Europe sounds alarm over freshwater pollution

Environment agency review also charts gloomy news on biodiversity.

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02 March 2015

Zoonar GmbH/Alamy

Algae pollution in a lake in Schlehdorf, Germany.

Around half of Europe's rivers and lakes are still polluted, a major environmental review has found, despite a 15-year-old target to restore all the continent's waters to good ecological health by 2015.

The synthesis report, the latest in a series published every five years or so by the European Environment Agency in Copenhagen, charts a litany of other environmental failures. They include increasing biodiversity loss since the last report, and continued air and noise pollution (which is linked to deaths through heart attacks and strokes).

On the status of Europe's waters, it notes that despite seven major European water initiatives in the past 15 years, just 53% of freshwater bodies are expected to be in good ecological condition this year — a "modest improvement" from 2009, when 43% of rivers and lakes were healthy.

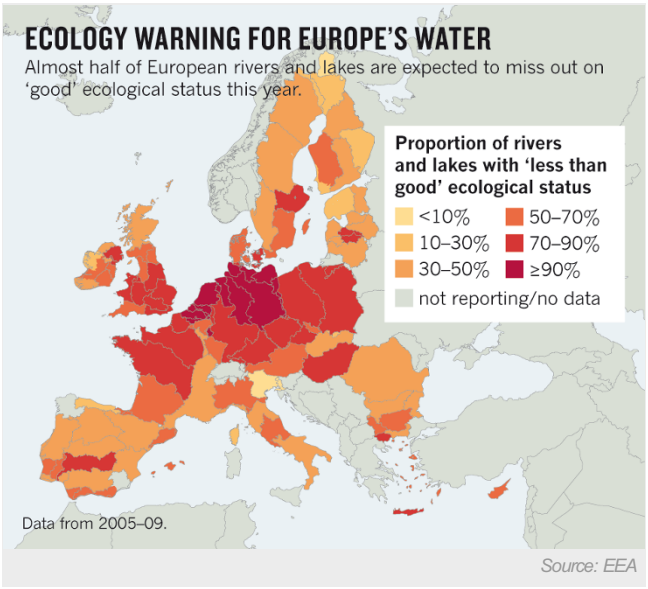
"It is becoming ever more urgent" to protect aquatic ecosystems, says Hans Bruyninckx, executive director of the environment agency. Improving water quality is also a public-health issue, he says.

Among the worst offenders are Germany and the Netherlands, where more than 90% of fresh water has failed to reach good ecological status (see chart, below). Waters with good status are defined as those that deviate only slightly from "undisturbed" reference conditions, which are based on measurements of chemical pollutants such as nitrates, biological indicators including the abundance of caddisflies and other invertebrates around rivers, and the physical condition of the water (whether a river is in a free-flowing, near-natural course, for example, or has been affected by structures such as hydroelectric power plants).

Pollution from agriculture and urbanization is mostly to blame. "Europe has not been very good at getting rid of manure from animal farming, nor lowering fertilizer use," says Bruyninckx. Urbanization leads to changes in land use, as farmland pastures and forests are converted into mining and construction sites.

Small gains

Concentrations of nitrates from agricultural run-off have declined on average by 20% between 1992 and 2012, but in more than 40% of Europe's rivers they still cause problems including algal blooms. The algae in turn can cause biodiversity loss, because they may be toxic to other aquatic animals, or may use up oxygen, killing fish. In 2012, the countries with the highest nitrate concentrations in rivers were Luxembourg, Turkey and the United Kingdom; Britain's nitrate-pollution levels have decreased since 1992, but Luxembourg's have risen.



Among the greatest achievements for water quality in the past 25 years is that countries have stopped dumping large quantities of untreated urban and industrial waste water into rivers, says the report. However, “advances are slow. We won't meet our targets,” says Bruyninckx.

But not all ecologists are so worried. The state of Europe's fresh water is “not as bad as it sounds”, says Alan Jenkins, deputy director of the UK Centre for Ecology & Hydrology, headquartered in Wallingford. Jenkins says that legislators' targets for improving water quality were unattainable — so it is not surprising that they were not met. “Generally, Europe's rivers and streams function pretty well,” he says, although he agrees that high nitrate concentrations are a problem, causing periodic toxic algal blooms across the continent.

Biodiversity loss

Europe's biodiversity is also ailing, the report shows. Some 60% of species and 77% of habitats assessed between 2007 and 2012 are in an “unfavourable” condition, and need greater protection. Both of these figures have increased by around ten percentage points from an assessment in 2001–06. But it is not clear whether the changes are attributable to declining conditions or to an increase in the number of species and habitats reviewed.

Bruyninckx applauds Europe for increasing the proportion of land and marine water under protection since the previous assessment. But he says that the biodiversity trends send a “strong signal” that further action is needed. Biodiversity is declining globally, and many scientists warn that it is reaching a critical point at which harm will become irrevocable. Many internationally agreed targets for protecting biodiversity by 2020 are likely to be missed.

Bruyninckx says that Europe's leaders must not shy away from tackling the continent's environmental challenges, which he says are set to increase with climate change and population growth: “The current policies do not suffice.”

Nature | doi:10.1038/nature.2015.17021