

Fish population survey report

River Avon 2017

This report provides a summary of results from recent fish population surveys on the River Avon between Evesham and Tewkesbury. The surveys were carried out to assess the health of the river and enable successful management of our principal fisheries.



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Checked by	Ros Challis
Sign-off date	May 2018

Summary

- Two sites on the River Avon were surveyed by micromesh seine netting (fry surveys) in September. We also have results for hydroacoustic survey between Tewkesbury and Strensham in July, an EQSD survey near Avon Marina in May and an endocrine disruptor survey at Hampton Ferry in November.
- Nine species of fish were recorded and a total of 1027 fish were captured during fry surveys;
- Bleak, chub and roach were the most widespread species, being recorded at all sites surveyed;
- Bleak were the most numerous species on the fry surveys, roach were most numerous on EQSD and endocrine surveys (not a surprise as target species).

Site locations

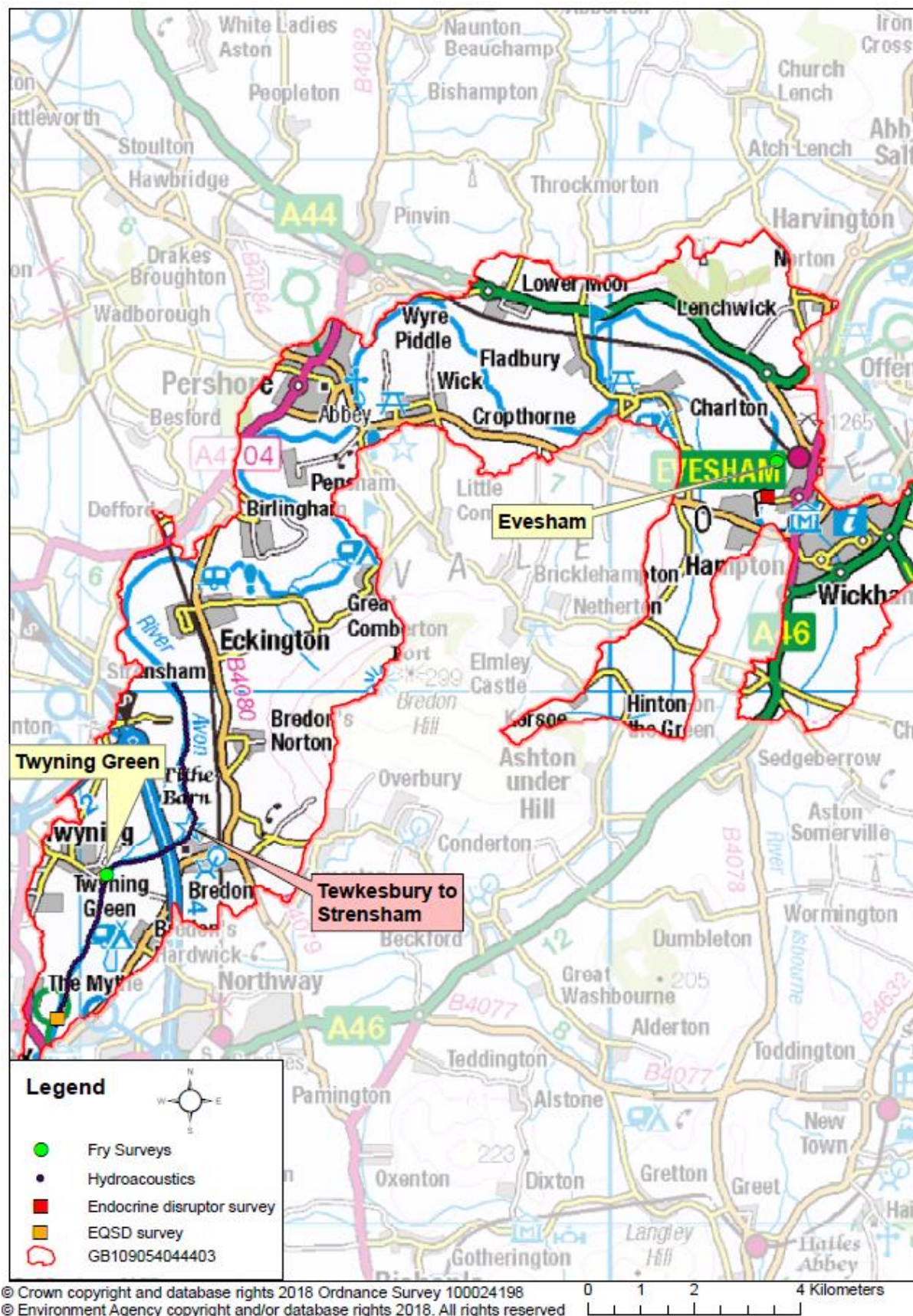


Figure 1 Map showing survey locations for River Avon 2017

customer service line
03708 506 506

incident hotline
0800 80 70 60

floodline
0345 988 1188
0845 988 1188

Survey results

Fry Surveys

The 2017 fry surveys on the River Avon were undertaken using the same methodology. Twenty five metre long micromesh seine nets were used to catch fry in shallow sections of the river. Due to the irregular nature of the river bank it was impossible to have a standard area that was sampled at each site, hence in the results section numbers of fish caught are recorded and not densities. Results from fry surveys can vary considerably depending on weather conditions on day of survey, flow and water temperature. The 2017 surveys were undertaken in ideal conditions for fry netting.

Table 1 Results from fry surveys undertaken on River Avon during 2017 (size range is in mm)

		Evesham	Twynning Green
Chub	Number caught	84	46
	Size range	19-41	24-70
Dace	Number caught	0	13
	Size range	-	53-75
Bleak	Number caught	49	542
	Size range	12-35	21-44
Common bream	Number caught	0	7
	Size range	-	33-50
Gudgeon	Number caught	5	14
	Size range	19-46	29-51
Roach	Number caught	121	119
	Size range	23-42	34-53
Perch	Number caught	1	8
	Size range	67	53-128
Pike	Number caught	0	1
	Size range	-	236
Minnow	Number caught	17	0
	Size range	21-42	

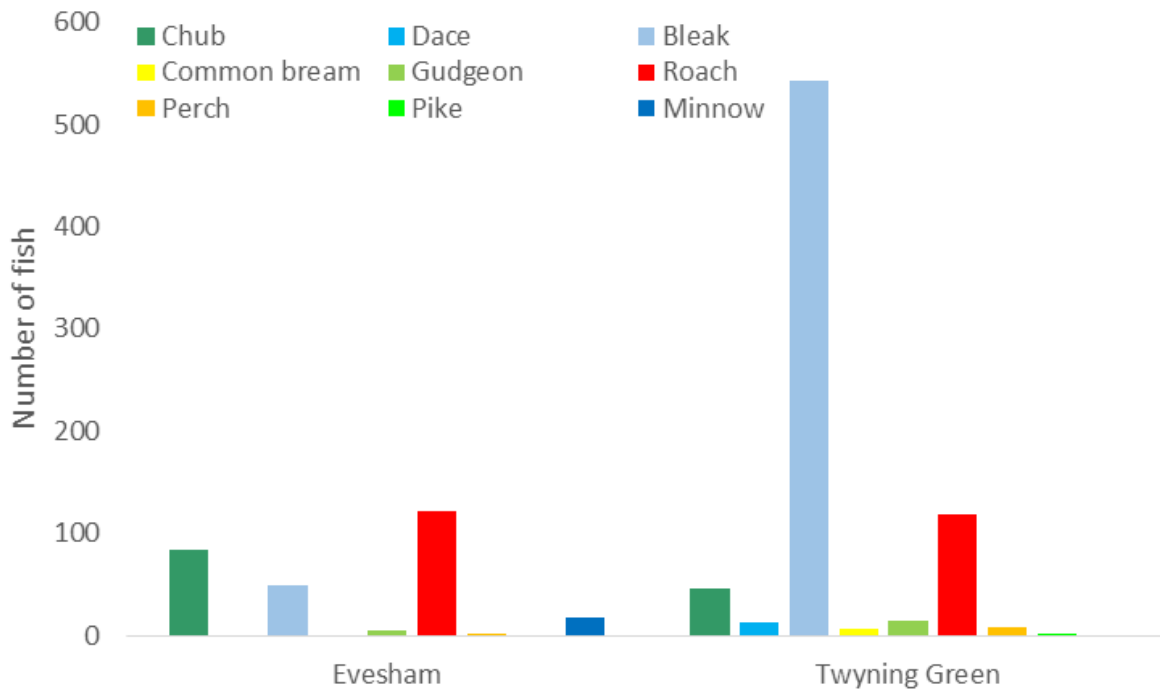


Figure 2 Number of fish caught during fry surveys on River Avon during 2017

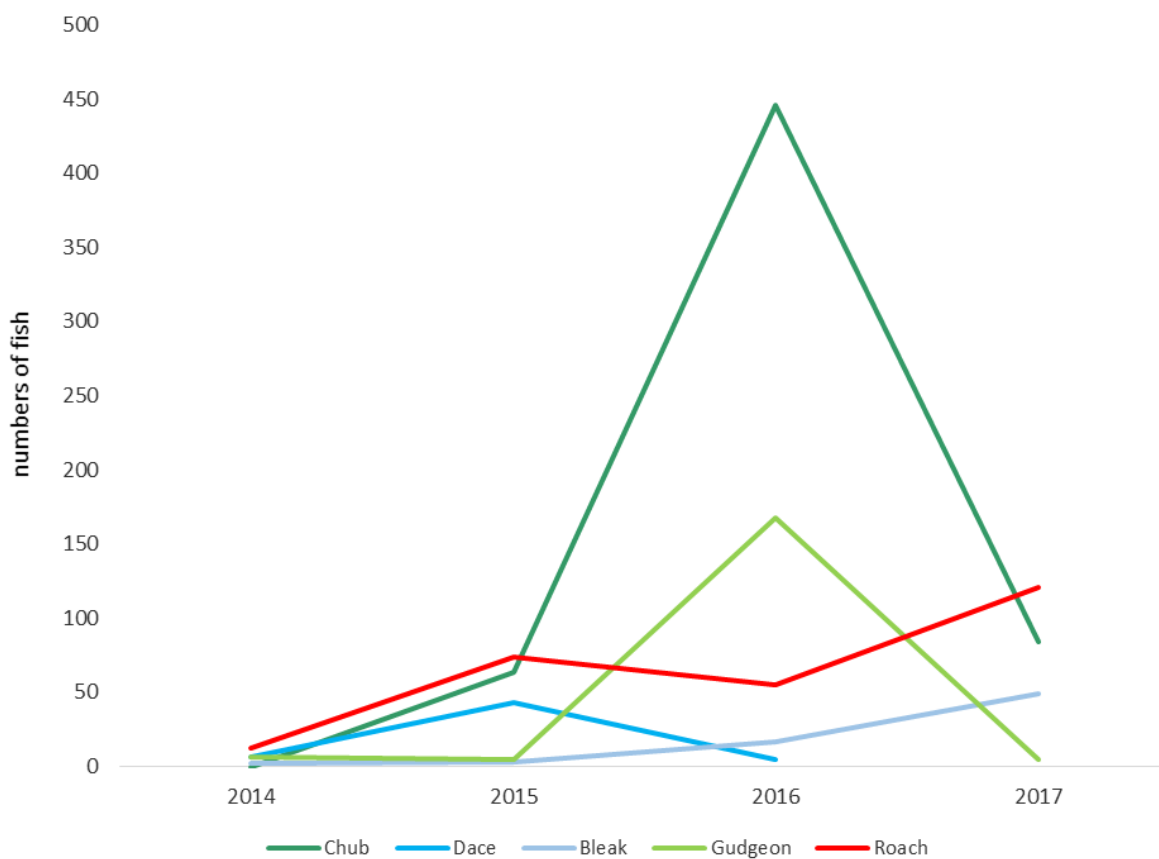


Figure 3 Number of fish caught at Evesham since fry monitoring began in 2014 (for main species)

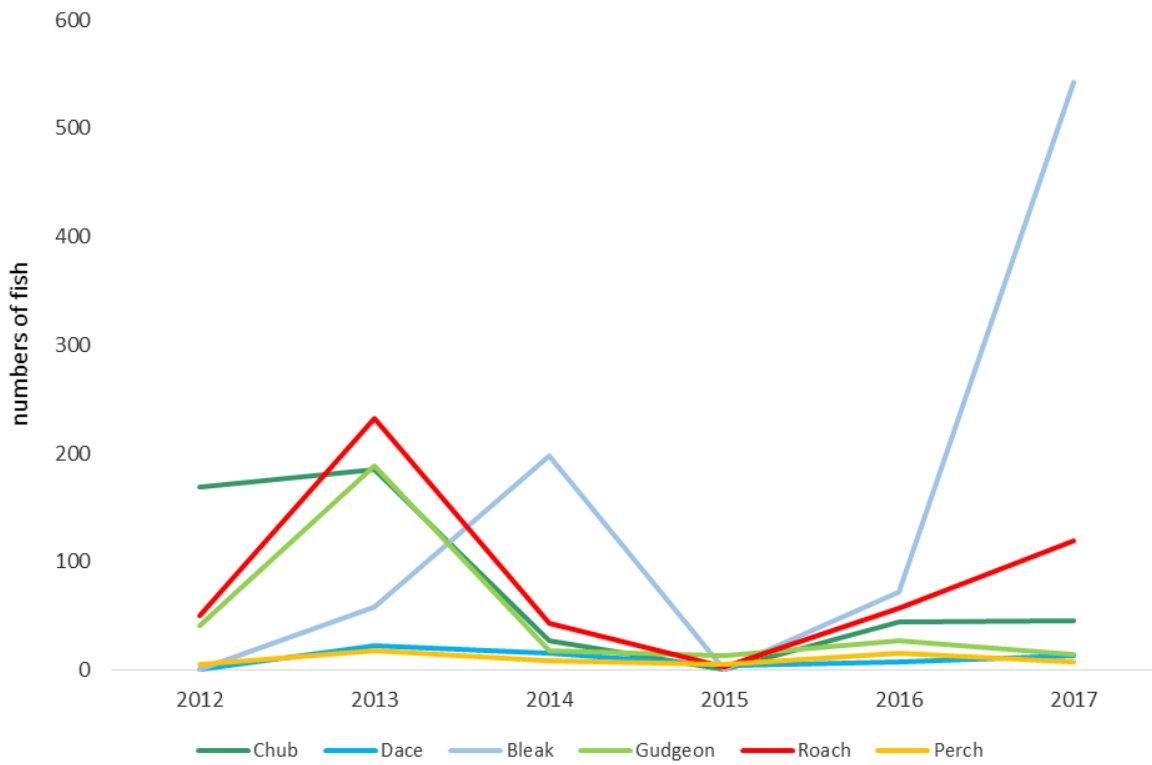


Figure 4 Number of fish caught at Twynning Green since fry monitoring began in 2012 (for main species)

Hydroacoustics

Hydroacoustic surveys are undertaken at night as fish are more likely to be in the open water. The main drawback with this methodology is that it will only give you an estimate of fish density. It is impossible to say which fish species are picked up in the survey and very difficult to estimate size/weight. However, it is a non-intrusive sampling methodology and quite long sections of a river can be surveyed in one night.

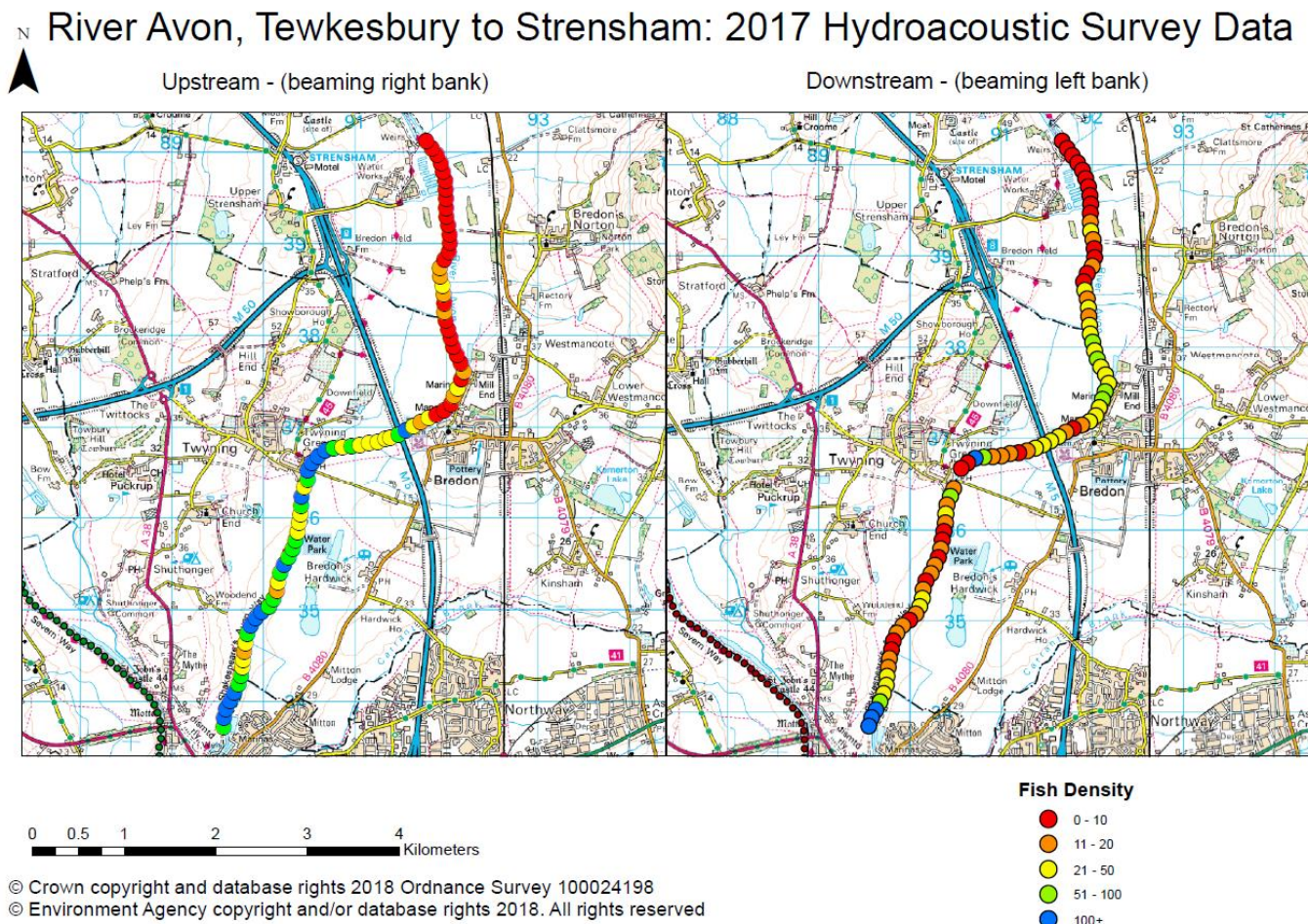


Figure 5 Hydroacoustic survey results for River Avon Tewkesbury to Strensham 2017.

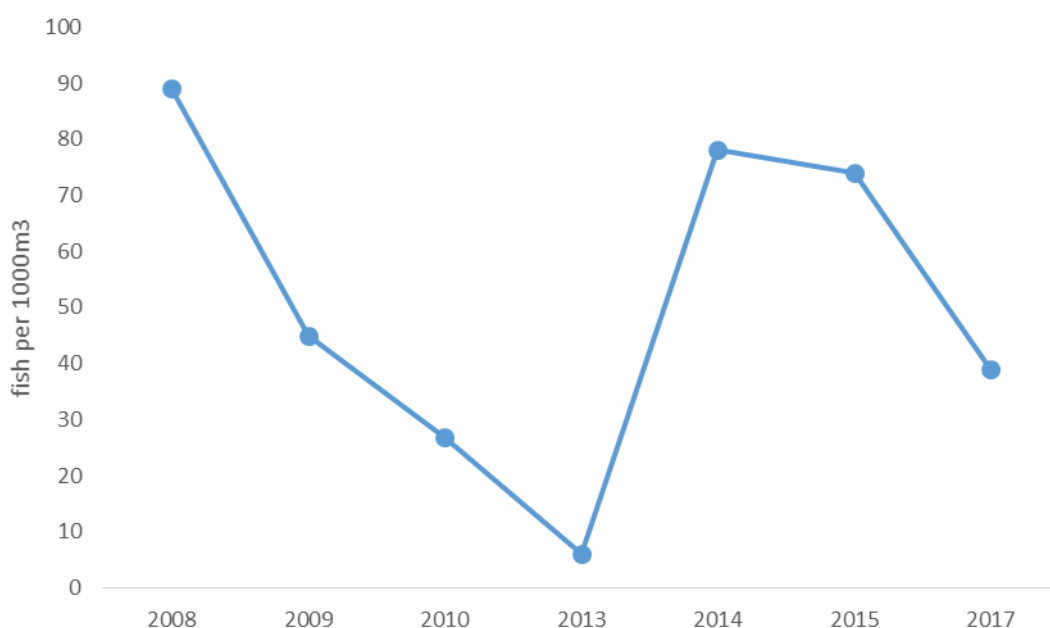


Figure 6 Fish densities from hydroacoustic surveys on River Avon Tewkesbury to Strensham since 2008

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EQSD

The Environmental Quality Standards (EQS) Directive is a daughter directive of the WFD and focuses on limiting the input of certain hazardous substances to the water environment. For this fish are caught and then tested for bio-accumulation of certain hazardous substances. The target species for these surveys in the River Avon are roach. Fish were caught using electric fishing from a boat. All fish caught by this method were identified, counted and measured.

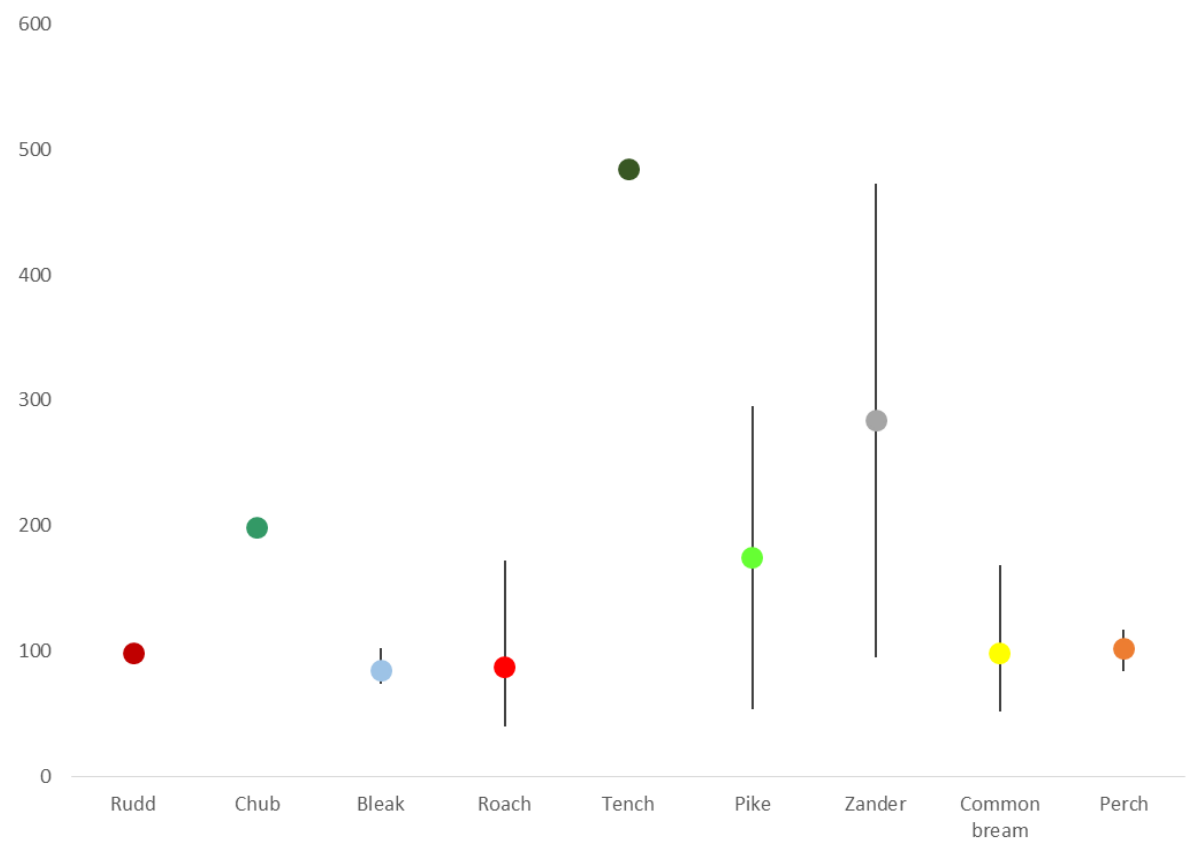


Figure 7 Size range of fish (mm) caught during EQSD survey at Tewkesbury Marina (marker is mean, lines show minimum and maximum)

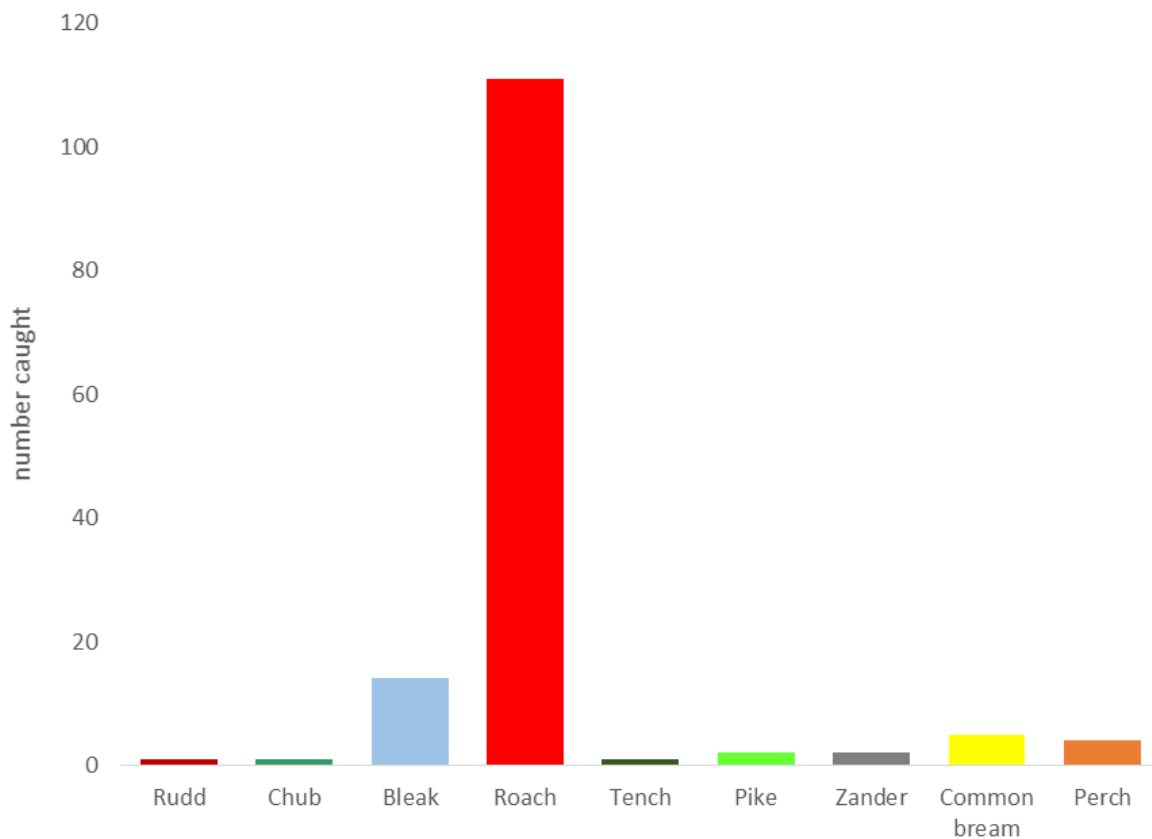


Figure 8 Number of fish caught during EQSD survey at Tewkesbury Marina May 2017

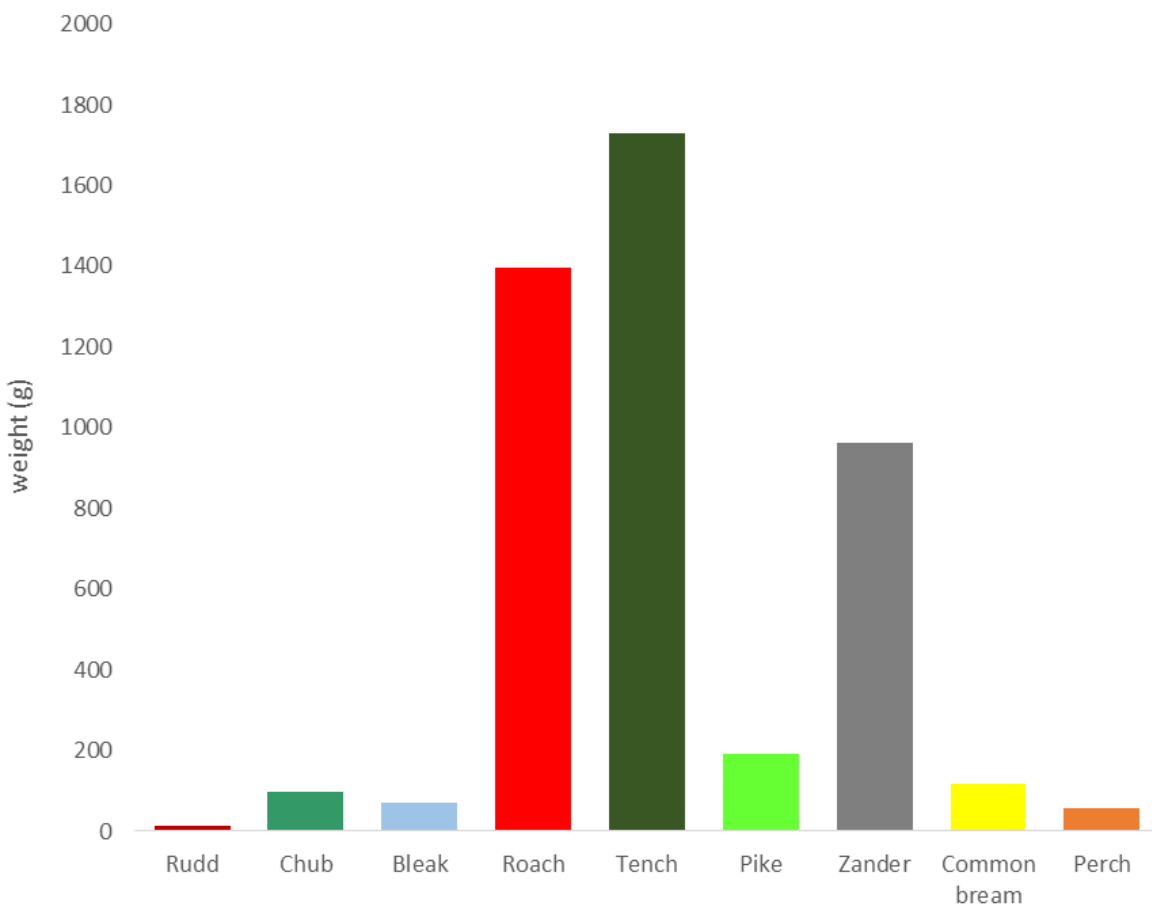


Figure 9 Weight of fish caught during EQSD survey at Tewkesbury Marina May 2017

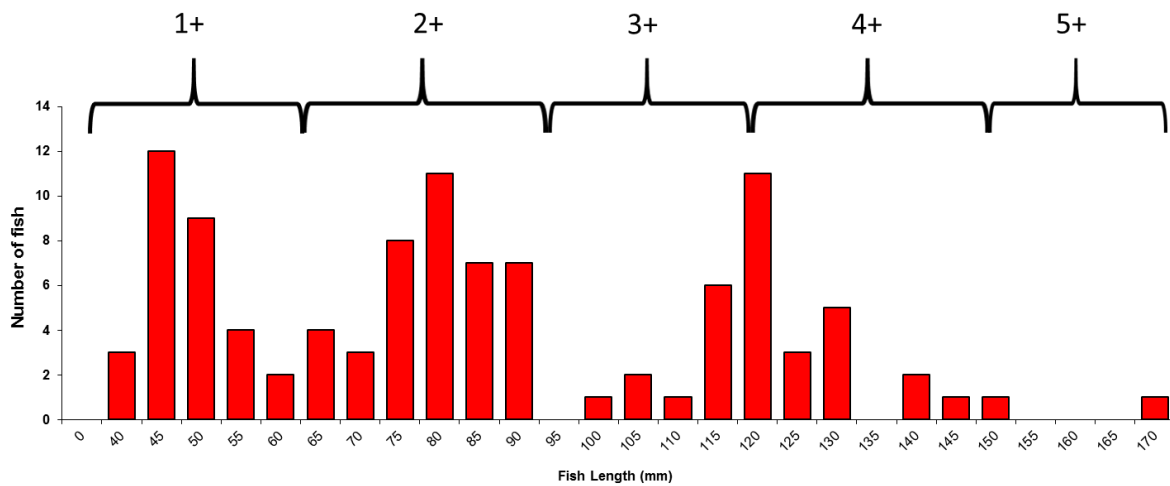


Figure 10 Length frequency distribution histogram for roach caught during EQSD survey 2017. Age data from scales collected

Endocrine disruptor

An endocrine disruptor is a substance that alters the function of the hormone system. This survey was part of a wider national programme that was being undertaken by Brunel University studying oestrogenic effects they might have on fish. Roach were the target species for this survey and were collected by electric fishing from a boat at Hampton Ferry on River Avon.



Figure 11 The River Avon at Hampton Ferry. Limited bankside habitat for fish

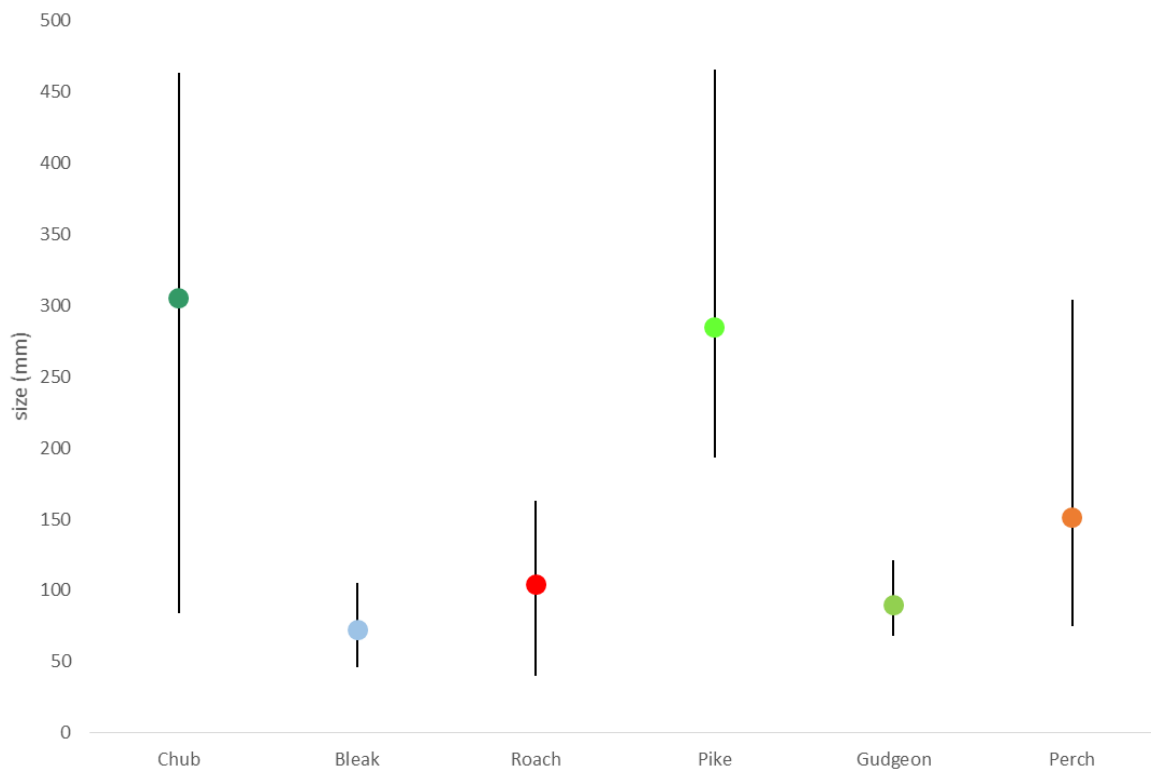


Figure 12 Size range of fish (mm) caught during endocrine disruptor survey at Hampton Ferry (marker is mean, lines show minimum and maximum)

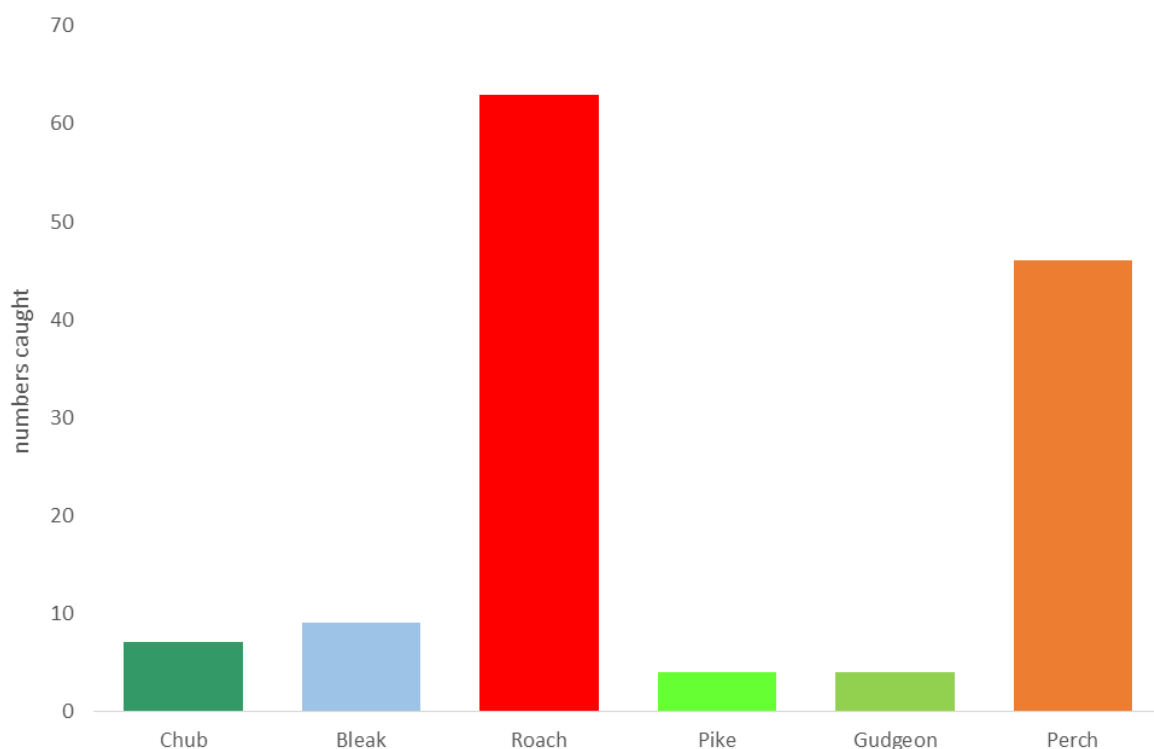


Figure 13 Number of fish caught during endocrine disruptor survey at Hampton Ferry November 2017

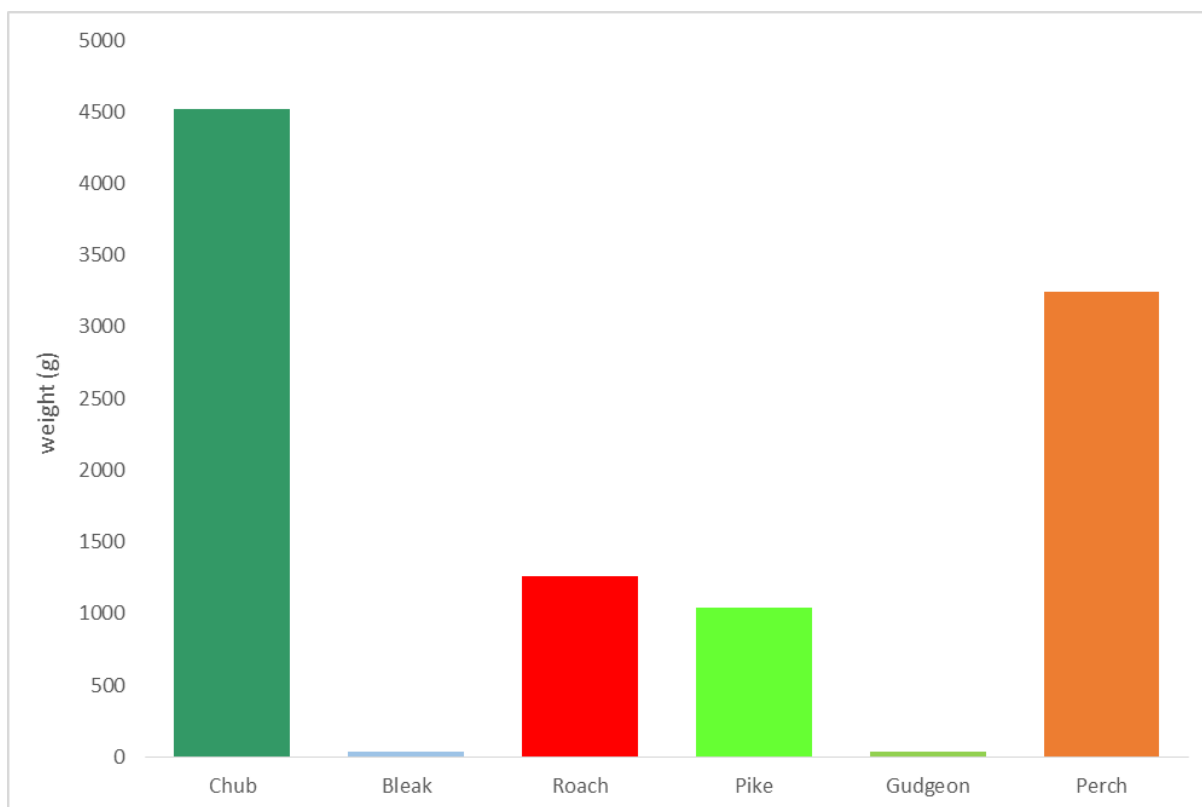


Figure 14 Weight of fish caught (g) during endocrine disruptor surveys at Hampton Ferry November 2017

WFD Classification

All the surveys within this report are within the furthest downstream waterbody on the River Avon. Due to the size of the watercourse it is not possible to survey this section for fish using the WFD agreed methodology, hence no fish classification.

Water body ID	Water body name	Fish status	Driving element	Overall status
GB109054044403	Avon conf Workman Br, Evesham to conf R Severn	N/A	Phosphate	Moderate

Health of fish population

- Fry surveys during 2017 were dominated by the following species: roach, chub and bleak (94% of fish caught). Compared to historical data roach and bleak numbers appear to be on the increase at both sites, although chub and dace were generally lower.
- Hydroacoustic survey for 2017 showed reasonably high fish densities in the lower section of the waterbody (downstream of M5 road bridge). Average fish density for the whole section was lower than the previous two years;
- The EQSD survey around Tewkesbury Marina targeted roach, so not surprisingly they were the most numerous species. However, one large tench outweighed all the roach caught. The majority of the roach caught were under 100mm in length;
- The endocrine disruptor survey at Hampton Ferry was also targeting roach and not surprisingly they were the most numerous species caught. However, a lot more perch (46) were caught here than down at Tewkesbury;
- There are a number of pressures that could be impacting the fish population on this section of the River Avon. Water quality issues are due to a mixture of point and diffuse sources (urban and rural) and physical modification including barriers to migration are an issue.

Next survey

The EQSD survey will be repeated in May, hydroacoustics in July and fry surveys in September

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

- Martin Fenn – Senior Environmental Monitoring Officer, Assessment and Reporting, Shrewsbury
- 03708 506 506
- enquiries@environment-agency.gov.uk

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

- Sam Chapman, Fisheries, Biodiversity and Geomorphology, Tewkesbury
- 03708 506 506
- 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/>.