Essex and Suffolk Rivers Trust and The State of Our Rivers Report

Andy Went

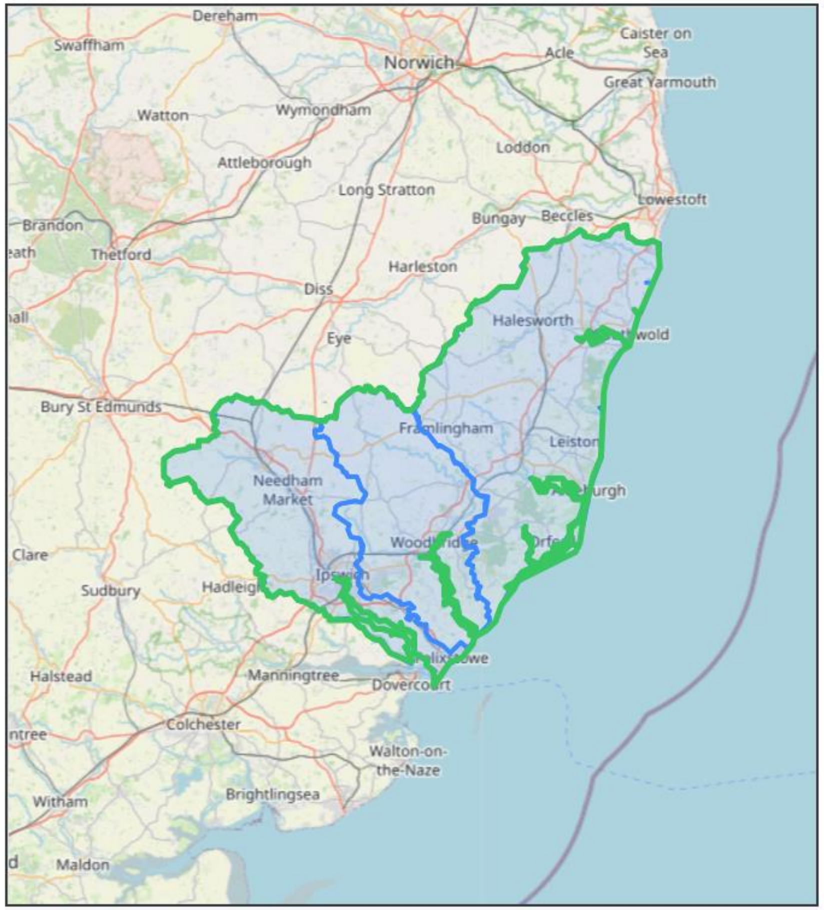
Catchment and Project Officer

Overview of East Suffolk Rivers

The East Suffolk Rivers area of 1,364 km2 encompasses the valleys, waterbodies, tributaries and estuaries of the Rivers Gipping (Orwell), Deben, Alde and Ore, Thorpeness Hundred, Yox, Blyth and Lothingland Hundred.

This area is mostly rural with significant urban areas at Felixstowe, Ipswich, Woodbridge, Wickham Market, Stowmarket, Saxmundham, Halesworth, Southwold and Kessingland.

Agriculture is the predominant land use (root veg and pig farming in the east and arable). Other pockets of land-based industry exist, including food processing, milling, malting and the manufacture of farm machinery and fertilisers.



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Main Catchments

Rivers Gipping

River Deben

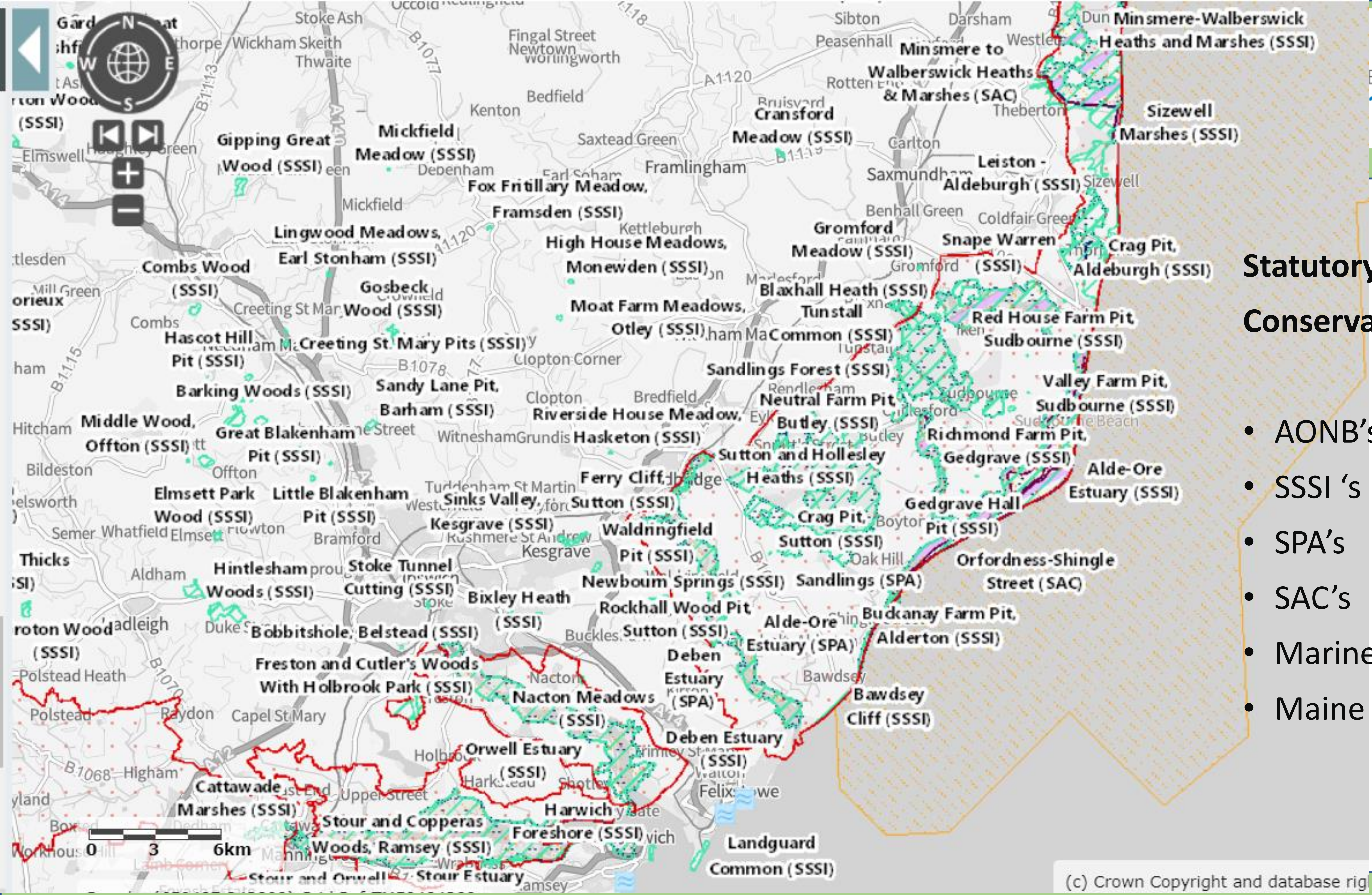
River Alde and Ore

River Blyth

Thorpeness Hundred

Yox

Lothingland Hundred.



Essex and Suffolk Rivers Trust

Statutory Land and Marine Conservation Designations

- AONB's
- SSSI 's
- SPA's
- SAC's
- Marine SPA's
- Maine Conservation Zone

Our Waterbodies (as identified by WFD - Suffolk Coastal, Deben and Gipping)

Essex and Suffolk Rivers Trust

Suffolk Coastal

- Alde
- Alde - Ore (d/s confluence)
- Black Ditch (East Suffolk)
- Blyth (Hevingham Hall - d/s Halesworth)
- Blyth (Huntingfield tributary)
- Blyth (Laxfield - Hevingham Hall)
- Blyth (New Reach through Halesworth)
- Blyth (d/s Halesworth)
- Blyth (u/s Halesworth)
- Butley River
- Chediston Watercourse
- Easton Broad
- Fromus
- Hundred River
- Leiston Beck
- Lothingland Hundred
- Minsmere Old River
- Ore
- Tang
- Wang
- Wenhaston Watercourse

Deben

- Bucklesham Mill River
- Byng Brook
- Deben (Brandeston Bridge - Melton)
- Deben (u/s Brandeston Bridge)
- Earl Soham Watercourse
- Fynn
- Lark
- Lark - Fynn (d/s confluence)
- Potsford Brook
- Shottisham Mill River

Gipping

- Belstead Brook
- Coddenham Watercourse
- Gipping (d/s Stowmarket)
- Gipping (through Stowmarket)
- Gipping (u/s Stowmarket)
- Great Finborough Watercourse
- Haughley Watercourse
- Jordan (East Suffolk)
- Rattlesden River (d/s Gt. Finborough)
- Rattlesden River (u/s confluence with Gt. Finborough
- Somersham Watercourse
- Wattisham Watercourse

43 Waterbodies

What is the ‘State of Our Rivers Report’?

- A National Report produced by the Rivers Trust (RT) in 2021, which looks at the current state and impacts to all **England rivers.**

  State of Our Rivers | The Rivers Trust

- The data used by the RT was available open data (mostly EA). Focussed on river quality to give an overview of status and impacts on all our rivers standard using Environmental Quality Standards/Ratios (EQS /EQR).
- The data were plotted to provide a mapped Water Framework Directive (WFD) status for all UK rivers – Gov. target to achieve **‘Good’** or ‘**Good Potential’** status by 2027.
- Is this achievable by 2027 with the current standard ???

The Big Picture!

Essex and Suffolk Rivers Trust

0%

of all rivers in England are in good overall health

99%

of British rivers have artificial barriers obstructing migrating fish

83%

decline in freshwater species globally since 1970

1%

of the earth's surface is made up of freshwater ecosystems, yet they provide habitat for 100,000+ species

The National SoR Report Headline!

The public recognise and agree that our rivers are important natural treasures – yet:

0% of river in England achieved ‘good health’ status’

0 % achieved ‘Good’ chemical health and just **14%** passed achieved ‘Good’ ecological health.

This is a huge statement on the conditions of our rivers and aquatic environments.

Currently, WFD targets are not being met by the UK.

East Suffolk Rivers Performance

Current and Past Ecological and Chemical Status / Potential (n=43) Summary statistic	Rivers, Canals and SWTs (2015)	Rivers, Canals and SWTs (2019)
% of water bodies at good or better **ecological** status/potential	13%	16%
% of water bodies at good **chemical** status	100%	0%

What's changed between 2015 and 2019?

Inclusion of ubiquitous, persistent, bio-accumilative and toxic (uPBT's) priority hazardous substances.

uPBT's in our environment

These Ubiquitous Priority Hazardous Substance are :

Mercury and its compounds – thermometers, barometers and hygrometers. Also, dentistry, electrical instruments, mirrors, lighting. Often airborne from coal-fired power stations, manufacturing, industry and even crematoriums

Poly-brominated diphenyl ethers (pBDE) – Fire retardants (e.g. furniture/ consumer goods)

Perfluorooctane sulphonate (PFOS/PFAS) – Water, grease and stain repellents https://www.bbc.co.uk/programmes/m00159zr

Tributyltin (TBT) – anti-fouling agent in bottom / hull paints

Polyaromatic hydrocarbons (PAHs) – Derived from the use of fossil fuels (e.g. exhaust fumes, road run-off, coal fired plant)

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43 Waterbodies

E. Suffolk Ecological Status/Potential

Ecological status for surface waters

Ecological status or potential	Bad	Poor	Moderate	Good	High	Total
Number of water bodies	1	9	27	6	0	43
Number of water body elements	15	70	100	130	397	712

Approx. 16 to 17 water body elements per watercourse measured.

Waterbody eco- elements are:

Biological

Fish, macroinvertebrates, and plants (higher and algae) communities.

Physico-Chemical Quality

BOD, Ammonia, pH, Temperature, Phosphate, Dissolved Oxygen

Hydromorphological

Hydrological regime (flow), Morphology.

Current Ecological Health Status

The Rivers Trust State of Our Rivers

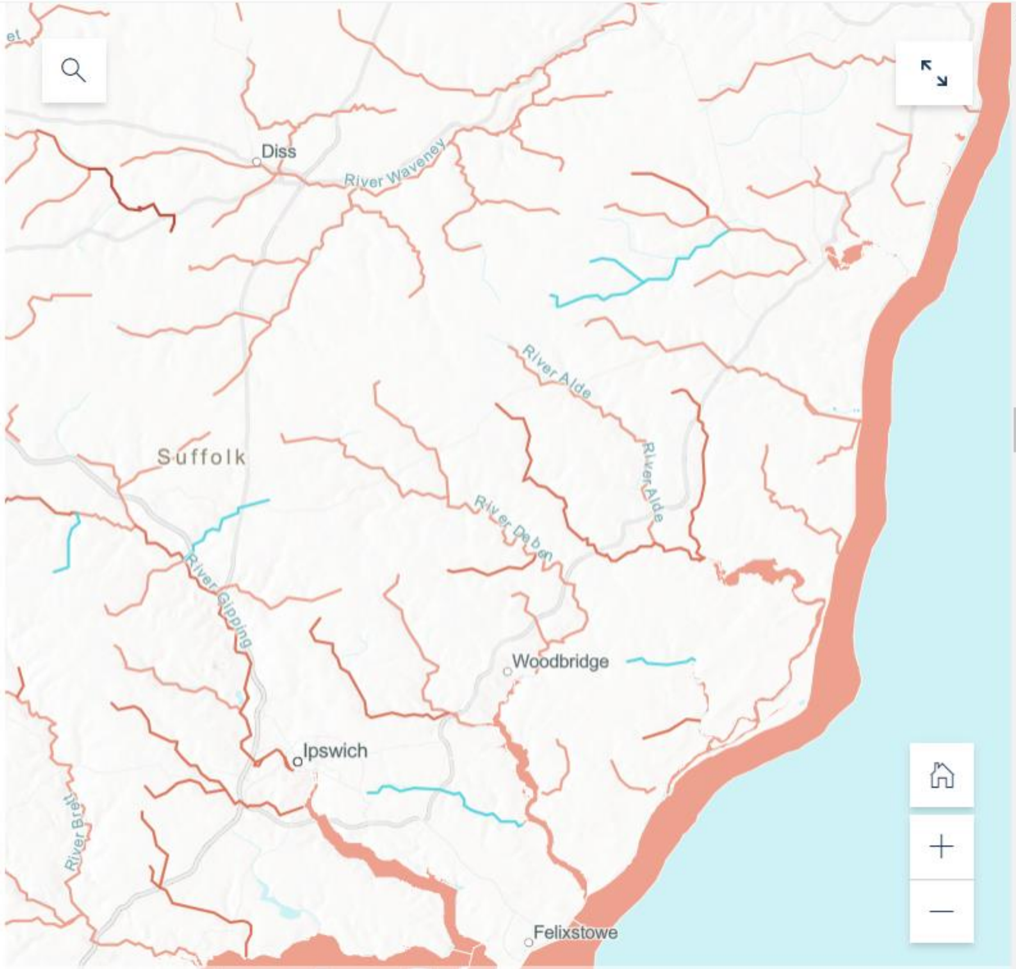
State of Our Rivers | Remarkable rivers | Current state | BIG problems | BIG solutions | Take action

This map shows the range of Ecological health in rivers around England.

Zoom in and find out what's happening on your river.

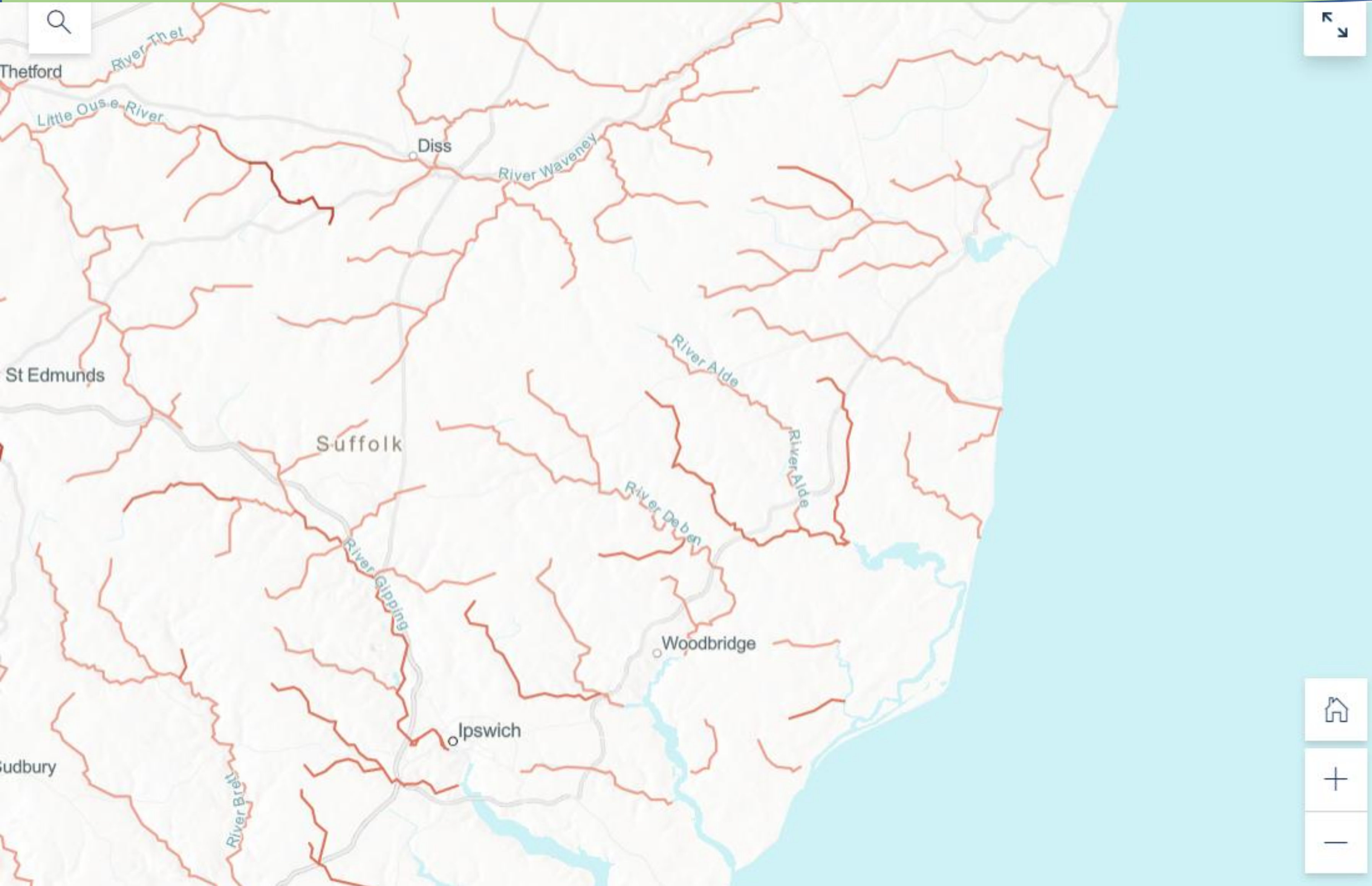
Bad **Poor** **Moderate**

Good **High** **Not assessed**



State of Our Rivers (arcgis.com)

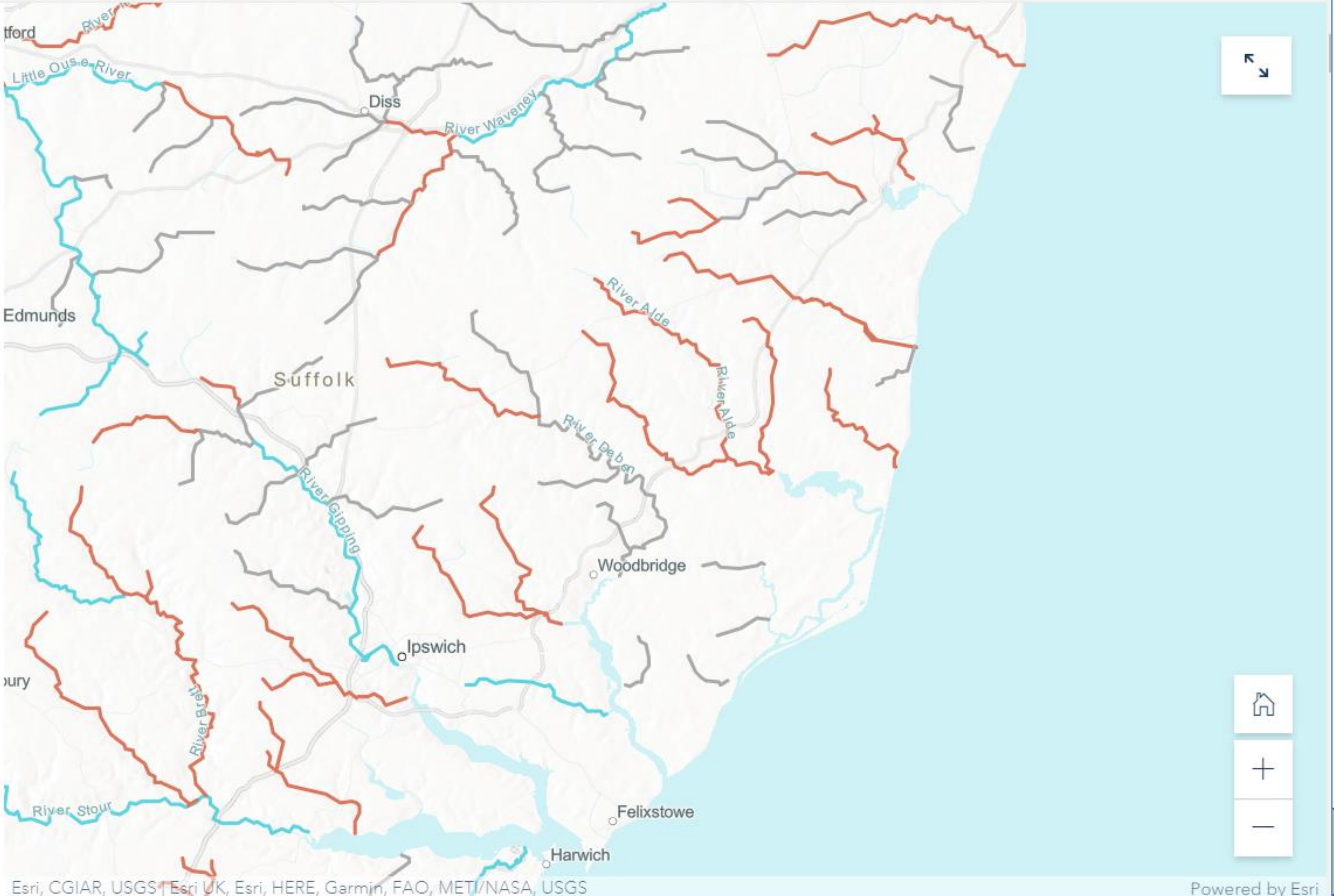
Current Chemical Health Status



[State of Our Rivers (arcgis.com)]

Freshwater Fish

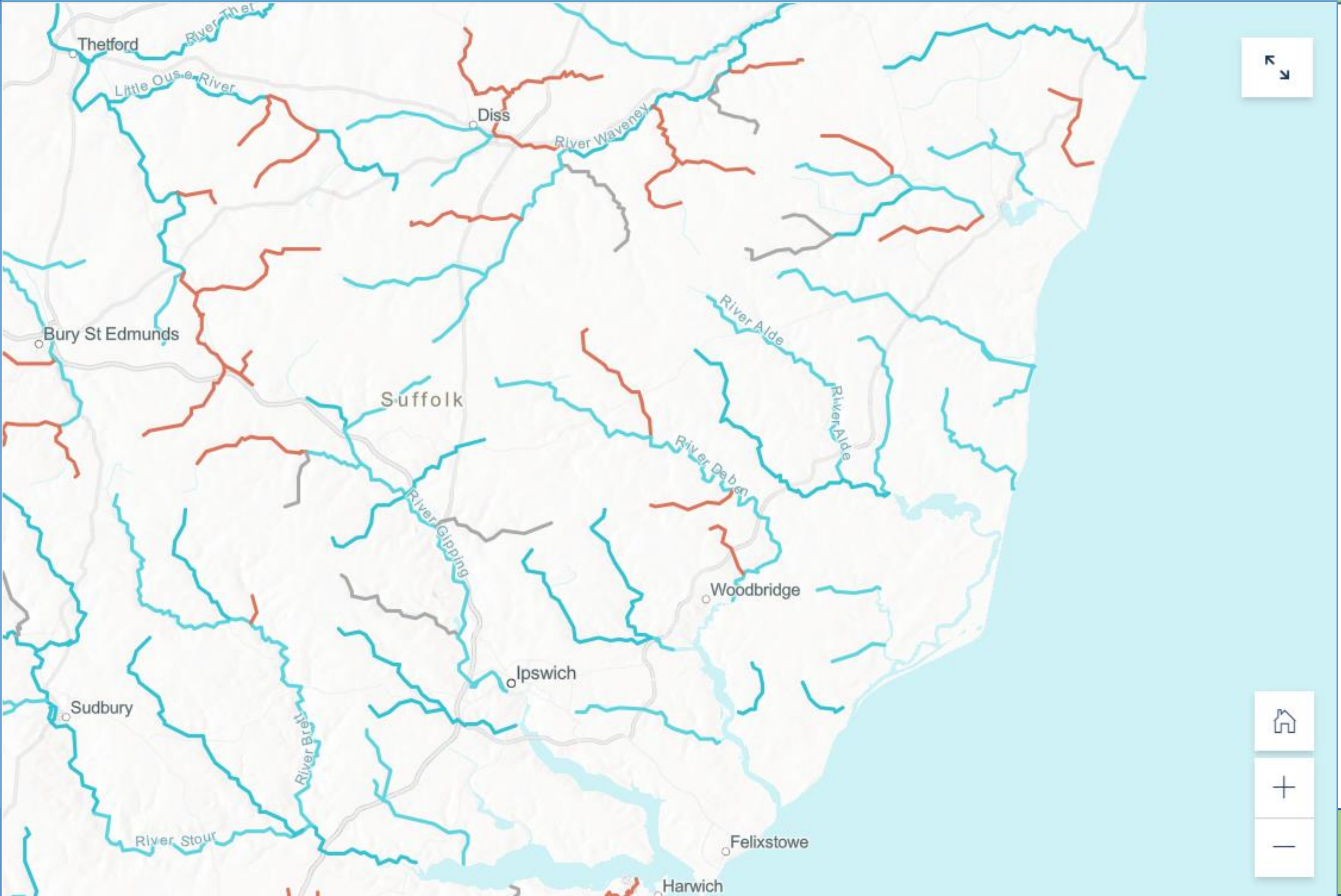
Essex and Suffolk Rivers Trust



Fish are used as indicators of water quality and hydromorphological condition, as well as longitudinal connectivity in rivers.

The abundance, diversity and age structure of fish communities can tell us a lot about how healthy a river is and whether or not important species are still thriving.

Freshwater Invertebrates



Aquatic invertebrates, such as flies or bugs, are incredible indicators of water quality.

Invertebrates are very sensitive to different types of pollution, so we can detect issues with water quality by looking at the composition and abundance (or absence) of different species.

Freshwater Plants

This is an assessment of the aquatic flora (plants, mosses and algae) growing in the river and this can tell us how well the river is working.

They can indicate the impact of increased nutrients in rivers and are also influenced by other pressures such as channel engineering, water abstraction, flow impoundment or acidification.

Bad | Poor | Moderate | Good | High | Not assessed

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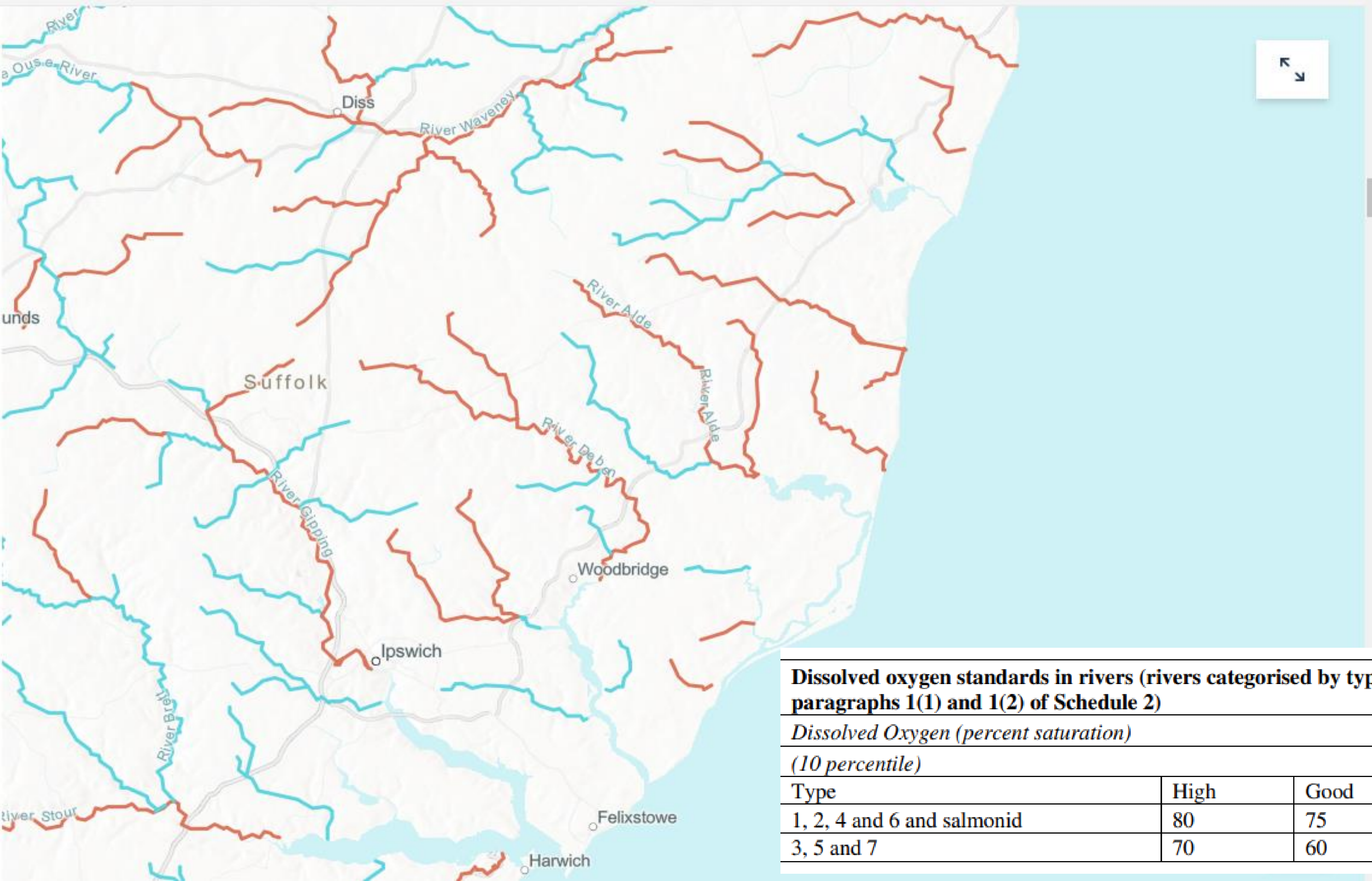
Physico-chemical Elements

These include physical and some chemical properties of the water in a river:

- BOD
- Ammonia
- Dissolved Oxygen
- pH
- Phosphate
- Acid Neutralising Capacity
- Temperature

Dissolved Oxygen



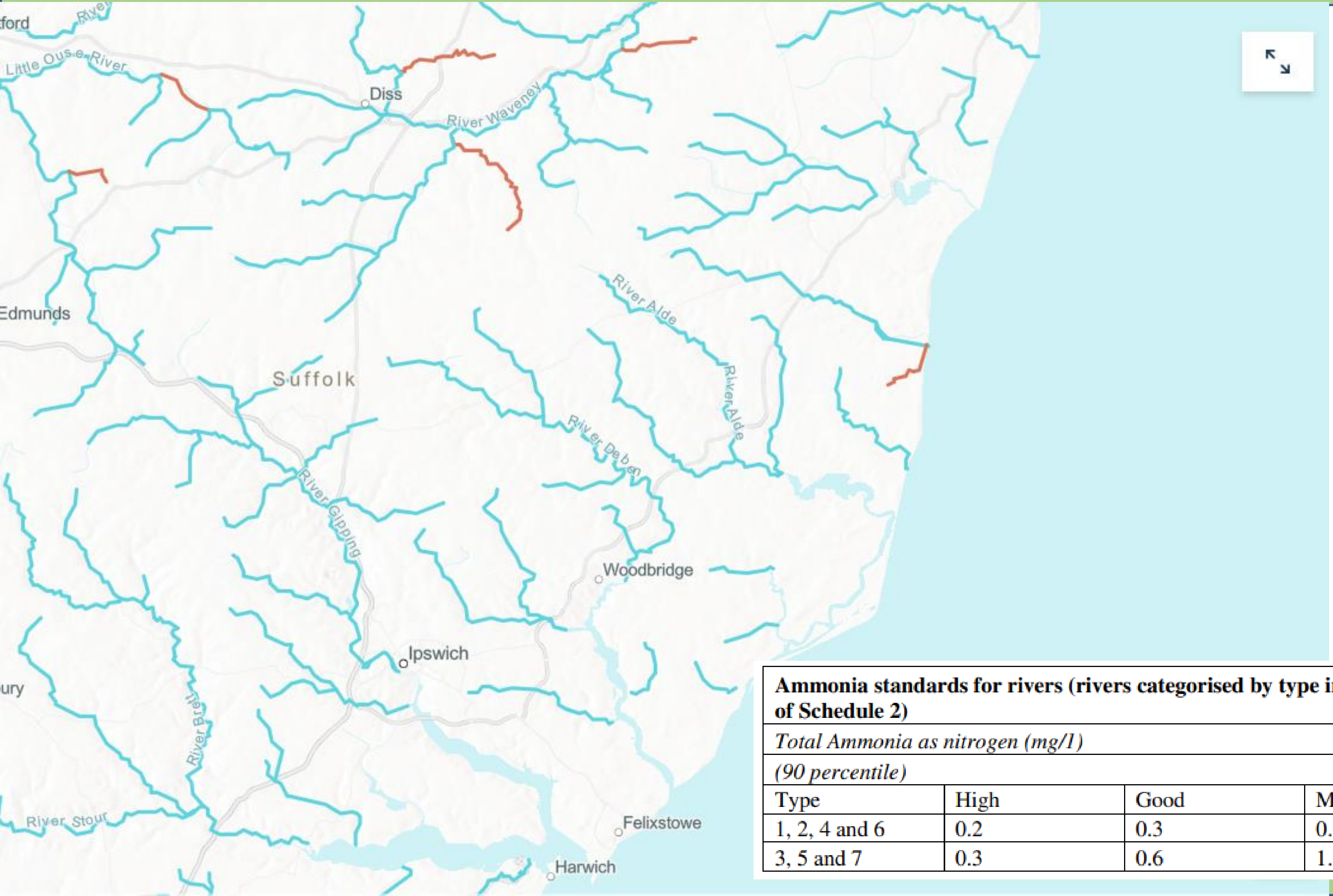
This indicates the ability of the watercourse to sustain aquatic life.

It can indicate several impacts and pressures such as pollution (diffuse and point), water abstraction, flow impoundment, channel modification and nutrient enrichment.

Bad	Poor	Moderate
Good	**High**	**Not assessed**

Dissolved oxygen standards in rivers (rivers categorised by type in accordance with paragraphs 1(1) and 1(2) of Schedule 2)				
Dissolved Oxygen (percent saturation)				
(10 percentile)				
Type	High	Good	Moderate	Poor
1, 2, 4 and 6 and salmonid	80	75	64	50
3, 5 and 7	70	60	54	45

Ammonia



Ammonia levels are mostly good.

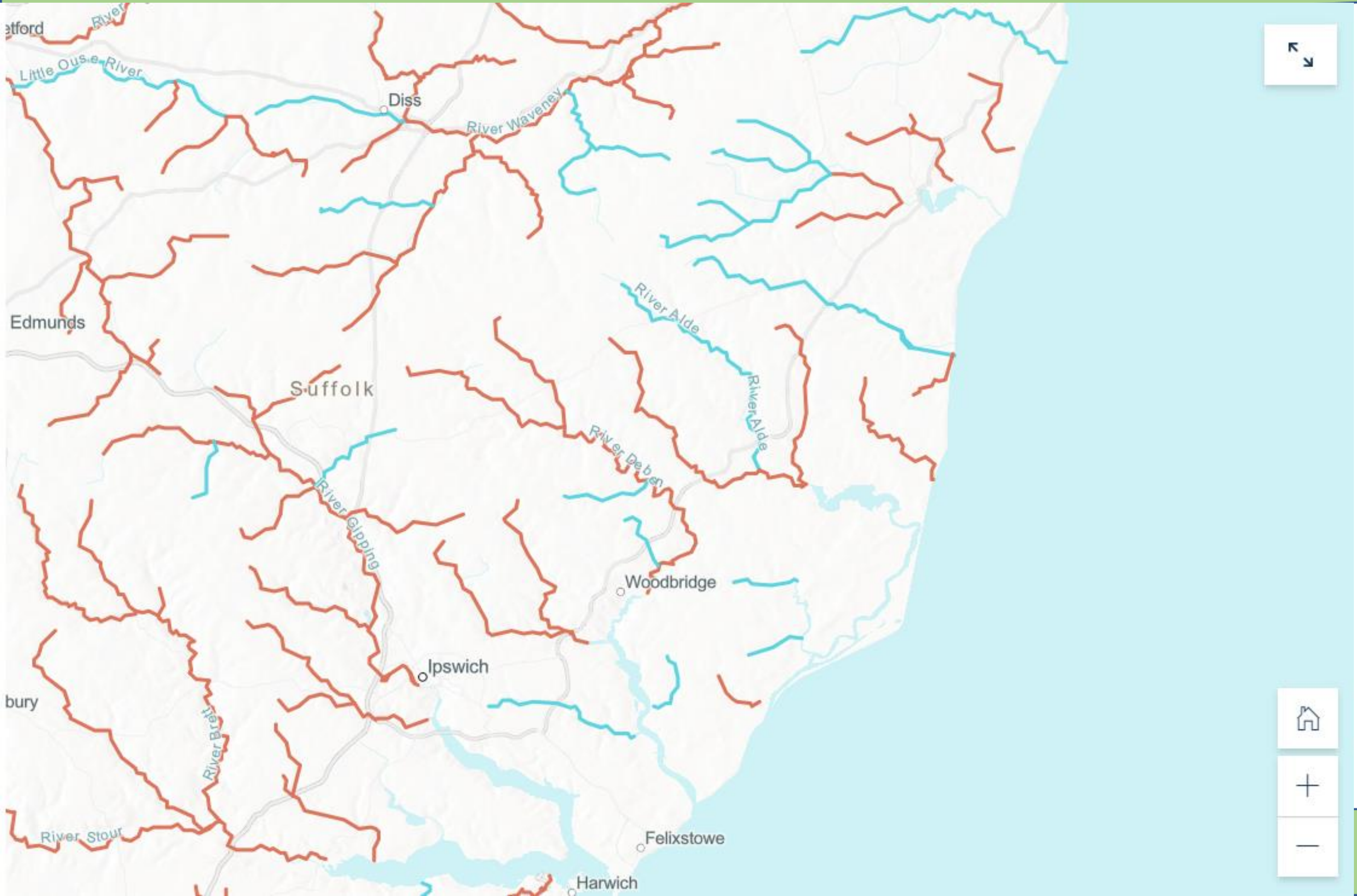
Low levels of organic pollutants entering the watercourses.

Ammonia standards for rivers (rivers categorised by type in accordance with paragraph 1(1) of Schedule 2)				
Total Ammonia as nitrogen (mg/l)				
(90 percentile)				
Type	High	Good	Moderate	Poor
1, 2, 4 and 6	0.2	0.3	0.75	1.1
3, 5 and 7	0.3	0.6	1.1	2.5

Bad Poor Moderate

Good High Not assessed

Phosphate



The appearance of phosphates in watercourses indicate nutrient enrichment and eutrophication.

This is mainly from water company discharge, agriculture diffuse pollution, sediment type, food processing and manufacturing.

River should below 0.1mg/l

[Open WIMS data]

Bad
Poor
Moderate
Good
High
Not assessed

Why we are not meeting 'Good' status by business sector

Significant water management issue	Changes to the natural flow and level of water	Invasive non-native species	Physical modifications	Pollution from abandoned mines	Pollution from rural areas	Pollution from towns, cities and transport	Pollution from waste water
Agriculture and rural land management	0	0	8	0	74	0	0
Domestic general public	0	0	0	0	0	0	0
Industry	0	0	0	0	0	5	0
Local & central government	0	0	12	0	0	0	0
Mining and quarrying	0	0	0	0	0	0	0
Navigation	0	0	0	0	0	0	0
No sector responsible	0	0	0	0	0	0	0
Other	0	0	13	0	0	0	0
Recreation	0	0	0	0	0	0	0
Sector under investigation	0	0	0	0	0	0	0
Urban and transport	0	0	1	0	0	8	0
Waste treatment and disposal	0	0	0	0	0	0	0
Water Industry	1	0	0	0	0	0	32
Total	**1**	**0**	**34**	**0**	**74**	**13**	**32**

Issues preventing waters reaching good status and the sectors identified as contributing to them. The numbers in the table are individual counts of the reasons for not achieving good status in water bodies.

There may be more than one reason in a single water body. Note, table does not include reasons for deterioration.

River Deben (DS Brandeston Bridge to Melton) reasons for failing to meet 'Good' status

Reason Type	SWMI	Activity	Category	Classification Element	More information
RNAG	Diffuse source	Poor Livestock Management	Agriculture and rural land management	Phosphate	Details
RNAG	Point source	Sewage discharge (continuous)	Water Industry	Phosphate	Details
RNAG	Physical modification	Other (not in list, must add details in comments)	Local and Central Government	Mitigation Measures Assessment	Details
RNAG	Diffuse source	Poor nutrient management	Agriculture and rural land management	Phosphate	Details
RNAG	Diffuse source	Riparian/in-river activities (inc bankside erosion)	Agriculture and rural land management	Phosphate	Details

RNAG = reasons for not achieving good status

What’s happening to help improve our rivers?

Essex and Suffolk Rivers Trust

Agricultural Industry -

Environmental Stewardship Scheme (ELS / HLS / ES)

Farming Rule for Water (FRW)

Farm Clusters (Sandling, Felixstowe peninsula)

Water Companies -

Local and regional initiatives – e.g. ‘Get Rivers Positive’ and ‘RiverCare and BeachCare’

Reducing CSO / permitted storm discharges (Environment Bill, 2019)

Manage phosphate discharges locally

Provide Catchment Advisor services for reducing diffuse pollution (agriculture)

Discharge and abstraction license compliance and performance / River Plans

Environment Agency -

/ Natural England

Enforcement and monitoring of waste, pollution and diffuse pollution.

Water Management (quality and quantities) – River Basin Management Plan / Abstraction Licencing Strategies

Fisheries, Pollution, Waste, Flooding, biodiversity duties and Nature Recovery Networks and Strategies

Catchment Sensitive Farming Advisors and Catchment Co-ordinators

Regulatory Enforcement and planning inputs (with Local Authorities)

River Trusts / Environmental Groups

Citizen science monitoring of ecological indicators and water quality (Freshwater Citizen Science — Freshwater BiologicalAssociation (fba.org.uk))

River Restoration to benefit habitat and species, partnership working across catchments, providing information and advice. Invasive species controls

Working with landowners, NGO’s, Executive non-departmental public body (EA, NE), Local Authorities etc.. for better river and riparian habitats and natural flood management.

Other Water Related Initiatives / Strategies in East Suffolk you should be aware of..

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Water For Tomorrow - Home - Water for Tomorrow (water-for-tomorrow.com)

Reclaim the Rain - Reclaim The Rain

WRE - Emerging Water Resource Plans - WRE-Emerging-Plan.pdf

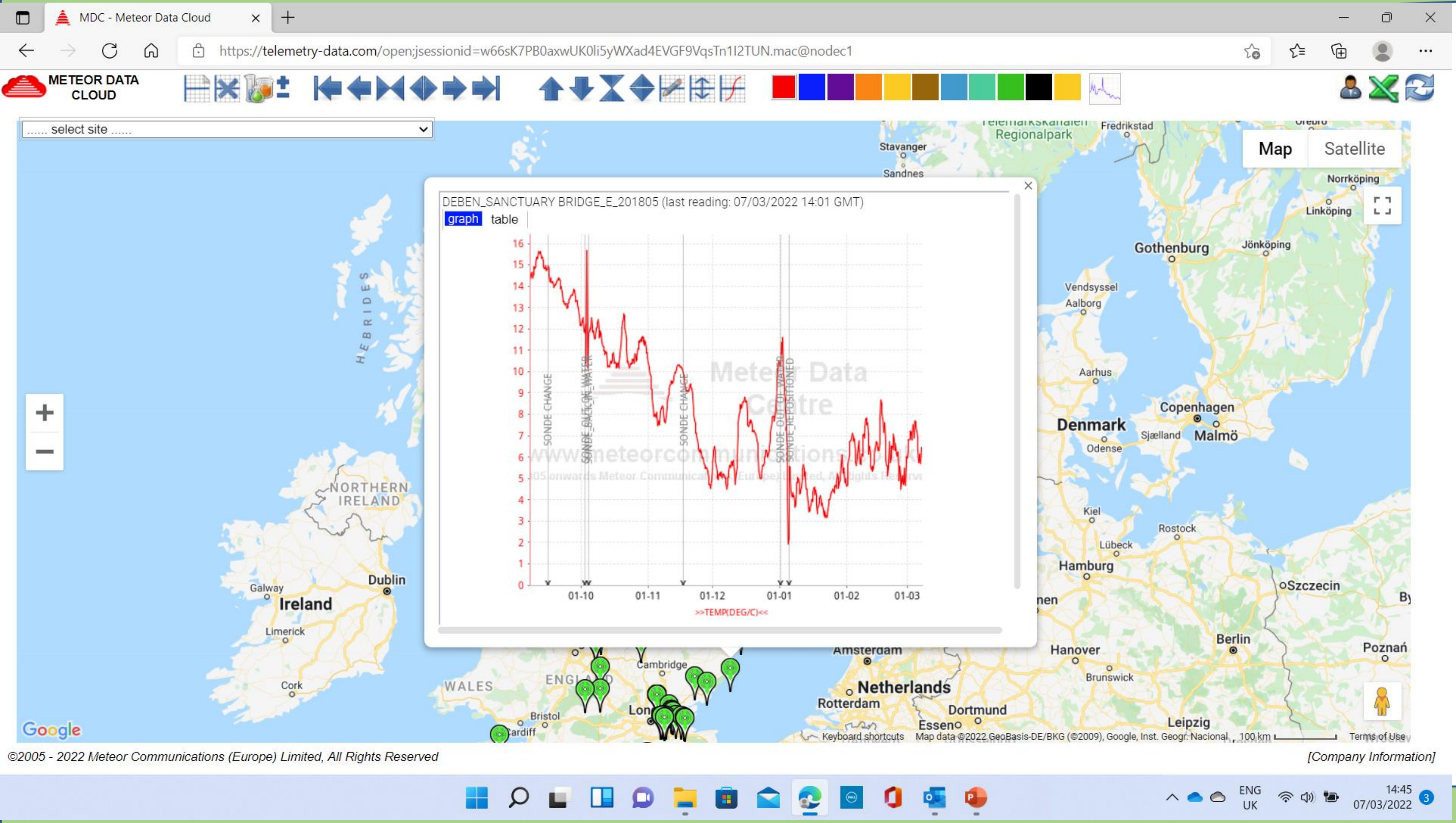
ESW Water Resources Plan - Water Resources Management Plan (nwg.co.uk)

Groundworks East - Yellowfish - Engaging with communities - Yellow Fish - CaBA (catchmentbasedapproach.org)

SCC - Fresh4C's - Home - FRESH4Cs

FWAG – Water Sensitive Farming Initiative - Water Initiative – Suffolk Farming Wildlife Advisory Group (suffolkfwag.co.uk)

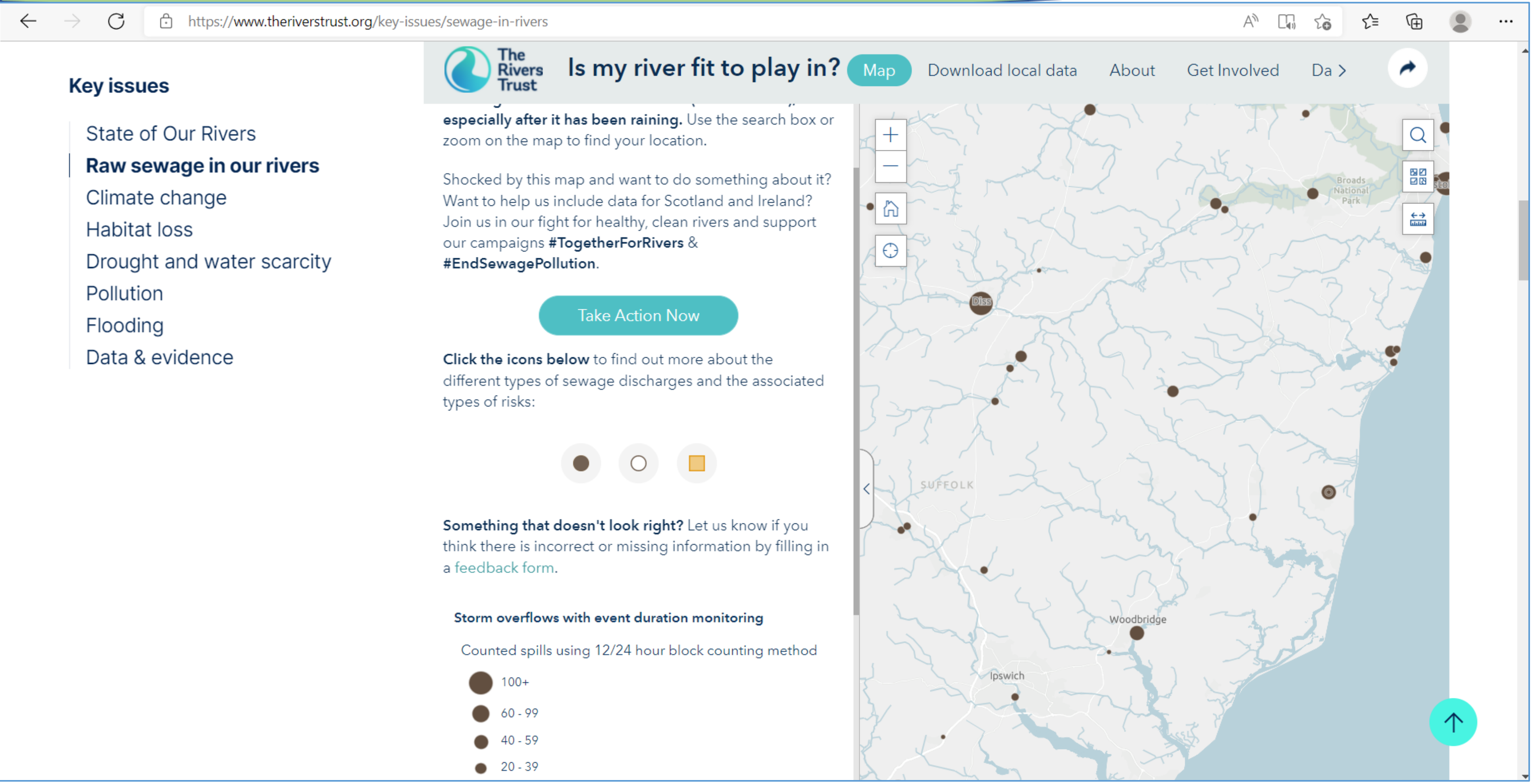
Water Quality Data



[MDC - Meteor Data Cloud (telemetry-data.com)](https://telemetry-data.com)

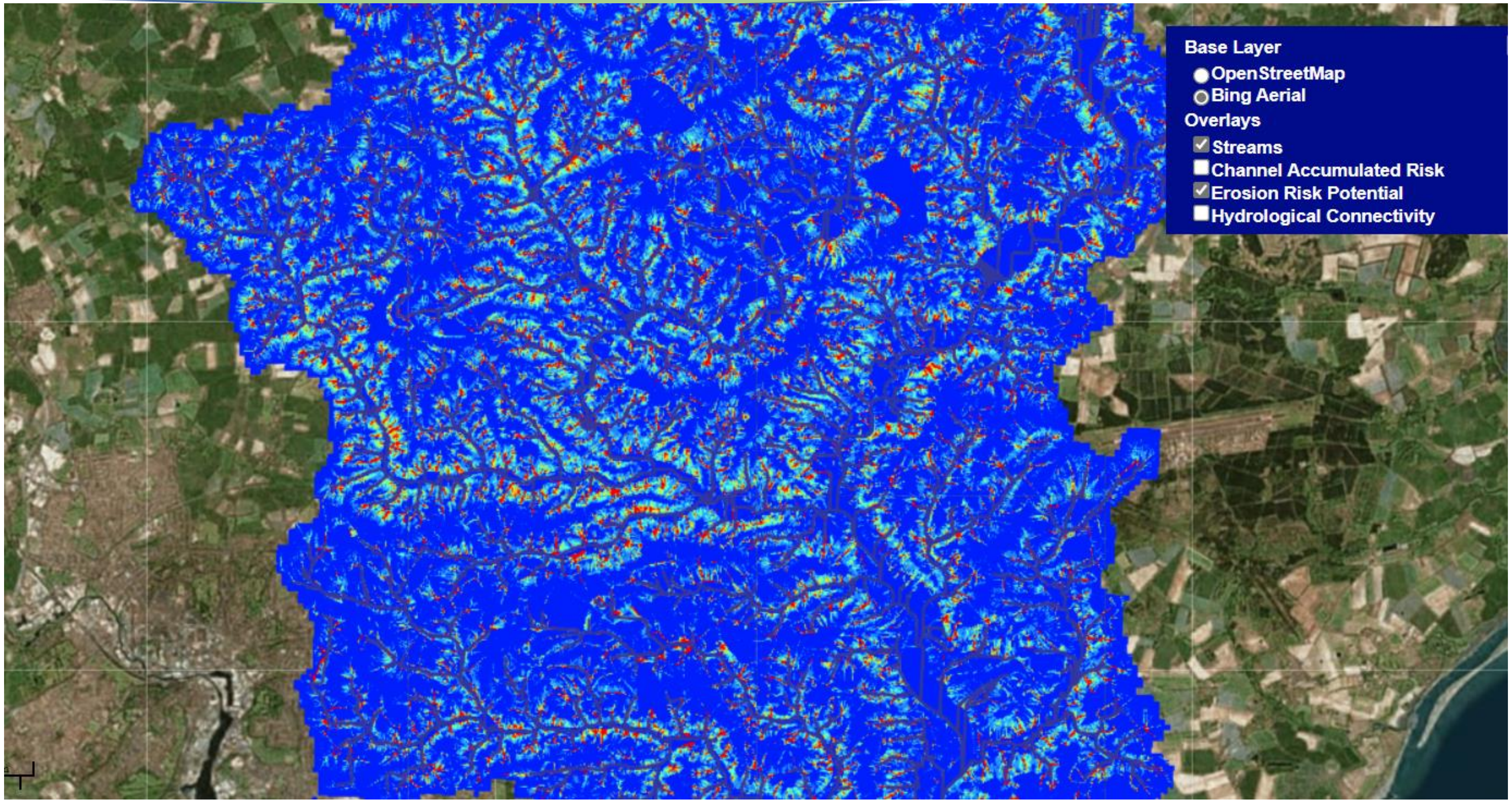
Raw Sewage in Rivers

Essex and Suffolk Rivers Trust



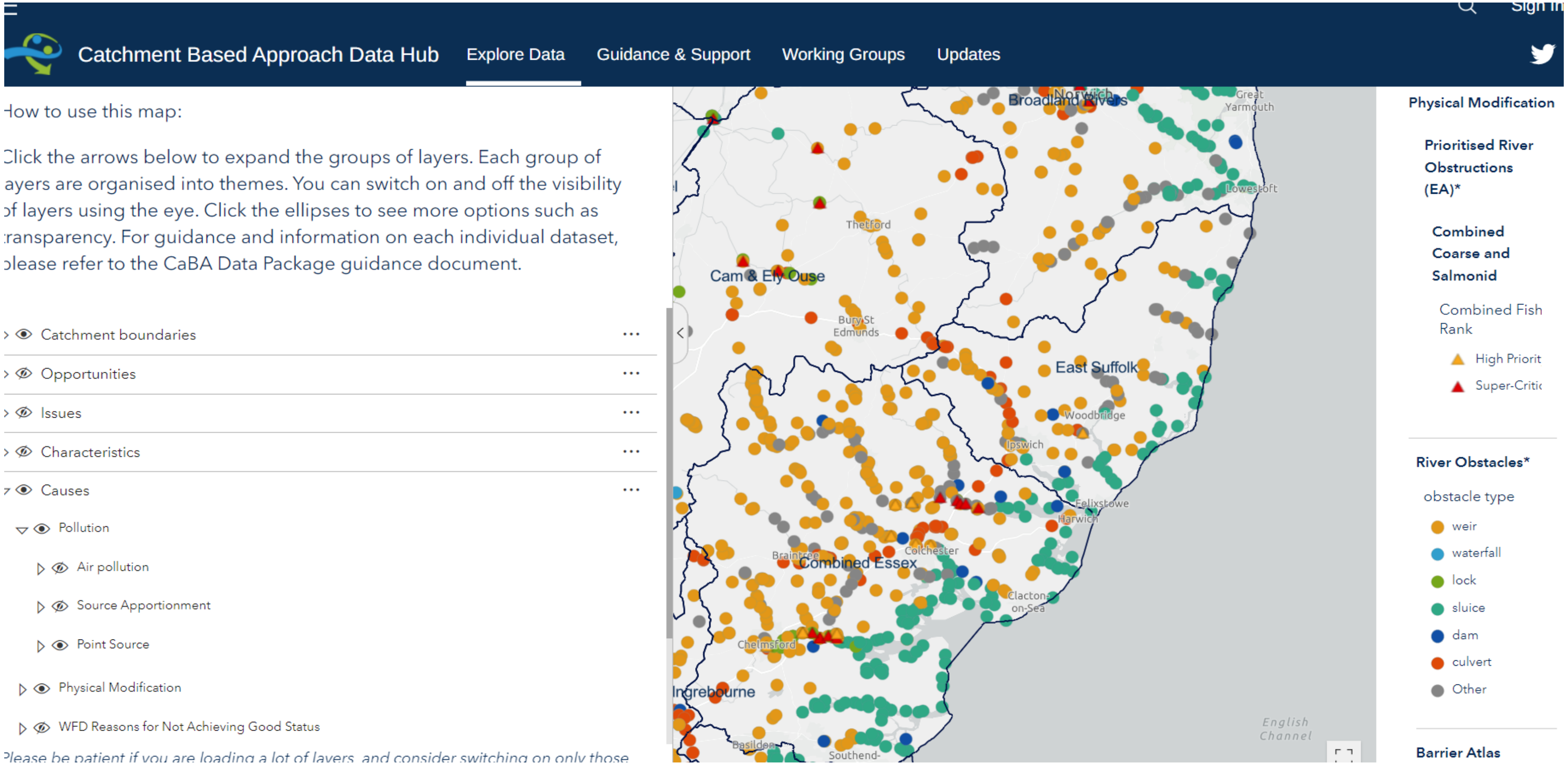
[Raw sewage in our rivers | The Rivers Trust](https://www.theriverstrust.org/key-issues/sewage-in-rivers)

Sediment Transfer Potential (SCIMAP)



SCIMAP

CaBA – Data Hub



Barrier Altas

Impound river section

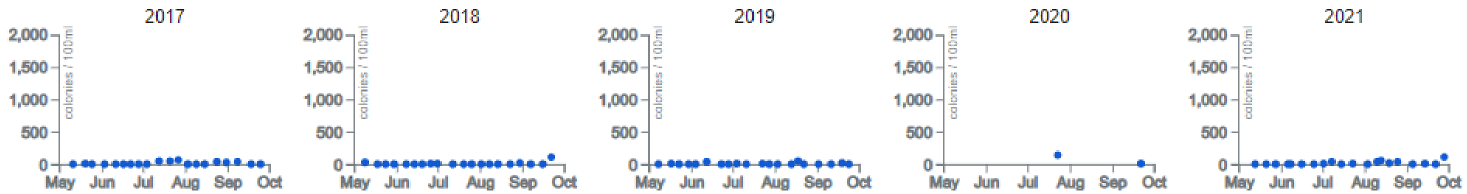
Reduce natural river morphological process

Barriers to migratory fish e.g. eels, sea trout, sea lamprey

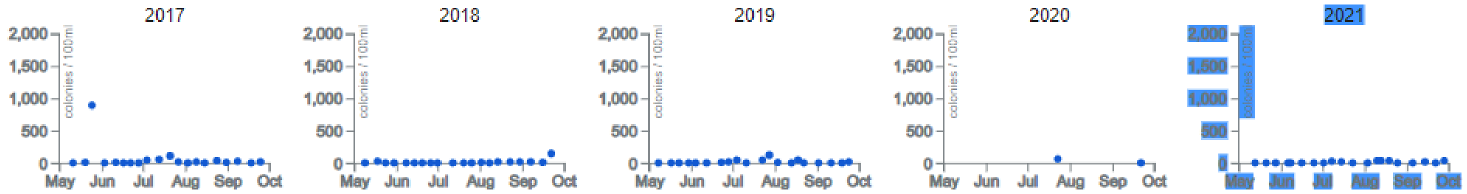
Increase sedimentation

Increase vegetation dominances

Intestinal Enterococci (IE)

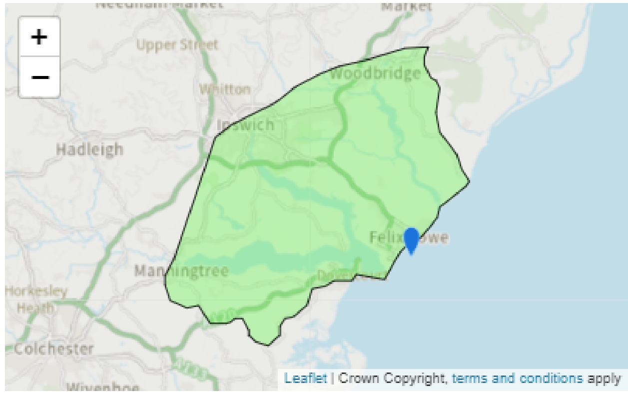


Escherichia coli (EC)



Catchment description

The River Deben is 5 km to the north and drains a large mixed catchment. The Orwell and Stour estuary is 4km to the south and drains a large catchment containing some industry and the Port of Felixstowe.



Bathing water sampling location   Surface water catchment boundary

Pollution risk forecasts

There are no active pollution risk forecasts made at this bathing water. However any bathing water has the potential to be affected by a pollution incident and if this occurs a pollution risk warning with associated advice against bathing will be issued on this website.

Visible pollution

Environment Agency samplers make observations of litter present on the beach at every visit, this includes assessments of sewage debris, litter and tar. At Felixstowe North for the four year (2018-2021) assessment period where data is available, sewage debris was not noted at this site. Litter was assessed as being sufficient to be objectionable for 2% of visits, with 64% of visits noting the presence of litter. Tarry residue was not noted at this site.

Pollution management

It is the Environment Agency role to drive improvement of water quality at bathing waters that are at risk of failing higher standards. It is natural for water to run off the land to the sea. Water quality at a bathing water is dependent upon the type and area of land (the catchment) draining to the water and the activities undertaken in that catchment.

Working with water companies

History

In 1997/8 Anglian Water upgraded the town's sewerage system and removed any sewage outfalls to the sea.

Sewage treatment works outfalls

Discharges from sewage treatment works have improved substantially in England since the 1980s.

The new sewage treatment works at Felixstowe was commissioned by Anglian Water in 1997. The fully treated effluent discharges to the Orwell Estuary but doesn't affect bathing water compliance.

Essex and Suffolk Rivers Trust

- [Bathing water quality (data.gov.uk)]()

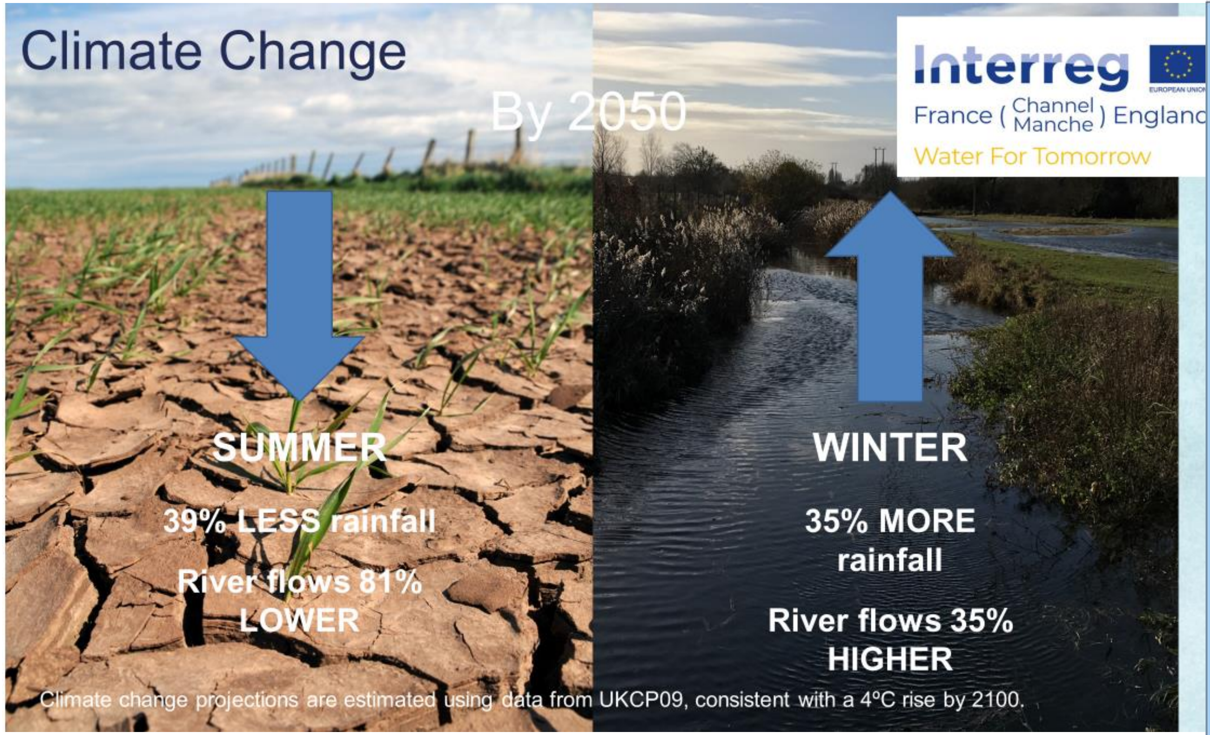
TOPSOIL Interreg North Sea Region European Regional Development Fund EUROPEAN UNION

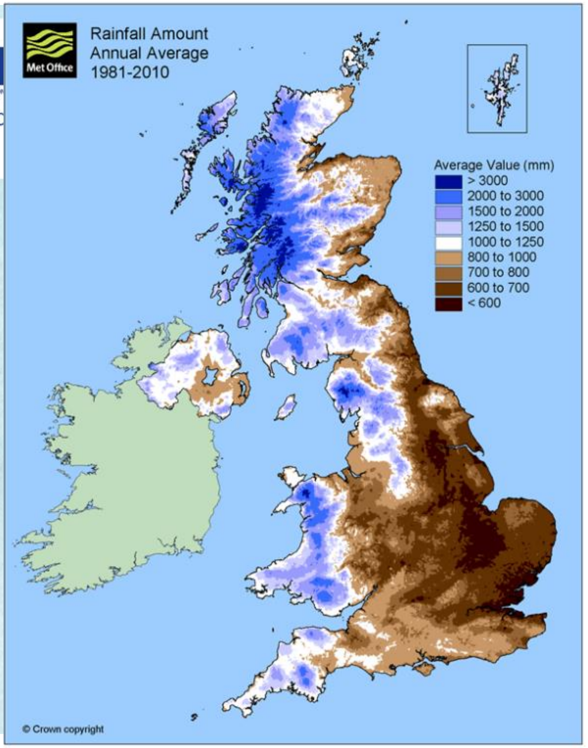
The biggest water issue in East Anglia
WATER AVAILABILTY!!!

The EA prediction for East Anglia a worst-case scenario of a deficit of 2,267 Ml/day. Best-case 703 Ml/day

Sir James Bevan, (EA CEO), in 2018 said

*"Around **25 years from now,** where those [demand and supply] lines cross is known by some as the '**jaws of death**' – the point at which **we will not have enough water to supply our needs**, unless we take action to change things,"*





Based on the predict 4°C by 2100

Sir James Bean (2022) - that there are a number of “inconvenient truths” that we need to confront to make progress. He says that “Nothing in life is free, and that includes better water quality. If we want it, it will have to be paid for” and “the first people who should be paying to protect and enhance our waters are the polluters themselves. At the moment they aren’t.”

[Water: Myths, Facts and Inconvenient Truths - GOV.UK (www.gov.uk)]

Thank You

Andy Went

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