Broads Authority

12 May 2023
Agenda item number 14

Risk to waterways users from water-borne disease in the Broads

Report by Waterways & Recreation Officer and Head of Construction, Maintenance & Ecology

Purpose

To respond to a formal request from the Broads Local Access Forum for the Broads Authority to make clear its approach to tackling the source of untreated sewage and addressing the lack of critical safety information for water users on water-borne diseases that may arise from such pollution.

Broads Plan context

C4 - Maintain and improve safety and security standards and user behaviour on the waterway

Recommended decision

Members note the background to this issue and support the recommendations laid out in section 5 of this report.

Contents

1. Introduction

1.1. Recently there has been much coverage in the media and public discussion around bacteria and Faecal Indicator Organisms (FIO's) in our waterways particularly arising from untreated sewage discharges, but also from other agricultural sources.

1.2. Over the past few years, there has been an increase in open water swimming, paddle-boarding, kayaking and other water sports which include frequent contact with river water.

1.3. To date the Authority has not quantified any human health impacts directly attributable to waterborne diseases. Such health data is not gathered by the Authority or in its direct ability to do so. The actual risk to the public, therefore, remains unknown, but it is assumed to be low, given the scarcity of reports and documented cases of directly attributable illness.

1.4. The topic of monitoring for sewage related contamination in the Broads waterways was raised under Item 6 of the 8 March 2023 meeting of the Broads Local Access Forum (BLAF). A written report was submitted to the BLAF at that meeting by the Environment Agency to outline the extent of FIO monitoring in the Broads area. As the Environment Agency does not carry out any monitoring, the members of the BLAF voiced concern over the lack of information on the extent of contamination and the risk to water users, particularly those involved in open water swimming and the various paddle sports. BLAF members agreed that the Chair should raise the issue with the Broads Authority for a response, as per the BLAF constitution.

1.5. This report will look at what information is available for bacterial pollution in water in the Broads and recommend the approach of the Broads Authority and partners to control the potential hazards to river users.

2. Data on bacterial pollution in the Broads

2.1. The Environment Agency test for Faecal Indicator Organisms (FIOs), such as E. coli and intestinal enterococci, in order to understand the levels of bacterial pollution in water. However, this testing is only done as a statutory responsibility at Designated Bathing Water sites, of which the vast majority are coastal beaches. As such no FIO testing is currently carried out anywhere on inland waters in the Broads Authority executive area.

2.2. As part of the monitoring for the Catchment Sensitive Farming initiatives in the Broadland catchment, FIO levels are regularly tested by the Environment Agency in the River Tud, a tributary of the River Wensum.

2.3. Figure 1 shows levels of E. coli in the River Tud (blue line) over the past seven years, plotted with the inland bathing water “good” standard (green line). The E. coli colony counts in the River Tud vary above and below the line and the Environment Agency.

2.4. A similar level of pollution and variance in colony counts has been observed in England’s first inland bathing water site at Ilkley on the River Wharfe in West Yorkshire. See information from the iWharfe citizen science project. Peaks may be associated with discharges from sewage or livestock sources. It is unknown whether water in the Broads area carries a greater or lesser FIO load than in these monitored locations, though FIO’s are assumed to be present in all areas of the Broads. It is the case that the

Broads Authority does not receive any specific funding to carry out bacterial water quality monitoring in the Broads.

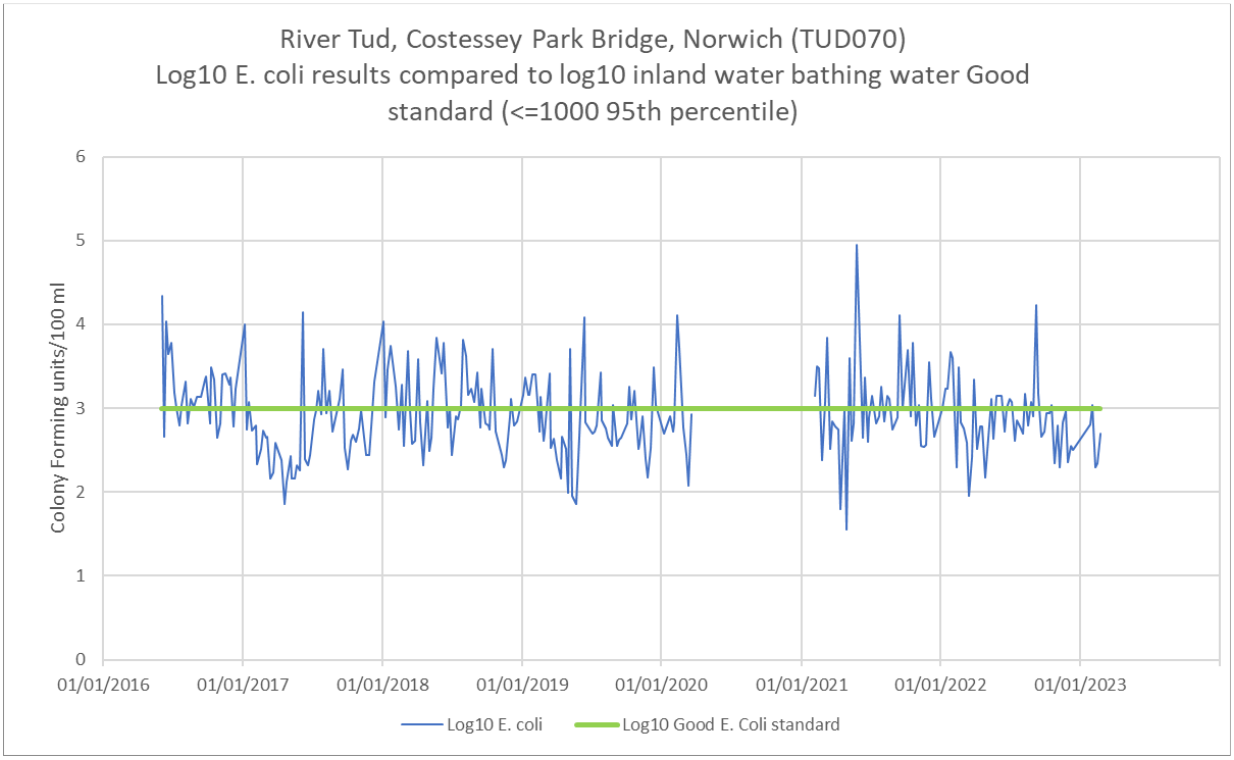

Figure 1. E. coli colony counts from the River Tud (Environment Agency data)

2.5. Recently there has been interest in setting up bathing water sites on inland waterways and the River Waveney Trust is working with Anglian Water and looking at establishing one at Falcon Meadow in Bungay. Several criteria need to be met for DEFRA to designate an inland bathing water site, these include providing evidence of a need, for example sufficient numbers of swimmers, and also appropriate facilities such as toilets. The criteria do not include providing any data on water quality. However, in the example of Falcon Meadow, Anglian Water are working with the Waveney River Trust to establish what bacterial levels are present, prior to applying for formal designation. In all cases, once an application is approved then the site is added to the Environment Agency's monitoring schedule.

2.6. The Environment Agency also collects data from the water companies on Event Duration Monitoring. This measures how often and for how long storm overflows are used. This annual data has been collated on an interactive map by The Rivers Trust. Sewage Map | The Rivers Trust

2.7. This map enables river users to gain an idea of the levels of historical spills from combined sewage overflows in their area. All water companies have been asked to provide a live data version of these maps and the current active example is from Thames Water EDM Map | Storm discharge data | River health | Thames Water

2.8. There is potential for better publicity of the existing public information, such as the scrollable map of annual sewage discharge data summarised by The Rivers Trust sewage map.

3. What the Broads Authority is currently doing in relation to the issue.

3.1. The Authority recognises water-borne diseases as a key hazard in the Safety Management System hazard log (which is how the Authority implements the Port & Marine Safety Code). The hazard log will be reviewed this year as part of the SMS Stakeholder Hazard Review, which occurs every five years.

3.2. The Authority's current position on open water swimming (as described on the Authority's public website) is that we "strongly advises against entering the water unless part of an organised event". The website guidance continues, "However, while recognising benefits to the health and well-being of participants, a balanced assessment must be undertaken as swimming in the Broads carries numerous risks".

3.3. These risks include hypothermia, cold water shock, visibility to vessels but does not include water-borne diseases or risks from bacterial pollution.

3.4. In addition, the Broads Authority co-hosts the Broadland Catchment Partnership (BCP). A recent review of the Broadland Catchment Plan by the BCP has highlighted the potential threat to human health posed by untreated sewage pollution. This will be developed further in the future revision of the published Broadland Catchment Plan.

4. Risk implications

4.1. The current risks to the Authority are:

- Not having a stated mitigation plan in response to the hazard to waterways users from water-borne diseases (as per the Safety Management System hazard log).
- There is a reputational risk that continued media coverage of bacterial pollution and sewage discharges may discourage visitors coming to the Broads and enjoying the river system.
- The increase in the popularity of immersive paddlesports raises the risk of individuals becoming ill, if bacterial contamination is present.
- The hazard has the potential to increase as weather patterns change as a result of climate change so that we experience drier summers mixed with heavy rainfall events which could further overwhelm the sewage system.

5. Conclusion

5.1. The recommendations are as follows

- There should be no change to the Authority's current overall position on open water swimming, as per the text on the website https://www.broads-authority.gov.uk/boating/navigating-the-broads/outdoor-swimming.
- Carry out a review of the current communications for both open water swimming and paddle-sports, to include water-borne diseases as one of the hazards facing those taking part in these activities. The Authority's principle role should be the provision of information on what the public need to take into consideration before taking part in these activities and how to self-manage the risks.
- Work with partners to ensure safety messages align (where possible) and to expand the reach of communications.
- Through the Broadland Catchment Partnership, support the Environment Agency and Anglian Water in their implementation of the recent Defra announcement to make the reduction of sewage overflows a legally binding target, as per the Storm Overflows Discharge Reduction Plan published in August 2022.
- Support the River Waveney Trust's ambition for establishment an inland bathing water sites at Falcon Meadow, Bungay. The site is beyond the limits of navigation but within the Authority's executive area, therefore the risks of boat collisions are significantly reduced and a well-managed site should mitigate the other risks of outdoor swimming.

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Background papers: River Wharfe and Ilkley bathing water site information page - Environment Agency - Citizen Space (environment-agency.gov.uk)

iWharfe citizen science project

Storm Overflows Discharge Reduction Plan

Broads Plan strategic objectives: C4 - Maintain and improve safety and security standards and user behaviour on the waterway