

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.
2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.
3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:

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Designation date

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Site Reference Number

2. Date this sheet was completed/updated:

Designated: 07 November 1991

3. Country:

UK (England)

4. Name of the Ramsar site:

Esthwaite Water

5. Designation of new Ramsar site or update of existing site:

This RIS is for: Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area:

** Important note: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site included:

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

- i) **hard copy** (required for inclusion of site in the Ramsar List): *yes* ✓ -or- *no* ☐;
- ii) **an electronic format** (e.g. a JPEG or ArcView image) *Yes*
- iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** *yes* ✓ -or- *no* ☐;

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The site boundary is the same as, or falls within, an existing protected area.

For precise boundary details, please refer to paper map provided at designation

8. Geographical coordinates (latitude/longitude):

54 21 37 N 02 59 06 W

9. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Nearest town/city: Kendal

Esthwaite Water is situated in the southern part of the Lake District between Lake Windermere and Coniston Water, 8 km south-west of Ambleside.

Administrative region: Cumbria

10. Elevation (average and/or max. & min.) (metres): **11. Area** (hectares): 137.4

Min.	68
Max.	68
Mean	68

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

Esthwaite Water is a natural lake set in a glacial valley. It is the most productive of the large lakes in the Lake District and is one of the best examples in England and Wales of a mesotrophic system. At the northern end of the lake is a well-developed hydrosere, famous for long-term studies on plant community succession.

13. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

1, 2

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar criterion 1

Esthwaite Water is a particularly good example of a mesotrophic lake, with a well developed hydrosere at the northern end.

Ramsar criterion 2

The lake supports a rich assemblage of pondweed species and is the only known locality in England and Wales for slender naiad *Najas flexilis*. The diverse aquatic invertebrate fauna includes a number of species with restricted distributions in Britain.

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Atlantic

b) biogeographic regionalisation scheme (include reference citation):

Council Directive 92/43/EEC

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	neutral, clay, alluvium, peat, nutrient-rich, nutrient-poor, metamorphic, slate/shale, gravel
Geomorphology and landscape	lowland, valley, floodplain
Nutrient status	mesotrophic
pH	circumneutral
Salinity	fresh
Soil	mainly mineral, mainly organic
Water permanence	usually permanent, usually seasonal / intermittent
Summary of main climatic features	Annual averages (Newton Rigg, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/newton_rigg.html) Max. daily temperature: 12.1° C Min. daily temperature: 4.9° C Days of air frost: 57.6 Rainfall: 929.2 mm Hrs. of sunshine: 1243.2

General description of the Physical Features:

No information available

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

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.

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Flood water storage / desynchronisation of flood peaks

19. Wetland types:

Inland wetland

Code	Name	% Area
O	Freshwater lakes: permanent	73.3
Other	Other	14.4
Xf	Freshwater, tree-dominated wetlands	6.2
4	Seasonally flooded agricultural land	3.4
Tp	Freshwater marshes / pools: permanent	1.6
U	Peatlands (including peat bogs swamps, fens)	1.1

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

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*.

Ecosystem services

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Nationally important species occurring on the site.

Higher Plants.

Najas flexilis, *Carex elongata*

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in 12. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Birds**Species Information****Assemblage.**

The site supports a diverse assemblage of aquatic invertebrate fauna with restricted distributions, including:

Bdellocephala punctata.

23. Social and cultural values:

Describe if the site has any general social and/or cultural values e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Aesthetic
 Environmental education/ interpretation
 Fisheries production
 Non-consumptive recreation
 Scientific research
 Sport fishing

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? No

If Yes, describe this importance under one or more of the following categories:

- i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:
- ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:
- iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:
- iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

Ownership category	On-site	Off-site
Non-governmental organisation (NGO)	+	+
National/Crown Estate	+	+
Private	+	+

25. Current land (including water) use:

Activity	On-site	Off-site
Tourism		+
Recreation	+	+
Current scientific research	+	
Commercial forestry		+
Cutting/coppicing for firewood/fuel	+	
Fishing: recreational/sport	+	
Freshwater aquaculture	+	

Grazing (unspecified)	+	
Permanent pastoral agriculture	+	+
Sewage treatment/disposal	+	
Transport route		+
Domestic water supply		+
Urban development		+
Non-urbanised settlements		+

26. Factors (past, present or potential) adversely affecting the site’s ecological character, including changes in land (including water) use and development projects:

Explanation of reporting category:

1. *Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.*
2. *Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.*

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
Eutrophication	2	This site condition is unfavourable because of eutrophication, occurring as a result of pollution from aquaculture and domestic sewage. Recent surveys have shown significant deterioration of the aquatic macrophyte flora as well as adverse changes in the water chemistry.	+		+
Pollution – domestic sewage	2		+	+	+
Pollution – unspecified	1			+	
Pollution – associated with aquaculture	2		+		+

For category 2 factors only.

What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?
 Eutrophication - Phosphate-stripping was installed at Hawkshead Sewage Treatment Works which discharges into the lake. However, the single most important source of nutrients to the lake is the fish farm. The issue is complicated by the shallowness of the lake and presence of P-rich surface sediments, a consequence of the long history of P inputs. The adverse impacts of increasing P concentrations are exacerbated by a heavily-stocked rainbow trout *Salmo gairdneri* population.

Pollution – domestic sewage - Sewage treatment works have gone through to Asset Management Plan AMP4 to be upgraded.

Pollution – associated with aquaculture - English Nature and the Environment Agency are preparing plans to purchase the fish farm and revoke consent.

Is the site subject to adverse ecological change? YES

27. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	
National Nature Reserve (NNR)	+	
Other	+	
Management plan in preparation	+	

b) Describe any other current management practices:

The management of Ramsar sites in the UK is determined by either a formal management plan or through other management planning processes, and is overseen by the relevant statutory conservation agency. Details of the precise management practises are given in these documents.

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

29. Current scientific research and facilities:

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Contemporary.**Miscellaneous.**

Institute of Freshwater Ecology and the Freshwater Biological Association have a boathouse and slipway on the lake. At any one time they have several projects based on studying Esthwaite Water. Various reports completed on nutrient status of Esthwaite Water.

Completed.**Fauna.**

Survey for *Najas flexilis* completed in 1994.

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

None reported

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Activities, Facilities provided and Seasonality.

Land-based recreation:

There are no footpaths adjacent or on the site. In a few places public roads are close to the site and there is some recreational use of the shoreline. This is not considered to be significant. There is some angling from the shoreline.

Water based recreation:

Angling from boats takes place on the site but is not significant in terms of impact on the site features.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.
Head, Natura 2000 and Ramsar Team, Department for Environment, Food and Rural Affairs,
European Wildlife Division, Zone 1/07, Temple Quay House, 2 The Square, Temple Quay, Bristol,
BS1 6EB

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Site Designations Manager, English Nature, Sites and Surveillance Team, Northminster House,
Northminster Road, Peterborough, PE1 1UA, UK

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see 15 above), list full reference citation for the scheme.

Site-relevant references

McLeod, CR, Yeo, M, Brown, AE, Burn, AJ, Hopkins, JJ & Way, SF (eds.) (2004) *The Habitats Directive: selection of Special Areas of Conservation in the UK*. 2nd edn. Joint Nature Conservation Committee, Peterborough.
www.jncc.gov.uk/SACselection

Ratcliffe, DA (ed.) (1977) *A Nature Conservation Review. The selection of biological sites of national importance to nature conservation in Britain*. Cambridge University Press (for the Natural Environment Research Council and the Nature Conservancy Council), Cambridge (2 vols.)

Ratcliffe, DA (2002) *Lakeland: the wildlife of Cumbria*. HarperCollins, London (New Naturalist, No. 92)

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