European Environment Agency

Bathing water results 2010 – Austria

1. Reporting and assessment

This report gives a general overview of bathing water quality in Austria during the 2010 bathing season. In 2010 Austria reported under the Directive 2006/7/EC.

Before the necessary data set for assessment of bathing water quality under the Directive 2006/7/EC is compiled (data for three or four consecutive years) the rules for transition period assessment are applied. This means that the classification of bathing waters is defined on the basis of concentrations of intestinal enterococci and *Escherichia coli* that are reported under the Directive 2006/7/EC. The limit values for the classification are taken from the Directive 76/160/EEC. For the conversion of reported parameters under the Directive 2006/7/EC, Article 13.3 of the Directive 2006/7/EC foresees that the parameter *Escherichia coli*, reported under the Directive 2006/7/EC, is assumed to be equivalent to the parameter faecal coliforms of the Directive 76/160/EEC. The parameter intestinal enterococci reported under the Directive 2006/7/EC is assumed to be equivalent to the parameter faecal streptococci.

The results are classified in the following categories:

- **Class CI:** Compliant with the mandatory value of the Directive 76/160/EEC for *Escherichia coli* and not compliant with the guide values of the Directive 76/160/EEC for *Escherichia coli* or intestinal enterococci;
- **Class CG:** Compliant with the mandatory value of the Directive 76/160/EEC for *Escherichia coli* and the more stringent guide values for the *Escherichia coli* and intestinal enterococci;
- **Class NC:** Not compliant with the mandatory value of the Directive 76/160/EEC for *Escherichia coli*;
- **Class B:** Banned or closed (temporary or throughout the season);
- **Class NF:** Insufficiently sampled;
- **Class NS:** Not sampled.

In the assessment of bathing water quality in 2010 the maximum days between two samples considered were 32 days. The new directive also requires that the first sample must be taken shortly before the start of a bathing season. However, in the assessment of bathing water quality in 2010, the first sample could be taken not later than 10 days after the start of the bathing season. If this was a case, the second sample should have been taken no later than 32 days after the start of the bathing season. The bathing water is classified as insufficiently sampled or not sampled when the pre-season sample is missing or when the difference between two consecutive samples is larger than 32 days.

2. Length of bathing season and number of bathing waters

For all bathing waters the bathing season lasted 2.5 months, from 15 June till 31 August 2010.

A total of 268 inland bathing waters were monitored in Austria during the 2010 bathing season (eight on rivers; 260 on lakes). Austria has no coastal bathing waters.

With 268 bathing waters Austria accounts for about 1.3 % of the reported bathing waters of the European Union.

The evolution of the reported number of bathing waters since monitoring of the water quality began under the Directive 76/160/EEC and the Directive 2006/7/EC is presented in Table 1. Only minor fluctuations can be noticed in the number of reported bathing waters since the start of the reporting in 1997 (266-270 bathing waters). In 2010, one new bathing site was added to the list compared to the previous year and one was de-listed.

3. Bathing water quality

The results of the bathing water quality in Austria for the period 1997-2009 as reported in the past reporting years and for the bathing season of 2010 are presented in Figure 1. The previous reports are available on the European Commission's bathing water quality website (http://ec.europa.eu/environment/water/water-bathing/index_en.html; Water and Health/Bathing Water/ 2005-2010 reports) and the European Environment Agency's bathing water website (http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water; reports for the 2008 and 2009 bathing seasons).

The graph shows, for inland bathing waters:

- The percentage of bathing waters that comply with the guide values (class CG, blue line);
- The percentage of bathing waters that comply with the mandatory values (class CI, green line);
- The percentage of bathing waters that do not comply with the mandatory values (class NC, red line);
- The percentage of bathing waters that are banned or closed (temporarily or throughout the season) (class B, grey line).

Table 1 shows the same information in absolute numbers and in percentages for inland bathing waters. The numbers and percentages of insufficiently sampled or not sampled bathing waters are also presented.

Map 1 shows the locations of the reported bathing waters in Austria. The location of the bathing waters is based on the geographic coordinates reported by the Austrian authorities.

In Austria, 98.9 % of the inland bathing waters met the mandatory water quality in 2010. This is an increase of 1.9 % compared to the previous year. The rate of compliance with the guide values decreased from 74.6 % to 69 %. Three bathing waters (1.1 %) were non-compliant with the mandatory value for *Escherichia coli* compared to seven in 2009, which is a decrease of 1.5 %. Since 1998, no bathing water had to be closed during the bathing season.

Looking at the compliance of bathing waters with the mandatory values, the quality of bathing waters is reasonably stable - at least 97 % compliance since 2003 with a peak in 2006 (99.3 %). However, there is a decrease in the number of bathing waters that meet the more stringent guide values from 83.1 % in 2004 to 69 % in 2010. The number of non-compliant bathing waters was less than 10 since 2002. There were only two to three non-compliant bathing waters in 2004, 2006 and 2010.

Figure 1: Results of bathing water quality in Austria from 1997 to 2010

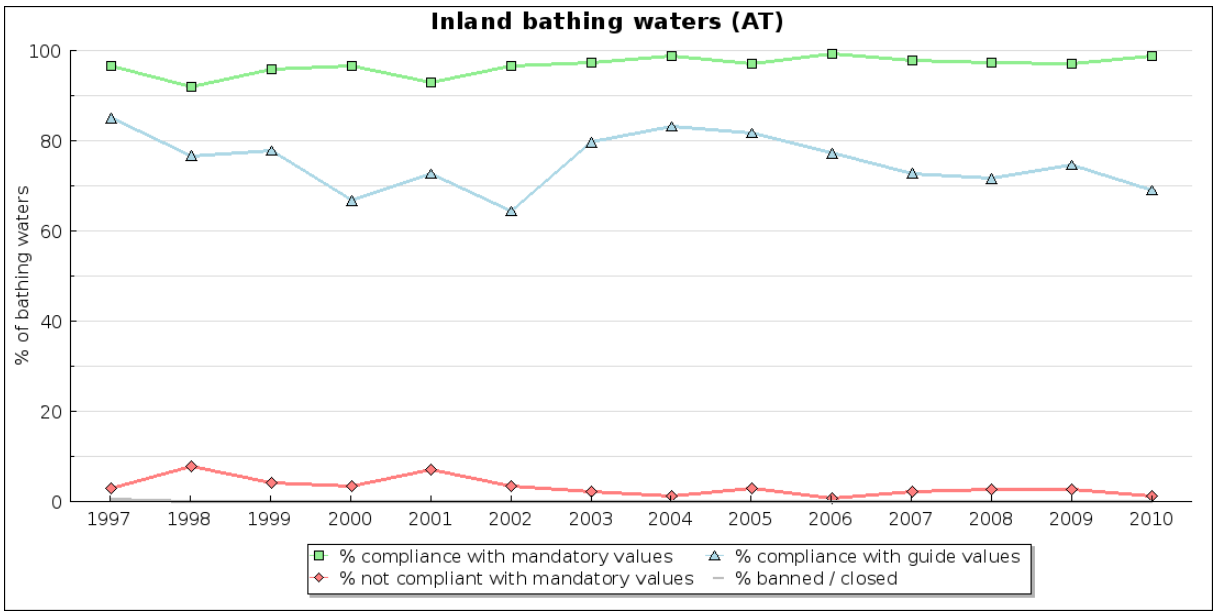

Table 1: Results of bathing water quality in Austria from 1997 to 2010

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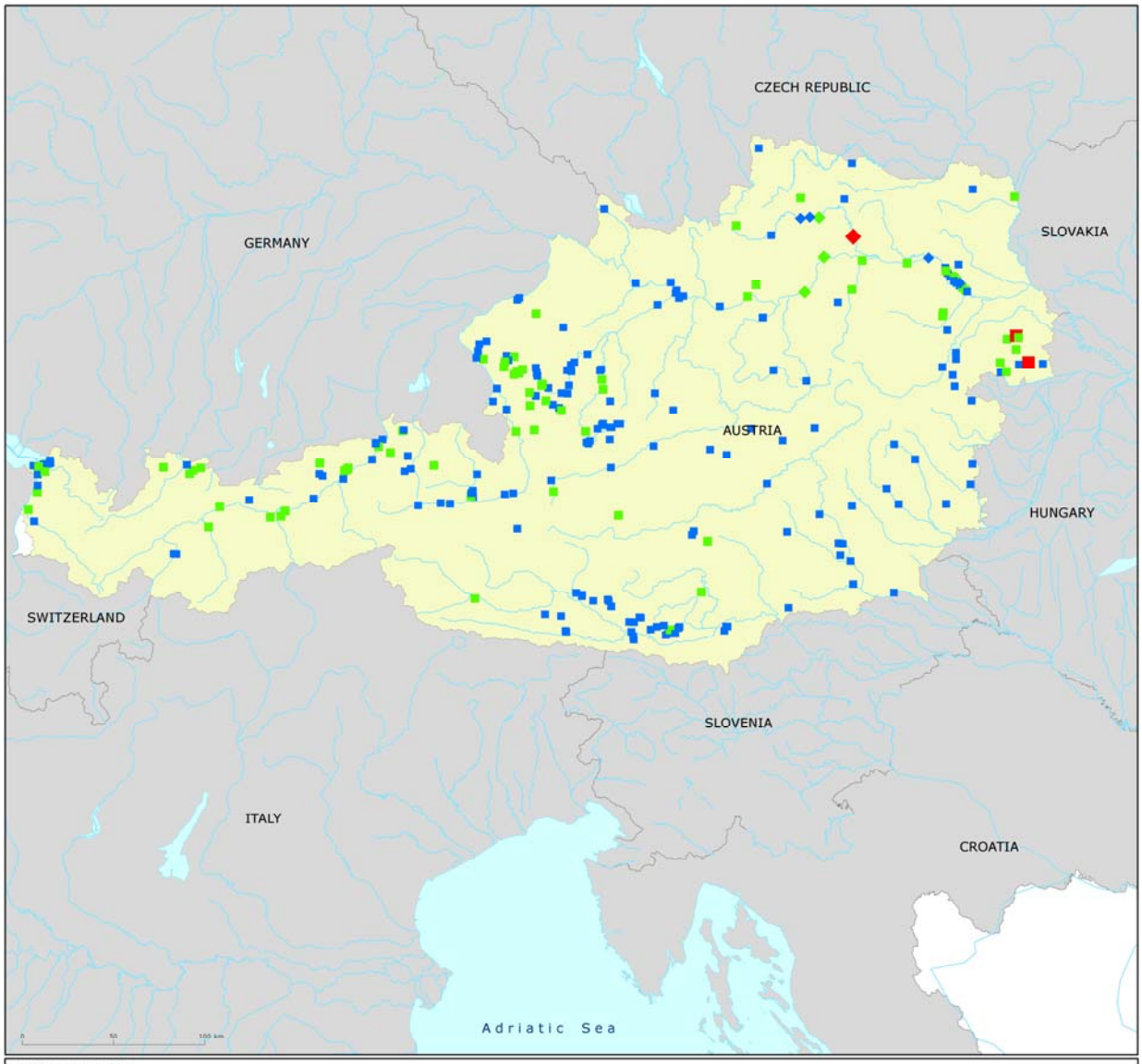
		Total number of bathing waters	Compliance with guide and mandatory values*		Compliance with mandatory values		Not compliant		Banned/closed temporarily or throughout the season		Insufficiently sampled or not sampled	
			number	%	number	%	number	%	number	%	number	%
Inland bathing waters	1997	268	228	85.1	259	96.6	8	3.0	1	0.4	0	0
	1998	270	207	76.7	248	91.9	21	7.8	0	0	1	0.4
	1999	270	210	77.8	259	95.9	11	4.1	0	0	0	0
	2000	268	179	66.8	259	96.6	9	3.4	0	0	0	0
	2001	267	194	72.7	248	92.9	19	7.1	0	0	0	0
	2002	267	172	64.4	258	96.6	9	3.4	0	0	0	0
	2003	266	212	79.7	259	97.4	6	2.3	0	0	1	0.4
	2004	267	222	83.1	264	98.9	3	1.1	0	0	0	0
	2005	268	219	81.7	260	97.0	8	3.0	0	0	0	0
	2006	268	207	77.2	266	99.3	2	0.7	0	0	0	0
	2007	268	195	72.8	262	97.8	6	2.2	0	0	0	0
	2008	268	192	71.6	261	97.4	7	2.6	0	0	0	0
	2009	268	200	74.6	260	97.0	7	2.6	0	0	1	0.4
	2010	268	185	69.0	265	98.9	3	1.1	0	0	0	0

*Bathing waters which were compliant with the guide values were also compliant with the mandatory values for five parameters under the Directive 76/160/EEC (1997-2009) or the mandatory value for *Escherichia coli* (2010).

Map 1: Bathing waters reported during the 2010 bathing season in Austria



Note: * banned or closed (temporarily or throughout the season)
More data on bathing water quality on: http://www.eea.europa.eu/themes/water/mapviewers/bathing

Source: National boundaries: GISCO; Large rivers and lakes: EEA, WFD Article 3; Bathing waters data and coordinates: Austrian authorities

4. Important information as provided by the Austrian authorities

Non-complying bathing waters

Description of significant management measures for non-compliant bathing waters with the mandatory value for *Escherichia coli* can be found at http://cdr.eionet.europa.eu/at/eu/nbwd/envtrsjlg/Beilage_1__Badesaison_2010_-_Gesetzte_BewirtschaftungsmaAYnahmen.pdf.

Analytical methods

Information on analytical methods used for *Escherichia coli* and intestinal enterococci on federal level are supplied at http://cdr.eionet.europa.eu/at/eu/nbwd/envtrsjlg/Beilage_3__Badesaison_2010_-_Analysenmethoden.pdf.

Bathing water profiles

The Austrian authorities provided the link to bathing water profiles by federal states: http://www.ages.at/ages/gesundheit/badegewaessermonitoring/badegewaesser-datenbank/.

Information for the public

Monitoring results on bathing water quality are made public through the media (primarily the local press, and occasionally local radio stations) and are also published online on the websites of the federal and provincial governments. The links to websites of the federal states can be found at http://www.bmg.gv.at/home/Schwerpunkte/VerbraucherInnengesundheit/Badegewaesser/.

Wastewater treatment

Measures to improve and guarantee the water quality for bathing waters were taken under the 1959 Austrian Water Act, long before Austria became a member of the EU.

Eutrophication effects due to wastewater discharges into a number of Austrian lakes gave rise to remediation programmes in the early 1970s. Since then, wastewater has been collected in ring-sewage systems and treated in at least biological wastewater treatment plants. Nowadays most of the treatment plants even have a tertiary treatment for P-or N removal as well. The treated effluent is discharged into rivers downstream of the lake in order to keep even the treated wastewater completely out of lakes.

The waste water treatment programmes were implemented for all surface waters. Wastewater treatment plants must adhere to strict national standards on the removal of nutrients. In the last 30 years, approximately EUR 25 billion has been spent on the sewage system and wastewater treatment plants. Around EUR 1.5 billion has been invested in restoring water quality in Austrian lakes.

After the enlargement and upgrading of the waste water treatment plants of the big cities like Linz, Salzburg, Graz and Vienna, the very stringent standards, which were set by the EU for waste water treatment in sensitive areas, are now observed on the whole territory of Austria. With regard to the overall load entering all urban wastewater treatment plants the percentage of reduction is 79% for total N and 89% for total P. Furthermore the sewage systems and waste water treatment in small settlements are continued to be improved. The connection to public sewerage and treatment plants increased continuously and reaches nowadays 93%.

Reduction of diffuse pollution sources

It has proved that compared to point sources the process to reduce pollution from diffuse sources is much more difficult and therefore has shown less progress. Agriculture is a major diffuse pollution source despite the fact that Austria's almost exclusively organic, family-run farms use relatively low levels of fertilizers compared with many other Member States.

Austria's national strategies to reduce pollution from diffuse sources are based on:

- action programme according to the EU nitrates directive (91/676/EEC), which is implemented throughout Austrian territory;
- the Austrian environmental programme to base on Council Regulation (ECC) No 2078/92.This programme provides financial incentives of EUR 520 million a year to encourage environmentally friendly agriculture to help reducing pollution from diffuse sources;
- in addition the National River Basin Management Plan (Nationaler Gewässerbewirtschaftungsplan) and its programme of measures based on the Water Framework Directive (2000/60/EC) will support in future.

5. More information on bathing water quality in Europe

Of the more than 21 000 bathing areas monitored throughout the European Union in 2010, two-thirds were in coastal waters and the rest in rivers and lakes. The largest number of coastal bathing waters can be found in Italy, Greece, France, Spain and Denmark, while Germany and France have the highest number of inland bathing waters.

During recent years, including the 2010 bathing season, majority of Member States have adjusted their monitoring programmes to meet the requirements of the new bathing water directive (2006/7/EC). Luxembourg was the first country to report under this Directive in 2007. Cyprus, Denmark, Estonia, Finland, Germany, Hungary, Latvia, Lithuania, Slovakia, Spain and Sweden started to report under the new directive in 2008. Malta and the Netherlands started to report in 2009, while Austria, Belgium - Walloon Region, France, Greece, Italy, Portugal and Slovenia reported under this Directive for the first time in 2010. Historical data of two microbiological parameters, *Escherichia coli* and intestinal enterococci were sent by Sweden (since 2005), Luxembourg and Malta (since 2006), Belgium - Walloon Region, Greece, Hungary and Portugal (since 2007), and France (since 2009). To conclude, 20 Member States and the Walloon Region of Belgium monitored and reported under the new directive (Directive 2006/7/EC) in 2010.

Assessment of the status of all bathing waters in 2010 under the rules of the new directive (Directive 2006/7/EC) is made for Luxembourg, Malta and Hungary. Assessment of the bathing water quality on a country level for the other countries that reported under the new directive has been done using transition rules. Bathing water quality for individual bathing waters having four year set of data can be seen on the interactive maps and data viewer that are described below.

Three non-EU countries, Croatia, Montenegro and Switzerland have reported monitoring results under the new directive. Switzerland sent data on *Escherichia coli* for all bathing waters but only for some data on intestinal enterococci.

Overall in 2010, 92.1 % of Europe's coastal bathing waters and 90.2 % of inland bathing waters met the minimum water quality standards set by the bathing water directives. During recent years there has been deterioration in bathing water quality but still more than nine in ten bathing waters meet the minimum quality standards. The share of non compliant bathing waters was 1.2 % for coastal bathing waters and 2.8 % for inland bathing waters. The decrease reflects in part year to year variation but also indicates that further work is necessary to ensure that the quality of bathing waters is constantly improved and maintained.

More information on bathing water quality in the European Member States, including the EU summary report, the reports for 27 Member States, Croatia, Montenegro and Switzerland, can be found on the European Commission's bathing water quality website (http://ec.europa.eu/environment/water/water-bathing/index_en.html) and the European Environment Agency's bathing water website (http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water). The Institute for Water of the Republic of Slovenia (IWRS), a partner in the EEA European Topic Centre on Inland, Coastal and Marine Waters (ETC/ICM) has produced the reports for the bathing seasons from the 2008 bathing season on. Countries have collaborated in the assessment of bathing water quality and supplied additional information when needed.

Interactive information on bathing water quality

The bathing water section of the Water Information System for Europe (WISE), which is accessible at the EEA bathing water website, allows users to view the quality of the bathing water at more than 22 000 coastal beaches and inland bathing sites across Europe. Users can check bathing water quality on an interactive map or can download data for a selected country or region and make comparisons with previous years.

The WISE map viewer (http://www.eea.europa.eu/themes/water/interactive//bathing) is an online map viewer for visualisation of European spatial water data. It includes a lot of interactive layers, allowing water themes to be visualised at different scales. Broad resolutions display the aggregated data by Member State. At finer resolutions the locations of monitoring stations are displayed.

The WISE Bathing Water Quality data viewer (http://www.eea.europa.eu/themes/water/status-and-monitoring/bathing-water-data-viewer) combines text and graphical visualisation, providing a quick check on locations and statistics on the quality of coastal and freshwater bathing waters. It also documents how bathing waters have changed throughout Europe in recent years and provides a full summary of Europe's bathing water quality. Users can search information at three spatial levels - country, region and province - and observe specific bathing water locations on the Google Earth, Google maps or Bing maps.

The Eye On Earth - Water Watch application (http://www.eea.europa.eu/data-and-maps/explore-interactive-maps/eye-on-earth) allows users to zoom in on a given section of the coast, riverbank or lake, both in street map or, where available, bird's eye viewing formats. A 'traffic-light' indicator (red, amber, green) of bathing water quality, based on the official bathing water data, is put alongside the ratings of people who have visited the bathing site, including any comments users wish to make. For historical data Water Watch uses a simplified index of bathing water quality data. The Czech Republic, Estonia, Finland (one municipality), Hungary, Lithuania, Luxembourg, Malta, the Netherlands, Norway (one municipality), Slovenia, Slovakia and England and Wales were also sending near real time information on bathing water quality to the Eye On Earth application. The bathing water quality from Austria, Belgium, Bulgaria, Croatia, Denmark, France, Germany, Ireland, Italy, Poland, Portugal, Spain, Sweden and Scotland and Northern Ireland was also presented on Eye on Earth Water Watch.

National and local information on bathing water quality

In order to make information to the public more effective, all EU countries have national or local web portals with detailed information for each bathing water. Websites generally include a map search function and public access to the monitoring results both in real time and for previous seasons.

Information on EU bathing water legislation

EU Member States will have to comply with the stricter and more ambitious requirements laid out in Directive 2006/7/EC by 2015 at the latest. The new legislation requires more effective monitoring and management of bathing waters, greater public participation and improved information dissemination. By March 2011 Member States have to have established bathing water profiles. More on the new legislation can be found on the European Commission's websites and on http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:064:0037:0051:EN:PDF.