Bathing Water Directive report 2013
The Czech Republic

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 the Czech Republic.

1. BWD reporting in 2013 season

In 2013 bathing season, 157 bathing waters have been reported in the Czech Republic. For each bathing water, five groups of parameters have been delivered:

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

Bathing waters of the Czech Republic in 2013	
Total reported	**157**
Coastal	/
Inland	157
Season period	**112 days**
Coastal	/
Inland	20 May to 9 Sep
Samples taken	**810**
Share of bathing waters with good or excellent water quality	**89 %**
New BWD implemented in	**2012**

The authorities of the Czech Republic initiated new BWD (2006/7/EC) reporting in 2012 season. The 2013 season data were delivered to the European Commission by **6 January 2014**, with additional delivery on 10 April 2014.

Altogether, **157 bathing waters** have been reported – 0.7% of all bathing waters in Europe. Out of all bathing waters in the Czech Republic, none have been newly identified in 2013 season. Three bathing

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[1] Available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2006:064:0037:0051:EN:PDF

waters have been delisted[2]. All bathing waters are inland. **810 samples** were taken at bathing waters throughout the season – five per bathing water on average.

Inland bathing season period was from 20 May to 9 September, i.e. 112 days. Season duration varies for inland bathing waters.

Abnormal situation due to floods has been reported at eight bathing waters. See Chapter 4 for additional information.

Two bathing waters (1 % of total bathing waters) have been reported in a group.

Detailed information on individual bathing waters is available from national bathing water profiles at http://eagri.cz/public/web/mze/voda/povrchove-vody-vyuzivane-ke-koupani/.

2.   Assessment methodology

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 or livestock waste. 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 the water in the bathing sites concerned.

According to the BWD, the bathing water sample dataset should satisfy the following conditions:
- a minimum of one sample per month[3]
- a minimum of four samples per season[4]
- a minimum of 16 samples in total[5]
- four consecutive seasons[6]
- a pre-season sample[7]

The monitoring took place at 100% of total identified bathing waters, while 99% of bathing waters satisfied the described sampling frequency rules set by the Directive. Table 1 shows the share of bathing waters that did not satisfy monitoring frequency, as well as corresponding reasons.

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[2] Bathing waters which were identified in 2012 season, but not in 2013 season

[3] The interval between two samples should not exceed 31 + 4 days, provided that the next sampling is done according to the monitoring calendar; exception applies for temporarily closed bathing waters

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

[5] 12 samples if the season does not exceed eight weeks or the region is subject to special geographical constraints

[6] The condition does not apply if the bathing water is newly identified or any changes have occurred that are likely to affect the classification

[7] A pre-season sample is taken into account at total number of samples per season

Table 1: Number of assessed bathing waters in 2013

Total number of bathing waters in 2013	Bathing waters with sampling frequency satisfied	Bathing waters with sampling frequency not satisfied			
		Insufficiently sampled	Closed	Not sampled	**Total**
157	151	1	5	0	6

However, in pursue of maximum possible count of bathing waters to be taken into account for statistical purposes, limited number of other bathing waters have been assessed as well. This includes all bathing waters that have set of samples for a competent quality classification, but lack pre-season sample or frequency between sample dates is larger than defined in the directive. However, samples have to be equally distributed throughout the season.

Bathing waters are accordingly classified to one of the BWD quality classes:
- excellent
- good
- sufficient
- poor

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

3.   Bathing water quality

The results of the bathing water quality in the Czech Republic for the period of 2010–2013 as reported in the past reporting years and for the bathing season of 2013 are presented in Figure 2. The previous reports are available on the European Commission's bathing water quality website[8] and the European Environment Agency's bathing water website[9].

3.1   Coastal bathing waters

There are no coastal bathing waters in the Czech Republic.

3.2   Inland bathing waters

91.7% of the inland bathing waters met the mandatory water quality in 2013. No bathing waters had to be closed during the bathing season. See Appendix 1 for numeric data.

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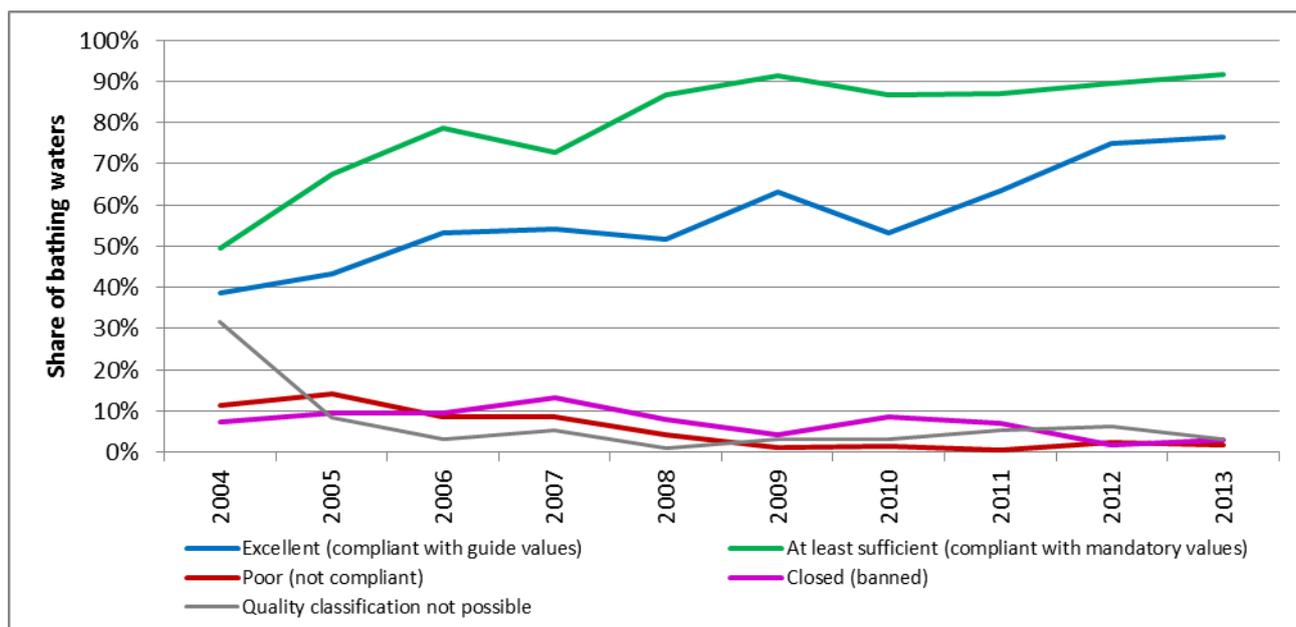[9] http://www.eea.europa.eu/themes/water/status-and-monitoring/state-of-bathing-water

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

4.   Information regarding management and other issues

Bathing water profiles were created, the information was published online and in media. Information boards were placed in an easily accessible place in the near vicinity of each bathing water. Sampling was carried out according to the bathing water monitoring calendar at least once per month. In some cases there was also an increase in the frequency of monitoring, where any exceeding of the national limit for parameters Escherichia coli, Intestinal enterococci or cyanobacteria occurred.

Water quality problems are most frequently related to mass proliferation of cyanobacteria due to eutrophication of reservoirs and ponds. Measures to reduce eutrophication of waters in the Czech Republic, including bathing waters, are primarily adopted under programmes implementing the Directive 91/271/EEC concerning urban waste-water treatment and the Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources. Selected bathing sites, based on the unsatisfactory water quality results, have been included into the operational water monitoring program. Measures to improve water quality will also be adopted in the frame of management plans of concerned river basins (Water Framework Directive 2000/60/EC).

The most important management measures are:
- Sediment removal
- Intensification/reconstruction/construction of wastewater treatment plant and sewer construction in the immediate vicinity or in the basin of bathing waters clearly affecting the water quality
- Preparation of the study concerning the assessment of current situation, identification of causes of pollution and proposal of measures
- Additional programmes of monitoring
- Action on reservoirs or ponds - aeration, manipulation with fish stock, coagulant dosage to the inflow into the reservoir

- Reconstruction of the reservoir or pond - dam repair
- Reduction of intensity of aquaculture production
- Application of chemicals to reduce the nutrients needed for the development of cyanobacteria and undesirable aquatic flora.

Quality of water in some bathing waters was affected by floods in the bathing season 2013 - especially in June. The monitoring calendar was thus suspended at eight bathing waters during the floods, moreover advices against bathing were issued there. Problems with huge amount of litter, woody debris and dead fish appeared on several reservoirs situated on large rivers (e.g. Vltava) after the floods.

Outbreak of cercarial dermatitis occurred in Velký Bolevecký rybník at the end of June and mainly at the beginning of July. Most cases were reported among participants of a long distance swimming race which was held on 5th July. Advice against bathing was applied and information on cercarial dermatitis was placed on several places near the beaches.

5.   Interactive information on bathing water quality in Europe

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 22 000 coastal beaches and inland sites across Europe. Data is aggregated and visualized on national and station level. Detailed information regarding specific bathing site are given in pop-up windows (can be activated with a click on a selected bathing location) and bathing water profiles which can be opened through hyperlinks in pop-up windows.

The data on bathing water quality in 2013 and previous years can also be viewed in WISE bathing water data viewer, an application prepared by TC Vode (http://bwd.eea.europa.eu/). The WISE bathing water quality data viewer combines text and graphical visualisation, providing a quick overview of the locations of coastal and inland bathing waters, as well as statistics on their quality. Specific bathing water locations can be observed on Google Earth, Google maps or Bing maps.

Appendix 1: Results of bathing water quality in the Czech Republic from 2010 to 2013

		Total	Excellent (compliant with guide values)		At least sufficient (compliant with mandatory values)		Poor (not compliant)		Closed (banned)		Quality classification not possible*	
			No	%	No	%	No	%	No	%	No	%
Total	2010	186	99	53.2	161	86.6	3	1.6	16	8.6	6	3.2
	2011	183	116	63.4	159	86.9	1	0.5	13	7.1	10	5.5
	2012	160	120	75.0	143	89.4	4	2.5	3	1.9	10	6.3
	2013	**157**	**120**	**76.4**	**144**	**91.7**	**3**	**1.9**	**5**	**3.2**	**5**	**3.2**

Note: the "At least sufficient" class also includes bathing waters which are of excellent quality, the sum of shares is therefore not 100%. * This includes new bathing waters, bathing waters with changes that affect or could have affected bathing water quality, and bathing waters that do not have enough samples.

Appendix 2: Bathing water quality map

Map 1: Bathing waters reported during the 2013 bathing season in the Czech Republic
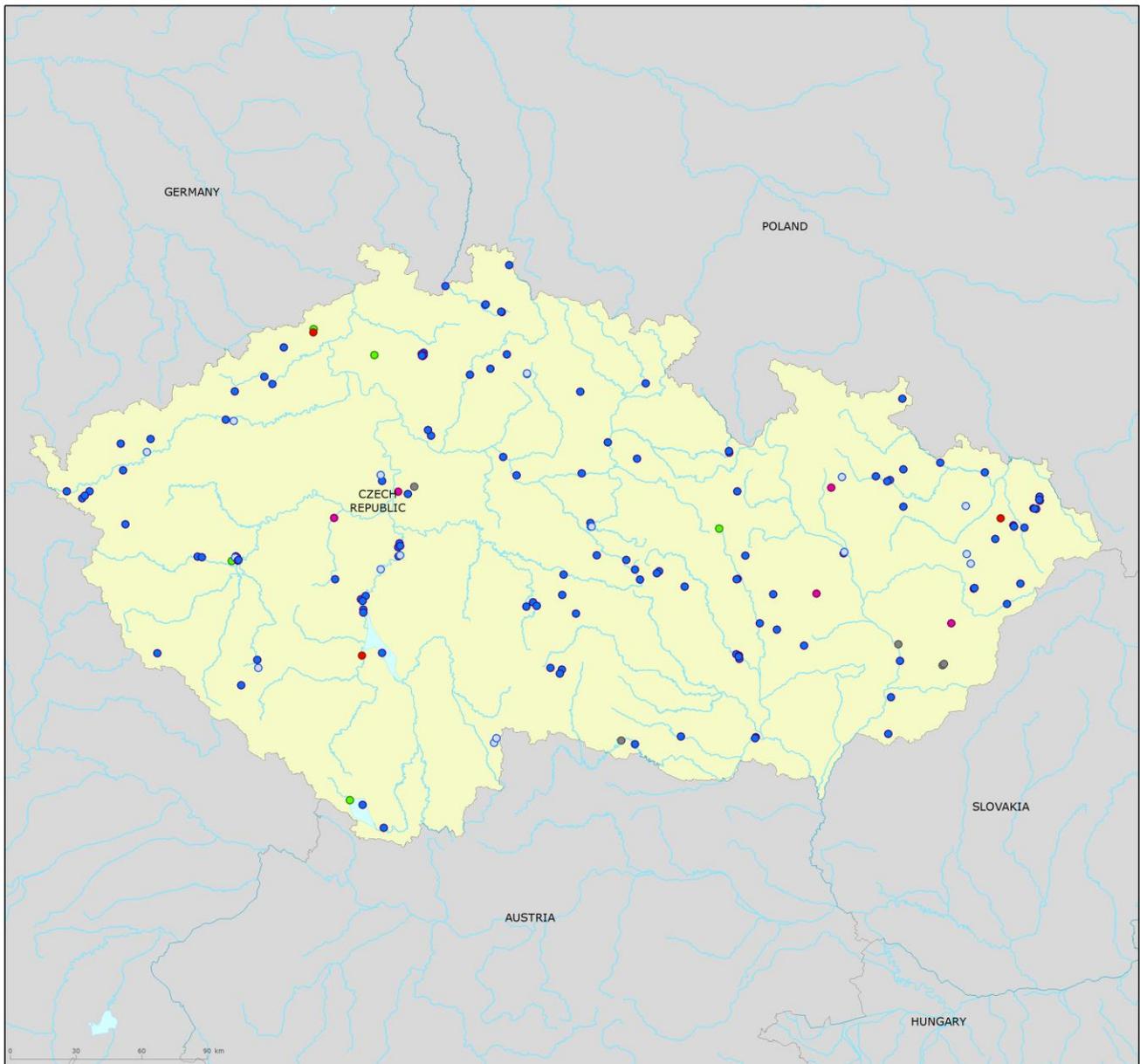
Bathing water quality

- ● Excellent water quality
- ● Good water quality
- ● Sufficient water quality
- ● Poor water quality
- ● Closed temporarily or throughout the season
- ● Quality classification not possible: new bathing waters / bathing waters with changes / not enough samples

- ☐ No data
- ▨ Outside data coverage (data available, not presented on the map)