

# Fish distribution map based on hydro acoustic survey data from the River Bure, Norfolk; October 2019.

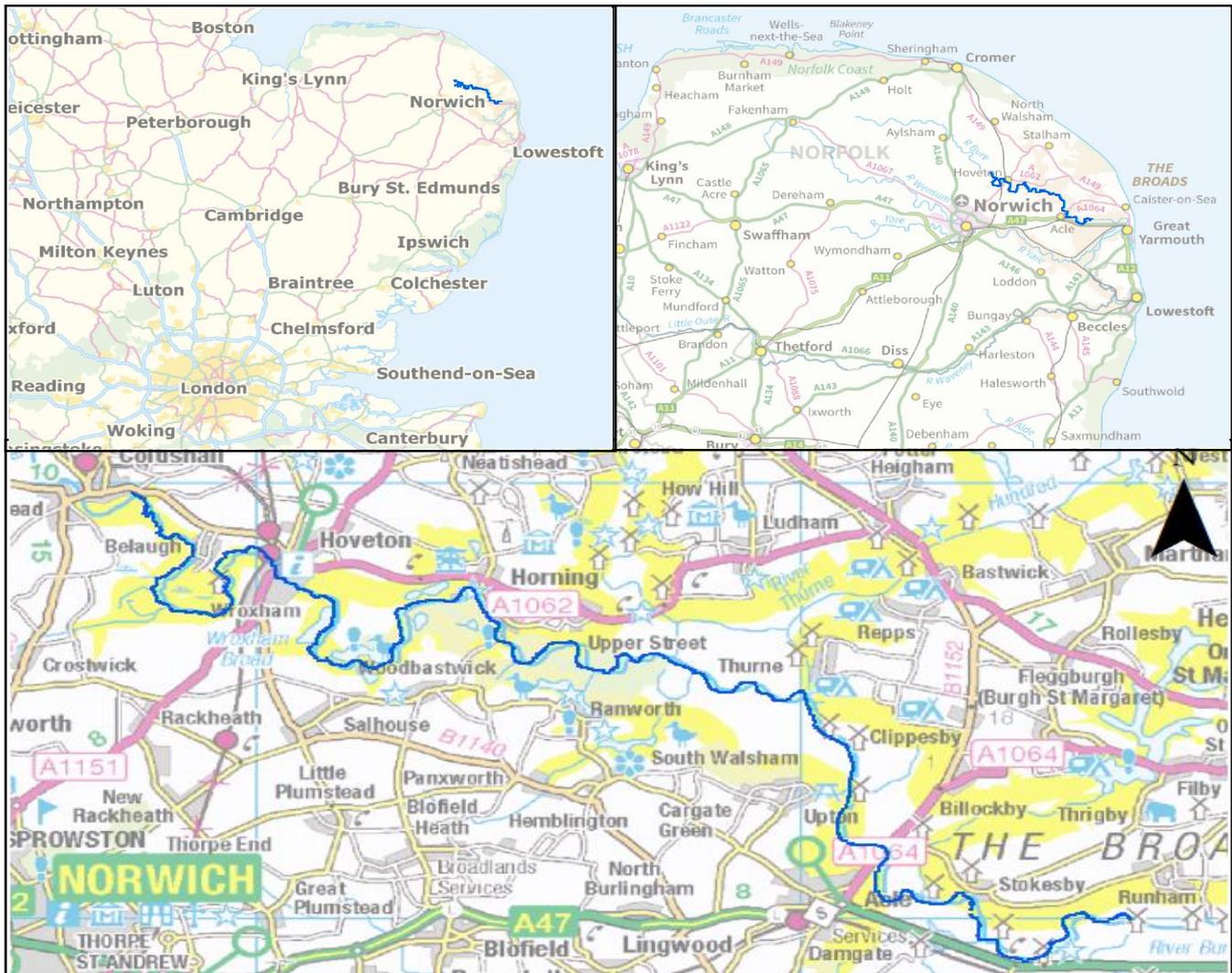


Figure 1: Maps indicating location of River Bure survey in East Anglia, UK; county of Norfolk

Originating team	Essex, Norfolk & Suffolk
Author(s)	Jeff Compton
Date	17/11/2020
Checked by	J Stansfield
Sign-off date	19/11/2020

# Aim

To provide an indication of freshwater fish distribution in 2019 for the lower reaches of the River Bure.

# The River

The maps on the frontispiece show the location of the River Bure within Southeast England, East Anglia and Norfolk. The river flows for 94 km from its source to Great Yarmouth, where it discharges to the sea. The survey covers 36 km of the lower river between Wroxham and Five Mile house, downstream of Acle. Between Acle and Great Yarmouth the river sits above surrounding marshland, is deep, has piled banks and constrained width. Upstream of Acle the river widens, is still deep and meanders through extensive stands of Norfolk reed (phragmites) and drained marshland. Daily fluctuations in level and flow result from the tidal connection to the sea. Salinity concentration increases towards the river mouth. In addition, periodic tidal surges advance saline concentration far up river. The extent of saline incursion depends on the size of the tide driving it. Sand and gravel substrates are visible on the riverbed through the clear water. Submerged macrophyte increases upstream of Horning increasing further around and above Wroxham.

# Summary

Figure 2 provides an overview of the fish distribution along the River Bure based on hydro acoustic data obtained overnight 9<sup>th</sup> ~ 10<sup>th</sup> October 2019. Data, collected on an upstream run starting at Five Mile house, and terminating at Wroxham are used to produce the density and distribution map. Each circle represents fish density / 1000 m<sup>3</sup> along the survey transect. The colour of the circle relates to the fish density / 1000m<sup>3</sup> recorded.

Boatyards, surveyed in early 2019, provide a species assembly present in the river, (hydro acoustic methods are unable to differentiate species directly). Boatyards are chosen as most species overwinter in them taking advantage of the cover, and the slightly warmer water present, rarely venturing out of the shelter they offer throughout winter.

During summer and autumn, boatyards and off river refuges offer respite from predation and the turmoil evident during daylight on the main river. Most fish venture into the main river at dusk returning at dawn. This is the main reason why Hydro acoustic surveys are conducted during the hours of darkness in autumn and accounts for the higher densities recorded near to such features at the time of survey.

Not all fish use off river refuges. Larger fish that are less prone to predation and able to cope with the higher flows more common in winter flood events stay in the river throughout the year.

Consequently angling match-catch results are vital to establish which other species are present in the river and provide a guide to the current size of the more mature individuals in the population.

- Roach and bream are the predominate species of fish recorded from the boatyard surveys.
- In 2019, 10 species of freshwater fish are present in the river. Boatyard surveys account for 5 of the 10 species (bream, perch, pike, roach & rudd). Angling results identify the remaining 5 species (chub, dace, eel, gudgeon & ruffe) along with the average size of both bream and roach.
- Angling results indicate the majority of bream in the river weigh 2 kg or thereabouts, while the even greater numbers of roach are between 0.12 ~ 0.25 kg
- Angling catches also indicate that saltwater species bass and mullet are present in the river with captures recorded as far upstream as Brundall for mullet, while bass are regularly caught downstream of Thurnemouth. Both species would be present in the river at the time of survey.
- Uneven fish distribution is evident along the survey route. The majority of fish (greatest number of higher density circles) inhabit the upper portion of the river.
- In keeping with previous survey results (2014, 2015, & 2016) the highest fish densities tend to occur near to boatyards, Broad entrances and dykes; features most often found in the upper section of the river (see above).
- Hotspots (fish density greater than 250 fish 1000 m<sup>-3</sup>; blue and black coloured circles) are evident upstream of Horning. Below Thurnemouth, fish density decreases (between 1 and 25 fish /1000 m<sup>3</sup>). The short section of missing data, below Upton is due to GPS power failure.



If you would like to discuss the information presented in this report, please contact:

- Jeff Compton. Monitoring officer, Assessment and Reporting
- 03708 506 506
- [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)

If you would like to discuss future management of this fishery, please contact:

- Kevin Grout, Fisheries specialist, Fisheries, Biodiversity and Geomorphology
- 03708 506 506
- [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)

Before you go fishing don't forget:

- You must have a valid [Environment Agency rod licence](#) and permission from the fishery owner;
- You must comply with the [fisheries byelaws](#);
- The coarse fish close season (15th March to 15th June inclusive) applies to all rivers, streams and drains in England and Wales but not most stillwaters. Stillwater fishery owners can still have their own close season and rules, so please check with them before setting out.

Report illegal fishing:

If you see any fishing, netting or trapping you think may be illegal, please do not tackle it yourself. Call us immediately on 0800 80 70 60 and tell us:

- Exactly where the alleged offence is taking place;
- What is happening;
- How many people are involved and their descriptions;
- The registration numbers of any vehicles involved.

If you prefer to remain report an environmental crime anonymously call Crimestoppers on 0800 555 111 or <https://crimestoppers-uk.org/give-information/give-information-online/>.