Aquatic, Ecology, Environmental and Land Management Consultants

Canvey Lake

Water Quality Report – August 2026

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Author (s): Edward Rickard, Finley O'Grady BSc (Hons), AIFM
Reviewed: Ash Girdler C.Biol, FRSB, C.Env, MIFM, FIFM

A.G.A Group Consultancy Limited
Telephone +044 (01953) 886824
Email: info@agagroup.co.uk
Website: http://www.agagroup.co.uk/

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1.0 Executive Summary

The 3 August 2026 samples show that Canvey Lake was under significant water-quality pressure during a period of low water levels. Reduced water volume may have limited dilution and circulation, contributing to the concentration of organic matter, suspended material, nutrients and microbiological indicators. Low water levels do not explain every result but provide important context for the August condition of the lake.

Organic loading and suspended solids increased substantially at both locations compared with July. BOD increased from 76.0 to 290 mg/l at the West site and from 33.0 to 130 mg/l at the East site. Total Organic Carbon increased to 219 mg/l and 118 mg/l respectively, while suspended solids increased to 1,920 mg/l and 1,790 mg/l. COD was also elevated at both locations, reaching 1,100 mg/l in the West and 1,400 mg/l in the East. These results indicate a substantial burden of oxygen-demanding and suspended material, with potential implications for oxygen availability, light penetration and aquatic life.

The August algae survey confirms continued cyanobacterial predominance. Blue-green algae accounted for 135,000 cells/ml, or 83% of the total assemblage, at the East site, and 160,000 cells/ml, or 94%, at the West site. Lower reported algal totals than in June do not demonstrate lake recovery, particularly when considered alongside increased organic loading and suspended material.

The West site showed the strongest nutrient and faecal-indicator results. Phosphorus was 1.56 mg P/l and ammonium was 40.8 mg NH_4/l, compared with 0.152 mg P/l and 2.62 mg NH_4/l in July. Intestinal enterococci exceeded 20,000 cfu/100 ml at the West site and were 800 cfu/100 ml at the East site, confirming a strong faecal-indicator signal.

Overall, the August results are consistent with a lake experiencing substantial organic, biological and microbiological stress under low-water conditions.

2.0 Introduction

A.G.A. Group Consultancy Limited (AGA) was commissioned by Stuart Jarvis, Assistant Director Environment, on behalf of Castle Point Borough Council to monitor Canvey Lake. This August 2026 report evaluates the 3 August water samples and the supplied August algal survey in the context of the site's earlier monitoring and management history.

The established programme described in the previous report comprises monthly monitoring from March to September and bi-monthly monitoring from October to February. The lake is assessed here as an amenity waterbody and aquatic habitat, with potential exposure of visitors, dogs and wildlife. Fish welfare remains a relevant management consideration.

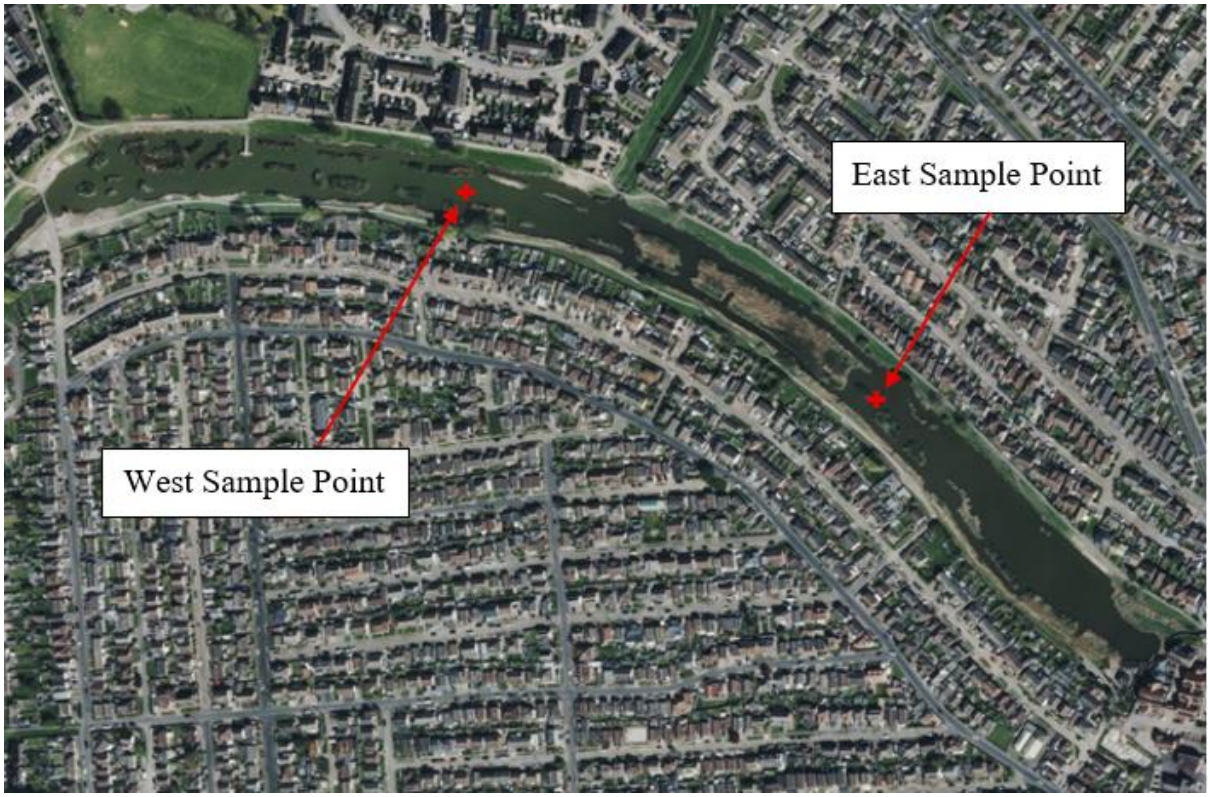


Figure 1 – Canvey Lake with annotated water sampling points.

3.0 Results

3.1 Water Quality Results

3.1.1 Table of Results

Table 1 presents all determinants from the 3 August 2026 for West and East.

Determinand	Unit	West	East
pH	at 25°C	7.0	7.5
Phosphorus	mg P/l	1.56	< 0.010
Ammonia	mg NH3/l	46.8118	3.4045
Ammonium	mgNH4/l	40.8	2.97
Nitrite	Mg NO2/l	<0.0328	<0.0328
Nitrate	mg/l	< 0.0885	<0.0885
Total Organic Carbon	mgC/l	219	118
BOD	mg/l	290	130
COD	mg/l	1100	1400
Alkalinity	mg/l CaCO3	126	150
Calcium Carbonate	mgCaCO3/l	333	260
Suspended Solids	mg/l	1920	1790
Total coliforms	MPN/100ml	155400	> 2420
E. coli	MPN/100ml	400	0
Intestinal Enterococci	cfu/100ml	> 20000	800
Calcium*	mgCa/l	133.00	104.00

Table 1. Laboratory results for 3 August 2026, West sample and East sample.

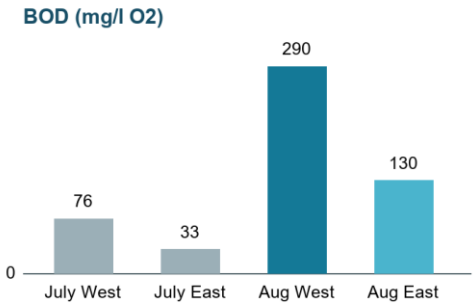
3.2 Historical comparison

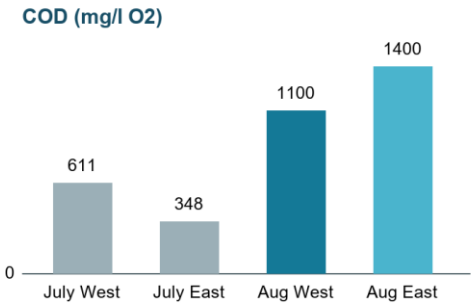
The water quality results in *Table 2* compares the 3 July and 3 August samples for the lake.

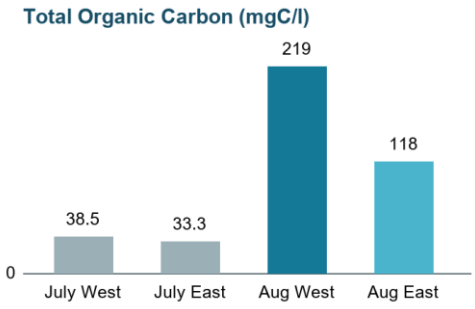
Determinand (unit)	3 July West	3 July East	3 August West	3 August East
Phosphorus (mg/l)	0.152	< 0.010	1.56	< 0.010
Un-ionised Ammonia as NH3 (mg/l)	0.182	0.69	0.1485	0.0339
Ammonium (mgNH4/l)	2.62	2.58	40.8	2.97
Nitrite (mgNO2/l)	0.20	0.16	<0.0328	<0.0328
Nitrate (mgNO3/l)	0.07	0.06	<0.0885	<0.0885
TOC (mg/l)	38.5	33.3	219	118
BOD (mg/l)	76.0	33.0	290	130
COD (mg/l)	611	348	1100	1400
Suspended Solids (mg/l)	1550	737	1920	1790
pH (at 25°C)	8.2	8.9	7.0	7.5
Alkalinity (mg/l CaCO3)	255	173	126	150
Calcium (mg/l)	112.00	60.400	133.00	104.00
Calcium Carbonate (mgCaCO3/l)	280	151	333	260
Total coliforms (MPN/100ml)	> 2420	> 2420	155400	> 2420
E. coli (MPN/100ml)	194	28	400	0
Intestinal Enterococci (cfu/100ml)	> 200	41	> 20000	800

Table 2. July–August water sample results comparison.

BOD, COD, TOC and Suspended Solids are higher at both locations in August. The West phosphorus and ammonium entries also rise markedly. These concurrent changes are evidence of greater measured loading in the August samples.







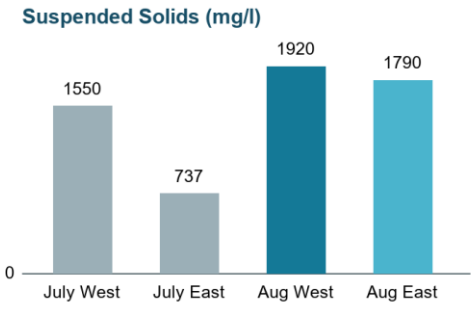


Figure 2. July and August by location. Bars show reported BOD, COD, TOC and Suspended Solids.

3.3 pH

In August, pH was 7.0 at the West site and 7.5 at the East site, compared with 8.2 and 8.9 respectively in July. Both sites were therefore less alkaline than in the previous month and not a cause for concern.

3.4 Phosphorus

Phosphorus was 1.56 mg/l at the West site, compared with 0.152 mg/l in July. In contrast, the East result remained below the reporting limit of 0.010 mg/l. The substantial increase in the West coincided with a high concentration of ammonium, organic-carbon and faecal-indicator signals. The East result of <0.010 mg/l is not equivalent to zero and does not rule out biological uptake or nutrient recycling.

3.5 Nitrogen

3.5.1 Nitrate (NO_3)

Nitrate concentrations were low in July, at 0.07 mg NO_3/l at the West site and 0.06 mg NO_3/l at the East site. In August, both results were reported as below the laboratory reporting limit of 0.0885 mg NO_3/l.

3.5.2 Nitrite (NO_2)

Nitrite was 0.20 mg NO_2/l at the West site and 0.16 mg NO_2/l at the East site in July. In August, both samples were reported as below the laboratory reporting limit of 0.0328 mg NO_2/l.

3.5.3 Un-ionised Ammonia (NH_3-N)

Un-ionised ammonia was 0.1485 mg/l at the West site and 0.0339 mg/l at the East site in August, compared with 0.182 mg/l and 0.69 mg/l respectively in July. Concentrations were therefore lower at both sites, with the greatest reduction at the East site.

3.5.4 Ammonium (NH_4^+)

Ammonium was 40.8 mg NH_4/l at the West site in August, compared with 2.62 mg NH_4/l in July. This substantial increase coincided with higher organic carbon, BOD, suspended solids and faecal-indicator results, consistent with a markedly increased organic and nutrient loading at the West site. At the East site, ammonium increased more modestly, from 2.55 to 2.97 mg NH_4/l.

The elevated West ammonium result shows that bioavailable nitrogen remained present despite low measured nitrate and nitrite.

3.6 Total Organic Carbon (TOC)

Total Organic Carbon (TOC) was 219 mg/l at the West site and 118 mg/l at the East site, increasing from 38.5 mg/l and 33.3 mg/l respectively in July. TOC measures the carbon contained in organic material, including material with differing biodegradability.

The increase at both locations, alongside elevated BOD and COD, indicates a greater organic burden in the August samples. Algal biomass and decay, feed waste, bird-derived material, disturbed organic sediment and other organic inputs are plausible contributors.

3.7 Biochemical Oxygen Demand

Biochemical Oxygen Demand (BOD) was 290 mg/l at the West site and 130 mg/l at the East site, compared with 76.0 mg/l and 33.0 mg/l respectively in July. Both August results were approximately four times higher than the previous month, indicating a substantial increase in the amount of biodegradable organic material present.

High BOD indicates that microorganisms require more oxygen to break down organic matter. This can reduce the oxygen available to fish, invertebrates and other aquatic organisms, particularly overnight when photosynthesis ceases but respiration continues. The risk is likely to be greatest in areas with limited circulation, high temperatures or dense algal growth. Low-oxygen conditions can also affect nutrient cycling and may contribute to the release of nutrients from bottom sediments, reinforcing poor water-quality conditions.

3.8 Chemical Oxygen Demand (COD)

COD was 1,100 mg/l at the West site and 1,400 mg/l at the East site. These are very high concentrations, indicating a substantial burden of chemically oxidisable material within the samples. High COD is consistent with significant organic or other oxidisable contamination and, alongside the elevated BOD and TOC results, indicates poor water quality and a high potential oxygen demand.

3.9 Alkalinity and calcium

Alkalinity was 126 mg/l $CaCO_3$ at the West site and 150 mg/l $CaCO_3$ at the East site, lower than the July results of 255 mg/l and 173 mg/l respectively. Calcium increased from 112.00 to 133.00 mg/l at the West site and from 60.400 to 104.00 mg/l at the East site. Calcium Carbonate also increased, from 280 to 333 mg$CaCO_3$/l in the West and from 151 to 260 mg$CaCO_3$/l in the East. This indicates that the lake has retained its buffering capacity.

3.10 Suspended Solids

Suspended solids were 1,920 mg/l at the West site and 1,790 mg/l at the East site, compared with 1,550 mg/l and 737 mg/l respectively in July. Both results increased, with a particularly marked rise at the East site. These are very high concentrations and indicate a substantial mass of suspended material within the water column.

At these concentrations, abrasive mineral particles may irritate or damage fish gills, particularly where exposure is prolonged. Algae may contribute to the result, but cell counts alone cannot quantify their proportion of the measured solids.

3.11 Total coliforms

Total coliforms were extremely high at 155,400 MPN/100 ml at the West site and were above 2,420 MPN/100 ml at the East site. July results were also reported as greater than 2,420 MPN/100 ml at both locations. The markedly elevated West result, considered alongside the E. coli and intestinal enterococci findings, demonstrates a strong microbiological contamination signal within the lake.

3.12 E. coli

E. coli was 400 MPN/100 ml at the West site and zero MPN/100 ml at the East site, compared with 194 MPN/100 ml and 28 MPN/100 ml respectively in July. The West result increased, providing further evidence of substantial faecal contamination at that location.

The East result indicates that E. coli was not detected in the portion of sample examined; it does not establish its absence throughout the lake. It should also not be interpreted in isolation, as intestinal enterococci were recorded at 800 cfu/100 ml at the East site. This confirms that a significant faecal-indicator signal remained present despite the non-detect E. coli result.

3.13 Intestinal Enterococci

Intestinal enterococci were above 20,000 cfu/100 ml at the West site and 800 cfu/100 ml at the East site, compared with above 200 cfu/100 ml and 41 cfu/100 ml respectively in July. The East result is substantially higher on a directly comparable basis. It confirms an exceptionally high level of faecal-indicator bacteria and is a serious water-quality concern.

3.14 Algal Survey

The supplied August Algae Survey identifies East and West samples; Appendix 1 reproduces the current source entries. The East taxon counts reconcile with the reported totals.

At the East site, total algal concentration was 162,000 cells/ml. Dolichospermum spp. accounted for 110,000 cells/ml (68%), Microcystis spp. for 10,000 cells/ml (6%), Oscillatoria spp. for 15,000 cells/ml (9%), and the green alga Scenedesmus spp. for 27,000 cells/ml (17%). The three cyanobacterial taxa total 135,000 cells/ml, consistent with the reported rounded cyanobacterial proportion of 83%. Cyanobacteria therefore formed the majority of the counted East assemblage, despite phosphorus remaining below 0.010 mg/l in the chemistry sample.

At the West site, Microcystis spp. was recorded at 30,000 cells/ml (18%), Oscillatoria spp. at 35,000 cells/ml (20%), and Scenedesmus spp. at 10,000 cells/ml (6%). Dolichospermum spp. is printed as “95,00” and 56%. The reported total-algae concentration of 170,000 cells/ml and blue-green-algae concentration of 160,000 cells/ml reconcile if this entry is interpreted as 95,000 cells/ml.

The June survey reported total algal concentrations of 238,000 cells/ml at the East site and 244,000 cells/ml at the West site, with blue-green-algae totals of 208,000 and 230,000 cells/ml respectively. August therefore continued to show cyanobacterial predominance at both locations.

Dolichospermum, Microcystis and Oscillatoria were identified in both August samples. These genera include organisms capable of producing toxins; however, genus identification and cell abundance alone do not establish that toxins were present. In combination with the elevated BOD, TOC and suspended-solids results, the August findings demonstrate a lake under substantial organic and biological pressure.

4.0 Discussion

4.1 Overall Condition

The August results indicate that Canvey Lake was in poor condition, with substantial organic loading, exceptionally high suspended-solids concentrations and a strong microbiological contamination signal. Water levels were low at the time of sampling, which may have reduced dilution, limited circulation and concentrated material within the water column. These conditions are relevant when interpreting the elevated results.

BOD, COD and TOC were all markedly elevated, indicating a large burden of biodegradable and chemically oxidisable material. This creates significant pressure on oxygen availability, particularly during periods of weak circulation or overnight respiration. Nutrient conditions also remained capable of supporting biological production: phosphorus and ammonium were particularly elevated at the West site, while the algae survey confirmed cyanobacterial predominance at both locations.

Faecal-indicator bacteria were very high, especially at the West site, where total coliforms and intestinal enterococci reached exceptionally elevated levels. The East site also showed high total-coliform and enterococci results. The lake retained measurable buffering capacity, but the reduction in pH alongside high organic loading indicates altered conditions rather than recovery.

Overall, the evidence is consistent with a lake experiencing significant organic, microbiological and biological stress during a period of low water levels, with the most severe results generally occurring at the West site.

4.2 Oxygen Demand and Nitrogen Cycling

Although dissolved oxygen was not measured, the markedly elevated BOD, COD and TOC concentrations indicate a substantial oxygen demand within the lake. The high organic burden, low water levels and potential for limited circulation create conditions in which oxygen availability may be under considerable pressure, particularly overnight and in warm weather.

Ammonium was particularly elevated at the West site, at 40.8 mg NH_4/l. In contrast, nitrite was below the August reporting limit at both sites, and nitrate was also reported below its August

reporting limit. These results do not show that nitrogen cycling has ceased or is ineffective: low nitrate and nitrite may reflect rapid biological uptake or microbial transformation. However, the elevated ammonium result confirms that substantial inorganic nitrogen remained present in the lake.

The high cyanobacterial concentrations are likely to add to oxygen pressure. Algae respire overnight and consume oxygen during decomposition; where dense algal biomass and organic material are present, this can increase the risk of low oxygen concentrations, particularly in the early morning.

Un-ionised ammonia was 0.1485 mg/l at the West site and 0.0339 mg/l at the East site. Although both results were lower than in July, measurable un-ionised ammonia remained present. Its toxicity to aquatic organisms is influenced by pH and temperature; the lower August pH is likely to have reduced the proportion of ammonia occurring in this more toxic form.

4.3 Current Treatment Programme

A monthly water-quality treatment programme has been introduced to address the nutrient, organic matter and algal pressures affecting the lake.

Bacterius N is being applied to introduce and support nitrifying bacteria responsible for converting ammonia and nitrite into less harmful forms. Bacterius 5B is also being used to support nitrifying bacterial activity and assist with the biological breakdown of accumulated organic matter.

Lake Aid BioX, a barley-straw extract treatment, is being applied to help suppress nuisance algal growth and reduce the likelihood of further bloom development.

During winter, Lake Aid AquaBio is also proposed. AquaBio acts as a hydro-soil conditioner, helping to improve anaerobic sediment conditions and reduce internal phosphorus availability by binding phosphorus within the sediment.

These treatments are intended to improve biological processing within the lake; however, their effectiveness is likely to remain constrained where oxygen availability and water circulation are insufficient.

4.4 Aeration

Additional mechanical aeration is strongly recommended throughout the lake to improve oxygen transfer, circulation and biological nutrient processing.

Due to the shallow depth of Canvey Lake, surface aerators are considered the most appropriate option. Aerators should be distributed along the lake to reduce stagnant areas rather than being concentrated in one location. It should be noted that with the low water levels and absence of a sunken sump that surface aerators were ineffective and Bubble Tubing® diffusers were installed powered by air compressors as an emergency measure.

Each aerator should be installed within a sunken sump in which the aerator can be positioned within. This would prevent soft sediment from encroaching around the equipment, restricting water flow and potentially causing overheating or mechanical failure.

4.5 Management Approach

The existing treatment programme should continue alongside the proposed installation of surface aeration, coir rolls, floating eco-islands and longer-term de-silting.

Monthly water-quality and algal monitoring should continue. Dissolved oxygen should be incorporated into the monitoring programme, ideally through early-morning measurements or short-term continuous monitoring, to characterise oxygen conditions and inform the final aeration design.

Overall, the results demonstrate that Canvey Lake requires coordinated intervention to address high organic loading, nutrient availability, cyanobacterial dominance, bank erosion and the potential for unstable oxygen conditions.

4.6 De-silting Works

De-silting would remove part of the accumulated nutrient-rich, organic sediment from the lake bed. Where bottom sediments are oxygen-poor or anaerobic, they can retain and recycle phosphorus, ammonium and organic material back into the water column. Removing this material would reduce the internal sediment reservoir available to sustain nutrient enrichment, algal growth and oxygen demand.

Increasing water depth would also increase the volume of water within the lake. This could improve dilution during low-water periods, reduce the likelihood of material becoming

concentrated in shallow areas and support more stable water conditions. Greater depth may also improve circulation and provide a larger water column in which oxygen conditions can be maintained.

Removal of soft organic sediment may reduce the potential for sediment disturbance to elevate suspended solids and release nutrients. This is particularly relevant to the August results, which showed very high suspended-solids concentrations, elevated organic loading and cyanobacterial predominance.

Dredging would not, by itself, prevent new nutrients, organic material or microbiological contamination from entering the lake. However, alongside the existing treatment programme, aeration and habitat measures, it would address an important internal source of water-quality pressure and improve the lake's resilience during periods of low water level.

5.0 Recommendations

Recommendation	Rationale
Continue the monthly Bacterius® N, Bacterius® Muck and Bacterius® 5B treatment programme. Appendix C	Bacterius N is a nitrifying bacterial treatment intended to support the conversion of ammonia and nitrite into less harmful nitrogen compounds. Bacterius 5B supports nitrifying bacteria while also assisting with the biological breakdown of organic matter. Continued monthly treatment is recommended due to the elevated ammonium, un-ionised ammonia and high sediment volume.
Continue the monthly Lake Aid BioX treatment programme. Appendix B	Lake Aid BioX is a barley-straw extract treatment used to help limit nuisance algal and cyanobacterial growth. Continued treatment is recommended due to the high algal concentrations and strong dominance of potentially toxin-producing cyanobacteria recorded throughout the lake.
Undertake a winter Lake Aid AquaBio treatment programme. Appendix A	AquaBio is a hydro-soil conditioner intended to improve redox conditions within organically enriched and anaerobic sediments. The treatment can help reduce phosphorus availability by binding phosphorus within the sediment, thereby limiting internal nutrient release and reducing the nutrients available to support future algal growth.
Apply Bacterius Muck. Appendix C	Bacterius Muck is recommended to support the biological breakdown of accumulated organic sediment. Reducing the quantity of decomposing organic material within the lakebed will help lower sediment oxygen demand, improve nutrient cycling and reduce internal nutrient loading.
Install distributed surface aeration throughout the lake.	Although dissolved oxygen was not measured, the highly elevated BOD, COD and TOC concentrations, together with ammonia accumulation, elevated nitrite and high algal abundance, indicate a concerning oxygen bottleneck. Surface aeration is recommended due to the shallow depth of the lake and would improve oxygen transfer, circulation and the effectiveness of the biological treatment programme.
Install surface aerators within sunken sumps or equivalent sediment-exclusion structures.	The shallow water and accumulation of soft sediment may allow sediment to encroach around the aerators, restrict water flow and cause overheating or mechanical failure. A sunken sump would maintain sufficient clear water around each unit and reduce sediment disturbance.
Continue monthly water-quality monitoring and algal surveys.	Ongoing monitoring will allow changes in water quality, algal abundance and cyanobacterial composition to be assessed. It will also provide early warning of further deterioration and allow the effectiveness of the treatment and aeration programme to be reviewed.
Substantially reduce or discontinue intentional waterfowl feeding.	Feeding supports unnaturally high wildfowl numbers and encourages birds to congregate around the lake. Uneaten feed and increased faecal inputs contribute organic matter, nutrients, microbial contamination and oxygen demand. Educational signage should be installed to explain the effects of feeding on water quality, bird health and the wider lake ecosystem.
Install planted coir rolls along eroded and heavily grazed banks.	Planted coir rolls are recommended to stabilise eroding banks, reduce sediment and nutrient runoff and establish marginal vegetation. This would improve water clarity, provide aquatic habitat and reduce the effects of grazing and trampling by wildfowl.
Install vegetated floating eco-islands.	Vegetated eco-islands would provide direct nutrient uptake, additional habitat and suspended root surfaces for beneficial microbial communities, including bacteria involved in nitrogen cycling. They would also improve habitat diversity within the otherwise degraded lake environment.
Undertake de-silting works as a longer-term intervention.	De-silting would remove nutrient-rich and organically enriched sediment, increase effective water depth and reduce sediment oxygen demand and internal nutrient loading. A bathymetric and sediment-depth survey should be undertaken to identify priority areas and estimate sediment volumes before the works are designed.

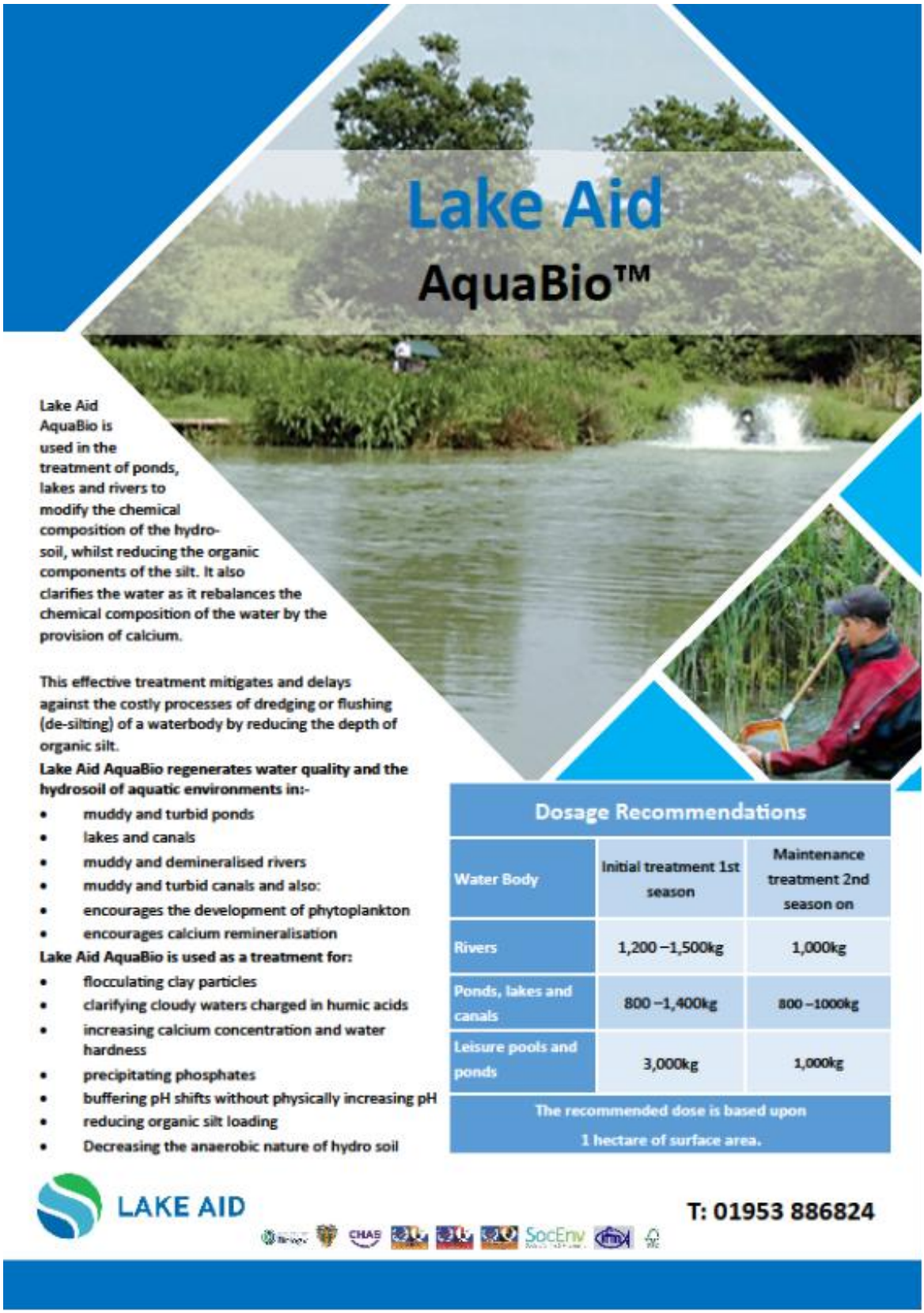
6.0 Appendix 1: August Algal Survey Results

Algal Survey Results

Project reference number: CP2526-129
Date: August 2026
Sampled: ER
Waterbody: Canvey Lake

Sample ID:			**Canvey Lake East**		
No.	**Algal group**	**Genus/species identified**	**Cell concentration (cells/ml)**	**Relative abundance (%)**	**Potentially toxin-producing**
1	Blue-Green Algae	*Dolichospermum spp*	110,000	68%	Yes / No
2	Blue-Green Algae	*Microcystis spp*	10,000	6%	Yes / No
3	Green Algae	*Scenedesmus spp*	27,000	17%	Yes / No
4	Blue-Green Algae	Oscillatoria spp	15,000	9%	Yes / No
5					Yes / No
6					Yes / No
7					Yes / No
8					Yes / No
9					Yes / No
10					Yes / No
	Total algal concentration		**162,000cells/ml**	**100%**	
	Total blue-green algae concentration		**135,000cells/ml**	**83%**	
Sample ID:			**Canvey Lake West**		
No.	**Algal group**	**Genus/species identified**	**Cell concentration (cells/ml)**	**Relative abundance (%)**	**Potentially toxin-producing**
1	Blue-Green Algae	*Dolichospermum spp*	95,00	56%	Yes / No
2	Blue-Green Algae	*Microcystis spp*	30,000	18%	Yes / No
3	Green Algae	*Scenedesmus spp*	10,000	6%	Yes / No
4	Blue-Green Algae	*Oscillatoria spp*	35,000	20%	Yes / No
5					Yes / No
6					Yes / No
7					Yes / No
8					Yes / No
9					Yes / No
10					Yes / No
	Total algal concentration		**170,000cells/ml**	**100%**	
	Total blue-green algae concentration		**160,000cells/ml**	**94%**	

7.0 Appendix A: Lake Aid AquaBio



LAKE AID AQUABIO.

To enhance fishery conditions **Lake Aid AquaBio** facilitates the breakdown of previously partially decomposed organic material and boosts aerobic digestion. Untreated the hydro-soil becomes anaerobic producing the undesirable gases methane and hydrogen sulphide. Because of their inbuilt instincts fish will always avoid these poor water areas.

TREATMENT PERIOD.

Any time of the year but most effective between March to November in Temperate regions (water temp 10℃).

Two or three treatments spread over a season will be more effective than one application.

This is particularly true for lake bed hydro-soil where there is a significant proportion of partially digested sediment or anaerobic conditions forming the noxious gasses associated with the anaerobic substrate.

PRODUCT DESCRIPTION.

Lake Aid AquaBio is completely harmless to all aquatic organisms including fish and amphibians.

Lake Aid AquaBio is a micronised powder produced from the processing of high purity mineral ($CaSO_4.2H_2O$ - Calcium Sulphate Di-hydrate).

Lake aid AquaBio is completely harmless to all aquatic organisms including fish and amphibians.

TECHNICAL DATA.

For a comprehensive technical data sheet please contact A.G.A. direct.

HEALTH AND SAFETY.

These products are not classified as dangerous/hazardous chemicals. Health and Safety information sheets are always available on request.

SUPPLY DETAILS.

Lake Aid AquaBio is supplied in handy 25Kg plastic sacks.

STORAGE.

When stored under normal dry conditions, this product will not deteriorate chemically, however it is susceptible to compaction lumps. Each bag is stamped with a date of manufacture and a batch reference. Stocks should be rotated so that the oldest material is used first.

This information is subject to change arising from new developments and findings. If you are unable to find the item you are looking for, please do not hesitate to contact us immediately.
The A.G.A. Group installation teams operate solely within the field of aquatic and bioengineering. We operate a policy of 'Best Practice' and are bound by the Code of Conduct of both the Institute of Fisheries Management and the Society of Biology. The A.G.A. Group will quote for the supply of materials, their installation or for 'turnkey' projects.
A.G.A. is Quality assured to: ISO45001 : 2018, ISO9001 : 2015 & ISO 14001 : 2015
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A.G.A. Group
Merton Hall Ponds, Merton
Thetford, Norfolk. IP25 6QH
England
Telephone: 01953 886824
Email: info@agagroup.co.uk
Web: www.agagroup.co.uk

8.0 Appendix B: Lake Aid BioX

ALGAE CONTROL.

Lake Aid Bio-X is a concentrate of barley straw which conditions the water to inhibit and control algae growth. For years' environmentalist and pond keepers alike have been using barley straw treatment as a control against the nuisance of algae. This laborious and expensive control is no longer the ideal answer.

Lake Aid Bio-X should be applied initially at a dose rate of 5 litres per acre before dilution.

The concentrate should be added to the water body by mixing at least 1 part concentrate to 5 parts water, this is done, not directly to dilute the product, but simply to create volume thus ensuring a good initial spread across the entire area of the waterbody

Further weekly treatment should then be carried out at 1-5 litres per acre dosage, still diluting the product for ease of application across the water surface.

Ideally the dilute concentrate should be applied from a boat preferably by spraying out through a knapsack sprayer which should be kept clean of any other chemicals.

Alternatively it can be drizzled gradually into a running inlet which will then naturally distribute it with the flows and currents.

Lake Aid BioX contains: Aqueous barley straw extract as a natural source of plant lignin. Lake Aid Bio-X is triple distilled to ensure 'full strength' delivery of the active ingredient

DOSAGE.

Lake Aid Bio-X is available in handy 25 litre drums.

Other pack options such as IBC 1000 litre containers available

Initial application rates 5 litre per acre. Subsequent regular applications 1.5 litre per acre should be carried out at weekly intervals.

The treatment should be carried out through the algae season. We therefore recommended that the critical application of **Lake Aid Bio-X** is commenced in early spring and used throughout the spring and summer to prove most effective in the control of algae.

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CHAS FSC ISO 9001 ISO 14001 SocEnv Society for the Environment Society of Biology ifm

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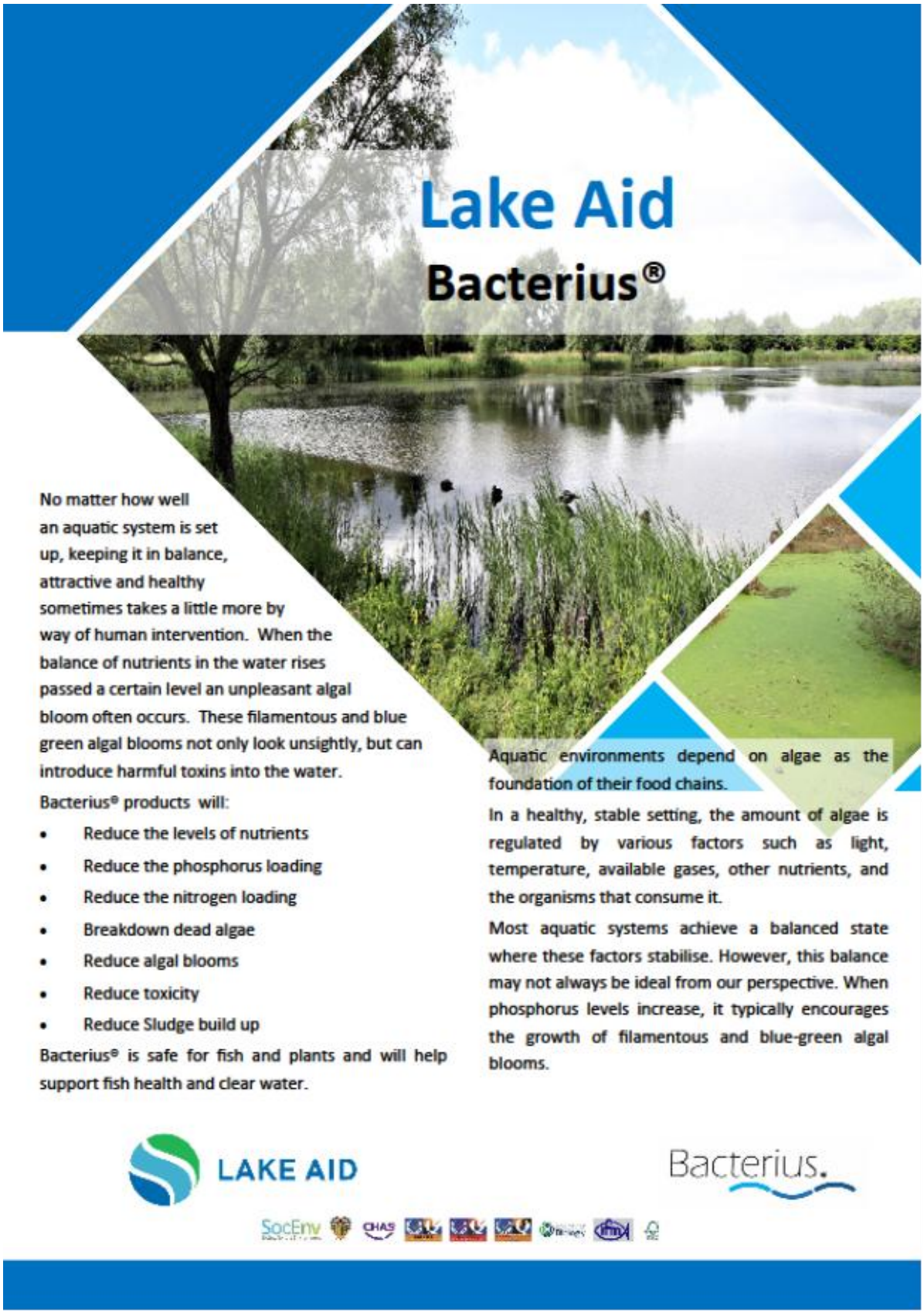
9.0 Appendix C: Bacterius®



BACTERIUS®

Bacterius®: Natural Water Treatment Solutions
Bacterius® is a brand of water treatment products designed to improve water quality as naturally as possible. Supplied by Canadianpond, a company renowned for its expertise in bioaugmentation and water treatments, Bacterius® products leverage the power of beneficial microorganisms to transform water parameters. In the UK, A.G.A Group is the exclusive supplier of this innovative technology and has successfully used it to treat ponds and lakes across the country.

How Does It Work?
Bioaugmentation involves introducing cultured beneficial microorganisms into an existing microbial community. These microorganisms reduce nutrient levels and break down unwanted compounds, thereby enhancing water quality. Specifically, the microorganisms in Bacterius® products produce enzymes that biodegrade or transform excess ammonia, nitrites, phosphorus, and hydrocarbon-based contaminants. This enzymatic activity is crucial in maintaining a healthy aquatic environment.
The enzymes released by the microbes in Bacterius® products break down various compounds that may contaminate aquatic environments. Bioaugmentation with Bacterius® offers many benefits:

- **Reducing Odours:** The breakdown of organic matter by beneficial microorganisms helps eliminate unpleasant odours commonly associated with stagnant or polluted water bodies.
- **Natural Clarification of Pond Water:** The enzymatic activity helps clear suspended particles and organic matter, increasing water clarity and enhancing the aesthetic appeal of ponds and lakes.
- **Reducing the Risk of Sickness and Death Among Fish:** By maintaining balanced nutrient levels and reducing harmful compounds, bioaugmentation promotes a healthier environment for fish, decreasing disease and mortality rates.
- **Clearing Lake or Pond Bottoms and Reducing Silt:** The microorganisms break down organic matter that accumulates on the bottoms of ponds and lakes, reducing silt and sediment buildup and maintaining the natural depth and health of these water bodies.
- **Controlling Algal Growth, Including Blue-Green Algae:** By breaking down excess nutrients, the beneficial microbes help control and prevent excessive algal growth, maintaining a balanced and healthy aquatic ecosystem.
- **Controlling Ammonia Levels:** Denitrifying bacteria break down harmful ammonia, converting it into nitrogen gas (N_2), which is harmlessly released into the atmosphere.

PRODUCTS WE OFFER

Bacterius® products come in various different product types, each specialised to the needs of the water system, most are in liquid form and are applied to the surface while some are in solid forms designed to dig deep into the sediment.
All Bacterius® products are non-toxic and safe for the environment, the products A.G.A Group offers are highlighted below .

Bacterius® C – Organic matter and waste controller

Bacterius® N – Nitrogen controller to reduce ammonia and nitrites (water nitrification)

Bacterius® EQUINOX – Cold Water Beneficial Bacteria Treatment

Bacterius® MUCK – Concentrated bacterial pellets for treating shoreline muck and sediment rich areas

Bacterius® 5B – High concentration bacteria with barley straw for sediment reduction and water clarity

Bacterius® 1B – Natural bacteria with barley straw, same formulation as 5B but less concentrated

Bacterius® POND – Nitrification and control of organic sediment

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England
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This information is subject to change arising from new developments and findings. We do not undertake any liability for the use of our products and information.
All trade is subject to out Terms and Conditions of Sale.

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Consultancy Limited

10.0 Appendix D: Lake Aid Oxy

11.0 Sources and interpretation references

AGA. CP2526-129 Canvey Lake Jul WQ - AG rev.2. Reviewed July report: site history, sampling plan, historical wildfowl census and management precedent. Its derived ammonia values, thresholds and inconsistent algae summaries are not analytical authorities.

AGA. August Algae Survey - Canvey Lake West & East. August 2026, sampler ER, project CP2526-129. Current algal source, reproduced in Appendix 1; exact collection date and West Dolichospermum entry require confirmation. Earlier comparison: June Algae Survey - Canvey Lake West & East, with historical count discrepancies described in the report.

[2] Defra. Environmental Indicator Framework Theme B Water. https://www.gov.uk/government/publications/environmental-indicator-framework-theme-b-water/environmental-indicator-framework-theme-b-water . Bathing-water classifications use the most recent four years of data.

[3] Environment Agency. Algal blooms: advice for the public and landowners. https://www.gov.uk/government/publications/algal-blooms-advice-for-the-public-and-landowners/algal-blooms-advice-for-the-public-and-landowners . Guidance on exposure assessment and managing suspected blooms.