

# River Wensum Special Area of Conservation

## Evidence Pack

First published August 2022, revised June 2024

Natural England Technical Information Note TIN201

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## Project details

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## Further information

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# 1. Site Details

## From the River Wensum Special Area of Conservation

The Wensum is a naturally enriched, calcareous lowland river. The upper reaches are fed by springs that rise from the chalk and by run-off from calcareous soils rich in plant nutrients. This gives rise to beds of submerged and emergent vegetation characteristic of a chalk stream. Lower down, the chalk is overlain with boulder clay and river gravels, resulting in aquatic plant communities more typical of a slow-flowing river on mixed substrate.

Much of the adjacent land is managed for hay crops and by grazing, and the resulting mosaic of meadow and marsh habitats, provides niches for a wide variety of specialised plants and animals. *Ranunculus* vegetation occurs throughout much of the river's length.

Stream water-crowfoot *R. penicillatus* ssp. *pseudofluitans* is the dominant *Ranunculus* species but thread-leaved watercrowfoot *R. trichophyllus* and fan-leaved water-crowfoot *R. circinatus* also occur in association with the wide range of aquatic and emergent species that contribute to this vegetation type.

The river should support an abundant and rich invertebrate fauna including the native freshwater crayfish *Austropotamobius pallipes* as well as a diverse fish community, including bullhead *Cottus gobio* and brook lamprey *Lampetra planeri*. The site has an abundant and diverse mollusc fauna which includes Desmoulin's whorl-snail *Vertigo moulinsiana*, which is associated with aquatic vegetation at the river edge and adjacent fens.

## 2. Reasons for European Designation

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

- H3260 Water courses of plain to montane levels with *R. fluitantis*
- S1016 Desmoulin's whorl snail, *Vertigo moulinsiana*
- S1092 Freshwater crayfish, *Austropotamobius pallipes*
- S1096 Brook lamprey, *Lampetra planeri*
- S1163 Bullhead, *Cottus gobio*

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 Wensum SAC it states ‘restore the natural nutrient regime of the river, with any anthropogenic enrichment above natural/background concentrations limited to levels at which adverse effects on characteristic biodiversity are unlikely’.

**Table 1 – Site attribute with water quality targets**

Unit name	SSSI Unit	Monitoring point ID	WQ Target	WQ Monitoring Data <sup>1</sup>	Compliance with target - – Pass/Fail and % reduction needed to achieve the WQ Target
<b>Wensum Above Confluence with Tat</b>	45	R.Wensum Helhoughton Bridge An-Wen020	20	39.3 (Feb 2019 – Jan2022)	FAIL 49% reduction needed
<b>Tat Above Confluence with Wensum</b>	46	R.Tat Tatterford Common (R.Wensum)An-Wen010	20	80.9 (Feb 2019 – Jan2022)	FAIL 75% reduction needed
<b>Confluence – Fakenham Mill</b>	47	R.Wensum Sculthorpe Mill An-Wen040	30	45.2 (Feb 2019 – Jan2022)	FAIL 34% reduction needed
		R. Wensum Goggs Mill Rd. Br. Hempton An-Wen045	30	46.1 (Jan 2019 – Dec2021)	FAIL 35% reduction needed
<b>Fakenham Mill</b>	48	R.WensumGreat RyburghBridge	30	59	FAIL – older

<sup>1</sup> 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.

<b>- Great Ryburgh Mill</b>		An-Wen070		(Oct 2011 – Sept2014)	data 49% reduction needed
<b>Great Ryburgh Mill – Bintree Mill</b>	49	No Monitoring Point	30	-	Unknown
<b>Bintree Mill - North Elmham Mill</b>	50	R.Wensum County School Bridge An-Wen102	30	71.6 (May 2019 – Dec 2021)	58% reduction needed
<b>North Elmham Mill - Elsing Mill</b>	51	R.Wensum Swanton Morley Bridge An-Wen180	30	57.6 (Feb 2019 – Jan2022)	FAIL 48% reduction needed
<b>Elsing Mill - Lenwade Mill</b>	52	R. Wensum Lyng Road Bridge An-Wen1905	30	64.9 (Jan 2019 – Dec2021)	FAIL 54% reduction needed
<b>Lenwade Mill - Taverham Mill</b>	53	R.Wensum Great Witchingham Bridge An-Wen200	30	59.7 (Feb 2019 – Jan2022)	FAIL 50% reduction needed
<b>Taverham Mill- HellesdonMill</b>	54	R.Wensum Taverham Bridge An-Wen235	30	63.8 April 2017 – March2020)	FAIL 53% reduction needed
<b>Langor Drain Above Conf. with Wensum</b>	55	Kettlestone Str.Langer Br. (R.Wensum)An-Wen060	30	75 (Aug 2014 – Jul 2017)	FAIL 60% reduction needed

Water Quality data is reported against the respective Site of Special Scientific Interest (SSSI) units within the SAC. The data reported here are from the same monitoring points as those used in the River Wensum Diffuse Water Pollution Plan (DWPP).

The occurrence of elevated 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 Wensum within the SAC show phosphorus concentrations to be exceeding the targets for all units where there is monitoring data. 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, for the River Wensum, the whole upstream catchment is included within the catchment map.

## **4. Additional Information**

Habitat type impacted by nutrients - Riverine

The SAC is legally underpinned by the River Wensum SSSI

SSSI interest features include:

- River supporting habitat
- Rivers and Streams



# Appendix

## Component SSSIs of River Wensum SAC

Map of component SSSIs of River Wensum SAC

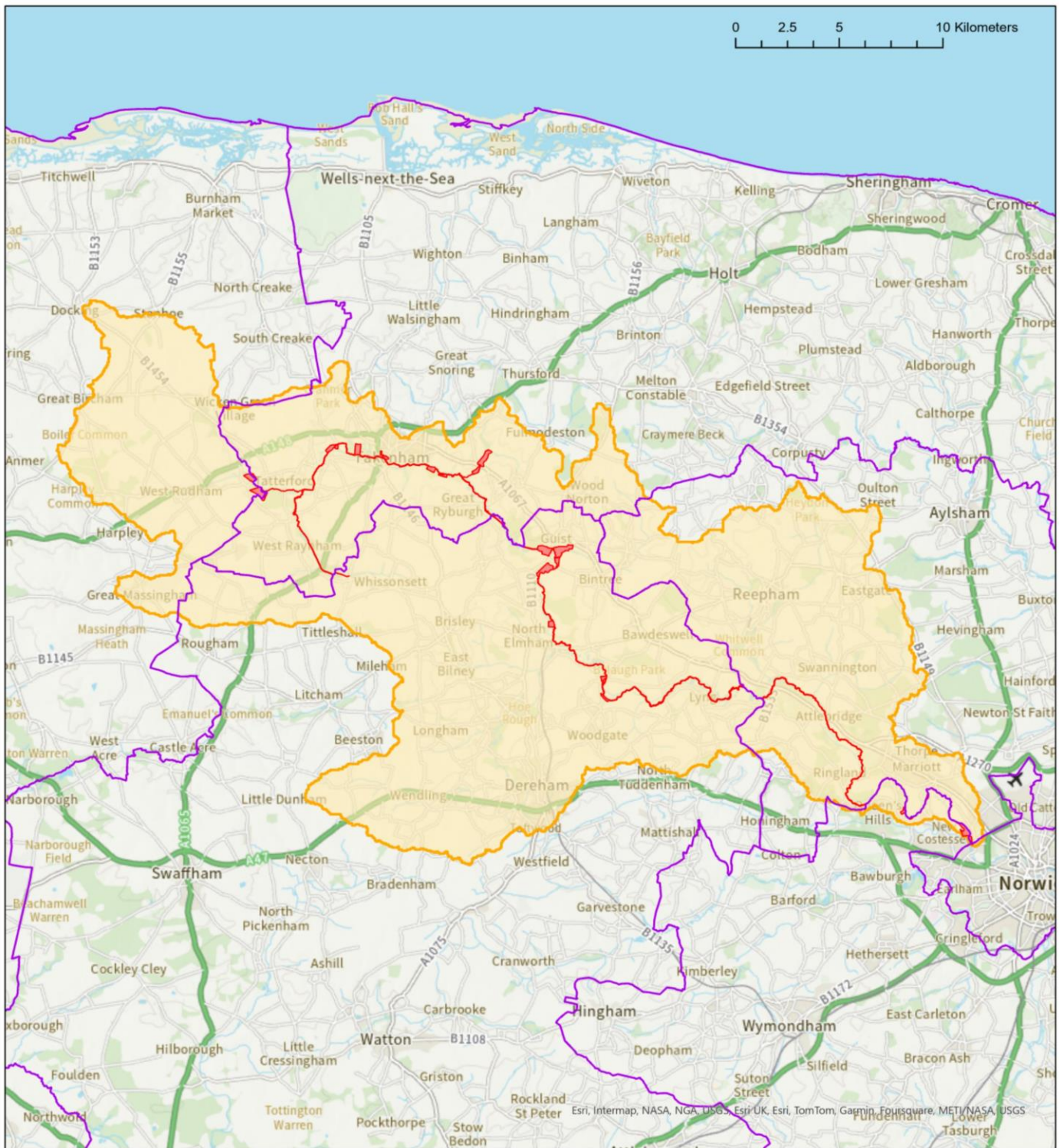
### Catchment Area Update (2024)

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 following review.

### Publishing of catchment area data

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



## Area where Natural England’s Nutrient Neutrality advice applies for River Wensum SAC

European protected sites requiring nutrient neutrality strategic solutions

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

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# List of abbreviations

**DWPP** – Diffuse Water Pollution Plan

**OP** – Orthophosphate

**SAC** – Special for Area Conservation

**SRP** – Soluble Reaction Phosphorus

**SSSI** – Site of Special Scientific Interest

**WQ** – Water Quality

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