoring and assessment, as well as demonstrating the importance of investing in wastewater infrastructure, among others, to reduce pollution across Europe.

In addition, the 2015 bathing season was the first time that all EU Member States monitored their bathing sites according to the provisions of the EU's revised Bathing Water Directive (2006/7/EC).

We encourage you to engage with the information in the report, and use the online resources available at the EEA website to further your understanding of bathing water quality in your local area or chosen holiday destination. We also hope you have a great summer and, wherever you are, encourage you to contribute to keeping Europe's bathing sites as clean and inviting as possible.

We wish you a pleasant summer and happy bathing.

Karmenu Vella,
European Commissioner for the Environment, Maritime Affairs and Fisheries

Hans Bruyninckx,
Executive Director, European Environment Agency

Executive summary

Each year millions of Europeans spend their holidays or weekends at Europe's diverse and beautiful beaches and bathing areas. As this year's bathing season approaches, many of them start to take an interest in the quality of water in which they will bathe. Europe is the world's no. 1 tourist destination, and the tourism industry has become a key sector of the European economy, generating over 10 % of EU GDP (directly or indirectly) and employing around 10 million citizens. The competitiveness of the European tourism industry is dependent on the quality of tourist destinations, including the quality of bathing water at those destinations. The European Commission and the European Environment Agency (EEA) ([1]) are therefore pleased to present this year's bathing water report.

The efforts of the European Union to ensure clean and healthy bathing water began forty years ago with the Bathing Water Directive, issued in 1976. A revised version of the directive followed in 2006 ([2]), updating the measures of the 1976 legislation and simplifying its management and surveillance methods. This revised directive also provides for better and timelier public information about bathing water quality.

For recreational activities such as swimming, faecal contamination from sewage and animals is a cause of concern for public health. Swimming at contaminated beaches or bathing lakes can result in illness.

The major sources of pollution responsible for faecal bacteria come from sewage and water draining from farms and farmland. Their presence leads to poor quality bathing water. Such pollution increases during heavy rains and floods, when pollution is washed into rivers and seas, and by overflowing sewerage networks. Forty years ago, large quantities of uncontrolled, untreated or partially treated wastewater were discharged into many of Europe's waters.

European legislation and national water policies as well as many years of investment in the sewerage system, better wastewater treatment and the reduction of pollution from farms have led to Europe's bathing water being much cleaner today than it was 40 years ago. Looking forward, it is important to continue understanding the effectiveness and efficiency of the policy.

Trends in bathing water quality over the past 25 years

Over the past 25 years, there has been an increase in the number of bathing water sites reported. This is due to both more EU Member States reporting and more individual bathing water sites being reported. In 1991, the number of sites reported by the 12 EU Member States was already over 15 000. Since the enlargement of the European Union in 2004, bathing water quality has been reported for more than 20 000 sites.

Based on the nearly 9 600 bathing water sites that have been monitored every year from 1991 to 2015, a marked improvement in bathing water quality can be seen.

- In 1991, 56 % of bathing water sites reached the highest standards. This percentage rose to 87 % in 2015.
- In the beginning of the 1990s, 25 % of these sites did not comply with the minimum standards, while in 2015, only 1.7 % had poor water quality, were closed or did not have adequate monitoring.

Bathing water quality and trends in 2015

Since the 2015 bathing water season, the revised Bathing Water Directive (2006/7/EC) has been fully implemented in all EU Member States ([3]) and follows the directive's requirements on monitoring, reporting and assessment. These include at least monthly sampling

([1]) Since 2009, the European Environment Agency (EEA) and its European Topic Centre on Inland, Coastal and Marine Waters have prepared the annual European bathing water report.
([2]) Directive 2006/7/EC of the European Parliament and of the Council of 15 February 2006 concerning the management of bathing water quality and repealing Directive 76/160/EEC, OJ L 64, 4.3.2006, pp. 37–51.
([3]) Member States had until December 2014 to achieve full implementation of the revised Bathing Water Directive.

Photo: Bornholm, Denmark © Peter Kristensen

during the bathing water season with a minimum of four annual samples taken, and the obligatory use of data from four years of monitoring for the assessment of bathing water quality. The 2015 classification of bathing water quality is determined on the basis of data from the four-year period 2012 to 2015, which gives reliable and realistic results. The results give an indication of the bathing water sites where the quality of bathing water is expected to be excellent or good for the 2016 season, but also identifies the sites where in the past the bathing water quality was only sufficient or poor.

There were 21 582 bathing water sites monitored in Europe in 2015, of which 21 288 were in the 28 EU Member States. Switzerland and Albania also monitored and reported on the quality of their 294 bathing water sites. In 2015, 69 % of sites were coastal bathing waters (including transitional waters), while 31 % were inland waters (rivers and lakes).

The EEA has checked all reported bathing water sites for the monitoring requirements described by the revised Bathing Water Directive. Bathing water sites that do not meet the criteria were categorised as 'sampling frequency not satisfied'. The sampling frequency was not satisfied at 324 sites in the EU Member States, at 18 sites in Albania and at 26 sites in Switzerland. In comparison with the 2014 season, when 541 bathing water sites did not meet at least one of the sampling frequency conditions, this shows a great improvement in monitoring bathing water according to the provisions of the directive.

There has been a marked drop in the proportion of EU bathing water sites that could not be quality assessed, from 5.8 % in 2011 to 2.3 % in 2015.

Minimum water quality standards (meaning at least 'sufficient' bathing water quality) have been met by 96 % of all EU bathing water sites reported for the 2015 bathing season. The share of poor quality bathing water sites dropped to 1.6 % in 2015 from 1.9 % in 2014.

The share of bathing water sites in the EU with excellent water quality increased from 78.1 % in 2011 to 84.4 % in 2015.

Overall bathing water quality is thus improving over time. It is encouraging to observe that more and more bathing water sites are not only reaching minimum quality standards set by the Bathing Water Directive, but are improving their quality to the highest (excellent) quality standards.

Bathing water quality by country in 2015

All reported bathing water sites in Cyprus, Croatia, Estonia, Greece, Latvia, Luxembourg, Malta and Slovenia achieved at least sufficient quality in 2015. Moreover, more than 90 % of bathing water sites were of excellent quality in eight Member States: Luxembourg (all 11 reported bathing water sites), Cyprus (99.1 % of bathing water sites), Malta (97.7 %), Greece (97.2 %), Croatia (94.2 %), Italy (90.5 %), Germany (90.3 %) and Austria (90.2 %).

In 2015, there were 383 sites with poor quality bathing water in Europe. Italy (95 bathing water sites or 1.7 %), France (95 bathing water sites or 2.8 %) and Spain (58 bathing water sites or 2.6 %) are the countries with the highest number of poor bathing water sites. In some EU Member States, more than 3 % of bathing water sites were of poor quality: 4.9 % or 31 sites in the United Kingdom, 4.4 % or six sites in Ireland, 3.4 % or 24 sites in the Netherlands and 3.2 % or three sites in Bulgaria.

Improvements and deterioration of bathing water quality

Between 2014 and 2015, 125 bathing water sites changed status from poor quality to sufficient quality or better. The countries with the highest number of bathing water sites where the water quality improved from poor to at least sufficient were France (32 sites), Italy (24 sites) and Spain (20 sites).

However, in the same period, 76 bathing water sites changed their status from at least sufficient quality to poor quality. This deterioration was most significant in France, where the quality at 29 bathing water sites changed from at least sufficient to poor. Deterioration in quality is also significant for Spain, Italy and the Netherlands, where the quality of more than 10 bathing water sites was downgraded from at least sufficient to poor.

Despite efforts to reduce and eliminate pollution, problems related to poor water quality persist. Affected bathing water sites must be closed to eliminate hazards to bathers' health. A permanent bathing prohibition, or permanent advice against bathing must be put in place at bathing water sites that are classified as poor for five consecutive years. In 2015, there were 34 bathing water sites in Europe that were in this situation; 31 in Spain, two in Denmark and one in Sweden.

For the 2016 bathing season, all sites with poor water quality in the 2015 season should prohibit bathing or at least advise against it. In addition, adequate measures to prevent, reduce or eliminate the causes of pollution should be implemented before the bathing water can be reopened.

Informing the public about bathing water quality

Besides calling for more effective monitoring and management of bathing water, the revised Bathing Water Directive also requires greater public participation and improved information dissemination. The directive obliges Member States to inform citizens about bathing water management, bathing water quality, potential threats to bathing water quality, and bathing. Today, countries have national or local websites with detailed information on each bathing water site. These websites generally include a map search function and allow public access to monitoring results, both in real time and for previous seasons.

At European level, bathing water information is made available to the public through the EEA's bathing water website ([4]), which allows users to view bathing water quality at more than 21 000 coastal beaches and inland sites across Europe. Users can check bathing water quality on an interactive map, download data and a report for a country and make comparisons with previous years.

Today, the public has access to high-quality information on bathing water quality, and can thus become more actively involved in protecting the environment and helping to improve Europe's bathing areas.

EU water policy

Water is essential for human life, nature and the economy. The EU's water policy has been successful in helping to protect water resources and the ecosystem services they provide. The improved quality of EU bathing sites over the last 40 years is a good example. Many years of investment in the sewerage system and better wastewater treatment have led to Europe's bathing water being much cleaner today.

Management of water to ensure safe supplies of an essential resource is a fundamental requirement for human civilisation. Aspects of water management in relation to human health are described in a forthcoming EEA report 'Human health and well-being in European water policies'. The report describes different elements of the Bathing Water Directive, the Urban Wastewater Treatment Directive, the Drinking Water Directive and the Water Framework Directive and makes links between the policies.

In addition to the good quality of bathing water, we need clean and healthy water for our ecosystems. Efforts to improve the quality of bathing water should therefore not be seen in isolation but in the context of the good ecological and environmental status we aim for in implementing the Water and Marine Strategy Framework Directives.

([4]) http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water/state.

1 Four decades of European bathing water policy

Each year, before the start of the bathing water season, the European Union (EU) publishes an annual report on the quality of coastal and inland bathing areas, as reported by EU Member States and other European countries. Since 2009, the European Environment Agency (EEA) and its European Topic Centre on Inland, Coastal and Marine Waters have been preparing the report in cooperation with the European Commission's Directorate-General for the Environment.

This report gives an overview of the 2015 bathing water quality at more than 21 000 locations in the Member States of the European Union, Albania and Switzerland. It also presents a longer-term historical perspective of the evolution in bathing water quality since 1991. Moreover, the report provides an overview of changes in monitoring programmes and the efficiency of management measures since the directives came into force.

1.1 Development of bathing water legislation

Some forty years ago, when Europe had its first bathing water legislation, large quantities of mostly uncontrolled, untreated or partially treated municipal wastewater were discharged into many of Europe's surface waters. At the same time, an increasing number of beach visitors, combined with dirty beaches, concerns over the health of swimmers and growing environmental awareness paved the way for the first Bathing Water Directive.

The Bathing Water Directive was adopted in 1976 by the Council of the European Communities (76/160/EEC). It defined bathing water as 'those fresh or sea waters where bathing is either explicitly authorised or is not prohibited, and is traditionally practiced by large numbers of bathers'. The directive listed 19 physical, chemical and microbiological parameters for which limit values had to be defined. Some of them are Imperative (I) values, whilst others are Guideline (G) values. Member States had to set values for bathing water that are no less than I-values, whilst the G-values are seen as desirable targets. The directive also stipulated minimum sampling frequencies and reference methods of analysis. Member States were obliged to take all necessary measures to ensure that, within 10 years of the publication of the directive, the quality of bathing water would conform to the limit values.

The overall quality of bathing water has steadily improved since Directive 76/160/EEC came into force. However, that directive reflected the state of our knowledge and behaviour in the early 1970s. Patterns of bathing water use have since changed, as has the state of scientific and technical knowledge.

In December 2000, the Commission adopted a Communication to the European Parliament and the Council on the development of a new bathing water policy, and initiated a large scale consultation of all interested and involved parties. The main outcome of this consultation was general support for the development of a new directive based on the latest scientific evidence and paying particular attention to wider public participation.

The revised Bathing Water Directive, adopted in 2006 (2006/7/EC), uses scientific evidence from the most reliable indicators to predict microbiological health risk and achieve a high level of protection. The directive itself is implemented in coordination with other Community legislation on water, such as directives on urban wastewater treatment, protection of waters against pollution caused by nitrates from agricultural sources and joint actions in the field of water policy (Water Framework Directive). The revised directive puts greater emphasises on the integrated management of bathing water, which if implemented in an effective way, should lead to appropriate bathing water quality. It also obliges Member States to establish bathing water profiles (descriptions of bathing water characteristics and pollution sources) and make them available to the public. Member States should also encourage public participation in the implementation of the revised directive and ensure the provision of opportunities for those members of the public affected.

1.2 Trends in bathing water and bathing water quality over the past 25 years

Over the past 25 years, there has been an increase in the number of bathing water sites reported (Figure 1.1). This is due to both more EU Member States reporting and more individual bathing water sites being reported, and was especially great between 1990 and 1996. In fact, the number of bathing water sites reported by EU Member States in 1990 was 7 539 (in 7 Member States), while a year later, the figure was already 15 075 (in 12 Member States). With the enlargement of the European Union in 2004, 913 new bathing water sites were reported and since 2004, bathing water quality has been reported for more than 20 000 sites.

In total, bathing water quality has been classified each year from 1991 to 2015, for a total of 9 594 sites (in 12 Member States). Based on this subset of bathing water sites, the following trends can be illustrated (Figure 1.2).

- During the periods 1991–1996 and 2009–2012, there are a relatively high proportion of bathing water sites that could not be classified because not enough samples were available. This reflects the problems encountered in implementing the provisions of the 1976 Bathing Water Directive and its 2006 revision.

- Almost one quarter of bathing water sites did not achieve minimal quality and monitoring standards in 1991.

- In the period 2009–2012, countries began to implement the revised Bathing Water Directive, which caused problems with sampling frequency (i.e. no pre-season sample taken, or less than four samples taken per year). Today, the implementation of the revised Bathing Water Directive is fully in place and the proportion of bathing water sites with satisfactory monitoring has significantly improved.

- In 1991, 56 % of bathing water sites reached the highest standards. This percentage rose to 87 % in 2015.

- In the beginning of the 1990s, 2 363 (25 %) of the 9 594 bathing water sites did not comply with the minimum standards (i.e. not complying to mandatory values or not enough samples), while in 2015, only 160 (1.7 %) had poor water quality, were closed or did not have adequate monitoring.

- The decrease in the share of bathing water sites with excellent, good or sufficient quality (compliance to mandatory values) between 2009 and 2012, is mainly attributed to problems with monitoring and the introduction of more stringent quality limit values. The summer of 2012 was also exceptionally wet in some Member States, resulting in more low quality bathing water sites.

Pollution gets into the water from many sources and takes many forms, but one of the most prevalent is faecal contamination from sewage and animals. Faecal contamination is a cause of concern for public health — raw sewage and animal waste are full of bacteria and viruses. Swimming at contaminated beaches or bathing lakes can result in illness.

The major sources of pollution responsible for faecal bacteria in bathing water are:

- Pollution from sewage — bacteria from sewage can enter waters as a result of system failures or overflows from sewerage works. Insufficiently treated wastewater of this sort finding its way into freshwaters and the sea continues to be a pollution problem at some beaches.

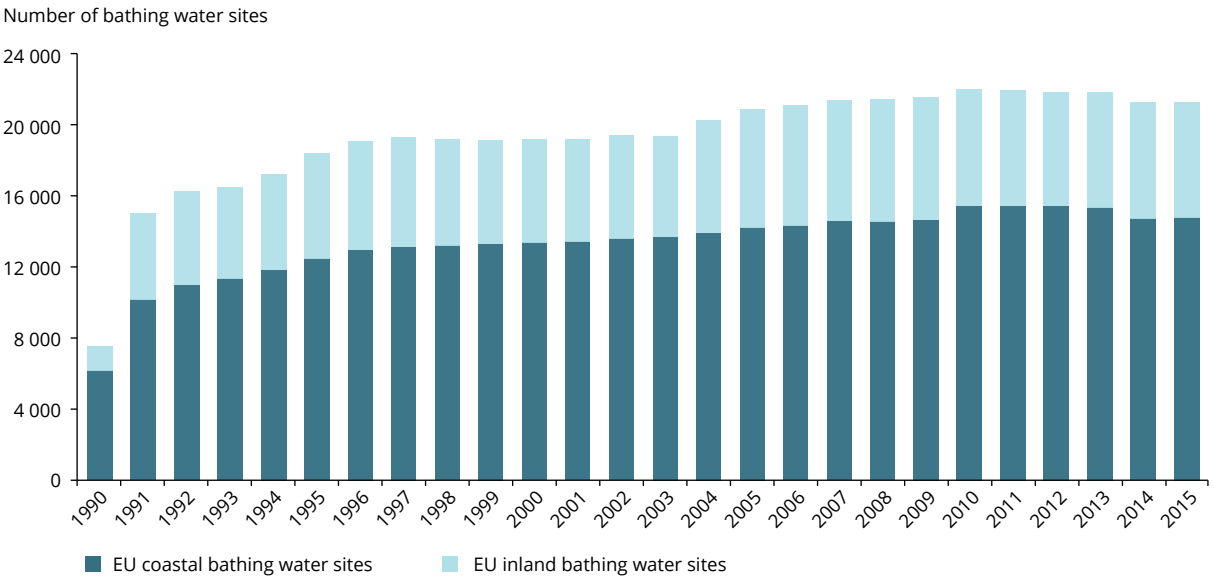
- Water draining from farms and farmland — poorly stored slurry or manure from livestock can wash into streams, resulting in the pollution of downstream bathing water. Scattered houses with misconnected drains and poorly located or poorly maintained septic tanks can also be the cause of pollution.

- Animals and birds on or near beaches — bathing water can be affected by dog, bird and other animal faeces as it often contains high levels of bacteria. Crowded beaches with many swimmers may also result in poor quality.

In wet summers, large amounts of rainwater affect bathing water quality by causing storm sewerage systems to release diluted sewage into bathing water or streams that discharge close to beaches. Rainwater also washes animal waste from urban and rural areas into surface water drains and rivers.

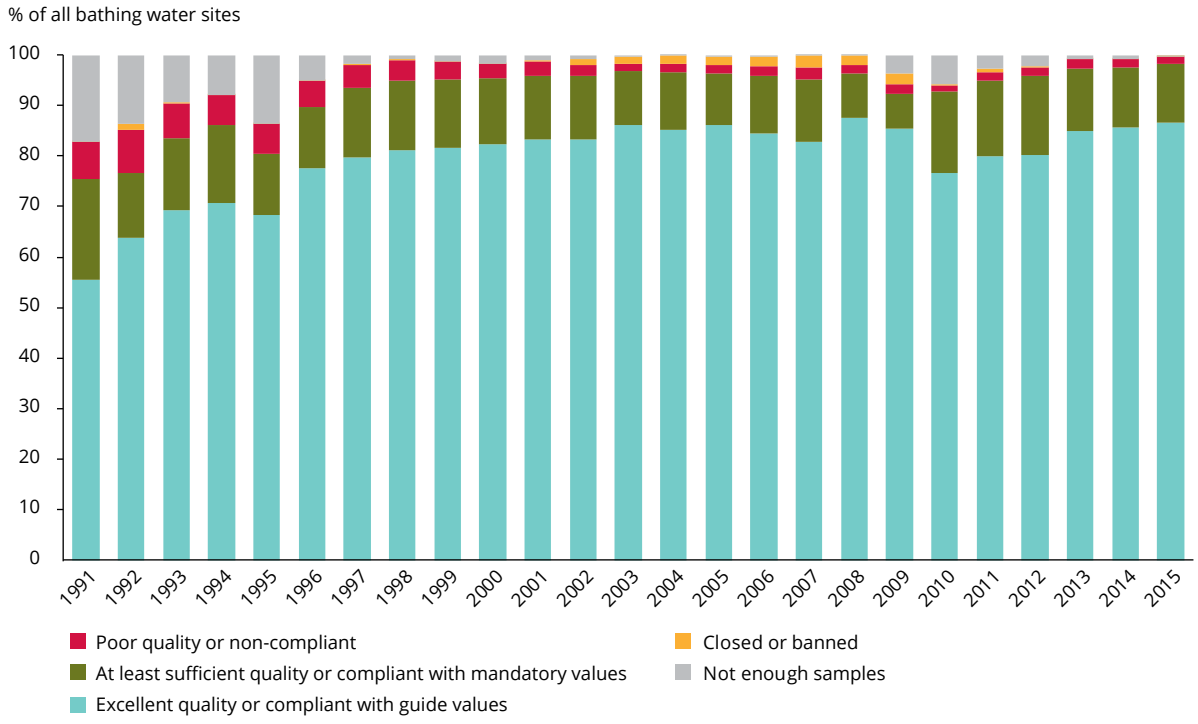
Poor water quality can also be caused by misconnected plumbing — where foul water, such as from toilets, enters directly into surface waters — and from poorly maintained cesspits and septic tanks. Water quality is affected in years with below average sunshine, as the sun's ultra-violet (UV) rays kill faecal bacteria found in the water.

Figure 1.1 Total number of bathing water sites reported in the European Union



Source: WISE bathing water quality database (data from annual reports by EU Member States). Detailed data on bathing water quality are available at http://www.eea.europa.eu/data-and-maps/data/bathing-water-directive-status-of-bathing-water-8.

Figure 1.2 Bathing water quality for 9 594 bathing water sites



Note: The trend is based on bathing water sites (12 Member States) where quality observations exist for all years from 1991 to 2015. In Chapter 2, the trend from 2011 to 2015 is illustrated, covering around 21 000 bathing water sites and all reporting countries.

Source: WISE bathing water quality database (data from annual reports by EU Member States). Detailed data on bathing water quality are available at http://www.eea.europa.eu/data-and-maps/data/bathing-water-directive-status-of-bathing-water-8.

Photo: Jutland, Denmark © Peter Kristensen

Many years of investment in the sewerage system and better wastewater treatment have led to Europe's bathing water being much cleaner today than it was 40 years ago, but as the results show, there are still bathing water sites with poor quality.

Where bathing water quality is poor, it is imperative to assess the sources of pollution. Bathing water profiles should provide an indication of pollution sources in the bathing catchment area and, together with historical data on rainfall, stream flow and sea currents, there should be information on the sources to be targeted with measures. At some bathing water sites, the causes of poor quality are not known in detail and special studies to explore the sources may be needed.

Management measures are primarily implemented at those bathing water sites that have only sufficient or poor water quality.

- Implementation of the Urban Waste Water Treatment Directive (UWWTD) and a focus on reducing sewer overflow have successfully reduced pollution and improved quality at several low quality bathing water sites. However, for some bathing water sites, upgrading of wastewater treatment, for example with ultraviolet light disinfection, may be needed to ensure good bathing water quality.

- Bathing water affected by water draining from farms and farmland, and from scattered houses with misconnected drains will need detailed inventories to find and stop the sources.

- Bathing water affected by large numbers resting birds or dogs on the beach may need measures to restrict the number of animals, or a change of location of the bathing water site.

- In addition to measures to reduce pollution at source and rainwater storage basins, bathing water affected by heavy rains and storm water overflow may also need an effective modelling and warning system to advise bathers against entering the water after these short-term pollution events.

Some examples of investment in pollution reduction and improving the quality of bathing water are given in Box 1.1.

Box 1.1 Examples of investment in pollution reduction and improving the quality of bathing water sites

Copenhagen: from sewer to harbour bath

In Copenhagen, Denmark, many years of investments in the sewerage system have revitalised the harbour. For decades, the discharge of wastewater from sewers and industrial companies had a major impact on the water quality in Copenhagen harbour. The water was heavily polluted.

In 1995, 93 overflow channels fed wastewater into Copenhagen harbour and the adjacent coastlines. Since then, the municipality has built rainwater reservoirs and reservoir conduits that can store wastewater until there is space again in the sewerage system. This has resulted in the closure of 55 overflow channels. Today, wastewater is only discharged to the harbour during very heavy rainfall.

Municipal investments in modernising the sewerage system and expanding the city's wastewater treatment plants have revitalised the harbour of Copenhagen. In 2002, the first public harbour bath opened and today there are five harbour baths. An established online warning system calculates and monitors the water quality in the harbour. If the water quality is poor, the swimming facilities are immediately closed.

Source: DAC&Cities homepage: http://www.dac.dk/en/dac-cities/sustainable-cities/all-cases/water/copenhagen-from-sewer-to-harbour-bath.

Swimming in the Isar in Munich

An urban river restoration project has been in progress on the river Isar in Munich since the beginning of 2000. Within the scope of the 'Isar Plan', local flood protection is improved and ecologically valuable habitats for fauna and flora are restored.

Besides an improved protection against flooding, the river was brought into an almost natural state, resulting in a better quality recreational area within the city of Munich. The quality of the water has also improved due to the upgrading of the wastewater treatment plants along the river. The number of microbiological bacteria, however, is still relatively high. Together with other cities and communities along the Isar, Munich has set a goal to reduce pollution until the water quality is good enough to allow bathing in the river. If this is achieved, Munich would be one of the few big cities in Europe with a river with sufficiently high water quality to allow swimming. The wastewater treatment plants on the upper river are now treating wastewater with ultraviolet light, which greatly reduces the microbiological bacteria, but bathing in the Isar still cannot be guaranteed safe because of the entrance of polluted rainwater into the river, especially during heavy rain.

Source: Münchner Stadtentwässerung homepage: http://www.muenchen.de/rathaus/Stadtverwaltung/baureferat/mse/Baden-in-der-Isar.html.

A story on improvement in north-west England (Blackpool — Fylde coast)

Tourism plays a major part in the economy along much of the Fylde coast of north-west England. This region, bounded by Fleetwood to the north and the Ribble estuary to the south, has four main population centres: Blackpool; Lytham St Anne's; Southport; and Preston, located further inland. Blackpool is one of the country's most famous resorts and is visited by over 17 million people a year. The area had a long history of water quality problems, which had increasingly begun to threaten the local tourist industry.

A major programme of improvements was required. United Utilities have implemented a number of co-ordinated schemes to enhance sewerage infrastructures and increase wastewater treatment capability in order to address the quality of bathing water along this part of the coast. These included the provision of improved disinfection facilities and substantially increased storage for stormwater, together with the upgrading of treatment works and changes to outfall arrangements. Over the last 20 years, GBP 1 billion were spent improving the region's bathing water sites, with plans to invest a further GBP 250 million between 2015 and 2020.

In 1988, just six of the then 29 waters monitored in the region met bathing water guidelines. By 2014, all bathing water sites were of the necessary standard.

Source: United Utilities bathing water homepage: http://www.unitedutilities.com/Bathing-waters.aspx.

2 Bathing water quality and trends in 2015

In the following chapter, bathing water quality monitoring and assessment results are presented. Overall bathing water quality, as well as coastal and inland bathing water quality, are presented in separate subchapters. All bathing water sites reported for the 2015 season are assessed and compared with those of 2014 and the trend in bathing water quality in the period 2011 to 2015 is illustrated.

2.1 Monitoring of bathing water quality

In the 2015 bathing season, all EU Member States monitored their bathing sites according to the provisions of the EU's revised Bathing Water Directive (2006/7/EC). Countries identified national bathing water sites, defined the length of their bathing season and established a monitoring calendar for each bathing water site before the start of the bathing season. They ensured that the analysis of bathing water quality took place in accordance with the reference methods specified in the directive. The results of the analysis are used to assess the quality of the bathing water sites concerned and to provide information to the public.

During the bathing season, samples from coastal and inland bathing water sites are taken and analysed. Laboratories count the numbers of two microbiological organisms present — intestinal enterococci and *Escherichia coli* (also known as *E. coli*) — which indicate the potential presence of pollution. Local results are usually compiled at national level and, by the end of the bathing season, reported to the European Commission and the EEA.

The assessment of bathing water quality under the revised Bathing Water Directive makes use of the values of these two microbiological parameters obtained in four consecutive years. For example, the quality of bathing water in 2015 is assessed on the basis of samples taken from 2012 to 2015. Bathing water quality as described in this report is based on an assessment of the data measured and reported by countries in 2015.

Besides the monitoring of bacteria concentrations, bathing water sites are also regularly inspected for other potential hazards such as cyanobacterial proliferation, chemical spills, marine litter etc. If such events affect bathing water sites and present a threat to human health, information is made available to the public at the bathing water's location (signs and boards), through the media, via bathing water profiles etc. Sometimes monitoring cannot be conducted due to abnormal situations, restricted access to bathing water locations (e.g. due to landslides), construction works, a lack of water in reservoirs etc.

There were 21 582 bathing water sites identified in Europe in 2015, of which 21 288 were in the 28 EU Member States. Switzerland and Albania also monitored and reported on the quality of their 294 bathing water sites. In 2015, 69 % were coastal bathing water sites (including transitional waters), while 31 % were inland waters (rivers and lakes). All 24 countries with access to the sea monitored and provided data on their coastal bathing water sites, while 27 countries reported on inland bathing sites in lakes and rivers. There were no inland bathing water sites reported in Albania, Cyprus and Malta.

Change in bathing water sites from 2014 to 2015

Of the 21 582 bathing water sites identified in 2015 in Europe, 236 were either new or re-opened ([5]). The most significant increase in newly reported bathing water sites, occurred in Switzerland, where 35 of the 216 reported sites are newly identified and reported on for the first time. A vast majority of newly identified Swiss bathing water sites are situated on the shores of lakes Neuchatel and Geneva.

([5]) In cases where bathing water is subject to temporary management measures or has to be closed, the Member State must make changes to its monitoring calendar. In such cases, the Member State may decide not to identify the site as a bathing water site for the current season. After the measures are fully implemented, bathing water can be monitored and reported again.

Between the 2014 and 2015 bathing seasons, 192 bathing water sites were delisted or excluded from the countries' monitoring programmes. France, Greece, Croatia and Switzerland each excluded more than 20 bathing water sites from the monitoring programme. Nevertheless, the total number of bathing water sites identified in Greece, France and Switzerland increased compared to the previous season due to the high number of newly identified bathing water sites. On the contrary, in Croatia the number decreased.

Detailed tabular information regarding the number of bathing water sites in Europe by country, as well as information on newly identified bathing water sites, and bathing water sites excluded from the monitoring programme is available in Annex 1.

Bathing water sites categorised as sampling frequency satisfied or not satisfied

All bathing water sites have been checked for the monitoring requirements described in Box 2.1. Bathing water sites that do not meet the criteria were categorised as 'sampling frequency not satisfied'. The sampling frequency was not satisfied at 324 bathing water sites in the EU Member States 18 in Albania and 26 in Switzerland (Table 2.1). In comparison with the 2014 season, when 541 bathing water sites did not meet at least one of the sampling frequency conditions, this shows a great improvement in monitoring bathing water according to the provisions of the revised Bathing Water Directive. Italy and Sweden account for the highest number of bathing water sites with 'sampling frequency not satisfied', at 144 and 61 respectively. The highest percentages of EU bathing water sites violating the sampling frequency requirements are found in Sweden (13.7 %), Lithuania (12.5 %) and Hungary (9.8 %) .

Box 2.1 Monitoring requirements and quality assessment methodology for bathing water quality in the 2015 season

The monitoring requirements under the revised Bathing Water Directive are:

- taking of a pre-season sample (taken shortly before the start of the bathing season);
- a minimum of four samples per season (three samples are sufficient if the season does not exceed eight weeks or if the region is subject to special geographical constraints);
- a minimum of one sample per month (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).

These conditions must be met for all reported bathing water sites. If these rules are satisfied, the bathing water is categorised as sampling frequency satisfied. If at least one monitoring requirement is not fulfilled the bathing water is categorised as sampling frequency not satisfied.

If the sampling frequency of bathing water has not been satisfied, it 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 are more or less equally distributed throughout the season, and if the bathing-water sample dataset contains an adequate amount (16 or 12, respectively) of samples. Bathing water sites are accordingly classified in one of the bathing-water quality classes (excellent, good, sufficient or poor).

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

- not enough samples: not enough samples have been provided for the 2015 season or throughout the whole assessment period.
- new: classification not yet possible because bathing water is newly identified and a complete set of samples is not yet available.
- changes: classification is not yet possible after changes affecting bathing water quality have been implemented.
- closed: bathing water is closed temporarily or throughout the bathing season.

Table 2.1 Number of bathing water sites in the 2015 season with requirement on sampling frequency satisfied and not satisfied

Country	Total number of bathing water sites in 2015	Bathing water sites with sampling frequency satisfied *	Bathing water sites with sampling frequency not satisfied **	Bathing water sites that are new, changed or closed ***		
				Closed	New	Changes
AT (Austria)	265	265	0	0	0	0
BE (Belgium)	113	111	0	0	0	2
BG (Bulgaria)	94	94	0	0	0	0
CY (Cyprus)	113	112	1	0	0	0
CZ (Czech Republic)	153	145	1	3	2	2
DE (Germany)	2 292	2 244	6	7	25	10
DK (Denmark)	1 028	1 015	3	0	9	1
EE (Estonia)	54	51	2	0	1	0
ES (Spain)	2 189	2 154	8	1	18	8
FI (Finland)	301	286	10	0	4	1
FR (France)	3 355	3 269	39	8	34	5
GR (Greece)	1 542	1 508	0	0	34	0
HR (Croatia)	935	903	1	0	31	0
HU (Hungary)	246	200	24	0	18	4
IE (Ireland)	137	134	0	0	1	2
IT (Italy)	5 518	5 342	144	1	27	4
LT (Lithuania)	112	94	14	1	2	1
LU (Luxembourg)	11	11	0	0	0	0
LV (Latvia)	55	47	0	0	8	0
MT (Malta)	87	87	0	0	0	0
NL (Netherlands)	714	693	0	1	11	9
PL (Poland)	197	181	3	0	12	1
PT (Portugal)	569	544	6	0	17	2
RO (Romania)	50	50	0	0	0	0
SE (Sweden)	445	376	61	0	4	4
SI (Slovenia)	47	47	0	0	0	0
SK (Slovakia)	33	28	0	5	0	0
UK (United Kingdom)	633	629	1	3	0	0
EU	**21 288**	**20 620**	**324**	**30**	**258**	**56**
AL (Albania)	78	60	18	0	0	0
CH (Switzerland)	216	115	26	0	75	0
Europe	**21 582**	**20 795**	**368**	**30**	**333**	**56**

Note: * These bathing water sites have been monitored according to revised Bathing Water Directive provisions (monitoring frequency satisfied and pre-season sample taken), are not new, have no changes and were not closed in 2015. Such bathing water sites have been quality-classified (excellent, good, sufficient, poor).

** These bathing water sites have either not been monitored according to revised Bathing Water Directive provisions (monitoring frequency not satisfied), are not new, have no changes or were closed in 2015. They may be quality-classified if there is a reasonable volume of samples available.

*** These bathing water sites are closed, new or have been subject to changes that could affect bathing water quality (see Box 2.1).

Of the bathing water sites reported, 30 were not fully monitored in 2015 (closed sites) so the bathing water quality could not be assessed. Bathing water sites are closed for reasons usually not connected to water quality such as dangerous access, construction works, low water levels or legal issues. France (8) and Germany (7) had the highest number of closed bathing water sites. If these sites are monitored in the coming years, the quality assessment will become possible again.

At 56 bathing water sites, measures were taken during the 2015 season to reduce pollution (changes). These sites will be quality assessed when the dataset recorded after the measures have been taken contains at least 16 samples ([6]). For the 2015 season, such 'changes' were reported by 15 countries. At least seven bathing water sites where measures had been implemented were reported by Germany (10), the Netherlands (9) and Spain (8).

There are 285 'new' EU bathing water sites where not enough samples for quality assessment are available yet. These sites will be quality assessed as soon as an adequate amount of samples (minimum 16 samples) are collected.

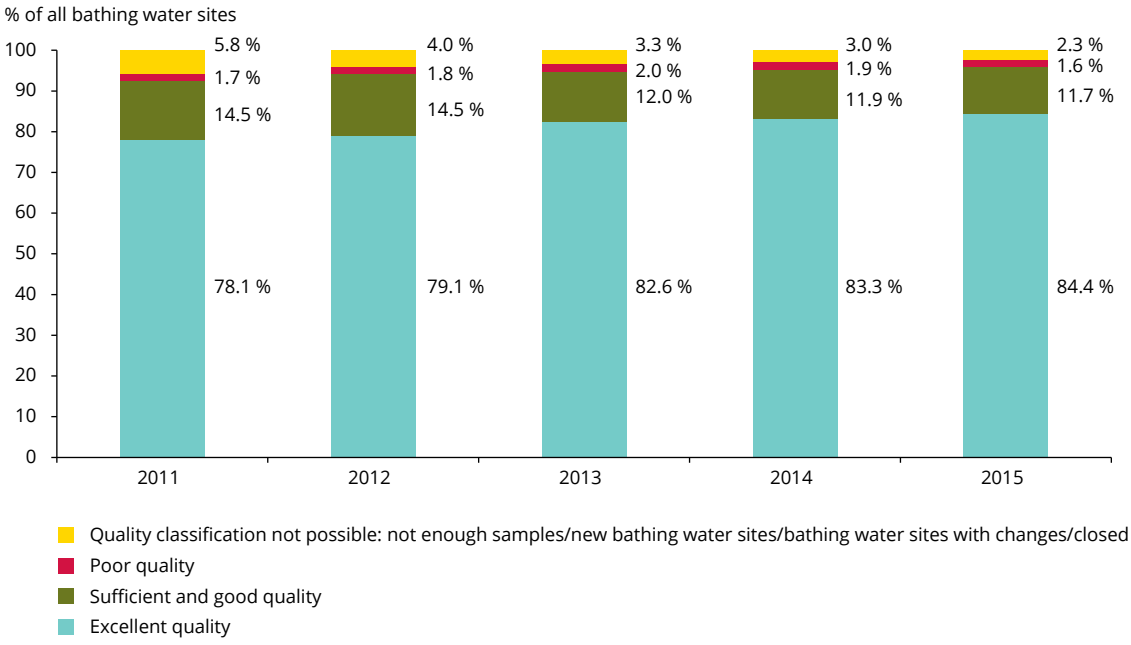
2.2 Overall bathing water quality

Minimum water quality standards (meaning the bathing water was of at least sufficient quality) have been met at 96.1 % of all EU bathing water sites identified for the 2015 bathing season, representing an increase of 0.9 percentage points compared with 2014. In total, 349 EU bathing water sites were of poor quality. The share of poor quality bathing water sites dropped to 1.6 % in 2015. This represents a 0.3 percentage point decrease from the previous season.

There has been a marked drop in the proportion of bathing water sites that could not be quality assessed, from 5.8 % in 2011 to 2.3 % in 2015. The most common reason for quality status not being calculated is an insufficient number of samples for quality assessment (minimum 16 samples over four years ([6])). Some bathing water sites have also not been assessed because they were closed (temporarily or throughout the season).

The share of bathing water sites in the EU with excellent water quality increased from 78.1 % in 2011 to 84.4 % in 2015 (Figure 2.1). The share of bathing water sites with poor quality remained relatively constant during the period assessed.

Figure 2.1 Overall bathing water quality in the European Union between 2011 and 2015



Source: WISE bathing water quality database (data from annual reports by EU Member States). Detailed data on bathing water quality are available at http://www.eea.europa.eu/data-and-maps/data/bathing-water-directive-status-of-bathing-water-8.

([6]) Eight samples are sufficient if the conditions in the Bathing Water Directive, article 4, paragraph 4, are satisfied.

Overall bathing water quality is thus improving over time. It is encouraging to observe that more and more bathing water sites are not only reaching the minimum quality standards set by the Bathing Water Directive, but are improving their quality to the highest (excellent) quality standards.

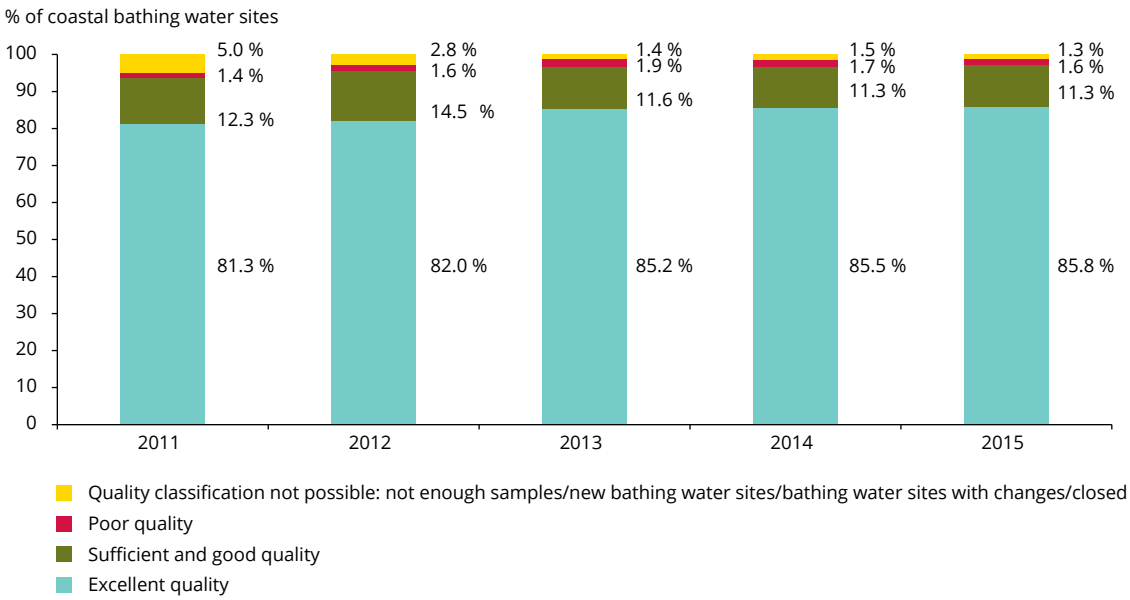
2.3 Coastal bathing water quality

In 2015, EU Member States reported 14 791 coastal bathing water sites. Coastal sites were monitored in all 23 EU Member States with access to the sea. More than 60 % of these are situated on Mediterranean Sea coasts, whereas less bathing water sites are reported for the north-east Atlantic Ocean (25 %), the Baltic Sea (8 %) and the Black Sea (1 %). Remaining bathing water sites are located in the Canary Islands, Madeira, the Azores, Martinique and French Guiana in the Atlantic Ocean, and in the Indian Ocean (e.g. Reunion).

At least sufficient quality was achieved at 97.1 % of EU coastal bathing water sites, representing a 0.3 percentage point improvement compared with the 2014 bathing season. Quality assessment cannot be made for 199 EU coastal bathing water sites (which represent 1.3 % of all coastal sites), because they were either newly opened, closed, or not yet assessed due to changes; or the required number of samples for assessment was not provided.

The share of bathing water sites with excellent quality increased from 81.3 % in 2011 to 85.8 % in 2015. The share of excellent quality bathing water sites is increasing because the water quality at locations that previously reported sufficient bathing water is being improved. The share of bathing water sites with poor quality remained relatively constant (between 1.4 % and 1.9 %) during the period assessed.

Figure 2.2 Coastal bathing water quality in the European Union between 2011 and 2015



Source: WISE bathing water quality database (data from annual reports by EU Member States). Detailed data on bathing water quality are available at http://www.eea.europa.eu/data-and-maps/data/bathing-water-directive-status-of-bathing-water-8.

2.4 Inland bathing water quality

In 2015, 6 497 bathing sites situated on rivers and lakes across Europe were monitored by EU Member States. Almost 90 % of all inland bathing water sites are situated on lakes, whereas less than 900 bathing water sites are located on rivers. Almost half of all river bathing water sites were reported by France. At least sufficient quality has been achieved at 93.8 % of inland bathing water sites in the European Union. This represents an increase of 2.5 percentage points compared with the 2014 bathing season.

The status of 284 (4.4 %) bathing water sites could not be calculated because these sites were either newly opened, closed or not yet assessed due to changes that affected or could have affected bathing water quality; or because the required amounts of samples for the assessment were not provided. This is a decrease of 127 bathing water sites from the previous year.

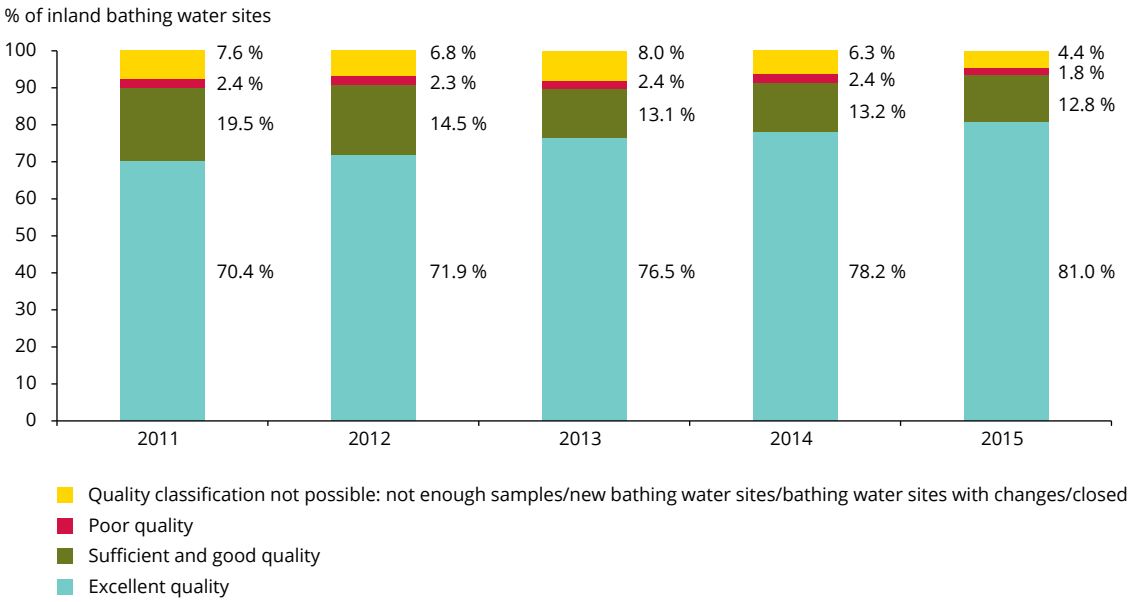
In the five year period 2011–2015, the share of excellent bathing water sites increased markedly from 70.4 % to 81.0 %. The most significant increase was reported between 2012 and 2013, when the share of bathing water sites with excellent quality increased by 4.6 percentage points. The increasing share of excellent quality bathing water sites is due to water quality improvement at sites that were formerly of poor or sufficient quality. The share of poor quality bathing water sites decreased from 2.4 % in 2011 to 1.8 % in 2015.

2.5 Improvements and deterioration of bathing water quality

Between 2014 and 2015, 125 bathing water sites changed status from poor to sufficient quality or better (Map 2.1). The countries with the highest number of bathing water sites where the water quality improved from poor to at least sufficient were France (32 sites), Italy (24 sites) and Spain (20 sites).

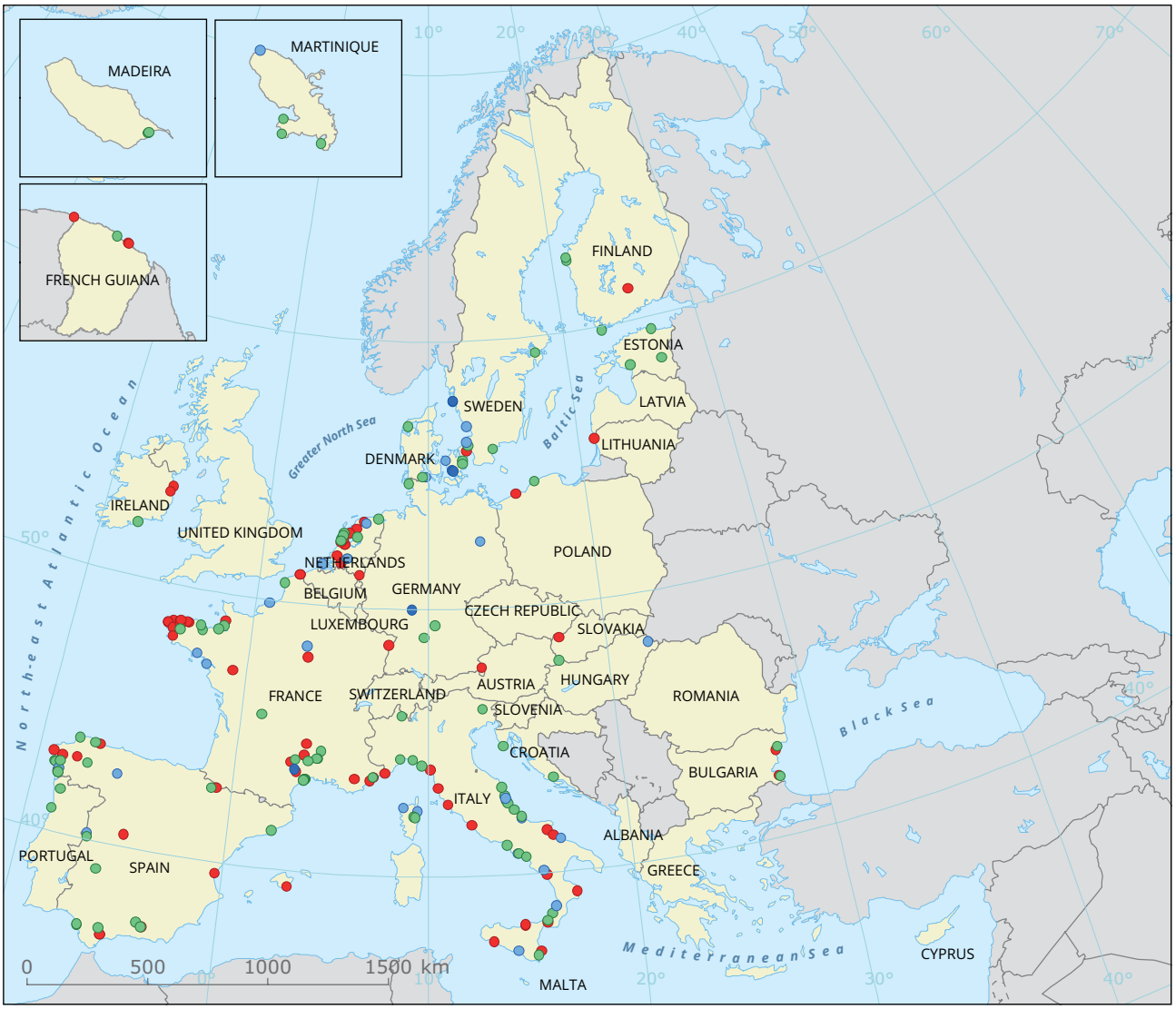
However, in the same period, 76 bathing water sites changed their status from at least sufficient to poor quality. This deterioration has been most significant in France, where the quality at 29 bathing water sites changed from at least sufficient to poor (12 of these in the Bretagne region alone) (Map 2.1). Deterioration in quality is also significant for Spain, Italy and the Netherlands, where the quality of more than 10 bathing water sites was downgraded from at least sufficient to poor.

Figure 2.3 Bathing quality of inland bathing water sites (lakes and rivers) in the European Union between 2011 and 2015



Source: WISE bathing water quality database (data from annual reports by EU Member States). Detailed data on bathing water quality are available at http://www.eea.europa.eu/data-and-maps/data/bathing-water-directive-status-of-bathing-water-8.

Map 2.1 Improvements and deteriorations in bathing water quality



Bathing water sites where quality improved from poor in 2014 to sufficient, good, or excellent in 2015; and bathing water sites where quality deteriorated from excellent, sufficient, or good in 2014 to poor in 2015

- EU Member States and other countries with results
- Outside coverage

Bathing water sites where quality improved from poor in 2014 to sufficient, good, or excellent in 2015

- Excellent water quality
- Good water quality
- Sufficient water quality

Bathing water sites where quality deteriorated from sufficient, good, or excellent in 2014 to poor in 2015

- Poor water quality

Note: Improvements and deteriorations are showed for countries which have been assessed under the provisions of the New Bathing Water Directive for 2014 and 2015 bathing seasons.

Source: National boundaries: EEA; bathing water data and coordinates: reporting countries' authorities.

Despite efforts to reduce and eliminate pollution, problems related to poor water quality persist. Affected bathing water sites must be closed to eliminate hazards to bathers' health. A permanent bathing prohibition, or permanent advice against bathing must, be put in place at bathing water sites that are classified as poor for five consecutive years. However, there is no obligation for a Member State to wait five consecutive years to place such a permanent prohibition; it can be done sooner if so desired. Once a permanent prohibition has been placed on a body of bathing water, there is no longer any obligation to monitor or assess water quality, since it is no longer considered to be a bathing water site.

In 2015, there were 34 bathing water sites in Europe that had been poor for five consecutive years; 13 on rivers, 18 on the coast of Spain, one coastal location in Sweden and two coastal locations in Denmark.

According to the revised Bathing Water Directive (Article 5) ([7]), at each bathing water classified as poor, the following measures shall be taken with effect from the bathing season that follows its classification:

- adequate management measures, including a bathing prohibition or advice against bathing;
- identification of the causes and reasons for the failure to achieve sufficient quality status;
- adequate measures to prevent, reduce or eliminate the causes of pollution; and
- alerting the public by a clear and simple warning sign and informing them of the causes of the pollution and measures taken, on the basis of the bathing water profile.

2.6 Bathing water quality by country in 2015

Tabular information regarding 2015 bathing water quality in Europe by country is available in Annexes 2–4. The EEA website contains national reports with further bathing water quality information (see Chapter 3).

All reported bathing water sites in Cyprus, Croatia, Estonia, Greece, Latvia, Luxembourg, Malta and Slovenia achieved at least sufficient quality in 2015 (according to minimum quality standards set by the Bathing Water Directive). Moreover, in excess of 90 % of bathing water sites were of excellent quality in eight Member States: Luxembourg (all 11 reported bathing water sites), Cyprus (99.1 % of sites), Malta (97.7 %) Greece (97.2 %), Croatia (94.2 %), Italy (90.5 %), Germany (90.3 %) and Austria (90.2 %).

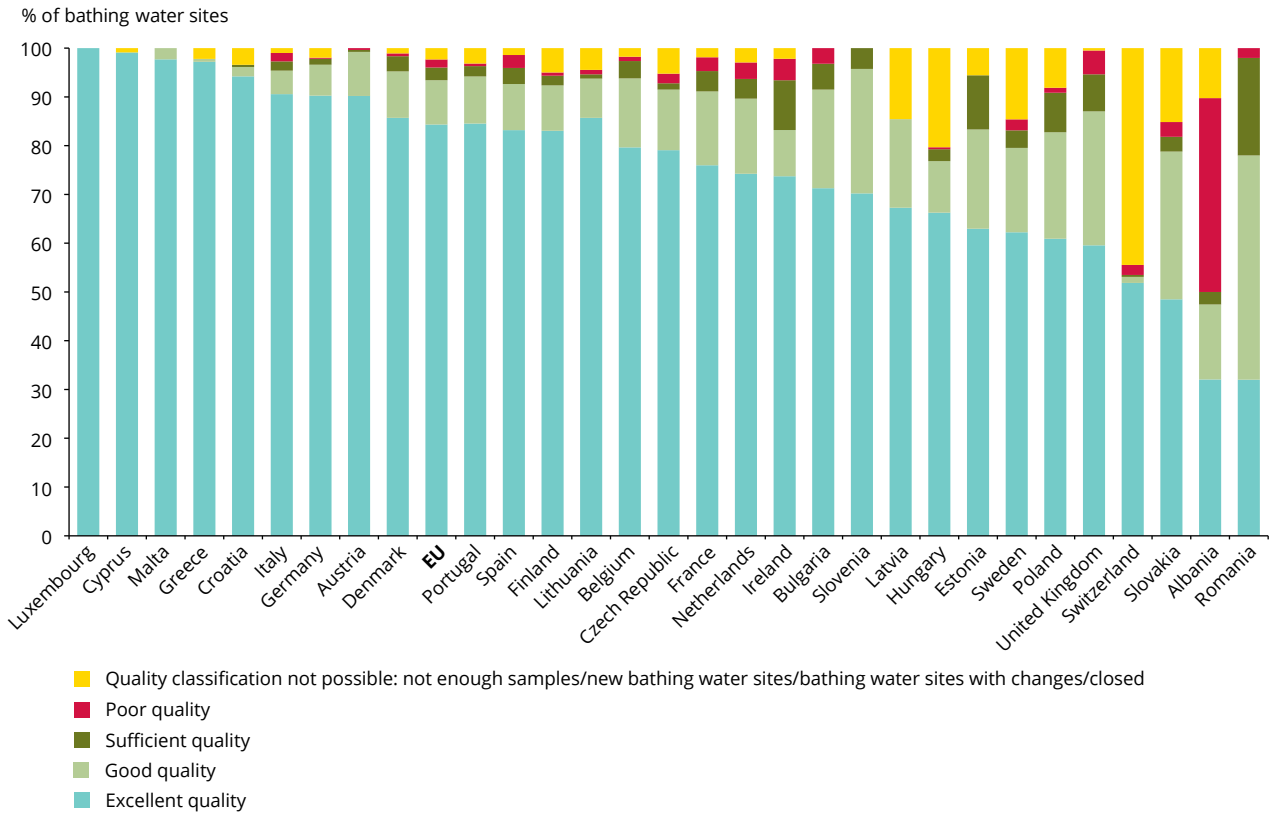
In 2015, there were 383 sites with poor quality bathing water in Europe. Italy (95 bathing water sites or 1.7 %), France (95 sites or 2.8 %) and Spain (58 sites or 2.6 %) are the countries with the highest number of poor bathing water sites.

In some EU Member States, more than 3 % of the bathing water sites had poor quality: 4.9 % or 31 bathing water sites in the United Kingdom, 4.4 % or six sites in Ireland, 3.4 % or 24 sites in the Netherlands and 3.2 % or three sites in Bulgaria.

In Albania, assessed under provisions of the revised Bathing Water Directive for the first time, 31 bathing water sites (or 39.7 %) were classified as poor. A great majority of these bathing water sites (24) are situated on the coasts of Durres, the country's second largest city and one of the main tourist locations in Albania. Even though the Durres Waste Water Treatment Plant has recently been constructed, the coast remains polluted due to insufficient sewerage networks. Nevertheless, national authorities are aware of this problem and have paid attention to the water sector in the Durres area. The World Bank has also supported investment in Durres' sewerage network and its transfer capacity from the tourist beach area to the wastewater treatment plant ([8]).

([7]) http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32006L0007&from=EN.
([8]) Worldbank, 2015. World Bank supports doubling water availability in Durres region, URL: http://www.worldbank.org/en/news/press-release/2014/01/16/world-bank-supports-doubling-water-availability-in-durres-region (accessed on 30.03.2016).

Figure 2.4 Bathing water quality in 2015 for the 28 EU Member States, Albania and Switzerland



Source: WISE bathing water quality database. Detailed data on bathing water quality are available at http://www.eea.europa.eu/data-and-maps/data/bathing-water-directive-status-of-bathing-water-8.

Some countries had a large share of bathing water sites where quality classification was not possible because the sites were either newly opened, closed, or not yet assessed due to changes; or because the required amount of samples for assessment had not been provided. Switzerland reported the largest share of such waters (46.8 %), followed by Hungary (16.7 %), Slovakia (15.2 %), Latvia (14.5 %) and Sweden (14.4 %). The majority of Swedish bathing water sites that were not-quality-assessed (90 %) did not have enough samples for assessment. A total of 75 % of Swiss and 36 % of Polish bathing water sites where quality assessment was not possible are 'new' sites. All five Slovakian bathing water sites for which it was not possible to assess quality were closed throughout the 2015 bathing season. Four bathing water sites in Hungary and five in Sweden could not be quality assessed because measures that might affect bathing water quality have recently been implemented at or near the sites in question, so the required number of samples for the assessment to be made have not yet been collected.

3 Informing the public about bathing water quality

Besides calling for more effective monitoring and management of bathing water, the revised Bathing Water Directive (2006/7/EC) also requires greater public participation and improved information dissemination. Public engagement is encouraged through different mechanisms. The revised directive obliges Member States to inform citizens about bathing water management, bathing water quality, potential threats to bathing water quality and bathing prohibitions. This is done through national and regional webpages, periodical reports, media (TV, radio, internet) etc.

Member States are obliged to establish bathing water profiles and make them available to the public. These profiles are most often made available online, but profiles can also be placed on more traditional media such as billboards. Bathing water profiles give a description of the geographical, hydrological and physical characteristics of the bathing water, along with general descriptions of the bathing water site, monitoring results, potential causes of pollution and the management measures implemented. Each bathing water profile can cover a single site or a group of contiguous bathing water sites.

In order to provide more comprehensive information to the public, all countries have national or local websites with detailed information for each bathing water site (Table 3.1). These websites generally include a map search function and allow public access to monitoring results, both in real time and for previous seasons.

Bathing water monitoring data are reported by the EU Member States to the European Commission and the EEA every year. This assures that comprehensive and up-to-date bathing water reports are made available to European citizens. Each year, the EEA prepares national reports ([9]) in which bathing water quality trends are described together with information on the measures taken and other management characteristics.

At European level, bathing water information is made available to the public via the bathing water section of the Water Information System for Europe (WISE). This can be accessed through the EEA's bathing water web pages ([9]), and it allows users to view bathing water quality at more than 21 000 coastal beaches and inland sites across Europe. Users can check bathing water quality on an interactive map, download data for a country and make comparisons with previous years.

The WISE map viewer is an online tool that allows users to visualise spatial and qualitative data on European bathing water (Figure 3.1). Broad resolutions display the aggregated data by Member State. At finer resolutions, the locations of monitoring stations are displayed. Online bathing water profiles can be seen by clicking on a specific bathing water location using the WISE interactive map, which links to the related bathing water profile.

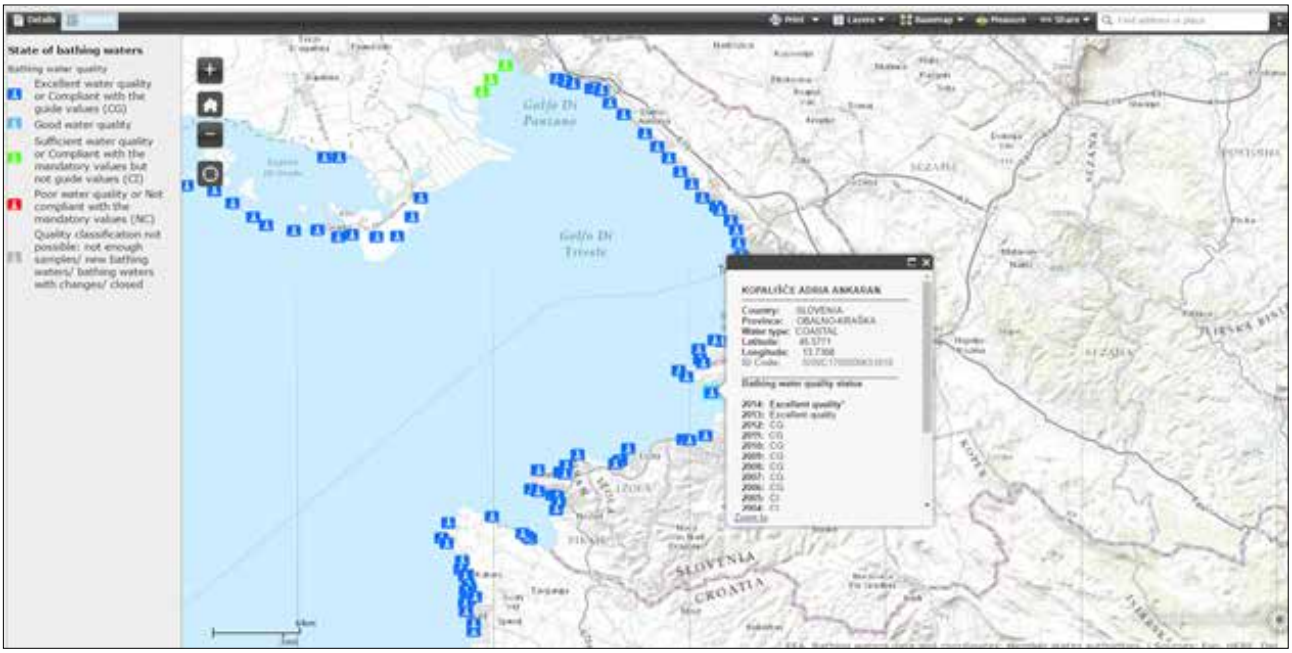
Today, the public has access to high-quality information on bathing water quality, and can thus become more actively involved in protecting the environment and helping to improve Europe's bathing areas.

([9]) http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water/state.

Table 3.1 National or regional websites for bathing water quality

Country	Region	Link to national or regional websites for bathing waters
AT (Austria)		http://wisa.bmlfuw.gv.at/wasserkarten/sonstige_themen/badegewaesser_oesterreich.html
BE (Belgium)	Wallonia	http://aquabact.environnement.wallonie.be/login.do
BE (Belgium)	Flanders	http://www.kwaliteitzwemwater.be
BG (Bulgaria)		http://www.mh.government.bg/bg/administrativni-uslugi/registri
CH (Switzerland)		http://www.bafu.admin.ch/umwelt/indikatoren/08605/16029/index.html?lang=en
CY (Cyprus)		http://www.moa.gov.cy/moa/environment/environment.nsf/All/1D1F9531D9C13AE3C22579180037063B?OpenDocument
CZ (Czech Republic)		http://www.mzcr.cz/verejne/obsah/koupani-ve-volne-prirode_1071_5.html
DE (Germany)		http://www.umweltbundesamt.de/themen/wasser/schwimmen-baden/badegewaesser/wasserqualitaet-in-badegewaessern
DK (Denmark)		http://naturstyrelsen.dk/vandmiljoe/badevand
EE (Estonia)		http://vtiav.sm.ee/index.php/?active_tab_id=SV
ES (Spain)		http://nayade.msssi.es/Splayas/ciudadano/ciudadanoZonaAction.do
FI (Finland)		http://www.valvira.fi/ymparistoterveys/terveydensuojelu/uimavesi
FR (France)		http://baignades.sante.gouv.fr/baignades/editorial/en/accueil.html
GR (Greece)		http://www.bathingwaterprofiles.gr
HR (Croatia)		http://baltazar.izor.hr/plazepub/kakvoca?p_jezik=eng
HU (Hungary)		http://oki.antsz.hu
IE (Ireland)		http://splash.epa.ie
IT (Italy)		http://www.portaleacque.salute.gov.it/PortaleAcquePubblico/homeBalneazione.do
LT (Lithuania)		http://www.smlpc.lt/lt/aplinkos_sveikata/maudyklos
LU (Luxembourg)		http://www.eau.public.lu/actualites/2011/03/Profil_baignade
LV (Latvia)		http://www.vi.gov.lv/lv/vides-veseliba/peldudens
MT (Malta)		http://health.gov.mt/en/environmental/Pages/Health-Inspectorate/Environmental-Health-Risk-Management/Bathing-Water-Programme.aspx
NL (Netherlands)		http://www.zwemwater.nl
PL (Poland)		http://sk.gis.gov.pl/?go=content&id=7#mapa
PT (Portugal)		http://www.apambiente.pt/index.php?ref=19&subref=906&sub2ref=919&sub3ref=920
PT (Portugal)	Azores	http://www.azores.gov.pt/Gra/SRMCT-MAR/menus/secundario/Zonas+Balneares
PT (Portugal)	Madeira	http://dramb.gov-madeira.pt/berilio/berwpag0.listctn?pCtn=103
RO (Romania)		http://www.ms.gov.ro/?pag=182
SE (Sweden)		https://badplatsen.havochvatten.se/badplatsen/karta
SI (Slovenia)		http://www.mop.gov.si/si/delovna_podrocja/voda/kopalne_vode/seznam_in_profili_kopalnih_voda/profili_kopalnih_voda
SK (Slovakia)		http://www.uvzsr.sk/index.php?option=com_content&view=article&id=2599&Itemid=66
UK (United Kingdom)	England	http://environment.data.gov.uk/bwq
UK (United Kingdom)	Northern Ireland	https://www.nidirect.gov.uk/articles/bathing-water-quality
UK (United Kingdom)	Scotland	http://apps.sepa.org.uk/bathingwaters
UK (United Kingdom)	Gibraltar	https://www.gibraltar.gov.gi/new/water
UK (United Kingdom)	Wales	http://environment.data.gov.uk/wales/bathing-waters/profiles

Figure 3.1 WISE bathing water map viewer



Source: http://www.eea.europa.eu/themes/water/interactive/bathing/state-of-bathing-waters.

Photo: Bornholm, Denmark © Peter Kristensen

Annex 1 Number of bathing water sites in Europe by country

Country	Total number of bathing water sites in 2015	Total number of bathing water sites in 2014	Bathing water sites excluded from the monitoring programme in 2015	Newly identified or re-opened bathing water sites in 2015
AT (Austria)	265	266	1	0
BE (Belgium)	113	110	0	3
BG (Bulgaria)	94	94	0	0
CY (Cyprus)	113	112	0	1
CZ (Czech Republic)	153	152	0	1
DE (Germany)	2 292	2 290	11	13
DK (Denmark)	1 028	1 028	8	8
EE (Estonia)	54	54	0	0
ES (Spain)	2 189	2 178	10	21
FI (Finland)	301	310	10	1
FR (France)	3 355	3 345	38	48
GR (Greece)	1 542	1 540	32	34
HR (Croatia)	935	945	20	10
HU (Hungary)	246	244	2	4
IE (Ireland)	137	136	0	1
IT (Italy)	5 518	5 507	4	15
LT (Lithuania)	112	112	2	2
LU (Luxembourg)	11	11	0	0
LV (Latvia)	55	54	1	2
MT (Malta)	87	87	0	0
NL (Netherlands)	714	715	12	11
PL (Poland)	197	201	10	6
PT (Portugal)	569	558	0	11
RO (Romania)	50	50	0	0
SE (Sweden)	445	444	2	3
SI (Slovenia)	47	47	0	0
SK (Slovakia)	33	33	0	0
UK (United Kingdom)	633	632	0	1
EU	**21 288**	**21 255**	**163**	**196**
AL (Albania)	78	73	0	5
CH (Switzerland)	216	210	29	35
Europe	**21 582**	**21 538**	**192**	**236**

Annex 2 Bathing water quality results in 2015

Country	Total number of bathing water sites	Excellent quality		Good quality		Sufficient quality		Poor quality		Quality classification not possible *	
		Number	%	Number	%	Number	%	Number	%	Number	%
AT (Austria)	265	239	90.2	24	9.1	1	0.4	1	0	0	0.0
BE (Belgium)	113	90	79.6	16	14.2	4	3.5	1	1	2	1.8
BG (Bulgaria)	94	67	71.3	19	20.2	5	5.3	3	3.2	0	0.0
CY (Cyprus)	113	112	99.1	0	0.0	0	0.0	0	0.0	1	0.9
CZ (Czech Republic)	153	121	79.1	19	12.4	2	1.3	3	2.0	8	5.2
DE (Germany)	2 292	2 070	90.3	145	6.3	28	1.2	5	0.2	44	1.9
DK (Denmark)	1 028	881	85.7	99	9.6	31	3.0	6	0.6	11	1.1
EE (Estonia)	54	34	63.0	11	20.4	6	11.1	0	0.0	3	5.6
ES (Spain)	2 189	1 821	83.2	207	9.5	72	3.3	58	2.6	31	1.4
FI (Finland)	301	250	83.1	28	9.3	6	2.0	2	0.7	15	5.0
FR (France)	3 355	2 549	76.0	508	15.1	140	4.2	95	2.8	63	1.9
GR (Greece)	1 542	1 499	97.2	9	0.6	0	0.0	0	0.0	34	2.2
HR (Croatia)	935	881	94.2	18	1.9	4	0.4	0	0.0	32	3.4
HU (Hungary)	246	169	68.7	29	11.8	6	2.4	1	0.4	41	16.7
IE (Ireland)	137	101	73.7	13	9.5	14	10.2	6	4.4	3	2.2
IT (Italy)	5 518	4 995	90.5	269	4.9	104	1.9	95	1.7	55	1.0
LT (Lithuania)	112	96	85.7	9	8.0	1	0.9	1	0.9	5	4.5
LU (Luxembourg)	11	11	100.0	0	0.0	0	0.0	0	0.0	0	0.0
LV (Latvia)	55	37	67.3	10	18.2	0	0.0	0	0.0	8	14.5
MT (Malta)	87	85	97.7	2	2.3	0	0.0	0	0.0	0	0.0
NL (Netherlands)	714	530	74.2	110	15.4	29	4.1	24	3.4	21	2.9
PL (Poland)	197	120	60.9	43	21.8	16	8.1	2	1.0	16	8.1
PT (Portugal)	569	481	84.5	55	9.7	12	2.1	3	0.5	18	3.2
RO (Romania)	50	16	32.0	23	46.0	10	20.0	1	2.0	0	0.0
SE (Sweden)	445	278	62.2	77	17.3	16	3.6	10	2.2	64	14.4
SI (Slovenia)	47	33	70.2	12	25.5	2	4.3	0	0.0	0	0.0
SK (Slovakia)	33	16	48.5	10	30.3	1	3.0	1	3.0	5	15.2
UK (United Kingdom)	633	377	59.6	174	27.5	48	7.6	31	4.9	3	0.5
EU	**21 288**	**17 959**	**84.4**	**1 939**	**9.1**	**558**	**2.6**	**349**	**1.6**	**483**	**2.3**
AL (Albania)	78	25	32.1	12	15.4	2	2.6	31	39.7	8	10.3
CH (Switzerland)	216	109	50.5	2	0.9	1	0.5	3	1.4	101	46.8
Europe	**21 582**	**18 093**	**83.8**	**1 953**	**9.0**	**561**	**2.6**	**383**	**1.8**	**592**	**2.7**

Note: * Not enough samples/new bathing water sites/bathing water sites with changes/closed.

Source: EEA.

Annex 3 Coastal bathing water quality results in 2015

Country	Total number of bathing water sites	Excellent quality		Good quality		Sufficient quality		Poor quality		Quality classification not possible *	
		Number	%	Number	%	Number	%	Number	%	Number	%
BE (Belgium)	42	32	76.2	10	23.8	0	0.0	0	0	0	0.0
BG (Bulgaria)	90	63	70.0	19	21.1	5	5.6	3	3	0	0.0
CY (Cyprus)	113	112	99.1	0	0.0	0	0.0	0	0	1	0.9
DE (Germany)	367	280	76.3	62	16.9	13	3.5	1	0.3	11	3.0
DK (Denmark)	918	776	84.5	96	10.5	31	3.4	6	0.7	9	1.0
EE (Estonia)	27	11	40.7	9	33.3	5	18.5	0	0.0	2	7.4
ES (Spain)	1 948	1 696	87.1	154	7.9	49	2.5	29	1.5	20	1.0
FI (Finland)	77	48	62.3	17	22.1	5	6.5	1	1.3	6	7.8
FR (France)	2 063	1 619	78.5	314	15.2	79	3.8	44	2.1	7	0.3
GR (Greece)	1 540	1 497	97.2	9	0.6	0	0.0	0	0.0	34	2.2
HR (Croatia)	908	877	96.6	16	1.8	3	0.3	0	0.0	12	1.3
IE (Ireland)	128	93	72.7	13	10.2	14	10.9	6	4.7	2	1.6
IT (Italy)	4 866	4 399	90.4	239	4.9	91	1.9	94	1.9	43	0.9
LT (Lithuania)	16	14	87.5	0	0.0	1	6.3	1	6.3	0	0.0
LV (Latvia)	33	23	69.7	8	24.2	0	0.0	0	0.0	2	6.1
MT (Malta)	87	85	97.7	2	2.3	0	0.0	0	0.0	0	0.0
NL (Netherlands)	92	69	75.0	18	19.6	2	2.2	1	1.1	2	2.2
PL (Poland)	83	46	55.4	24	28.9	9	10.8	1	1.2	3	3.6
PT (Portugal)	460	412	89.6	33	7.2	5	1.1	3	0.7	7	1.5
RO (Romania)	49	15	30.6	23	46.9	10	20.4	1	2.0	0	0.0
SE (Sweden)	246	140	56.9	49	19.9	14	5.7	8	3.3	35	14.2
SI (Slovenia)	21	21	100.0	0	0.0	0	0.0	0	0.0	0	0.0
UK (United Kingdom)	617	367	59.5	169	27.4	47	7.6	31	5.0	3	0.5
EU	**14 791**	**12 695**	**85.8**	**1 284**	**8.7**	**383**	**2.6**	**230**	**1.6**	**199**	**1.3**
AL (Albania)	78	25	32.1	12	15.4	2	2.6	31	39.7	8	10.3
Europe	**14 869**	**12 720**	**85.5**	**1 296**	**8.7**	**385**	**2.6**	**261**	**1.8**	**207**	**1.4**

Note: * Not enough samples/new bathing water sites/bathing water sites with changes/closed.

Source: EEA.

Annex 4 Inland bathing water quality results in 2015

Country	Total number of bathing water sites	Excellent quality		Good quality		Sufficient quality		Poor quality		Quality classification not possible *	
		Number	%	Number	%	Number	%	Number	%	Number	%
AT (Austria)	265	239	90,2	24	9.1	1	0.4	1	0.4	0	0.0
BE (Belgium)	71	58	81.7	6	8.5	4	5.6	1	1.4	2	2.8
BG (Bulgaria)	4	4	100.0	0	0.0	0	0.0	0	0.0	0	0.0
CZ (Czech Republic)	153	121	79.1	19	12.4	2	1.3	3	2.0	8	5.2
DE (Germany)	1 925	1 789	92.9	83	4.3	15	0.8	4	0.2	34	1.8
DK (Denmark)	110	105	95.5	3	2.7	0	0.0	0	0.0	2	1.8
EE (Estonia)	27	23	85.2	2	7.4	1	3.7	0	0.0	1	3.7
ES (Spain)	241	125	51.9	53	22.0	23	9.5	29	12.0	11	4.6
FI (Finland)	224	202	90.2	11	4.9	1	0.4	1	0.4	9	4.0
FR (France)	1 292	930	72.0	194	15.0	61	4.7	51	3.9	56	4.3
GR (Greece)	2	2	100.0	0	0.0	0	0.0	0	0.0	0	0.0
HR (Croatia)	27	4	14.8	2	7.4	1	3.7	0	0.0	20	74.1
HU (Hungary)	246	169	68.7	29	11.8	6	2.4	1	0.4	41	16.7
IE (Ireland)	9	8	88.9	0	0.0	0	0.0	0	0.0	1	11.1
IT (Italy)	652	596	91.4	30	4.6	13	2.0	1	0.2	12	1.8
LT (Lithuania)	96	82	85.4	9	9.4	0	0.0	0	0.0	5	5.2
LU (Luxembourg)	11	11	100.0	0	0.0	0	0.0	0	0.0	0	0.0
LV (Latvia)	22	14	63.6	2	9.1	0	0.0	0	0.0	6	27.3
NL (Netherlands)	622	461	74.1	92	14.8	27	4.3	23	3.7	19	3.1
PL (Poland)	114	74	64.9	19	16.7	7	6.1	1	0.9	13	11.4
PT (Portugal)	109	69	63.3	22	20.2	7	6.4	0	0.0	11	10.1
RO (Romania)	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0
SE (Sweden)	199	138	69.3	28	14.1	2	1.0	2	1.0	29	14.6
SI (Slovenia)	26	12	46.2	12	46.2	2	7.7	0	0.0	0	0.0
SK (Slovakia)	33	16	48.5	10	30.3	1	3.0	1	3.0	5	15.2
UK (United Kingdom)	16	10	62.5	5	31.3	1	6.3	0	0.0	0	0.0
EU	**6 497**	**5 264**	**81.0**	**655**	**10.1**	**175**	**2.7**	**119**	**1.8**	**284**	**4.4**
CH (Switzerland)	216	109	50.5	2	0.9	1	0.5	3	1.4	101	46.8
Europe	**6 713**	**5 373**	**80.0**	**657**	**9.8**	**176**	**2.6**	**122**	**1.8**	**385**	**5.7**

Note: * Not enough samples/new bathing water sites/bathing water sites with changes/closed.

Source: EEA.

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