Austrian bathing water quality in 2017

Austria 🇦🇹

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European Environment Agency

BWD Report For the Bathing Season 2017
Austria

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

1.   BWD reporting in the season 2017

In the 2017 bathing season, 263 bathing waters have been reported in Austria. For each bathing water, five groups of parameters have been delivered[2]:

- *identification data* – including name, location, coastal, inland or transitional type of bathing water and availability to bathers;
- *seasonal data* – including season start and end, national quality classification in the recent season, potential management measures and changes that are likely to affect the classification of the bathing water;
- *monitoring results* – disaggregated numerical values of two microbiological parameters – intestinal enterococci and Escherichia coli (also known as E. coli), recorded at each water sample taken;
- *abnormal situation periods* – periods of an event or combination of events impacting on bathing water quality, during which monitoring calendar may be suspended; reporting is optional;
- *short-term pollution periods* – measurable events of microbiological contamination; reporting is optional.

Bathing waters of Austria in 2017	
Total reported	**263**
Coastal	0
Inland	263
Max season period	**78 days**
	15 Jun to 31 Aug
Samples taken	**1377**
Share of bathing waters with good or excellent water quality	**99 %**
Reporting under Directive 2006/7/EC since	**2010**

The authorities of Austria report data according to the new BWD (2006/7/EC) since the season 2010.

Altogether, **263 bathing waters** have been reported – 1.2% of all bathing waters in Europe. Out of all bathing waters in Austria, one has been newly identified in the recent season. All bathing waters

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

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

in Austria are inland. **1377 samples** were taken at bathing waters throughout the season – 5 per bathing water on average.

The bathing season period was from 15 June to 31 August, i.e. 78 days.

Detailed information on bathing waters is available from national portal at https://www.ages.at/themen/umwelt/wasser/badegewaesser/.

2. Assessment methodology[3]

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

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

If these rules are satisfied, the bathing water is categorised as 'sampling frequency satisfied'. If not all monitoring requirements are fulfilled the bathing water is categorised as 'not enough samples'. 99.6% of bathing waters met the described monitoring requirements set by the Directive, while the rest did not satisfy monitoring requirements for different reasons: being new; having changed environmental conditions that might affect water quality classification; closed; not monitored due to legal issues, physical inaccessibility to the site etc. Table 1 shows the statistics of bathing waters according to monitoring requirements.

Table 1: Bathing waters in 2017 according to compliance with BWD monitoring provisions

	Count	Share of total [%]
BWs with sampling frequency satisfied (and are not new, are not subject to changes or were not closed in 2017) These bathing waters have been monitored according to provisions and have complete dataset from the last assessment period. They have been quality-classified (excellent, good, sufficient, poor).	262	99.6%

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[3] The methodology used by the EC and the EEA is described here, while results of assessment by national authorities may differ in individual cases.

[4] A pre-season sample is taken into a sum of samples per season.

[5] Three samples are sufficient if the season does not exceed eight weeks or the region is subject to special geographical constraints.

[6] If, for any reason, it is not possible to take the sample at the scheduled date, a delay of four extra days is allowed. Thus, the interval between two samples should not exceed 31 + 4 days.

BWs with sampling frequency not satisfied (and are not new, are not subject to changes or were not closed in 2017) These bathing waters exist throughout the last assessment period but have not been monitored throughout the period according to provisions for various individual reasons. They may be quality-classified if there is an adequate volume of samples available for credible classification.	0	0.0%
BWs that are new, subject to changes or closed in 2017 These bathing waters do not have complete dataset for the last assessment period because they are new, have been subject to changes (that are likely to affect the classification of the bathing water) or have been closed. They cannot be quality-classified.	1	0.4%
Total number of bathing waters in 2017	**263**	**100%**

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

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

Quality assessment is not possible for all bathing waters. In these cases, they are instead classified as either:
- not enough samples[7];
- new[8];
- changes[9];
- closed[10].

3.   Bathing water quality

The results of the bathing water quality in Austria throughout the past period are presented in Figure 2. The previous reports are available on the European Commission's bathing water quality website[11] and the European Environment Agency's bathing water website[12].

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[7] Not enough samples have been provided throughout the last assessment period (the last four bathing seasons or, when applicable, the period specified in Article 4.2 or 4.4).

[8] Classification not yet possible because bathing water is newly identified and a complete set of samples is not yet available.

[9] Classification is not yet possible after changes that are likely to affect the classification of the bathing water.

[10] Bathing water is closed temporarily or throughout the bathing season.

[11] http://ec.europa.eu/environment/water/water-bathing/index_en.html

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

3.1   Coastal bathing waters

There are no coastal bathing waters in Austria.

3.2   Inland bathing waters

99.6% of all existing inland bathing waters were of at least sufficient water quality in 2017. See Appendix 1 for numeric data.
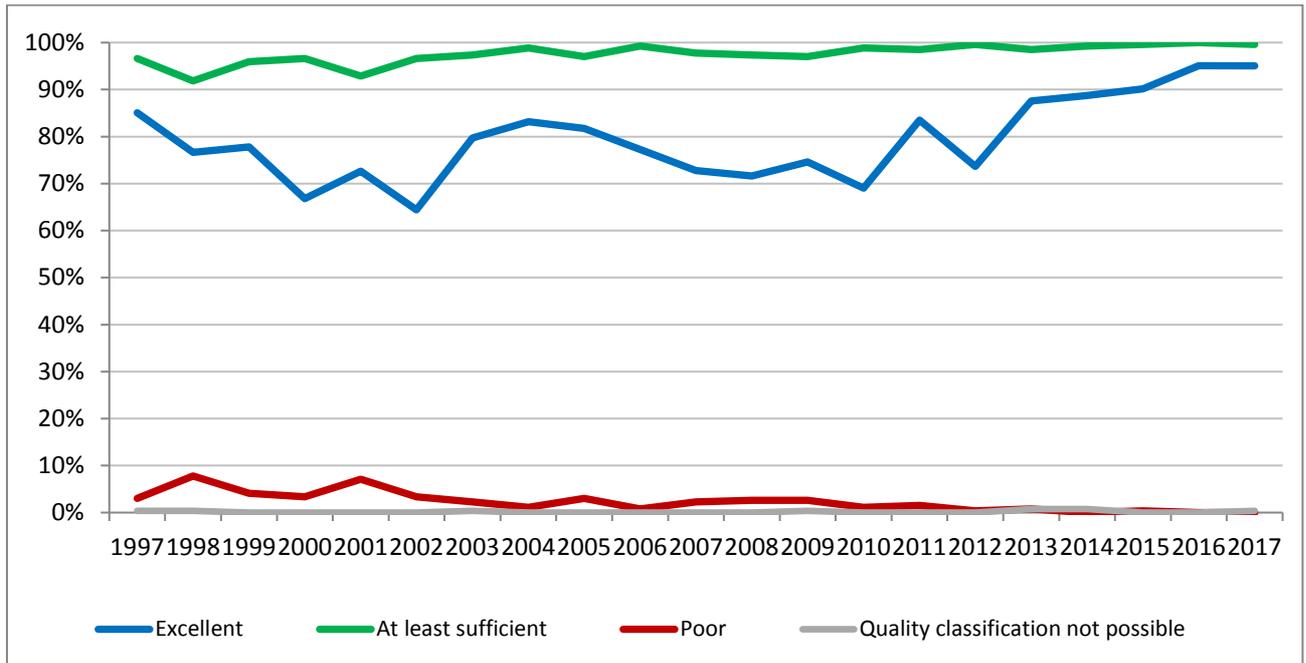
Figure 1: Inland bathing water quality trend in Austria. Note: the "At least sufficient" class also includes bathing waters of "Excellent" quality class, the sum of shares is therefore not 100%.

4. Information regarding management and other issues

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.

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 programs in the early 1970s. Since then, wastewater has been collected in ring-sewage systems and treated in at least biological wastewater treatment plants. Nowadays almost all treatment plants ≥ 2.000 population equivalents even have a tertiary treatment for P and/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 programs do not only have positive effects on lakes, but also on rivers and groundwater. Wastewater treatment plants must adhere to strict national standards on the removal of nutrients. Since 1959, approximately EUR 46,3 Billion Euro[2] have been spent on the sewage system and wastewater treatment plants.

The very stringent standards, which were set by the EU for waste water treatment in sensitive areas, are in place in the entire territory of Austria. With regard to the overall load entering all urban wastewater treatment plants the percentage of reduction by 31 December 2014 was 82% for total N and 90% for total P. Austria - as one of three EU Member States - fully complies with the requirements in the EU Urban Wastewater Treatment Directive 91/271/EWG.
The connection to public sewerage and treatment plants increased continuously up to 95,0 % (data status 2014). Furthermore the sewage systems and waste water treatment in small and scattered settlements are continued to be improved, whereas a shift of investments from new building to maintenance and renewal of old-established constructions is visible.

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[2] Source: KPC; Investment costs urban wastewater treatment from 1959 to 2016 (valorised), Basis: Baupreisindex Tiefbau, sonstiger Tiefbau 1986 by 31.12.2016

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 program according to the EU Nitrates Directive (91/676/EEC), which is implemented throughout Austrian territory;

- The Austrian Agri-Environmental Program ÖPUL 2015 based on articles 28, 29, 30 and 33 of EU-Regulation 1305/2013 in the context of the Austrian Rural Development Programme 2014-20. This program provides financial incentives of about EUR 420 million a year for area related commitments to encourage environmentally friendly agriculture. Combined with the reduced use of agricultural inputs, ÖPUL 2015 promotes sustainable, low impact management practices, contributing essentially towards the reduction of material input into groundwater and surface waters. With broad, area-wide measures, ÖPUL 2015 seeks to protect water bodies with low levels of pollution or none at all (e.g. "organic farming"; "Limitation of yield increasing inputs"). In areas with raised concentrations of nutrients and pollutants, i.e. a heightened risk of material pollution, targeted management practices for arable land and permanent grassland with low impact on the groundwater are supported.

Key ÖPUL approaches contributing to water pollution control are the following:

- Preventative and site-specific management practices on arable land contribute towards improving the water quality and reduce or prevent material pollution.
- Erosion protection measures such as greening or using permanent greening mixtures – particularly on arable land at high risk of leaching - reduce soil erosion and the associated nutrientrunoff into surface waters.
- Buffer zones in the form of wooded banks along water courses contribute to water pollution control.
- grassland preservation provides for slow water infiltration and a lower risk of nitrate leaching.
- A large number of consultation and training opportunities to convey the relationship between fertilizing and nutrient pollution in water bodies seek to raise the awareness and promote the efficient use of nutrients and plant protection products.

In addition the National River Basin Management Plan (Nationaler Gewässerbewirtschaftungsplan) and its program of measures based on the EU Water Framework Directive (2000/60/EC) will support in future.

Specific cases of increased values of monitored bacteria

While monitoring two bathing waters (Rheinauen, Hohenems and Alter Rhein, Lustenau), increased values of measured bacterial values were detected in August 2017. On a check-up measuring after four days the values were low again. The reasons for the uniquely high values might have been precipitation on the day before and / or accumulation of waterfowl; also many bathers could have been the reason for the high values. Together with the bathing water profile, a leaflet was posted for protection of waterfowl, and also warning against feeding. This topic was also discussed in the local media and disseminated via newspaper and radio.

The high levels of bacteria measured were also detected at Badesee Gaishorn am See in July 2017. The lake Gaishorn is vulnerable to contamination and microbiological inputs due to the topographical location; it is in the wake of thunderstorms and short heavy rains, and also exposed to prolonged rains. These were considered as the cause of the increased values.

Also at Neusiedlersee, Weiden, on July 2017 high levels of bacteria were detected. Therefore a temporary bathing prohibition went into effect. After the second inspection on 22 July 2017, the ban on swimming was lifted again. The further investigations according to the 2017 monitoring schedule produced a completely unobtrusive microbiological result. Other management measures were also taken: the entire sewer system in the area of the seaside resort, the Seepark Weiden and the neighboring facilities were systematically controlled; the entire shoreline was checked from the water side; the port facilities were constantly monitored; on 11 August 2017 the entire maritime park was checked; the boats were checked regularly during the crane for any discharge opening, etc. No abnormalities or irregularities were detected in these controls either. The cause of the temporary fecal load could not be found despite efforts to date.

At Zicksee, St. Andrä, due to the poor classification in 2013, increased attention is still paid to management measures. Full fencing of the entire shore area of the bathing water was re-implemented in the 2017 bathing season to prevent goose families from entering the bathing water and causing pollution. Daily washed-up algae (macrophytes and filamentous algae) were removed from the bathing water in 2017 and sampling during the 2017 bathing season continued to be conducted ten times to better capture short-term changes in the quality of the bathing water. The pumping tests with the Vienna University of Technology were continued in order to find an optimal doping system and the avifauna was again prevented from breeding and resting by subtle measures (such as expulsion).

5. Bathing water quality assessment presentation in online viewers

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

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

Appendix 1: Results of bathing water quality in Austria from 2014 to 2017

Table 2: Bathing waters in the season 2017 according to quality

		Total number of bathing waters	Excellent quality		At least sufficient quality		Poor quality		Quality classification not possible: not enough samples /new bathing waters/bathing waters subject to changes/closed	
			Count	%	Count	%	Count	%	Count	%
Total	2014	266	236	88.7	264	99.2	0	0.0	2	0.8
	2015	265	239	90.2	264	99.6	1	0.4	0	0.0
	2016	264	251	95.1	264	100.0	0	0.0	0	0.0
	2017	263	250	95.1	262	99.6	0	0.0	1	0.4

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

Appendix 2: Bathing water quality map

Map 1: Bathing waters reported during the 2017 bathing season in Austria

AUSTRIA

Adriatic Sea

0   50   100   150 km
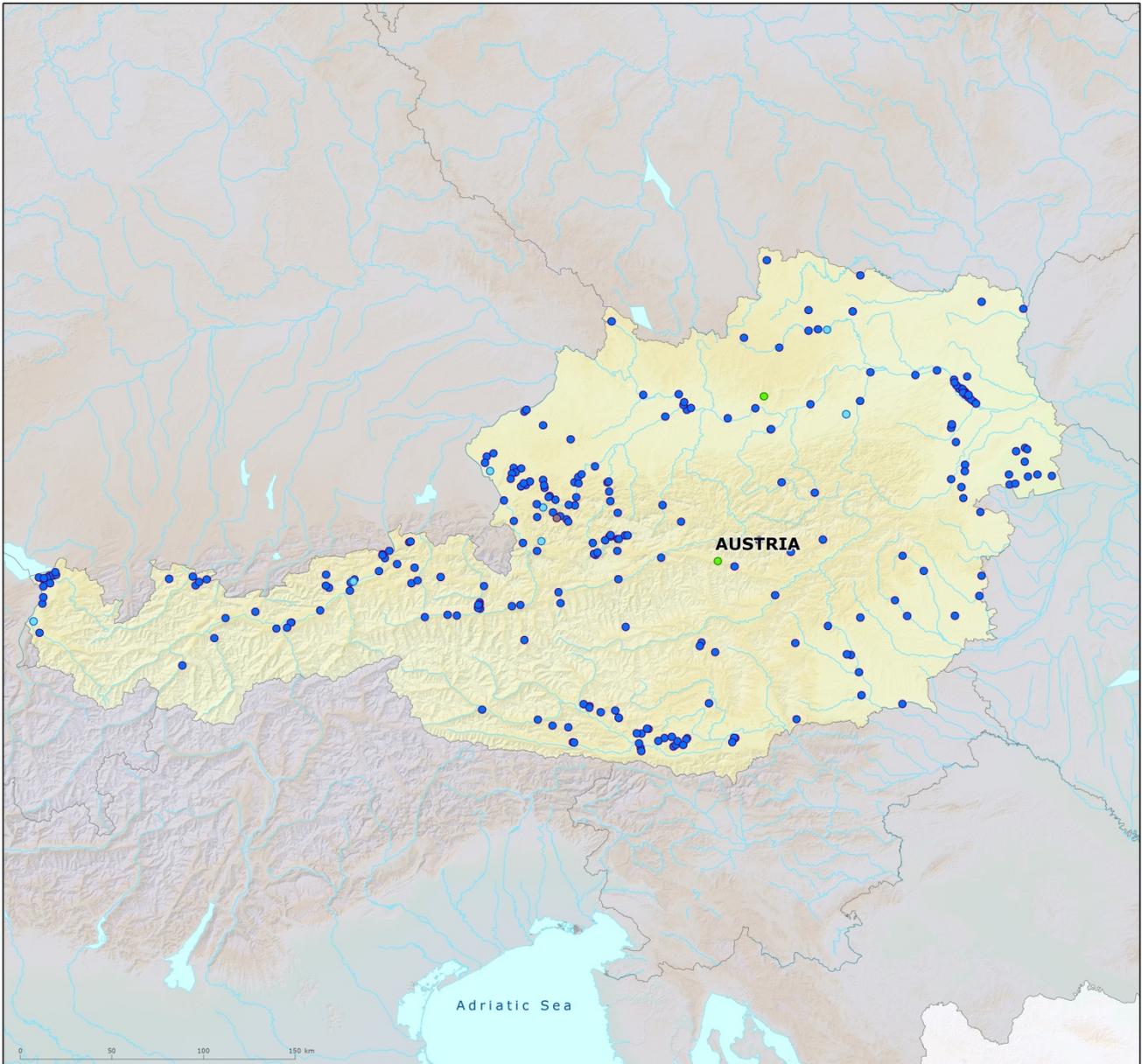
Bathing water quality

- Excellent water quality
- Good water quality
- Sufficient water quality
- Poor water quality
- Quality classification not possible: not enough samples / new

☐ No data

▨ Outside data coverage (data available, not presented on the map)