

Esthwaite Water Ramsar

Evidence Pack

First published August 2022, revised June 2024

Natural England Technical Information Note TIN188

Esthwaite Ramsar – Evidence Pack

Anita Wood, Helen Wake and Kathryn McKendrick-Smith



First published August 2022, revised June 2024

This report is published by Natural England under the Open Government Licence - OGLv3.0 for public sector information. You are encouraged to use, and reuse, information subject to certain conditions. For details of the licence visit [Copyright](#). Natural England photographs are only available for non-commercial purposes. If any other information such as maps or data cannot be used commercially this will be made clear within the report.

© Natural England 2024

Project details

This report should be cited as: WOOD, A., WAKE, H. and MCKENDRICK-SMITH, K. 2024. Evidence Pack - Esthwaite Ramsar Edition 3. *Natural England Technical Information Note*. TIN188.

Natural England Project manager

Simon Thompson

Author

Anita Wood, Helen Wake and Kathryn McKendrick-Smith

Keywords

Natural England, Nutrient Neutrality, Strategic Solutions, Esthwaite Ramsar

Further information

This report can be downloaded from the Natural England Access to Evidence Catalogue: <http://publications.naturalengland.org.uk/> . For information on Natural England publications contact the Natural England Enquiry Service on 0300 060 3900 or e-mail enquiries@naturalengland.org.uk.

Contents

1. Site Details	5
2. Reason for European Site Designation	5
3. Nutrient Pressures and Water Quality Evidence	6
4. Additional Information	7
Appendix 1	8
List of abbreviations	10
Glossary	10

1. Site Details

Esthwaite Water Ramsar

Esthwaite Water is a natural lake situated in a glacial valley and is generally agreed to be the most eutrophic lake in the English Lake District. It lies approximately 65 m above sea level and has an area of 1 km² and a maximum depth of 15.5 m. The average retention time is 90 days. The catchment area is 17.1 km² and the hills are composed geologically of Bannisdale slates and grits. The surrounding land is used chiefly for agricultural purposes and forestry.

Esthwaite Water supports an aquatic flora of pondweeds *Potamogeton spp.*, Canadian pondweed *Elodea canadensis* and beds of stoneworts *Chara spp.* Towards the lake shore there are carpets of water lobelia *Lobelia dortmanna* and shoreweed *Littorella uniflora*. Yellow and white water-lilies *Nuphar lutea* and *Nymphaea alba* are found in the more sheltered bays with reedbeds *Phragmites australis*. The nationally rare slender naiad *Najas flexilis* has been found in deeper water at the southern end of the lake. At the northern end of the lake there is an extensive area of hydrosere dominated by reedbeds, sedge swamp and willow or alder carr. Sedges include bottle sedge *Carex rostrata*, tufted sedge *C. elata*, greater tussock sedge *C. paniculata* and the nationally scarce elongated sedge *C. elongata*. Tall herbs in this wetland include meadowsweet *Filipendula ulmaria*, common valerian *Valeriana officinalis* and angelica *Angelica sylvestris*.

2. Reason for European Site Designation

Esthwaite Water Ramsar is designate for the following features:

- Mesotrophic Lake
- Slender naiad *Najas flexilis*
- Wetland invertebrate assemblage
- Wetland plant assemblage

Esthwaite water qualifies as a Ramsar Site under Criterion 1a because it is a particularly good example of a mesotrophic lake and under Criterion 2a because it contains nationally rare plant and other restricted species.

Links to Conservation Advice:

- [JNCC Ramsar Conservation Advice](#)

3. Nutrient Pressures and Water Quality Evidence

The nutrient pressure(s) for which the site is unfavourable for:

- Phosphorus

Water quality data is reported against the relevant Site of Special Scientific Interest (SSSI) unit within the Ramsar site.

Table 1 – Site attribute with water quality targets

Unit Name	SSSI Unit	Monitoring Point ID	WQ Target	WQ Monitoring Data ¹	Compliance with target – Pass/Fail and % reduction needed to achieve the WQ Target
			TP (µg/l)	TP (µg/l)	TP (µg/l)
Lake	1	Cunsey Beck at EES Bridge – NW 88004551	15	29	FAIL 48% reduction needed

The condition of the waterbody and the habitats which support the designated features is in part dependent on the water quality within them. Where excessive nutrients are present in a system this can lead to the occurrence of eutrophication, impacting on aquatic macrophyte flora and changes in water chemistry.

Recent water quality measurements show Esthwaite Water to be exceeding the targets for Total Phosphorus. Any nutrients entering the catchment upstream of the locations which are exceeding their nutrient targets, will make their way downstream and have the potential to further add to the current exceedance. Therefore, the whole upstream catchment of Esthwaite water is included within the catchment map.

¹ Water Quality Monitoring data from EA WIMS database. Nutrient concentrations reported for Total Phosphorus (TP) are the 2019 annual mean.

4. Additional Information

Habitat Type impacted by nutrients – Standing Water.

The Special Area of Conservation (SAC) is underpinned by Esthwaite Water SSSI.

SSSI features of interest include:

- Assemblages of breeding birds – lowland open waters and their margins
- Lowland mire grassland and rush pasture
- Lowland wetland including basin fen, valley fen, floodplain fen, waterfringe fen, spring/flush fen and raised bog lagg
- Mesotrophic Lakes
- Population of Schedule 8 plant – *Najas flexilis*, Slender Naiad
- Wet Woodland

Appendix 1

Annex 1 Map of component SSSIs of Esthwaite Ramsar

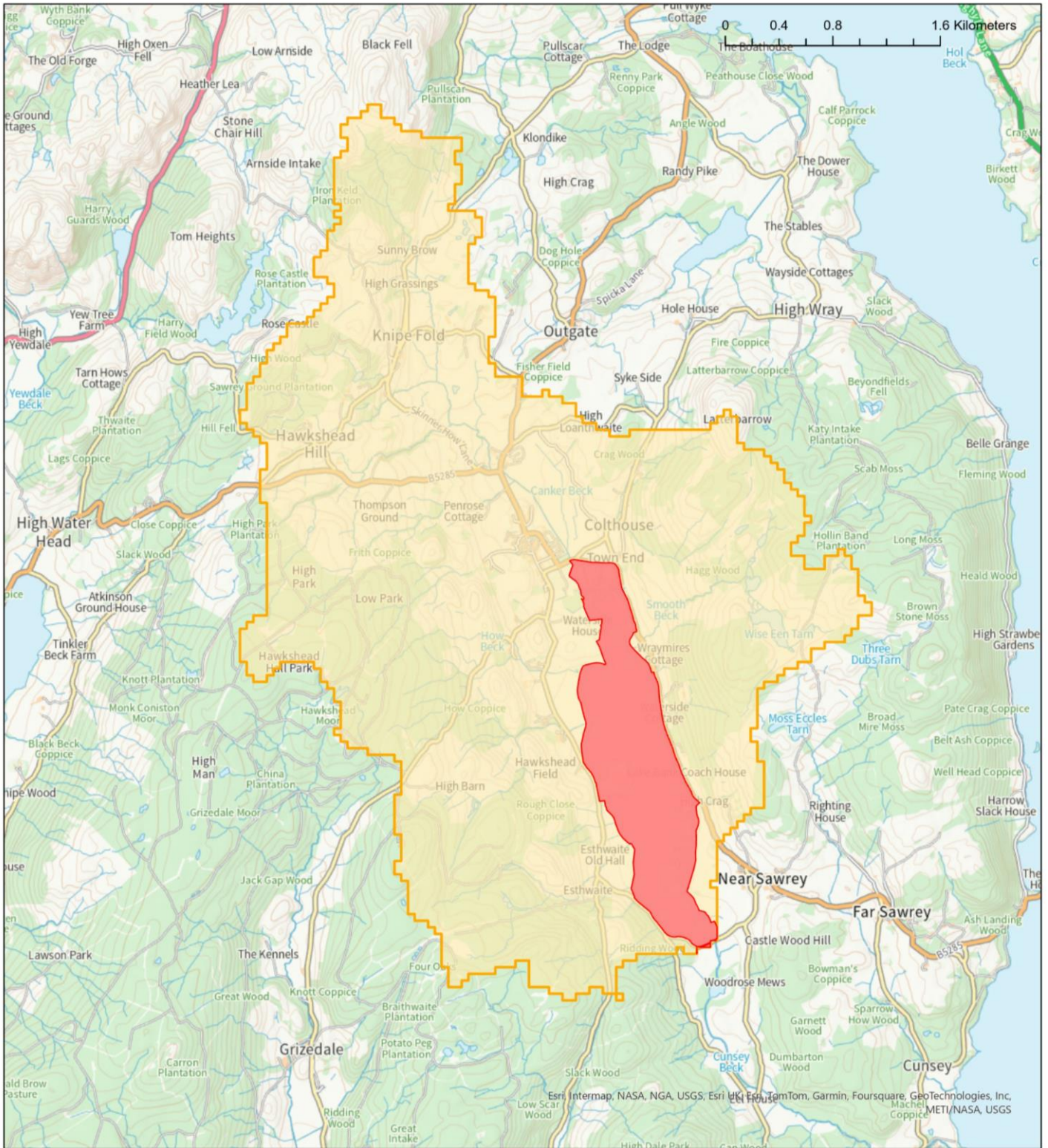
Catchment Area Update (2024)

Natural England has undertaken a review of all the Nutrient Neutrality catchment areas. This review has considered updated surface water catchment data and evidence held by both Natural England and the Environment Agency. Consideration has also been given to data and evidence provided by other parties such as Local Planning Authorities. The information below summarises changes.

This catchment remains unchanged.

Publishing of catchment area data

The Geographic Information System (GIS) data is available on [Defra Data Services Platform](#).



Area where Natural England’s Nutrient Neutrality advice applies for Esthwaite Water Ramsar

European protected sites requiring nutrient neutrality strategic solutions

- Component SSSIs of impacted designated site
- ▬ Surface water catchment area of relevant designated site due to nutrient pollution



List of abbreviations

SAC – Special Area of Conservation

SSSI – Site of Special Scientific Interest

TP – Total Phosphorus

UNESCO – United Nations Educational, Scientific and Cultural Organisation

WQ – Water Quality

Glossary

Ramsar – A Ramsar site is a wetland site designated to be of international importance under the Ramsar Convention, also known as the ‘The Convention on Wetlands’, an intergovernmental environmental treaty established in 1971 by UNESCO.

Natural England is here to secure a healthy natural environment for people to enjoy, where wildlife is protected and England's traditional landscapes are safeguarded for future generations.

Natural England publications are available as accessible pdfs from www.gov.uk/natural-england.

Should an alternative format of this publication be required, please contact our enquiries line for more information: 0300 060 3900 or email enquiries@naturalengland.org.uk.

Catalogue code: TIN188

This publication is published by Natural England under the Open Government Licence v3.0 for public sector information. You are encouraged to use, and reuse, information subject to certain conditions. For details of the licence visit www.nationalarchives.gov.uk/doc/open-government-licence/version/3.

Please note: Natural England photographs are only available for non-commercial purposes. For information regarding the use of maps or data visit www.gov.uk/how-to-access-natural-englands-maps-and-data.

© Natural England 2024