



**GUIDANCE NOTE:
BLUE-GREEN ALGAE – MANAGING THE RISK
JULY 2015**

This is the RYA's guidance note for clubs and training centres wishing to continue recreational boating activities upon waters affected by a blue-green algal bloom.

Each organisation is responsible for making its own decision as to the use of its water, according to the exact circumstances of its case and level of contamination, however this guidance note sets out the general RYA advice on this issue.

The basic principle is that clubs and training centres should take reasonable care to assess and manage the risks associated with blue-green algae e.g. by identifying areas of significant toxicity and taking steps to avoid them. Clubs and training centres should also inform water users of the dangers involved in an appropriate manner so that those who have sufficient capacity to acknowledge and accept the risks can do so if they choose to go afloat when high levels of blue-green algae are present.

However, children (including young people) and vulnerable adults may not have sufficient appreciation of the risks to enable them to make a valid decision whether to accept them. There is a section of advice to those teaching children and vulnerable adults below.

BLUE-GREEN ALGAE: THE FACTS

Blue-green algae are natural inhabitants of many inland waters, estuaries and the sea. Although referred to as algae they are, in fact, a type of bacteria (known as cyanobacteria) with the ability to use the sun's energy to make food in the same way that many plants do. They may be found in suspension, attached to rocks and other surfaces at the bottom of shallow waterbodies and along the edges of lakes and rivers. The term blue-green algae includes a number of different species.

All species of blue-green algae need nutrients - nitrates and phosphates - to grow. If the water is enriched with nutrients and we have calm, sunny and warm weather conditions, then the growth may become excessive resulting in algal blooms.

These algal blooms cause the water to appear discoloured green, blue-green or greenish-brown and some species can produce a musty odour. When the blooms die, they break down, using up oxygen in the water and cause problems for other aquatic life, such as fish. In calm, warm weather some bloom-forming species will rise to the water surface and form a scum which may again be coloured.

For reasons not fully understood, some bloom and scum-forming blue-green algae are capable of producing toxins. Although many blue-green algae blooms are not toxic, some produce nerve or liver toxins and it is therefore safest to assume toxins could be present.

The level of toxicity may vary hour to hour which means it is often not practicable to take regular toxicity tests. In their most dangerous form, both in quantity and species, blooms have caused death in cows, sheep and dogs drinking significant concentrations at the water's edge.

The known effects on humans in the UK have been limited to illness rather than death. Since the early 1990's the RYA has had no incidences of illness reported from members following the simple safety precautions detailed in this guidance note.

WHO IS AT RISK AND WHAT ARE THE SYMPTOMS?

Human health risk from exposure to blue-green algae toxins can arise through swallowing or inhaling water containing the algae and through prolonged direct contact with exposed parts of the body including the skin, and sensitive areas such as ears, eyes, mouth and throat.

Different groups of water users are at different levels of risk, depending on the amount of time they are likely to spend in/close to the affected water. Participants in **descending order of likely risk** are as follows:

1. Swimmers, paddlers, children playing at the water's edge, dogs, other animals including some farm animals, fishermen using the bank and water's edge.
2. Windsurfers whose level of competence puts them at risk in the prevailing wind conditions of becoming immersed in or blowing into areas of algal scum.
3. Dinghy sailors, catamaran sailors, canoeists and windsurfers competent for the prevailing conditions.
4. Other boat users and fishermen fishing from a boat or pontoon.

Essentially the more likely you are to come into direct contact with the algal scum, the greater the risk of effects of exposure. Symptoms of those affected could be easily confused with a range of other illnesses so it is important to be aware of the risk of blue-green algae as a contributory factor.

Swallowing and/or inhalation can result in mouth and nose ulcers, blistering of the lips, abdominal pain, nausea, vomiting, diarrhoea, muscular pains, sore throat, dry cough, headaches, hay fever symptoms, dizziness and fatigue.

Contact with the ears and eyes can result in irritation and exposure of the skin can lead to allergic or irritated reactions such as skin rashes, lesions and blisters. Bathing suits and wetsuits can aggravate these effects as the cells can accumulate next to the skin and be broken down through agitation, thus releasing the toxins.

Severe cases could include seizures, liver failure, respiratory arrest and even death, although there are no confirmed cases of human deaths from blue-green algae toxins. The severity of the illness is related to the amount of water ingested and the concentrations of the toxins.

WHAT SHOULD YOU DO?

If a blue-green algal bloom appears in your club's or training centre's waters, then following the advice contained within this guidance note will help to minimise the risk to club members, students and participants, and ensure that those choosing to continue sailing understand that they do so at their own risk.

1. Assess and manage the risk
2. Provide information to all users going on or near the water
3. Require Risk Statements to be signed by participants (or on their behalf)
4. Report incidents of blue-green algae blooms and scums to the relevant authority:
 - England - Environment Agency, 0800 80 70 60
 - Northern Ireland – Northern Ireland Environment Agency, 0845 302 0008
 - Scotland – Environmental/Public Health Department at your Local Authority
 - Wales – Natural Resources Wales, 0800 80 70 60

Assess and manage the risk

It is advisable to carry out a specific risk assessment for activities when a blue-green algal bloom is present and establish how to manage these risks. It is possible that the relevant authority for your country may wish to take a sample of the bloom for testing, especially if the water is owned by the Local Authority or a water company. Although the relevant authority is responsible for the initial testing of potentially affected waterbodies they are not responsible for managing and monitoring the risk unless they own the waterbody; once they have tested the water, they will notify the relevant bodies responsible for managing any risk to human or animal health.

In most situations the decision related to risks to human health is taken by the Environmental Health department of the Local Authority; although many Local Authorities will take a precautionary approach to blue-green algae and recommend avoiding the water until the bloom has subsided. Unless they own or manage the lake, Local Authorities are unlikely to formally close the facility. Instead, all users will be advised that they undertake recreational activities at their own risk. It is therefore important that each club or training centre carries out its own risk assessment and puts procedures in place to manage and minimise them.

The following points provide organisations some guidance in this:

1. So far as day to day operations are concerned, on each day of operation an appointed officer should inspect the shore to note collections of thick aggregations of algae or scum. If algae or scum is present, participants should be advised of the location of these aggregations. Launching from or returning via these areas should then be discouraged.
2. Where practical, mobile launching pontoons or jetties may be used to launch from if the waterbody does not have a reasonable number of alternative permanent launching slips.
3. Organisations should endeavour to enable participants to launch and to return to an area free from thick collections of algae and scum, with signs to appropriate slipways according to prevailing conditions. Prevailing conditions should be monitored during the day in the event of a change in wind direction.
4. A map of the waterbody should be on display and should be marked to show current areas of perceived risk. The map should be updated daily after inspection of the waters and shoreline. For racing, set a course which where possible avoids areas of perceived risk and should therefore consult the map before deciding upon the areas of water he/she wishes to use. Shallow water is best avoided.
5. Organisations should provide participants with the facts on blue-green algae contained in this guidance note.
6. The water should be patrolled by a patrol boat whenever tuition is taking place. Consult the map and ensure that no capsized participants remain unduly long in the water, particularly in areas of perceived risk. They should be particularly aware that capsized equipment and algae both float downwind to the same area of the lake.
7. Where practical, fresh tap water hoses should always be available at known places along the shore, or at the head of the chosen slipway for the day.
8. Participants should be advised to wash themselves down thoroughly following activities on the affected water so that scum and algae are removed from their clothing before they enter the changing rooms. Participants should clean their hands thoroughly after entering the water and before handling/eating food. Children or dogs which stray onto the shore should similarly be washed down and in particular dogs should be kept on leads and not permitted to lick scum off their coats. Club members should be advised to wash and thoroughly dry all protective clothing on returning home. Clothes should not be stored wet or damp.
9. Children, adults and pets should not be allowed to walk or play at the water's edge, particularly on a lee shore on a windy day when scum may be found some distance from

the edge. If the water level is falling in times of drought, dangerous pools containing high concentrations of algae may be found inland.

10. Those taking part in 'Working Parties' to improve facilities in or close to the water should be warned of the risk, particularly if they 'strip off' on a hot day and splash water on their skin.
11. The club or training centre may wish to consider whether they should print small, durable information cards for their members and/or students which in the event of illness would indicate to their doctor that they sailed upon waters where there was an exposure to toxic algae. This could well indicate that there may also be a risk from *Leptospirosis* (Weil's Disease) if there is a rat population in the area.
12. For future reference, a record book should be kept to commence the recording of data relating to toxic algae, including the quantity of algae noted, its position, the weather and water temperatures. Records should also be retained of any illness reported by participants subsequent to that day's activities. In this way a responsible monitoring and caring attitude can be demonstrated to participants, and used in future seasons to aid decisions and to work in a responsible co-operative manner with relevant authorities, water companies and waterbody owners. In the event of dead fish or animals being found, these must be reported to the relevant authority on the number above. A record should also be kept of the build-up of scum including dates and location.

Provide information to all water users going on or near the water

It is important that all water users are made aware of the facts about blue-green algae (as provided in this guidance note) and also provided with an up to date map of the areas affected (which could change daily). They should also be provided with any clear and specific operational details, such as points 4 and 8 above, to enable participants to make an informed decision as to whether or not to participate in sailing activities affected by blue-green algae.

It is particularly important to make participants aware of the increased risk of skin irritation if they wear a wetsuit and do not shower/wash themselves down to remove algal material immediately on exiting the water.

Information should be provided directly to each participant as well as being made available on noticeboards or similar for anyone to access.

Risk Statements to be signed by participants

It is suggested that all those who have received and read the blue-green algae information sheet are asked to sign a Risk Statement acknowledging that they have received a copy of the information sheet and will pay attention to any specific instructions regarding current conditions prior to participating in any activity. Signed Risk Statements should be kept as a record by the organisation. In combination with active management of the blue-green algae risk per the suggestions above, clubs or training centres may decide that a single Risk Statement completed by each individual would suffice for each sailing season.

Organisations may also consider asking visitors and participants in open meetings to read an appropriate information sheet and sign a Risk Statement on the occasion of each visit.

Children or vulnerable adults may not have sufficient capacity to sign a Risk Statement. This is discussed further below.

Annex 1 of this document provides suggested wording for a Blue-Green Algae Risk Statement.

ADVICE TO THOSE TEACHING CHILDREN AND VULNERABLE ADULTS

The presence of potentially toxic algae on your organisation's waterbody presents particular problems to those concerned about the possibility of incurring legal liability when teaching children (including young people) and vulnerable adults.

Additional advice to that already issued by the RYA on this subject is as follows:

1. Those responsible for children and vulnerable adults must be made aware of the presence of blue-green algae and the risks associated with it.
2. By 'children', 'young people' and 'vulnerable adults' we mean those who would be regarded in law as too young or not having sufficient capacity to make a valid judgment about whether to accept the risk of injury by participating in a hazardous activity.

Although the risks inherent in recreational boating may be considered to be self-evident, this is not the case with potential dangers arising from water pollution or blue-green algae growth.

3. Our advice to clubs and training centres is set out in this guidance note. This is based on the proposition that if those responsible for the management of activities:
 - a. take the steps necessary to help participants avoid the worst areas of contamination; and
 - b. fully explain to participants the possible risks and the personal safety precautions that should be taken;

then they will have taken reasonable steps to ensure that participants are reasonably safe. However, the organisation will be under an obligation to take greater care of participants who are children or vulnerable adults.

4. An instructor in charge of a group of children must provide the standard of care that would be given by a responsible parent having the same number of children under his or her supervision.

Instructors must therefore try and judge what a parent (having the same information on algae problems that the instructor has) would do when deciding whether to allow their child to use the water.

5. While it not essential to do so, RYA guidance is that it is good practice to obtain a parent or guardians written consent allowing the child or vulnerable adult to participate along with a Risk Statement signed on their behalf. It is also vital to make the parent or guardian aware of the blue-green algae risk. It is important to realise however that such consent does not operate to remove the obligation of the organisation to take reasonable care. Further, the care which is reasonable to extend to children and vulnerable adults by the organisation may well be higher than that which would be considered reasonable for adults.

SUMMARY

Once you have identified a potential risk to participants from blue-green algae you should:

1. Follow this guidance.
2. Explain the problem to participants, including parent(s)/guardians of children and vulnerable adults in your care.
3. Invite any parents/guardians to give their consent for their child/vulnerable adult to participate and ask all participants or parents/guardians to sign a Risk Statement on their behalf.
4. Using your own judgment on how this can best be done, explain the problem to the participants, including any children/vulnerable adults involved, and stress the personal safety precautions to be followed.
5. Finally: make sure your organisation is insured against the possibility of a legal claim by anyone who does suffer harm from contact with toxic algae.

FURTHER INFORMATION

For more information contact the RYA Planning & Environmental Team on 02380 604223 or email environment@rya.org.uk.

Further information on blue-green algae and the management of the risks to human health can also be found at:

- Environment Agency
www.gov.uk/government/publications/blue-green-algae-advice-for-the-public
- World Health Organisation (WHO)
[www.who.int/water_sanitation_health/resources/toxicyanbact/en/](http://www.who.int/water_sanitation_health/resources/toxiccyanbact/en/)
- The Scottish Government
www.scotland.gov.uk/Publications/2012/04/6625/0

The RYA Legal Department provides generic legal advice for its members, affiliated clubs and training centres. This guidance note represents the RYA's interpretation of the law. It takes all reasonable care to ensure that the information contained in this guidance note is accurate. The RYA cannot accept responsibility for any errors or omissions contained in this guidance note, or for any loss caused or sustained by any person relying on it. Before taking any specific action based on the advice in this guidance note, members are advised to check the up to date position and take appropriate professional advice.

ANNEX 1: BLUE-GREEN ALGAE RISK STATEMENT

(See form on the following page)

BLUE-GREEN ALGAE RISK STATEMENT

Participants are advised that blue-green algae is present in the waters used by this organisation. On occasions, growth of the blue-green algae becomes excessive and can cause blooms and scum. Bloom and scum-forming algae are capable of producing toxins which can be harmful to people and fatal to animals. We wish to advise you of the following:

1. Every person wishing to use the potentially affected water may be required to sign this Risk Statement after reading the RYA guidance at least once in each season.
2. When water is affected by algal scum the following categories are at particular risk: paddlers, trainees doing capsizing drill, swimmers (including immersion sports), small children, pregnant women, domestic animals (if allowed to play in the water or to drink it).
3. On a lee shore on a windy day algae and scum can be found at some distance from the water. Keep animals and children away from these areas.
4. Participants likely to enter the water should wear clothing which is close fitting at the wrists, neck and ankles, such as a wetsuit, along with boots over the clothing/wetsuit to minimise contact with algae or algal scum.
5. Minimal time should be spent in shallow water launching and recovering equipment. Launching/recovery should be in areas away from thick aggregations of algae or scum.
6. Consult the notice board before participating for detailed information as to areas of the water to be particularly avoided.
7. After coming ashore participants should hose themselves down to avoid bringing scum and algae into the changing rooms. All clothing should be washed and thoroughly dried on returning home. Do not store wet or damp clothes.
8. If taking part in working parties in or close to the water do not strip off, even on hot days; to do so increases the risk of illness.
9. Avoid horseplay in or near the water.

This Risk Statement is to be signed by or on behalf of those intending to go in or near the water at:

Name of club/centre

CONSENT

I confirm that I have read and fully understood the RYA guidance and other information provided by the club/centre on blue-green algae and accept responsibility for exposing myself to such risks whilst taking part in activities in and around the water. I will comply at all times with the instructions of the club/centre and its officers. I accept responsibility for any injury, damage or loss caused by my own negligence.

Signed Date

PARENTAL/GUARDIAN CONSENT

I agree that may take part in activities on the water. I confirm that I have read through the above advice with him/her and that she/he understands and agrees with them. I also confirm that he/she takes part in activities on the water with my full agreement.

Signed Date