# Environment Minister warns heatwave risks intensify threats to Lough Neagh’s ecosystem



As the weather transitions from the recent heat and the promise of summer fades, the environment is experiencing a complicated interplay of heat and ecological impacts. The Environment Minister for Northern Ireland, Andrew Muir, recently expressed a somewhat counterintuitive desire for rain over sunshine. His remarks came amid a heatwave that not only tested the resilience of local ecosystems but also intensified concerns over the health of Lough Neagh, the largest freshwater lake in the British Isles. With rising temperatures fostering conditions that encourage the growth of harmful blue-green algae, Muir’s apprehensions are well-founded. Algal blooms can severely threaten freshwater quality and biodiversity and pose risks for communities relying on these water sources.

Research highlights the detrimental effects of warmer freshwater on local wildlife, particularly cold-water fish species such as salmon and trout. During the heatwave of 2018, water temperatures in some Irish lakes soared to lethal levels, leading to significant fish mortality. Inland Fisheries Ireland recorded alarming figures, noting temperatures that exceeded 24.7°C for extended periods, particularly in the Owenriff catchment in Co Galway. This phenomenon, known as eutrophication, occurs when high nutrient loads interact with elevated temperatures, resulting in excessive plant growth and detrimental algal blooms that further compromise water health.

The situation is not isolated to Ireland but is reflective of a broader pattern observed globally. A scientific study has shown that heatwaves are increasingly affecting the dissolved oxygen concentrations in lakes worldwide, with European lakes facing particularly severe consequences. This connection underscores the urgent need for comprehensive measures to tackle nutrient pollution and safeguard water ecosystems. Experts like Professor Eleanor Jennings from Dundalk Institute of Technology warn that, if trends of global warming continue, lake surface temperatures could rise by as much as 6°C by the end of the century, exacerbating existing environmental challenges.

Moreover, research conducted on Lough Feeagh during the 2018 heatwave illustrated significant shifts in lake stratification, indicating that extreme climate events can disrupt not only the immediate aquatic environment but also the broader food web. Changes in chlorophyll levels and nutrient distributions highlight the far-reaching impact of heatwaves on aquatic ecosystems. It becomes evident that maintaining ecological balance in such an environment will require vigilant monitoring and proactive management of lakes and river systems.

In light of these intertwined issues, the call for rain from the Environment Minister transforms into a plea for balance—a plea resonating beyond the shores of Lough Neagh. With increasing global temperatures, the risks to freshwater ecosystems are becoming increasingly apparent, demanding immediate attention and action to mitigate climate impacts and preserve these vital resources for future generations.

## Reference Map:

* Paragraph 1 – [[1]](https://m.belfasttelegraph.co.uk/opinion/columnists/frank-mitchell/we-need-rain-but-another-heatwave-during-july-and-august-would-be-quite-a-treat/a1211523816.html), [[3]](https://www.rte.ie/news/ireland/2023/0712/1394065-global-warming-irish-lakes/)
* Paragraph 2 – [[2]](https://www.askaboutireland.ie/enfo/irelands-environment/water/irelands-warming-waters/fish-mortality/), [[5]](https://www.irishtimes.com/news/environment/irish-freshwater-temperatures-lethal-in-2018-fisheries-body-1.3744585), [[6]](https://www.mdpi.com/2073-4441/13/3/282)
* Paragraph 3 – [[4]](https://pmc.ncbi.nlm.nih.gov/articles/PMC11927634/), [[7]](https://www.marine.ie/site-area/news-events/news/climate-change-rapidly-warming-world%E2%80%99s-lakes)
* Paragraph 4 – [[3]](https://www.rte.ie/news/ireland/2023/0712/1394065-global-warming-irish-lakes/), [[6]](https://www.mdpi.com/2073-4441/13/3/282)
* Paragraph 5 – [[1]](https://m.belfasttelegraph.co.uk/opinion/columnists/frank-mitchell/we-need-rain-but-another-heatwave-during-july-and-august-would-be-quite-a-treat/a1211523816.html), [[3]](https://www.rte.ie/news/ireland/2023/0712/1394065-global-warming-irish-lakes/)

Source: [Noah Wire Services](https://www.noahwire.com)

## Bibliography

1. <https://m.belfasttelegraph.co.uk/opinion/columnists/frank-mitchell/we-need-rain-but-another-heatwave-during-july-and-august-would-be-quite-a-treat/a1211523816.html> - Please view link - unable to able to access data
2. <https://www.askaboutireland.ie/enfo/irelands-environment/water/irelands-warming-waters/fish-mortality/> - This article discusses the impact of rising temperatures on Irish freshwater ecosystems, particularly focusing on fish mortality. It highlights that during the summer of 2018, water temperatures in Irish lakes and rivers exceeded lethal levels for cold-water fish species like salmon and trout. Prolonged exposure to these elevated temperatures led to increased fish mortality rates, posing significant threats to these species. The article also touches upon the phenomenon of eutrophication, where higher temperatures combined with increased nutrient loads result in excessive plant growth and algal blooms, further affecting biodiversity.
3. <https://www.rte.ie/news/ireland/2023/0712/1394065-global-warming-irish-lakes/> - This report highlights the warming trend in Irish lakes due to global warming. Professor Eleanor Jennings from Dundalk Institute of Technology notes that surface water temperatures across lakes in Ireland increased by between 1.5°C and 2.5°C during the 2018 heatwave. Projections suggest that by the end of the 21st century, lake surface temperatures could increase by up to 4°C to 6°C. Such warming can lead to algal blooms, which produce toxins harmful to aquatic life and human health. The article emphasizes the need for measures to prevent nutrient pollution to protect water quality.
4. <https://pmc.ncbi.nlm.nih.gov/articles/PMC11927634/> - This scientific study examines the global impact of heatwaves on lake deoxygenation. The analysis demonstrates that heatwaves can negatively affect dissolved oxygen (DO) concentrations in lakes worldwide, with European lakes exhibiting notably higher absolute values of mean and maximum intensities compared to other continents. The study also observes an increasing trend in the intensity of heatwaves on DO concentrations over the past two decades, highlighting the escalating impact of climate change on freshwater ecosystems.
5. <https://www.irishtimes.com/news/environment/irish-freshwater-temperatures-lethal-in-2018-fisheries-body-1.3744585> - This article reports on the findings of Inland Fisheries Ireland (IFI) regarding the impact of the 2018 heatwave on freshwater temperatures in Ireland. The IFI found that water temperatures in Irish lakes and rivers during the summer of 2018 exceeded lethal levels for cold-water fish species, notably salmon and trout. The highest temperatures were recorded in the Owenriff catchment in Co Galway, where lethal water temperatures of more than 24.7°C were recorded over 13 days. The article emphasizes the risk posed to cold-water fish species under current climate change scenarios.
6. <https://www.mdpi.com/2073-4441/13/3/282> - This study investigates the effects of extreme climate events, such as heatwaves, on lake ecosystems. Focusing on Lough Feeagh in Ireland during the 2018 heatwave, the research found that the heatwave led to significant changes in the lake's stratification patterns, resulting in a three-fold reduction in Schmidt stability and a two-fold reduction in chlorophyll a. These changes had cascading effects on higher trophic levels, emphasizing the key role that extreme weather events can have on lake ecosystems.
7. <https://www.marine.ie/site-area/news-events/news/climate-change-rapidly-warming-world%E2%80%99s-lakes> - This news release from the Marine Institute discusses a global study indicating that climate change is rapidly warming lakes around the world, threatening freshwater supplies and ecosystems. The study found that lakes are warming an average of 0.34°C each decade, a rate greater than that of oceans or the atmosphere. At this rate, algal blooms are projected to increase by 20% in lakes over the next century, posing significant risks to water quality and aquatic life.