



Inter-Agency  
**Blue-Green Algae**  
**Monitoring Protocol**  
January 2026

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# 1. Blue-Green Algae: Background to monitoring protocol

The public should be aware of the dangers posed by the occurrence of blue-green algal blooms. Blue-green algae also known as cyanobacteria, are microscopic, plant-like organisms that occur naturally in fresh, brackish and seawaters throughout the world. While usually green or blue-green in colour, they may also be yellow-brown or red depending on the cyanobacteria species. Normally, blue-green algae are not visible in the water, however, when suitable weather conditions combine with a ready supply of nutrients, high concentrations can occur to form algal blooms and scums which discolour the water.

Blooms of blue-green algae often produce toxins (cyanotoxins), which can include neuro-(nerve) toxins, hepato-(liver) toxins, skin irritants, and inflammatory agents. These toxins are largely retained within the blue-green algae cells during their development and growth and are released into the surrounding water body when the cells die. Algal blooms can occur throughout the year, but they are most common from May through to October. The duration of blooms may last for a few days to months until conditions change, and the blue-green algae die and decompose. The behaviour of blooms is unpredictable and their location within a water body can change quickly throughout the day. They can float to the surface or move horizontally due to wind and currents. Therefore, a bloom that may be visible at one location one day may not be visible the next. Decaying blooms can also appear as scum or foam along the shoreline as a result of being carried by wind.

Due to the natural occurrence and large number of water bodies where blue-green algal blooms may occur, the Department of Agriculture, Environment and Rural Affairs (DAERA) cannot monitor and sample every bloom in Northern Ireland. A tiered approach is used for bloom investigations from active monitoring of identified and candidate bathing waters, to remote image verification of locations with a lower recreational use value.

DAERA undertakes a programme of water quality monitoring for identified (under the Bathing Water Regulations) and candidate bathing waters between 01st June and 15th September each year, and responds to reports of pollution incidents, taking samples where necessary to investigate potential sources of pollution.

Due to the diverse and increasing human requirements and pressures placed on water resources, DAERA is encouraging everyone to get involved in citizen science to help monitor blooms of blue-green algae, thereby highlighting any potential public health risks. The Bloomin' Algae App enables members of the public to submit a photo of the bloom taken on their phone and state what activity takes place at the location, so that the potential risks to people and animals can be gauged. The submitted records are verified by trained environmental experts,

enabling rapid feedback to the app user to verify blue-green algae presence, or something potentially less harmful, and appropriate next steps they should take. Records will be used to alert local authorities to provide early warnings of risks to other water users. The app is free to download directly from Google Play or App Store.

**For further information  
and guidance on the  
Bloomin' Algae App scan  
the QR Code**



**Members of the public can also report a suspected bloom by e-mailing:  
[emergency-pollution@daera-ni.gov.uk](mailto:emergency-pollution@daera-ni.gov.uk)  
with a photo, if possible, and details on the location of the potential bloom.**

## 2. Roles and Responsibilities (with respect to blue-green algae)

### The General Public

Members of the public are encouraged to take personal responsibility for themselves, their children and pets, and heed any signage at water bodies regarding risks of blue-green algae or specific signs with 'advice against bathing'. However, even if there is no signage at a location, should the appearance of a water body concern you, **when in doubt, stay out**, and do not let pets swim in, play in or drink water that looks discoloured or has scum on the surface.

Members of the public should report any suspected blue-green algal bloom as above via the Bloomin' Algae App or via the emergency pollution email:

[emergency-pollution@daera-ni.gov.uk](mailto:emergency-pollution@daera-ni.gov.uk)

### DAERA Marine and Fisheries Division

DAERA Marine and Fisheries Division (MFD) monitors identified and candidate<sup>1</sup> bathing waters for blue-green algae blooms, including toxins, to protect bathers' health under The Quality of Bathing Waters Regulations (Northern Ireland) 2008. MFD will inform bathing water operators of incidents of blue-green algae at identified or candidate sites. MFD also manages inland fisheries and the Public Angling Estate under the Fisheries Act (Northern Ireland) 1966.

### Northern Ireland Environment Agency

The Northern Ireland Environment Agency (NIEA) is an agency within DAERA. NIEA is responsible for identifying and confirming the presence of blue-green algae blooms reported through the Bloomin' Algae App. NIEA is responsible for informing operators, Local Council Environmental Health Departments and Northern Ireland Water of any confirmed blooms where possible. NIEA is also the competent monitoring authority for Lough Neagh and catchment rivers under The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017 and undertakes a programme of water quality monitoring to report upon the ecological health of our water environment. Under The Water (Northern Ireland) Order 1999, the Department and NIEA have a responsibility to promote the conservation and cleanliness of waterways and must have regard to the needs of industry and agriculture; the protection of fisheries; the protection of public health; the preservation of amenity and the conservation of flora and fauna; and the conservation of geological and physiographical features of special interest including archaeological, historical, architectural or traditional interest.

<sup>1</sup> The existing candidate bathing waters were formally identified in legislation on 31 May 2025. Therefore at this point, there are no candidate bathing waters. There may be new candidate bathing waters as part of future reviews.

## **DAERA Veterinary Science and Animal Health**

DAERA Veterinary Science and Animal Health Group are responsible for advising and acting upon animal health issues.

## **Food Standards Agency**

The Food Standards Agency (FSA) is a non-ministerial government department (NMGD) working across England, Wales and Northern Ireland to protect public health and consumers wider interest in food. FSA will provide advice to food businesses and consumers on the safety of consuming fishery products harvested from water bodies affected by blue-green algae blooms. The FSA is committed to safeguarding food safety and public health through evidence-based research and proactive monitoring.

## **Public Health Agency**

The Public Health Agency (PHA) provides specialist advice and guidance relating to the health of the public in Northern Ireland working in partnership with other agencies. The Public Health Agency has four core functions:

- health protection;
- health and social wellbeing improvement;
- public health support to commissioning and policy development; and
- Health and Social Care (HSC) research and development.

The health protection services include surveillance, intelligence gathering, risk assessment, scientific and technical advice and access to specialist health protection and public health microbiology services for the HSC, emergency responders, local government and the public during emergencies, at all levels.

## **Local Council Environmental Health**

Local Council Environmental Health have responsibility for providing advice to waterbody owners and the public regarding public health issues in council areas. PHA provides advice to local councils on health and safety for recreational water and waterside users.

## Northern Ireland Water

Northern Ireland Water Ltd. (NI Water) is a government-owned company with the Department for Infrastructure (DfI) as its sole shareholder. The DfI is responsible under The Water and Sewerage Services (Northern Ireland) Order 2006 to supply and distribute water, and NI Water performs the Department's water supply functions. NI Water is therefore responsible for providing all public water and sewerage services in Northern Ireland.

The public drinking water quality in Northern Ireland is assessed against standards set in The Water Supply (Water Quality) Regulations (Northern Ireland) 2017. The regulations set out the requirements to be met by NI Water when supplying water for domestic or food production purposes.

## Drinking Water Inspectorate

The Drinking Water Inspectorate (DWI), within NIEA, regulates the provision of drinking water by NI Water to ensure the protection of public health. DWI independently assesses the quality of the public drinking water supply to provide reassurance that the water is safe to drink.

## Water Business Owners/Controllers

Water businesses are responsible for warning and advising users of any potential dangers of their waterways. This requires liaising with local councils and PHA on public health related issues.

## 3. Categories of Water

There are five main categories of surface waters which require blue-green algae responses. Each requires a different approach and may have different authorities taking on the primary statutory public health responsibilities.

### 3.1 Sites with little or no recreational activity

Use of the Bloomin' Algae App is strongly recommended for bloom identification and verification. Consideration should be given to erecting permanent signs at 'frequently offending sites', warning of the possibility of harmful blooms and with QR code to the Bloomin' Algae App. Local Councils, NI Water, Inland Fisheries, and site operators may have responsibilities to erect warning signs. Sampling or formal monitoring is not proposed as reporting via the App is rapid, uses less resources, and provides the basic confirmation detail required, unless public authorities or site operators wish to undertake further monitoring.

### 3.2 Sites with high recreational activity which are not candidate or identified bathing waters

Use of the Bloomin' Algae App is also strongly encouraged for initial identification of potential bloom occurrences with subsequent laboratory verification. This provides an initial first step in confirming whether sites need to close for recreational activities. Under 'business as usual' NIEA can undertake Tier 1 monitoring of bloom samples to confirm presence of blue-green algae (see Section 4). Determining presence of blue-green algae does not however show the levels of toxins in the water, which are the best way of understanding risk to health (Tier 2 analysis). However, as these sites are not identified or candidate bathing waters, any Tier 2/toxin analysis required would have to be organised by the site owner or operator. Under The Health and Safety at Work (Northern Ireland) Order, 1978, site operators / owners have a responsibility to ensure risk assessments are carried out, and one of the aspects required around water-based activities is any risk presented by the presence of blue-green algae. Site owners or operators should consider erecting permanent signs, warning of the possibility of harmful blooms and with QR code to the Bloomin' Algae App. Organisers of events should undertake appropriate risk assessments of water quality prior to commencement.

### 3.3 Candidate or identified bathing waters

Under [The Quality of Bathing Water Regulations \(Northern Ireland\) 2008](#) identified or candidate bathing waters are monitored by DAERA through its Bathing Waters Programme during the bathing season. NIEA will be notified of possible bloom observations following routine water quality monitoring of sites by the DAERA bathing waters monitoring team. For inland sites with a risk of blue-green algae proliferation, consideration should be given by the bathing water operator (usually the local council) to erecting permanent signs, warning of the possibility of harmful blooms and with QR code to the Bloomin' Algae App to encourage reporting by the public or the bathing water operator (this would be in addition to any site inspections/visual observations undertaken by the DAERA bathing waters monitoring team).

A **Tier 1** screen to verify the Bloomin' Algae App submission and to confirm the presence of blue-green algae will be undertaken by NIEA.

**Tier 2** (toxin or biovolume based) monitoring is necessary to allow adequate management measures to be put in place and for provision of accurate advice to bathing water operators, which is a statutory obligation for DAERA under the Bathing Water Regulations. The bathing water operator has a statutory obligation to post any 'advice against bathing' where deemed necessary following monitoring results (see protocol detail in Section 5).

### 3.4 Sites where fish are harvested for placing on the market

Currently FSA leads on the approach to monitoring blue-green algae toxins in fish commercially harvested for placing on the market. The sampling plan is risk based and subject to annual review. There are currently no regulatory limits for cyanobacterial toxins in fish in the EU or UK. FSA are testing fish from Lough Neagh for a range of cyanotoxins including: Microcystins (free and bound), nodularins, cylindrospermopsins, anatoxins and saxitoxins, using validated methods.

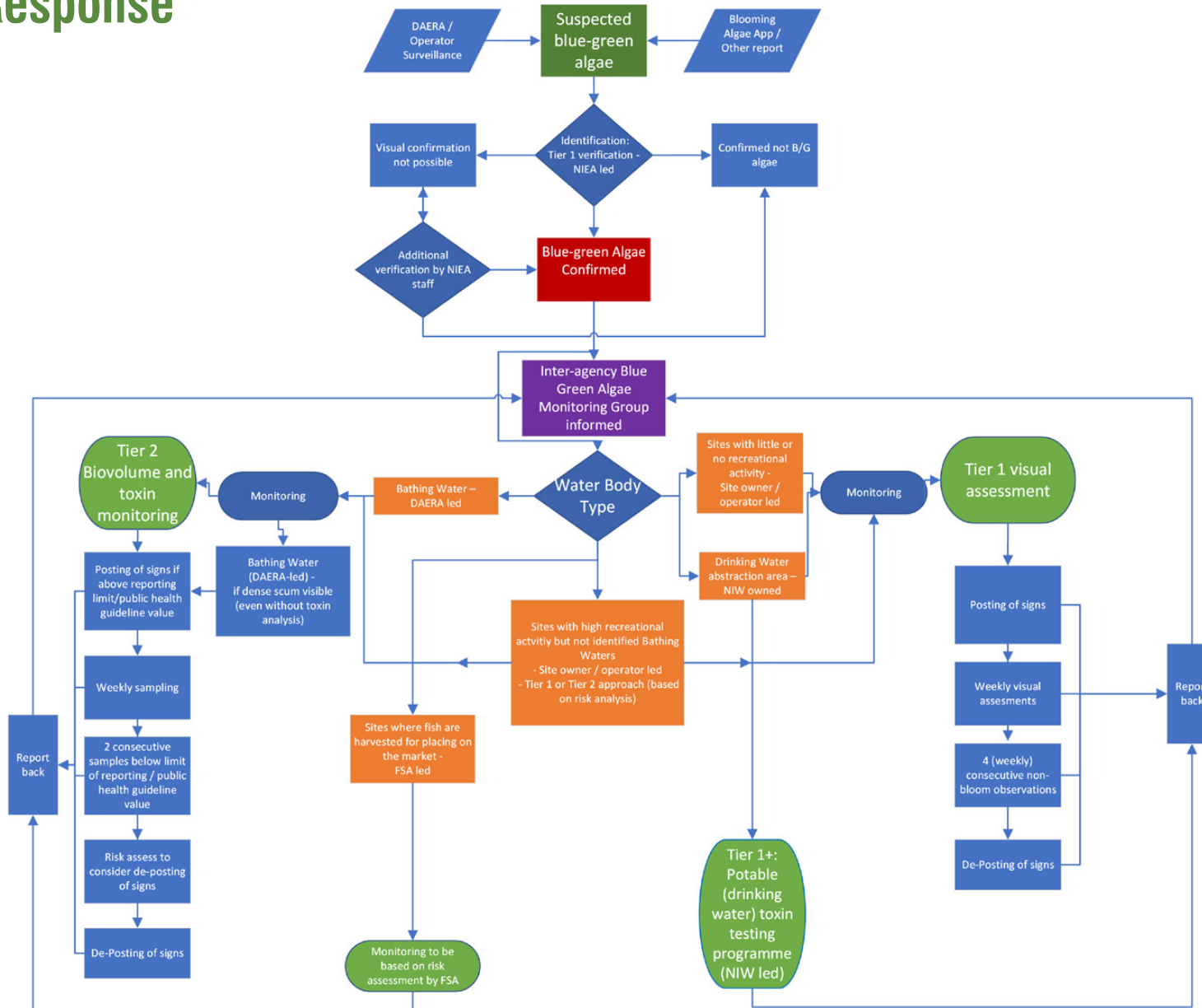
FSA published food safety advice on the risks of consuming fish from BGA affected waters of Lough Neagh based on results of samples collected in 2023 and 2024/25. FSA are continuing to undertake surveillance sampling of various fish species from Lough Neagh in 2025/26. Results of the sampling programme are subject to risk assessment by toxicologists, which informs FSA food safety advice. Following completion of the FSA's rapid risk assessments (RRA) they are published on the FSA website. The FSA's RRA for monitoring results in 2023 can be found at this link [Executive Summary - Microcystins in Fish | Food Standards Agency](#). The 2025 RRA is ongoing with the aim of publishing early 2026.

### 3.5 Drinking water abstraction waters

Waters used for the abstraction of drinking water are protected areas under The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017. The rivers, lakes and groundwater that currently (or will in the future) be used to supply more than 10m<sup>3</sup>/day of water for human consumption, or serve more than 50 people, are identified as Drinking Water Protected Areas (DWPAs). Therefore, for the public drinking water supplies, the objective is to ensure the necessary protection of the raw water supply by avoiding deterioration in water quality; also, to reduce the level of treatment required in producing drinking water that meets the requirements of the drinking water regulations. Where a DWPA is at risk, a safeguard zone (SgZ) should be established around a drinking water abstraction site. This zone identifies an area where land use practices are most likely to be causing, or have caused, water quality to deteriorate. NI Water must therefore be informed as soon as possible of any reports of possible bloom observations and/or confirmation of the presence of blue-green algae within a body of water abstracted for drinking water.

NI Water has an annual monitoring programme in place for both raw source waters abstracted for drinking water and the final treated drinking water. This is in accordance with the requirements of The Water Supply (Water Quality) Regulations (Northern Ireland) 2017.

# 4. DAERA Response Protocol



## Tiered approach to Surveillance and Monitoring

### Tier 1 verification of records and visual assessment

NIEA will complete verification of submitted records, either from reports via surveillance staff, or via the emergency pollution hotline, or via the Bloomin' Algae App. When required, qualitative assessments of potentially toxic blue-green algae from samples based on taxonomy will be used to confirm a blooms presence. It is recommended that regular visual inspections of the water are made by the site owner/operator, for evidence of bloom and scum formation. Site owners/operators should erect signs alerting the public to the presence of an active bloom and consider removal only after 4 weekly consecutive non-bloom observations. Signage is available from DAERA if required.

### Tier 1+ Potable drinking water testing

NIEA will notify NI Water of relevant verified records of blue-green algae. NI Water take samples of the raw and treated drinking water for algae, including cyanobacteria, and algal toxin analysis (Microcystin - LR). This monitoring enables the assessment of the risk in the raw water and ensures that the treatment processes are fully optimised to reduce and remove the risk in the treated drinking water.

### Tier 2 Biovolume and Toxin Monitoring - Enhanced Monitoring

Where sites are being used for water-based recreational or commercial activities that involve submersion in water or exposure to water spray, it is recommended that cyanotoxin concentrations are determined and [World Health Organization \(WHO\) Guidelines \(2021\)](#) applied. This is particularly the case when a bloom is decaying to confirm that it is safe to re-enter the water. Toxin samples and biovolume samples should be collected simultaneously, as they are both used to determine the applicable alert level and guide management actions. In the absence of toxin results, biovolume alone will determine the alert level. For sites that are not identified or candidate bathing waters, it is the responsibility of the site operator/owner to undertake such testing. Details of how public health guidelines are applied in bathing waters is provided in Section 6.

## 5. NI Water Drinking Water Monitoring Protocol

### 5.1 Water sample analysis

NI Water undertake sampling and analysis of the treated drinking water in line with the Drinking Water Regulations. On a daily basis, NI Water monitors raw water intakes and treated drinking water at treatment works and at customer taps to ensure that drinking water supplied meets the drinking water quality standards.

The treatment processes at the water treatment works provide a multibarrier approach for effective drinking water treatment, to ensure that the drinking water supplied to customers meets the drinking water quality standards. Where there is a risk for algae to be present in the raw water, the multibarrier drinking water treatment processes are designed to deal with this risk and to effectively remove cyanobacterial cells and algal toxins.

NI Water take samples of the raw and treated drinking water for algae, including cyanobacteria, and algal toxin analysis (Microcystin-LR). This monitoring enables the assessment of the risk in the raw water and ensures that the treatment processes are fully optimised to reduce and remove the risk in the treated drinking water.

### 5.2 Use of public health guideline values

NI Water undertakes sampling and analysis for the algal toxin, Microcystin-LR (MC-LR). Testing for Microcystin-LR in drinking water by NI Water is in line with the Recast Drinking Water Directive (2020/2184) and the World Health Organisation (WHO) Guidelines for drinking water quality (Cyanobacterial toxins: Microcystins). The Recast Directive provides a maximum value for Microcystin-LR of 1.0 µg/L for drinking water. The WHO lifetime drinking water guideline value (GV) for Microcystin-LR is 1.0 µg/L. The WHO drinking water GV for short-term exposure is 12 µg/L.

#### WHO health-based values for Microcystin-LR

Toxin	Lifetime exposure	Short-term exposure	Value type
Microcystin-LR	1 µg/L	12 µg/L	Provisional guideline value

Increased levels of algae in the raw water source can cause a taste and smell to the drinking water. Algae, particularly cyanobacteria, often produce volatile organic compounds called geosmin and Methyl-Isoborneol (MIB), which give an earthy or musty taste to water. Geosmin and MIB are naturally occurring compounds and are **not** harmful to health. Geosmin and MIB are also commonly found in soil and some foods such as beetroot and spinach.

Water treatment works have treatment processes that assist in the removal of Geosmin & MIB. NI Water undertakes analytical testing for Geosmin and MIB in the raw and treated drinking water. Geosmin and MIB can be detected by some people even at very low concentrations. This means that even at concentrations as low as 5 parts per trillion in drinking water, which is equivalent to 1 teaspoon in 200 Olympic swimming pools, these compounds can be detected by some people.

NI Water consults the PHA for appropriate public health advice in relation to the public drinking water supply where required.

## 6. DAERA Bathing Water Monitoring Protocol

### 6.1 Water sample analysis

Cyanotoxin-based monitoring programmes provide the most appropriate information in terms of protecting public health. This is because the toxins pose actual risk, rather than the potential risk posed by the presence of blue-green algae cells.

A reliable indicator of toxicity risk is blue-green algae biovolume or cell counts measured by a referenced method, accompanied with periodic corroboration via cyanotoxin analysis. This will be particularly important as we develop an understanding of actual toxicity during bloom formation and decay in the local situation.

The analytical methods for cyanotoxins such as microcystins (MCs) that are currently being used in commercial and research laboratories include enzyme-linked immunosorbent assay (ELISA) and liquid chromatography tandem mass spectrometry (LC-MS-MS). ELISAs are rapid screening methods which can give quantitative or semi-quantitative results. Currently, the ELISA being trialled by DAERA is acknowledged as being a sensitive and fully quantitative test for congener-independent detection of microcystins and nodularins in water samples. While this ELISA method is not specific enough to distinguish between individual MC variants, in practice it is sufficient for current risk assessments where all microcystins are assumed to be as toxic as a commonly occurring structural variant, microcystin-LR. DAERA is currently working towards accreditation for this method. However, once a positive is detected above a specific threshold value, the sample is then sent to investigate the profile of specific MCs present, including MC-LR, with this analysis carried out in a laboratory using LC-MS/MS to determine the toxin profile and levels.

A tiered approach is therefore recommended:

1. Reporting by DAERA bathing waters staff of any visual signs of blue-green algae for Tier 1 verification (NIEA)
2. Visual assessment to identify if blue-green algae are forming dense scums or mats at the bathing water
3. Take water samples for biovolumes, cell counts and to trial ELISA analysis in the laboratory
4. Where microcystins are present from water samples, take periodic reference samples for full cyanotoxin analysis at a suitable accredited laboratory and complete microscopic quantitative analysis (cell counts or biovolumes).

## 6.2 Use of public health guideline values

Based on World Health Organization (WHO) Guidelines (2021), freshwater recreational water bodies where bathing occurs should not contain:

- >24 µg/L total microcystins; or biovolume equivalent of >4 mm<sup>3</sup> /L for the combined total of all blue-green algae where a known toxin producer is dominant in the total biovolume; or
- blue-green algae scums are consistently present.

From a review of other guidelines in use, more conservative levels of total microcystin concentrations are advised:

- Canada<sup>2</sup>: 10 µg/L
- Australia<sup>3</sup>: 10 µg/L
- USA<sup>4</sup>: 8 µg/L

Where microcystin concentrations exceed such thresholds, immediate advice against bathing should be issued. Note the above levels are based on lower more protective values that have been adopted by many countries as a precautionary approach. There are a large number of microcystin toxins with only one (Microcystin -LR) having a guideline limit. However, there is not yet research available to support the establishment of guideline values for these.

Given the paucity of data on the toxicity of the blue-green algae blooms in 2023, a guideline of 10 µg/L guideline value for microcystin-LR (MC-LR) concentration was adopted for NI waters in 2024 and was retained for the 2025 season.

## 6.3 Monitoring frequency and Alert Level Framework

The WHO Guidelines recommend that for sites where there is an established risk of blue-green algae proliferation such sites should have baseline monitoring established at a frequency of fortnightly over the bloom season.

It is recommended that based on reports on blue-green algae blooms in Lough Neagh in 2023, such fortnightly surveillance monitoring at Rea's Wood commences in April and continues through to early November. This is known as the "Green level - surveillance mode".

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2 [Blue-green algae and their Toxins - For public consultation \(canada.ca\)](#)

3 [Guidelines for Managing Risks in Recreational Water \(nhmrc.gov.au\)](#)

4 <https://www.epa.gov/sites/default/files/2019-05/documents/hh-rec-criteria-habs-factsheet-2019.pdf>

Results from the surveillance fortnightly monitoring at Rea's Wood will be used to determine next steps, following the WHO Guideline Values and an Alert Level Framework summarised in the text below and table on page 19:

1. Where ELISA analysis indicates presence of microcystins and/or other toxins and/or microscopy shows dominance of blue-green algae species with up to 1-4mm<sup>3</sup>/L biovolume, the site should be considered as at “Amber level - alert mode”, and the bathing water operator should be informed.
2. **Once at “Amber level - alert mode” the site should be moved to weekly monitoring** and the public advised to be aware of the presence of blue-green algae. The site will automatically move to weekly monitoring during the bathing season (1 June - 15 September).
3. If cyanotoxin concentrations or biovolumes exceed the guideline values then the site is moved to “Red level - action mode” - bathing water operators should be informed to advise against bathing, even if a dense scum is not yet visible.
4. If there is a **visible, thick scum covering most of the water surface**, the site should be immediately considered as at “Red level - action mode” and advice against all water sports should be issued by the relevant landowner/manager/operator. In addition to the shore-based sampling, DAERA will use drone flights and information from monitoring buoys to assist in this risk assessment and will take a precautionary approach.

	Green level - surveillance mode	Amber level - alert mode	Red level - action mode
<b>Monitoring requirements:</b>	Fortnightly visual assessment*, water sample ELISA analysis and biovolume analysis to establish a baseline.	Weekly visual assessment, rapid test kit trialling, water sample ELISA analysis and/or biovolume analysis. Cyanotoxin concentration corroboration at accredited laboratory.	Weekly visual assessment, rapid test kit trialling, water sample ELISA analysis and/or biovolume analysis. Cyanotoxin concentration corroboration at accredited laboratory.
<b>Results:</b>	No presence of microcystins.  Biovolume of all cyanobacteria below 1 mm <sup>3</sup> /L.	Some visual evidence of patchy scum/mats/potential material.  AND  Presence of microcystins. Microcystin concentration below 10 µg/L.  AND/OR  Biovolume of all cyanobacteria between 1 and 4 mm <sup>3</sup> /L.	A visible, thick scum covering most of the water surface.  AND/OR  Microcystin concentration at or above 10 µg/L.  AND/OR  Biovolume of all cyanobacteria exceeds 4 mm <sup>3</sup> /L.
<b>Advice to bathing water operators:</b>	Bathing water operators informed at surveillance mode.	Bathing water operator and public informed to watch out for scums and when in doubt, stay out (encourage vigilance).	Bathing water operator to issue ' <b>advice against bathing</b> ' and public warned of risk to public health.

\*Note that in addition to the blue-green algae surveillance programme, all identified and candidate bathing waters will have weekly visual assessments completed during the bathing season (1st June - 15th September) under the bathing waters programme.

If there is any record of blue-green algae or risk of this at a bathing water, that site will then move to the blue-green algae surveillance programme protocol. Experience in the 2023 season has shown that account should be taken of prevailing wind conditions, which can transport blooms and scums into different locations and either concentrate them further or disperse them.

For the north coast bathing waters that may become a recipient of blue-green algae originating in Lough Neagh, the Interagency Monitoring Group records will be used to alert DAERA bathing waters team that blooms are in Lough Neagh or the Lower Bann and bathing water operators will be encouraged to submit any possible records of blue-green algae on the north coast sites, in addition to the weekly routine monitoring during the bathing season. The same alert level framework will be applied to any site that has blue-green algae confirmed.

## 6.4 Decision to remove restrictions

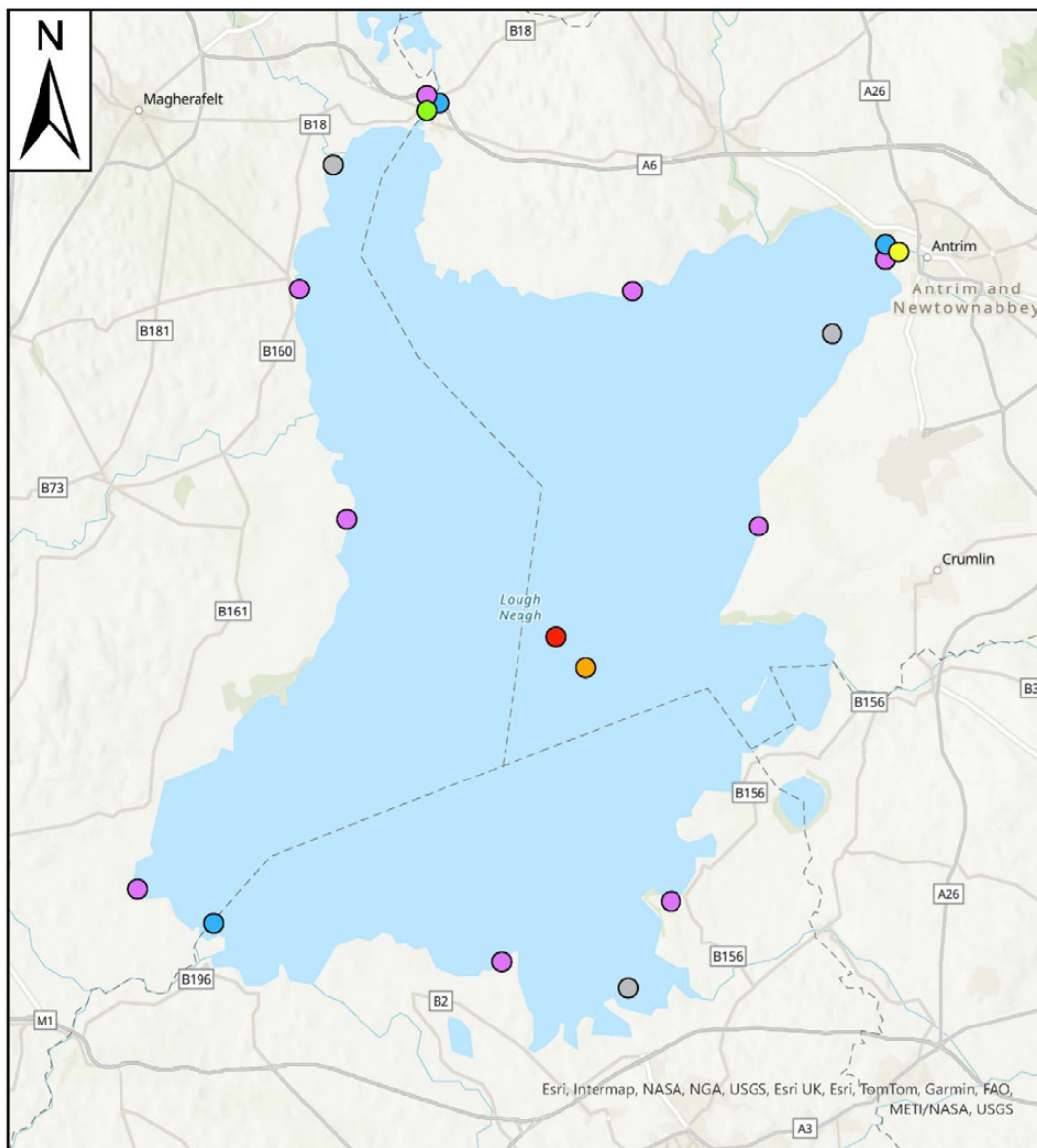
The decision as to when to remove restrictions such as 'advice against bathing' should take into account a variety of factors including the dominant species present, their toxicity and the presence of scum. It will be dependent on obtaining a favourable environmental risk assessment of the whole water body including:

- 2 samples below the limit of reporting (biovolume, specific and quantitative cyanotoxin analysis, cell count), ideally a week apart, after the last appearance of dense visible scum on the water/blue-green algal mats
- No weather and environmental conditions which could cause recurrence of the bloom.

# 7. Lough Neagh Monitoring

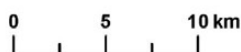
## 7.1 Lough Neagh monitoring locations

**Location of Monitoring Stations on Lough Neagh**



**Monitoring Station and Agency Responsible**

- |   |  |
|---|--|
| ● AFBI Lough Neagh Monitoring Buoy (1)                          | ● NIEA Lough Neagh Monitoring Buoy (3)               |
| ● AFBI Long Term Ecological Research (LTER) monitoring site (1) | ● NIEA Lough Neagh Priority Catchment Monitoring (9) |
| ● DAERA MFD Bathing Water Monitoring (1)                        | ● NIW Water Treatment Works (3)                      |
| ● FSA Fish Sampling (1)   |  |



Scale: 1:300,000

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15/09/2025

Agency	Programme	Site name	Sampling type	Frequency
AFBI	AFBI Lough Neagh Monitoring Buoy	Lough Neagh - mid point	In-situ monitoring	Continuous
AFBI	AFBI Long Term Ecological Research (LTER) monitoring site	Lough Neagh - White Horse Flats	Chemistry, phytoplankton, Secchi	Biweekly
DAERA MFD	Bathing Water Monitoring	Lough Neagh - Rea's Wood	Chemistry, cyanobacteria, in-situ monitoring, UAV surveys, cyanotoxins	Weekly (minimum)
FSA	Fish Sampling	Lough Neagh - Lough Neagh Fishermen's Cooperative	Sampling and analysis of different fish species for cyanotoxins	Monthly (During the open season May 2025 - March 2026)
NIEA	Lough Neagh Monitoring Buoy	Lough Neagh - Rea's Wood	In-situ monitoring	Continuous
NIEA	Lough Neagh Monitoring Buoy	Lough Neagh - Toome	In-situ monitoring	Continuous
NIEA	Lough Neagh Monitoring Buoy	Lough Neagh - Washing Bay	In-situ monitoring	Continuous
NIEA	Lough Neagh Priority Catchment Monitoring	Lough Neagh - Ardmore	Phytoplankton, chemistry, fluorescence	Monthly
NIEA	Lough Neagh Priority Catchment Monitoring	Lough Neagh - Ballyronan	Phytoplankton, chemistry, fluorescence	Monthly
NIEA	Lough Neagh Priority Catchment Monitoring	Lough Neagh - Bartin's Bay	Phytoplankton, chemistry, fluorescence	Monthly
NIEA	Lough Neagh Priority Catchment Monitoring	Lough Neagh - Churchtown Point	Phytoplankton, chemistry, fluorescence	Monthly

Agency	Programme	Site name	Sampling type	Frequency
NIEA	Lough Neagh Priority Catchment Monitoring	Lough Neagh - Moore's Point	Phytoplankton, chemistry, fluorescence	Monthly
NIEA	Lough Neagh Priority Catchment Monitoring	Lough Neagh - Rea's Wood	Phytoplankton, chemistry, fluorescence	Monthly
NIEA	Lough Neagh Priority Catchment Monitoring	Lough Neagh - Stanierd's Point	Phytoplankton, chemistry, fluorescence	Monthly
NIEA	Lough Neagh Priority Catchment Monitoring	Lough Neagh - Washing Bay	Phytoplankton, chemistry, fluorescence	Monthly
NIEA	Lough Neagh Priority Catchment Monitoring	Lower Bann - Toome Bridge	Phytoplankton, chemistry, fluorescence	Monthly
NIW	Water Treatment Works	Lough Neagh - Dunore Point	Algae / Algal Toxin (M-LR) / Geosmin & MIB	Monthly (November - March) / Weekly (April to October) (Minimum frequencies)
NIW	Water Treatment Works	Lough Neagh - Castor Bay	Algae / Algal Toxin (M-LR) / Geosmin & MIB	Monthly (November - March) / Weekly (April to October) (Minimum frequencies)
NIW	Water Treatment Works	Lough Neagh - Moyola	Algae / Algal Toxin (M-LR) / Geosmin & MIB	Monthly (November - March) / Weekly (April to October) (Minimum frequencies)

## 7.2 Lough Neagh Science Platform

The Lough Neagh Science Platform aims to improve scientific understanding, education and knowledge exchange and improve decision making. It is being delivered through a multistep approach. Step 1 developed an online portal ([Lough Neagh Water Quality Dashboard](#)) displaying near real-time data from the Lough from a variety of sources. Further steps will integrate data from NIEA, AFBI and NI Water.

The portal hosts non-validated NIEA data from 6 probes deployed in rivers and 3 probes suspended from buoys in the Lough, allowing tracking of harmful algal development and movement. Parameters include water temperature, phycocyanin, dissolved oxygen, turbidity and conductivity. All data is downloadable. Please note that whilst probes are regularly calibrated and tested their accuracy may be impacted in more extreme conditions.

Version 2 (release Summer 2026) will include validated nutrient and algal composition data from NI Water and NIEA. Further updates will include microbial source tracking and AFBI data.

Data gathering has commenced through AFBI and NERC to enable:

- 1) Enhanced understanding of source apportionment and nutrient enrichment in Lough Neagh and its rivers.
- 2) Enhanced modelling and tools to evaluate potential water quality interventions for improved ecosystem health and safety (cyanotoxins) and other environmental and economic outcomes.

Stakeholder input to tool development will be sought in 2026.

For further information regarding Tier 1 Monitoring:

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