

Recovery from acid rain 'much slower than expected'

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Acid rain was one of the world's worst pollution problems of the 1970s and 1980s, affecting large areas of upland Britain, as well as Europe and North America.

In Wales, more than 12,000 km of streams and rivers have been acidified, harming fish, stream insects and river birds such as the dipper.

Over the last 20 years, action has been taken across Europe to clean up acid pollutants from power generation and industry, which was widely expected to bring recovery. However, new research led by Cardiff University's School of Biosciences shows that the expected improvements in rivers are far short of expectations.

Recent studies in Galloway, the Scottish Highlands and Wales reveal that many streams are still highly acidified. Biological recovery has been particularly poor.

Key findings from the projects, carried out by combined teams from Cardiff University, the Centre for Ecology & Hydrology and National Museum Wales, include:

- Acidity in Welsh headwaters is declining, but only slowly
- More than two thirds of all streams sampled were acid enough during high flow to cause biological damage, with metals at toxic concentrations

- Sulphur pollution from man-made sources is still an important cause of acid episodes, particularly in Wales
- Sensitive insects survive conditions in the most acid streams for only a few days
- Headwater acidification is still a significant problem for important salmon fisheries, and Special Areas of Conservation such as the Welsh River Wye.

Professor Steve Ormerod of the School of Biosciences, a leading researcher into the biological effects of acid rain for more than 20 years, said: “Organisms and ecosystems are the best indicators of recovery from pollution, so these results will alarm anyone interested in the well-being of our rivers. We need to understand the factors responsible for such delayed recovery, particularly since climate change is likely to make the acidification problem even worse.”

Dr Chris Evans, an acid-rain specialist from the Centre for Ecology & Hydrology in Bangor, added “Pollution reductions are slowly improving in upland waters, but there is a long way to go. The large biological effects of acid episodes shown by this work mean that it is vital to continue monitoring these ecosystems if we are to protect them in future.”

The research contrasts with other recent studies which showed some encouraging early signs and will come as disappointing news to those who thought the acid rain problem was solved.

Source: Cardiff University

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