Natural capital

Surface waters

Indicator	EU indicator past trend	Selected objective to be met by 2020	Indicative outlook of the EU meeting the selected objective by 2020
Status in surface waters	NA(1)	Achieve good status of transitional and coastal waters and freshwaters — Water Framework Directive	
Considering the large proportion of surface waters failing to meet 'good' ecological status, it is unlikely that the objective of achieving good status of waters will be met by 2020			

The Seventh Environment Action Programme (7th EAP) includes the goal of the Water Framework Directive (WFD) that good status should be achieved, enhanced or maintained in transitional, coastal and fresh waters. Achieving good ecological status in surface waters is a critical aspect of this. The quality of Europe's surface waters has improved over the past decades, thanks to higher standards of wastewater treatment, for example, and reductions in agricultural inputs of nitrogen and phosphorus. Pollution from agriculture (in particular nitrogen losses from agricultural land) and urban and industrial wastewater nevertheless remain significant. Hydromorphological pressures are also affecting many surface water bodies, mainly from hydropower, navigation, agriculture, flood protection and urban development resulting in altered habitats. Overall, in 2009 only 43 % of surface water bodies were in good or high ecological status and, in 2015, 53 % of water bodies are expected to reach good ecological status, making it unlikely that the objective of achieving good status of waters will be met. Full implementation of the management measures under the Water Framework Directive, in combination with full implementation of other relevant directives (e.g. Urban Waste Water Treatment, Nitrates Directive) is needed in order to restore the ecological status or potential of surface waters.

For the further information on the scoreboard methodology please see Box I.1 in the EEA Environmental indicator report 2016

Setting the Scene

One of the goals of the 7th EAP (EU, 2013) is that the impact of pressures on transitional, coastal and freshwaters (including surface and groundwaters) should be significantly reduced to achieve, maintain or enhance good status, as defined by the Water Framework Directive. This briefing addresses only surface waters. Surface waters are the majority of the volume of EU waters and are important habitats, providing key support to society and the economy throughout Europe, while clean, unpolluted waters are essential for our ecosystems. Surface waters have traditionally been the disposal route for human, agricultural and industrial waste, which has damaged their water quality. They have also been altered (by dams, canalisation etc.) to facilitate agriculture and urbanisation, to produce energy and to protect against flooding, all of which can result in damage to their hydromorphology.

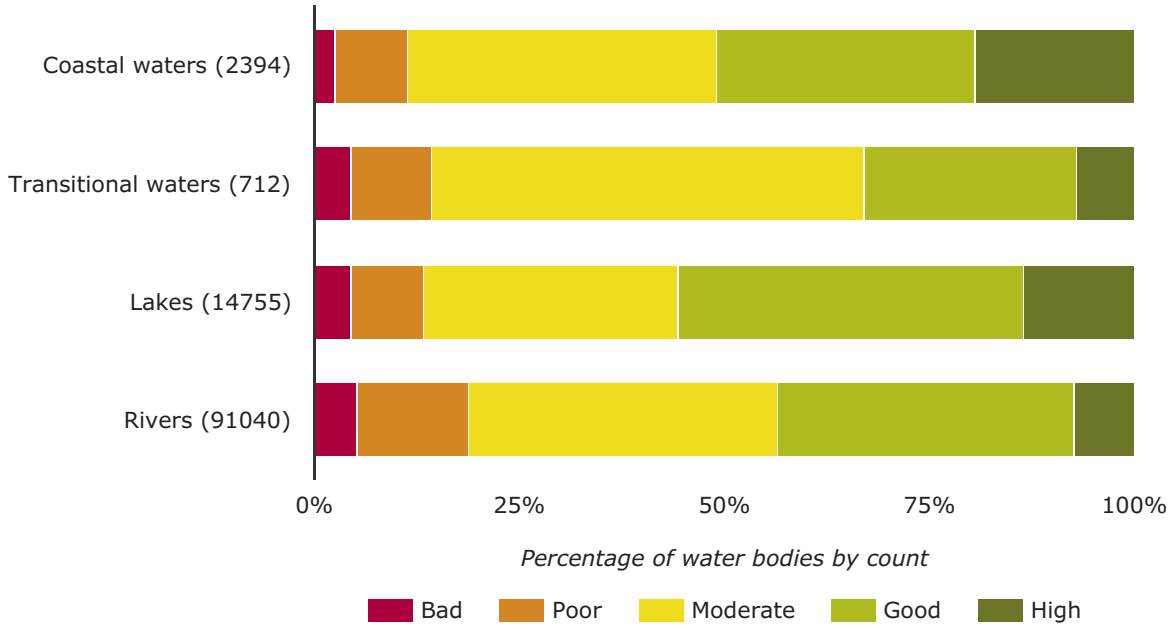
Policy targets and progress

The main aim of EU water policy is to ensure that a sufficient quantity of good quality water is available for people's needs and the environment. The Water Framework Directive (EU, 2000) stipulates that EU Member States should aim to achieve good status in all bodies of surface water and groundwater by 2015 unless there are grounds for exemption. The 7th EAP mirrored this objective and called for all European water bodies to reach 'good' status by 2020.

During the last 30 years, significant progress has been made in reducing the pollution in numerous European water bodies, in particular thanks to improved wastewater treatment. Water quality in Europe has therefore improved significantly in recent decades, and the effects of pollutants have decreased (EEA 2015a, 2015b). Pollution from agriculture (in particular nitrogen losses from agricultural land) and urban and industrial wastewater nevertheless remain significant. For decades, sometimes centuries, humans have altered European surface waters (straightening and canalisation, disconnection of flood plains, land reclamation, dams, weirs, bank reinforcements, etc.) to facilitate agriculture and urbanisation, produce energy and protect against flooding. These activities have resulted in damage to the morphology and hydrology of the water bodies, i.e. to their hydromorphology.

Based on the first river basin management plans reported in 2008, more than half of the surface water bodies in Europe are in less than good ecological status or potential, and will need mitigation and/or restoration measures to meet the Water Framework Directive objective (Figure 1). Rivers and transitional waters are on average in a worse condition than lakes and coastal waters. Concerns about the ecological status of surface water bodies are most pronounced for central and north-western Europe, in areas with intensive agricultural practices and high population densities. The status of coastal and transitional waters in the Black Sea and greater North Sea regions is also of concern.

Figure 1. Ecological status or potential of classified rivers, lakes, coastal and transitional waters, EU



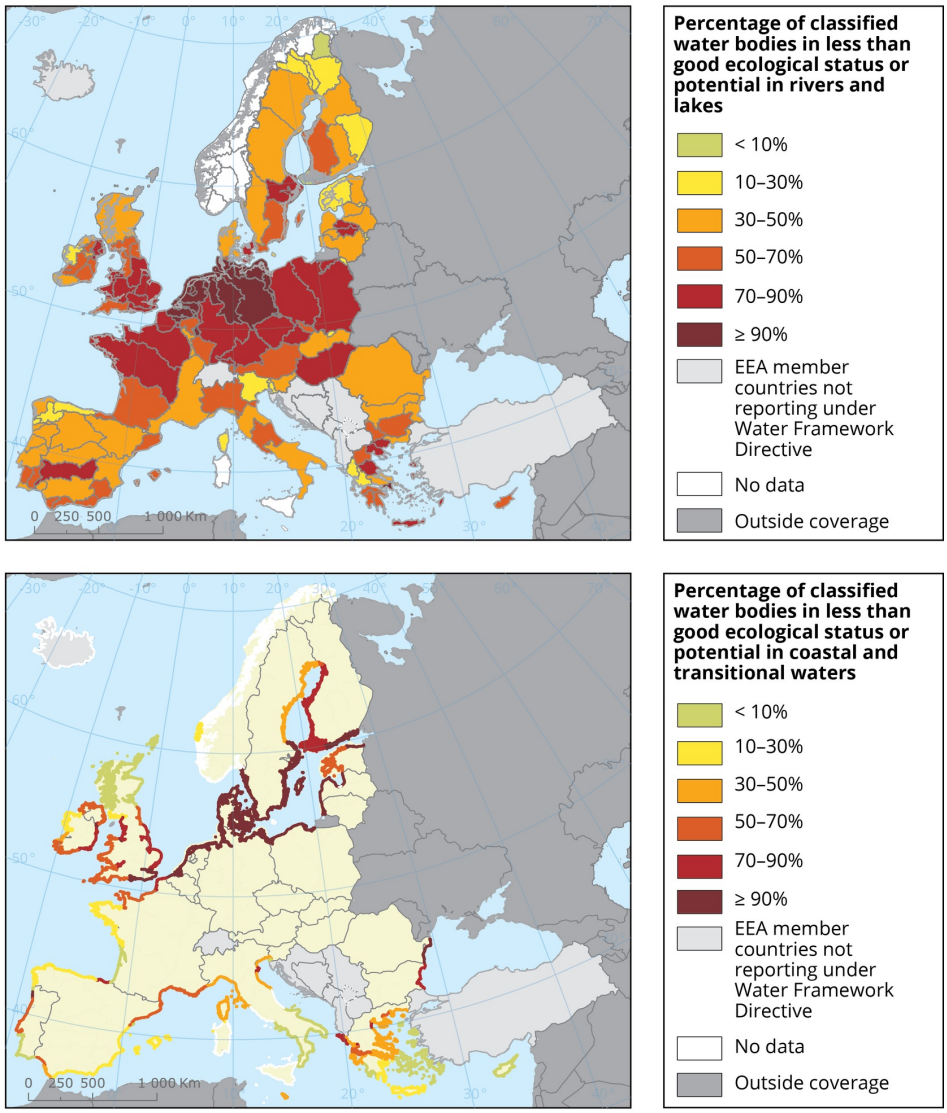
Data sources: EEA. WISE WFD Database

In 2009, 43 % of surface water bodies were in good or high ecological status and, in 2015, 53 % of water bodies were expected to reach good ecological status. This is far from meeting the objective of good ecological status and only constitutes a modest improvement in ecological status. Given this modest improvement and despite ongoing efforts, it is unlikely that the objective of achieving good status of waters will be met.

Country level information

As Figure 2 illustrates, there are differences between river basin districts with regard to the percentage of their water bodies that have 'good' ecological status. Surface water bodies in north-western Europe have the lowest status and/or greatest potential for improvement. In Belgium (Flanders), northern Germany and the Netherlands, more than 90 % of surface waters are reported to be in 'less than good' (i.e. moderate, poor or bad) ecological status or potential. Other problem areas are in the Czech Republic, southern England, northern France, southern Germany, Hungary and Poland, as well as several individual river basin districts in other EU Member States, where 70–90 % of freshwater bodies (lakes and rivers) are reported to be in 'less than good' status or potential. The status of coastal and transitional waters, in the Black Sea and greater North Sea regions is also of great concern.

Figure 2. Percentage of classified surface water bodies in different river basin districts holding less than good ecological status or potential, for rivers and lakes (top panel) and for coastal and transitional waters (bottom panel)



Note: Switzerland data sets on river and lake water quality reported in the framework of EEA priority data flows are not compatible with the EU Water Framework Directive assessments and are not included above.

Source: WISE WFD Database.

Outlook beyond 2020

Further efforts will be required beyond 2020 to achieve a 'good' status for all surface waters. To achieve good status, Member States will have to address the pressures affecting water bodies. Pollution will be one pressure (e.g. run-off from agriculture, wastewater from households and industry); morphological changes, overabstraction and hydrological changes affecting water flow would also play a role. Full implementation of the Water Framework Directive throughout all sectors will be needed to reduce these pressures, and in individual river basins it will be necessary to commit users from each sector (e.g. the agriculture sector) to focusing on delivering healthy water bodies with good status.

About the indicator

Achieving good status involves meeting certain standards for the ecology, chemistry, morphology and quantity of waters. In general terms, good status means that water shows only a slight change from what would normally be expected under undisturbed conditions (i.e. with a low human impact). This indicator is defined as the number of surface water bodies reaching at least 'good' ecological status or 'good' ecological potential. Ecological status and potential is a criterion for the quality of the structure and functioning of surface water ecosystems. More specifically, a surface water body has reached good ecological status when 'the values of the biological quality elements for the surface water body type show low levels of distortion resulting from human activity, but deviate only slightly from those normally associated with the surface water body type under undisturbed conditions' (EU, 2000).

The ecological status is used here as a proxy for the overall status of waters. This is because the ecological status is influenced by water quality (e.g. pollution levels of all types) as well as by the amount of available water. In addition, surface waters constitute the majority of EU waters. Water quantity issues are addressed in the Freshwater use briefing (AIRS_PO2.4, 2016),[1] which covers both surface and groundwaters.

The indicator covers only the current status of surface waters and not past trends. New data will become available in 2017 and the next version of the indicator will include trends.

Footnotes and references

(1) Time Series not yet available

EEA, 2012, European waters — Assessment of status and pressures, EEA Report No 8/2012, European Environment Agency (http://www.eea.europa.eu/publications/european-waters-assessment-2012) accessed 15 November 2016.

EEA, 2015a, 'Nutrients in freshwater (CSI 020)', European Environment Agency (http://www.eea.europa.eu/data-and-maps/indicators/nutrients-in-freshwater/nutrients-in-freshwater-assessment-published-6) accessed 15 November 2016.

EEA, 2015b, 'Nutrients in transitional, coastal and marine waters (CSI 021)', European Environment Agency (http://www.eea.europa.eu/data-and-maps/indicators/nutrients-in-transitional-coastal-and-3/assessment) accessed 15 November 2016.

EU, 2000, Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (OJ L 327, 22.12.2000, p. 1–73).

EU, 2013, Decision No 1386/2013/EU of the European Parliament and of the Council of 20 November 2013 on a General Union Environment Action Programme to 2020 'Living well, within the limits of our planet', Annexe A, paragraph 28b (OJ L 354, 28.12.2013, p. 171–200).

AIRS briefings

1. AIRS_PO2.4, 2016, Freshwater use, European Environment Agency.

Environmental indicator report 2016 – In support to the monitoring of the 7th Environment Action Programme, EEA report No30/2016, European Environment Agency