

River Mease Special Area of Conservation

Evidence Pack

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River Mease Special Area of Conservation – Evidence Pack

Anita Wood, Helen Wake and Kathryn McKendrick-Smith



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Project details

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Natural England Project manager

Simon Thompson

Author

Anita Wood, Helen Wake and Kathryn McKendrick-Smith

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Further information

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1. Site Details

From River Mease Special Area of Conservation citation:

Rising in the Coal Measures of north-west Leicestershire, the River Mease flows approximately 25 kilometres westwards across a largely rural and agricultural landscape to its confluence with the River Trent at Croxall. As a relatively un-modified lowland river, the River Mease contains a diverse range of physical in-channel features, including riffles, pools, slacks, vegetated channel margins and bankside tree cover, which provide the conditions necessary to sustain populations of spined loach *Cobitis taenia*, bullhead *Cottus gobio*, freshwater white-clawed crayfish *Austropotamobius pallipes* and otter *Lutra lutra*.

The head of the site includes the lower reaches of the Gilwiskaw Brook which flows along a steep gradient. Due to the fast-flowing nature of the river, aquatic vegetation is sparse and marginal vegetation restricted to stands of floating sweet-grass *Glyceria fluitans* but these sections provide valuable habitat for bullhead, which favours clean coarse gravels for spawning. Populations of bullhead also occur in the lower reaches of the Mease where river substrates are finer but woody debris lying within the river channel becomes more important in providing suitable breeding habitat.

Below Snarestone the descent becomes more gradual and the river enters a broad lowland floodplain. These middle reaches of the River Mease provide excellent habitat for spined loach *Cobitis taenia*. This largely sedentary fish is closely associated with the open sandy substrates of the river bed which act as important feeding and spawning grounds. Refuges from predators and strong river flows are very important and are provided by aquatic and marginal vegetation within the river channel.

Stands of marginal vegetation are typically dominated by common club-rush *Schoenoplectus lacustris*, floating sweet-grass, reed canary-grass *Phalaris arundinacea*, branched bur-reed *Sparganium erectum*, greater pond sedge *Carex riparia* and bulrush *Typha latifolia*. Submerged aquatic vegetation becomes more varied on the lower reaches of the river with river water-crowfoot *Ranunculus fluitans*, common water-crowfoot *R. aquatilis*, blunt-leaved pondweed *Potamogeton obtusifolius*, fennel pondweed *P. pectinatus*, arrowhead *Sagittaria sagittifolia* and yellow water-lily *Nuphar lutea* becoming increasingly frequent.

Bankside tree cover is very variable but an important feature of the river channel as submerged root systems of larger trees provide important in-channel cover for fish and provide woody debris to the watercourse in the form of fallen branches.

2. Reasons for European Designation

The River Mease Special Area for Conservation (SAC) is designated for the following features:

- H3260 Water courses of plain to montane levels with *R. fluitantis*
- S1092 Freshwater crayfish, *Austropotamobius pallipes*
- S1149 Spined loach, *Cobitis taenia*
- S1163 Bullhead, *Cottus gobio*
- S1355 Otter, *Lutra lutra*

Links to Conservation Advice:

- [Conservation Objectives](#)
- [Conservation Objectives Supplementary Advice](#)

3. Nutrient Pressure and Water Quality

Nutrient pressure(s) for which the site is unfavourable:

- Phosphorus

In the Conservation Objectives Supplementary Advice for the River Mease SAC it states **‘restore a natural nutrient regime to the River Mease, with any anthropogenic enrichment above natural/background concentrations limited to levels at which adverse effects on characteristic biodiversity are unlikely’**.

Water Quality data is reported against the relevant Site of Special Scientific Interest (SSSI) units within the SAC.

The condition of the waterbody and the habitats which support the designated features is in part dependent on the water quality within them.

The occurrence of excessive nutrients in the waterbody can impact on the competitive interactions between high plant species and between higher plant species and algae, which can result in a loss of characteristic plant species. Changes in plant growth and community composition and structure can have implications for the wider food web, and the species present. Increased nutrients and the occurrence of eutrophication can also impact on the dissolved oxygen levels in the waterbody and substrate condition, also impacting on biota within the river.

Recent water quality measurements for the River Mease/Gilwiskaw Brook within the SAC show phosphorus concentrations to be exceeding the targets for all units. 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. The catchment maps for the River Mease therefore includes the entire catchment of the site.

Table 1 – Site attribute with water quality targets

Unit name	SSSI Unit	Monitoring point ID	WQ Target SRP (ug/l), annual mean	WQ Monitoring Data ¹ OP reactive as P (ug/l), mean	Compliance with target - – Pass/Fail and % reduction needed to achieve the WQ Target
River Trent to Harlaston Bridge	1	River Mease – Croxall MD-58470100	50	200.5	FAIL 75% reduction needed
Harlaston Bridge to Netherseal	2	River Mease – Clifton Campville MD-58471500	50	173.4	FAIL 71% reduction needed
Netherseal to Snareston	3	River Mease – Clifton Campville MD-58472140	50	159.3	FAIL 69% reduction
Snareston to Packington	4	Gilwiskaw Brook – Measham Fields Farm MD-58807700	40	182.4	FAIL 78% reduction needed

4. Additional Information

Habitat type impacted by nutrients - Riverine

¹ Water Quality Monitoring data from EA WIMS database. Orthophosphate (OP) is a reasonable approximation to Soluble Reaction Phosphorus (SRP). Following the rivers common standards monitoring guidance the mean of 3 years of data used where available.

The River Mease SAC is legally underpinned by the River Mease SSSI.

The SSSI features of interest are the same as the features which the SAC is designated for.

Appendix

Component SSSIs of River Mease SAC

Map of component SSSIs of River Mease SAC



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European protected sites requiring nutrient neutrality strategic solutions
Component SSSIs of River Mease SAC

Scale: 1:90,000

- Local Authorities
- SSSI subject to nutrient neutrality strategy
- Nutrient neutrality SSSI catchment
- National Parks



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List of abbreviations

OP – Orthophosphate

SAC – Special for Area Conservation

SRP – Soluble Reaction Phosphorus

SSSI – Site of Special Scientific Interest

WQ – Water Quality

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