

Fish population survey report

River Severn 2017

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



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Sign-off date	May 2018

Summary

- Five sites on the River Severn were surveyed by micromesh seine netting (fry netting) in August. Hydroacoustic surveys were undertaken in July on the River Severn below Bewdley. We have also completed an electric fishing survey at Upton Marina in May for the purposes of EQSD. Match catch data has been submitted by Rowley and District Angling Club for their stretch of water near Coalport.
- Seventeen species of fish were recorded and a total of 5148 fish were captured during the juvenile seine netting;
- Roach and gudgeon were the most widespread species, being recorded at all sites (including Upton upon Severn (EQSD) and Coalport (match catch));
- Gudgeon (fry surveys), roach (EQSD) and dace (match catch) were the most numerous species recorded.

Site locations



Figure 1 Location of monitoring points undertaken during 2017 surveys

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03708 506 506

incident hotline
0800 80 70 60

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Survey results

Fry surveys

All the 2017 fry surveys 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. Unfortunately we do not have results for four sites that we have previously surveyed (Cressage, Hifnal, Bridgnorth us A458 and Wainlodes fry sites).

The site at Holt Fleet Mutton Hall was a new site for 2017 as the original Holt Fleet site had been significantly altered making it unsuitable for fish fry.

Table 1 Number of fish caught and size range (min – max, mm) recorded during the survey for key species

		Shrewsbury County Showground	Pengwern Boat Club	Monkmoor	Holt Fleet Mutton Hall	Upton Upon Severn
3-spined stickleback	Number caught	0	0	2	0	0
	Size range	-	-	21-25	-	-
Atlantic salmon	Number caught	0	0	1	0	0
	Size range	-	-	85	-	-
Barbel	Number caught	1	0	5	0	0
	Size range	22	-	27-39	-	-
Bleak	Number caught	25	39	0	140	0
	Size range	30-54	25-48	-	18-64	-
Bullhead	Number caught	0	2	0	0	0
	Size range	-	27-29	-	-	-
Chub	Number caught	31	244	85	10	185
	Size range	20-54	19-37	20-45	20-30	17-40
Common bream	Number caught	0	0	0	1	0
	Size range	-	-	-	37	-
Dace	Number caught	69	38	134	64	7
	Size range	34-62	31-49	30-56	30-56	42-92
Gudgeon	Number caught	67	129	39	2093	34
	Size range	29-48	18-61	28-78	22-52	18-34

Lamprey sp	Number caught	0	1	0	0	0
	Size range	-	125	-	-	-
Minnow	Number caught	355	390	337	3	0
	Size range	20-55	20-30	20-30	25-50	-
Perch	Number caught	0	4	0	14	1
	Size range	-	52-70	-	48-78	76
Pike	Number caught	0	1	0	0	0
	Size range	-	190	-	-	-
Roach	Number caught	11	169	9	210	4
	Size range	21-40	20-39	30-42	22-47	27-110
Ruffe	Number caught	0	100	0	92	0
	Size range	-	27-50	-	26-62	-
Stone loach	Number caught	1	0	0	0	0
	Size range	35	-	-	-	-

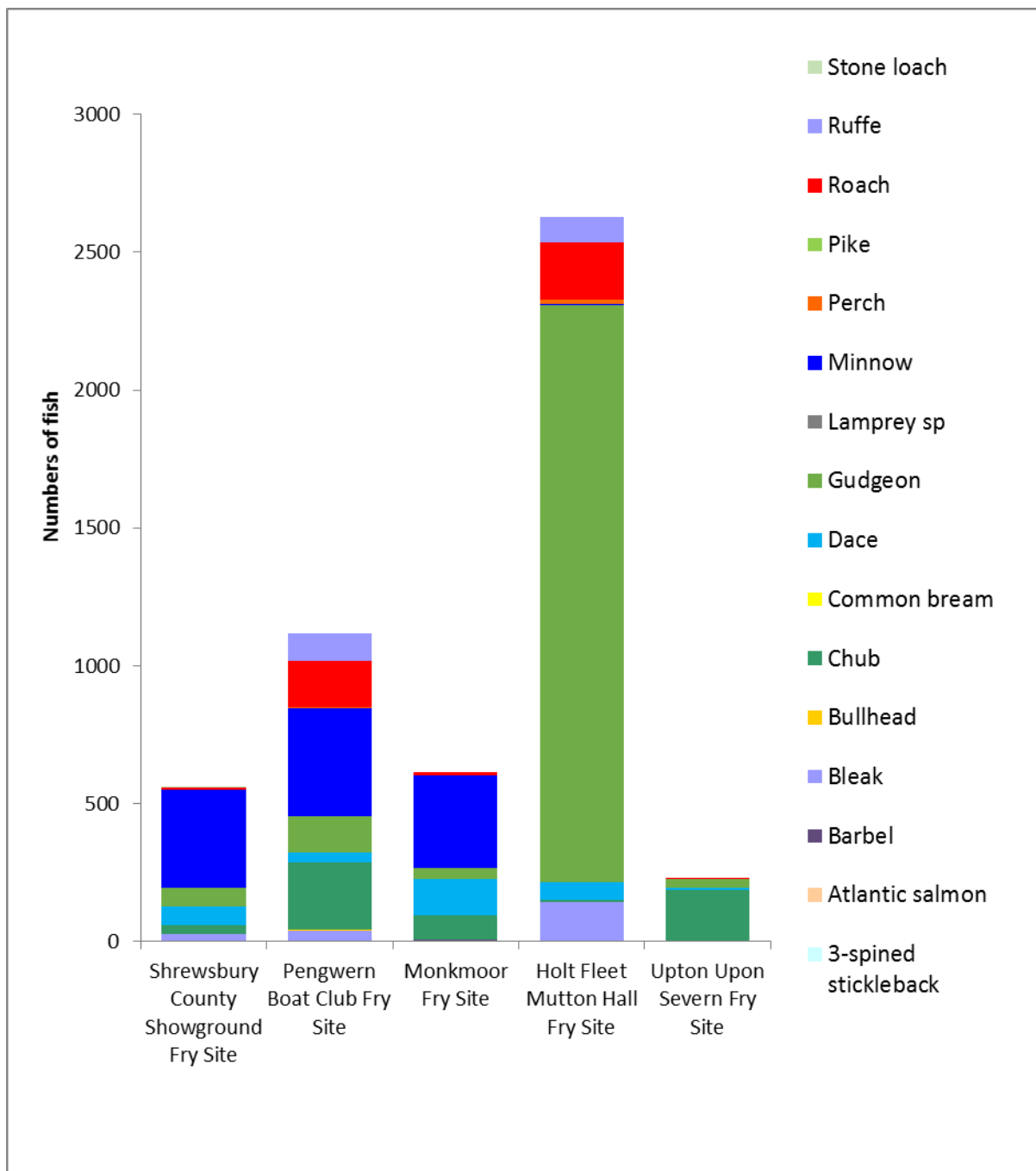


Figure 2 Total numbers of fish caught during fry surveys 2017

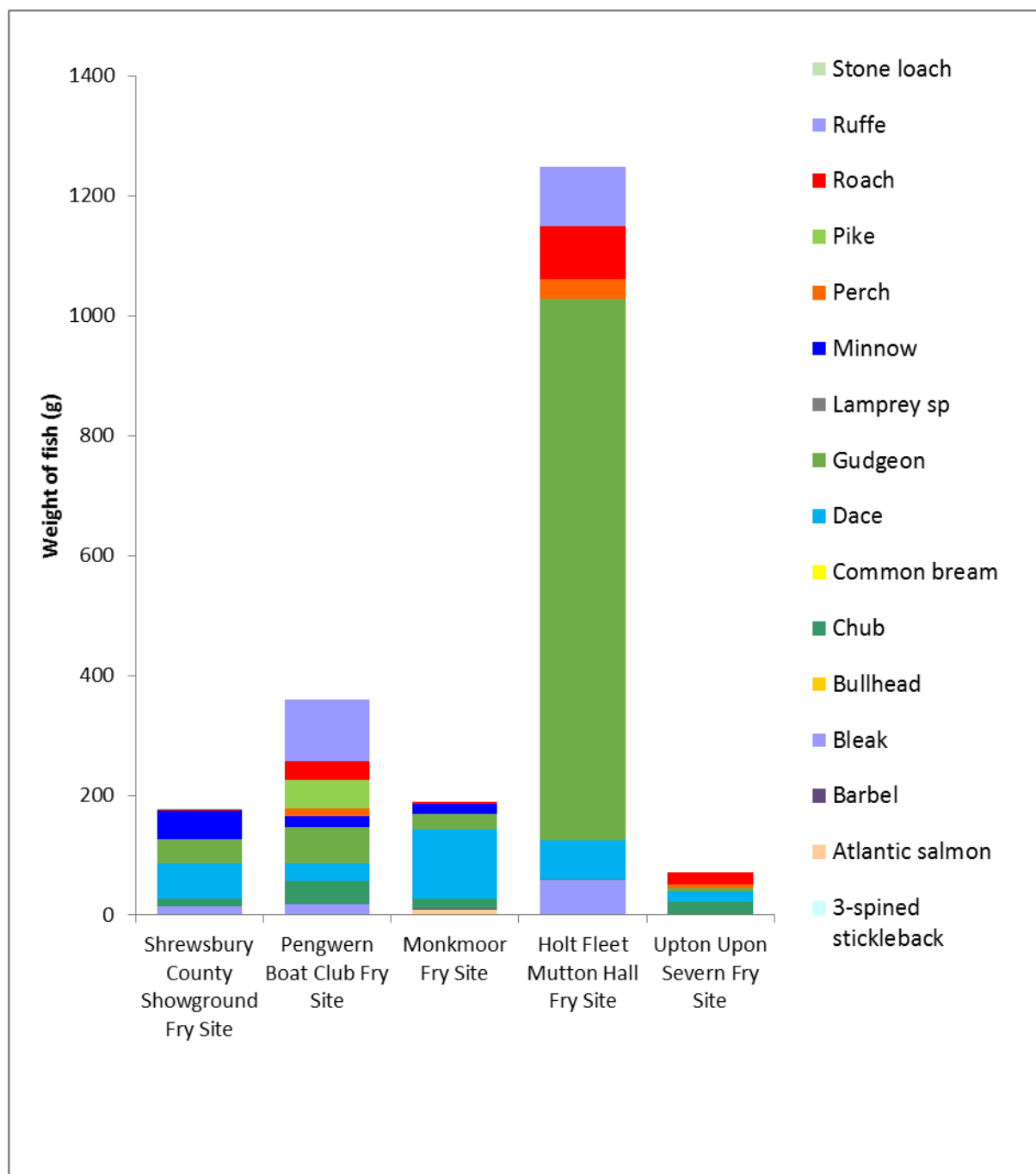


Figure 3 Estimated weight of fish caught during fry surveys 2017

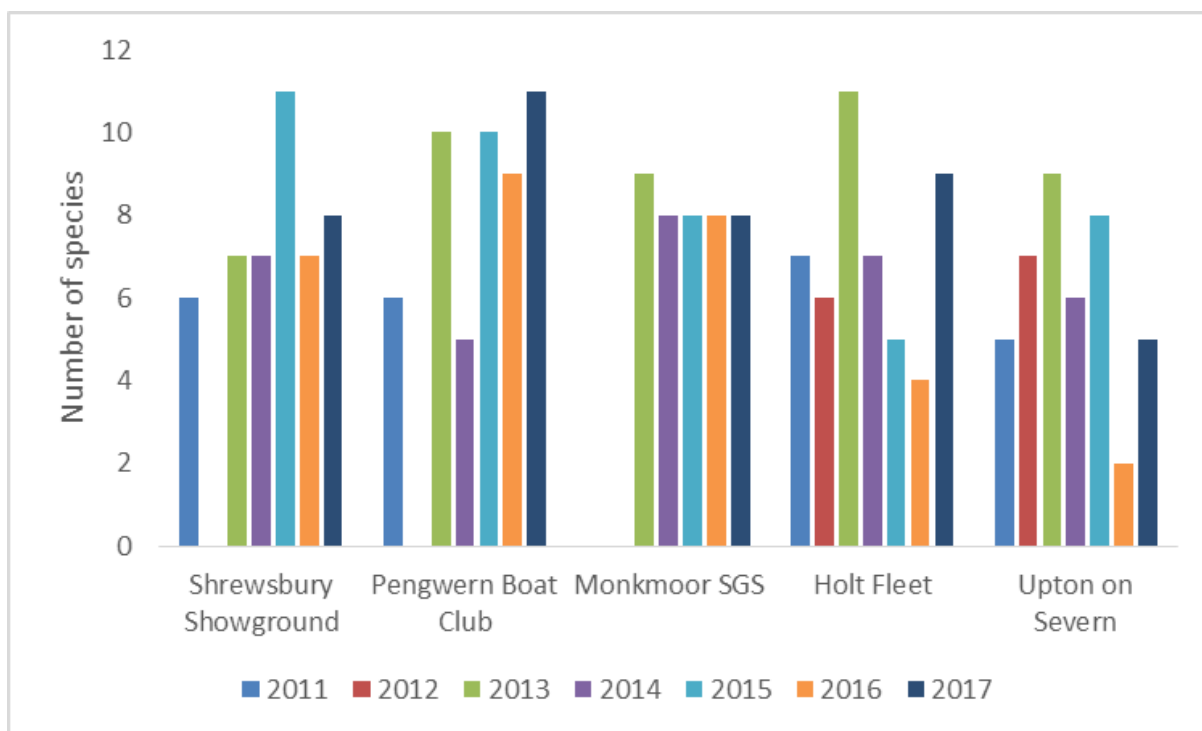


Figure 4 Total number of species caught at each site over the last 7 years

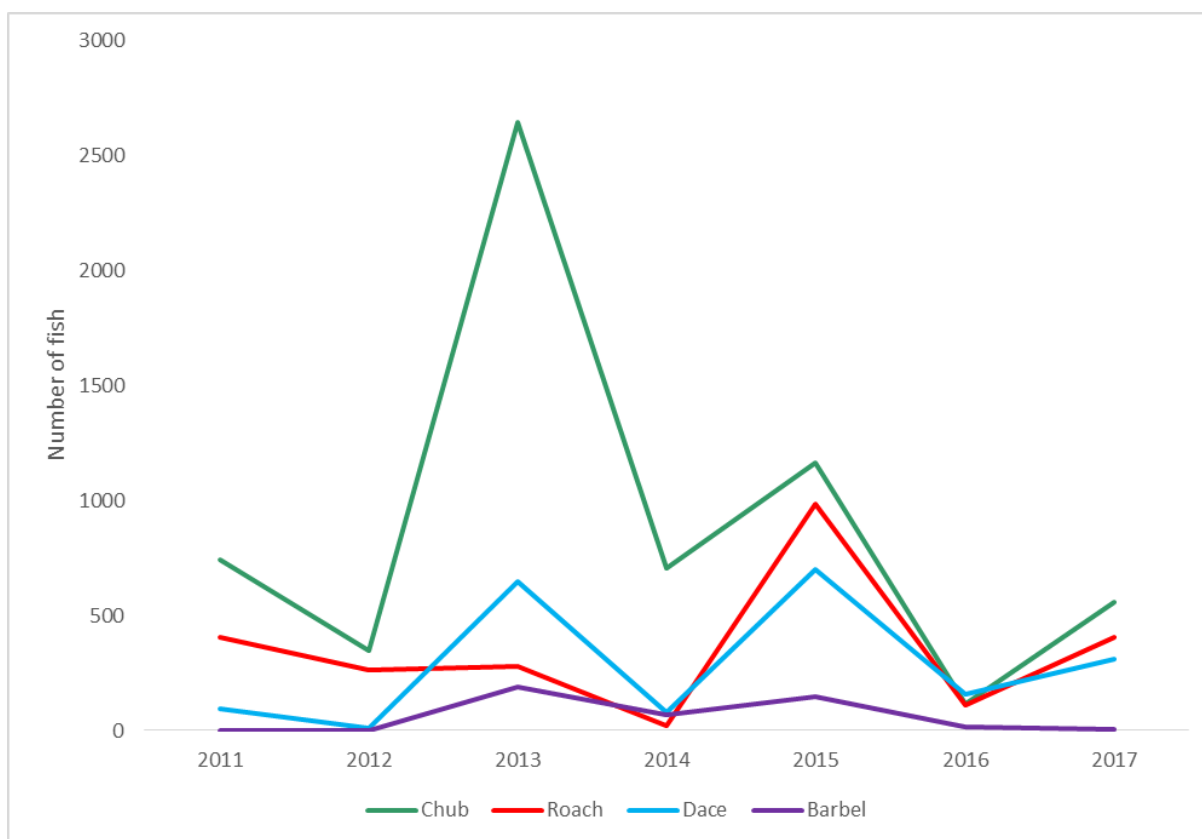


Figure 5 Total number of fish caught during fry surveys on River Severn for four key species (chub, roach, dace and barbel)

Hydroacoustics

Three stretches were surveyed using hydroacoustics during 2017 (see Figure 1);

- Liincomb to Holt
- Upton upon Severn to Upper Lode

- Lower Lode to Haw Bridge

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.

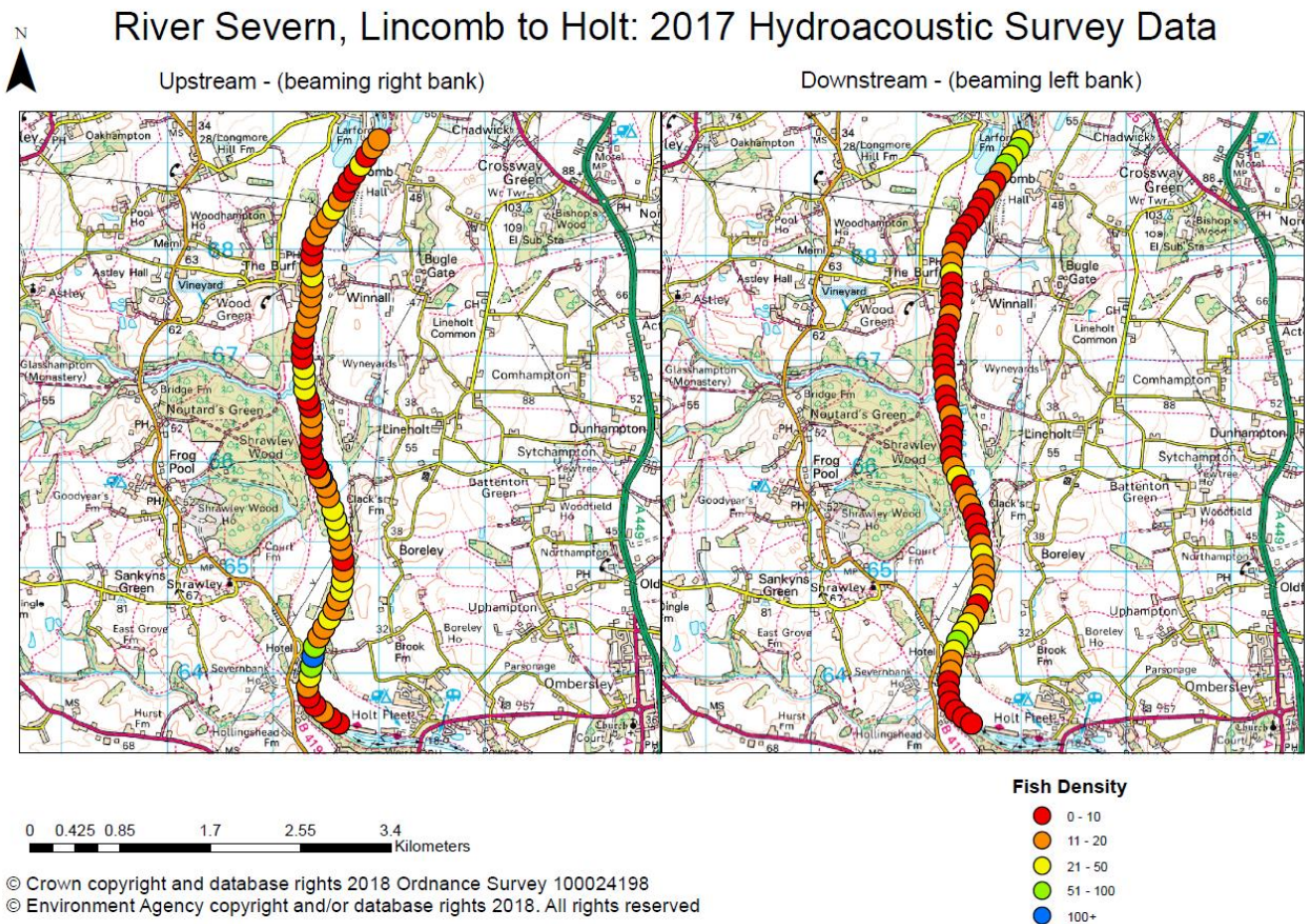


Figure 6 Fish densities recorded during hydroacoustic surveys between Lincomb and Holt in July 2017

River Severn, Upton Upon Severn to Upper Lode: 2017 Hydroacoustic Survey Data

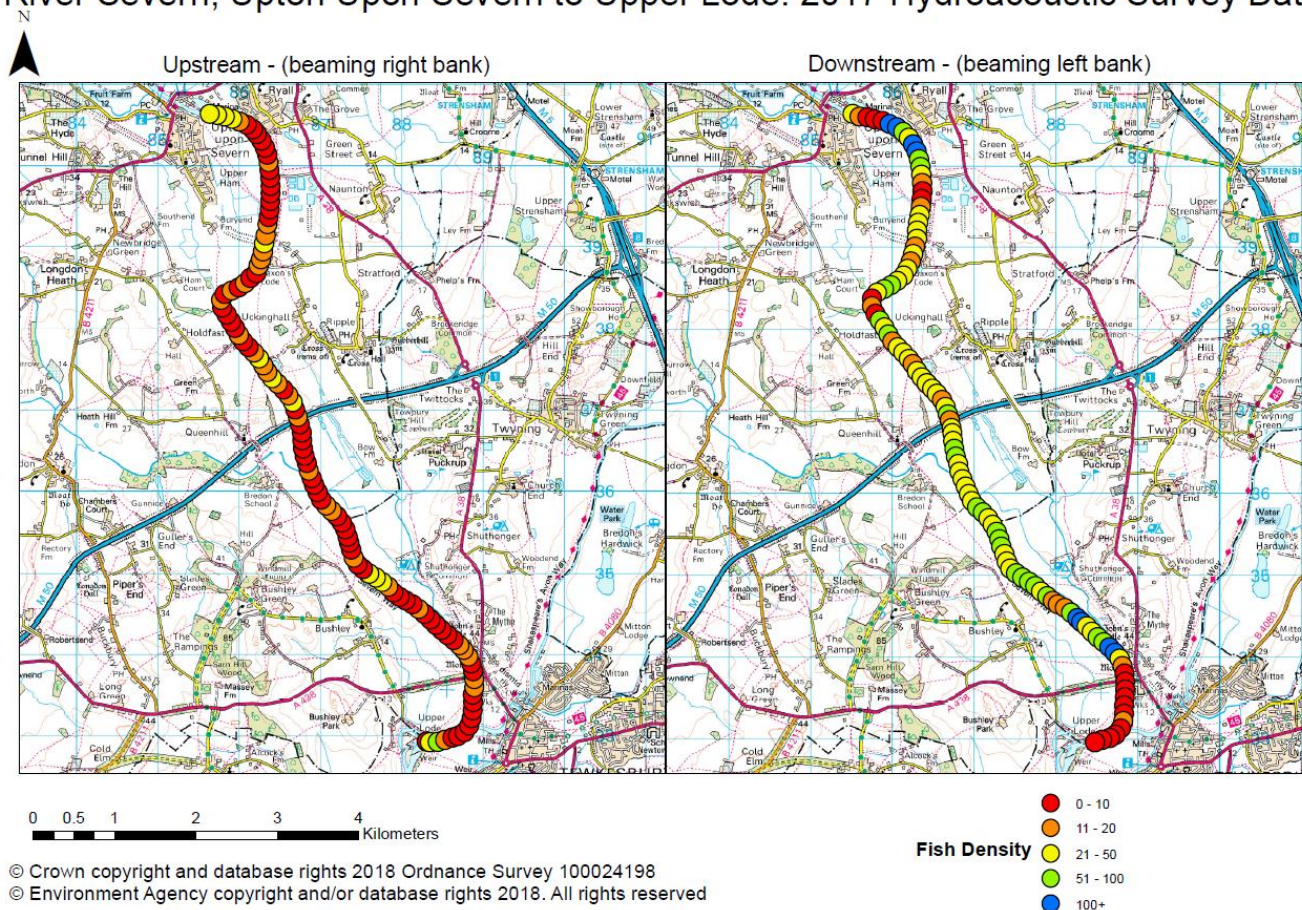


Figure 7 Fish densities recorded during hydroacoustic surveys between Upton upon Severn and Upper Lode in July 2017

River Severn, Lower Lode to Haw Bridge: 2017 Hydroacoustic Survey Data

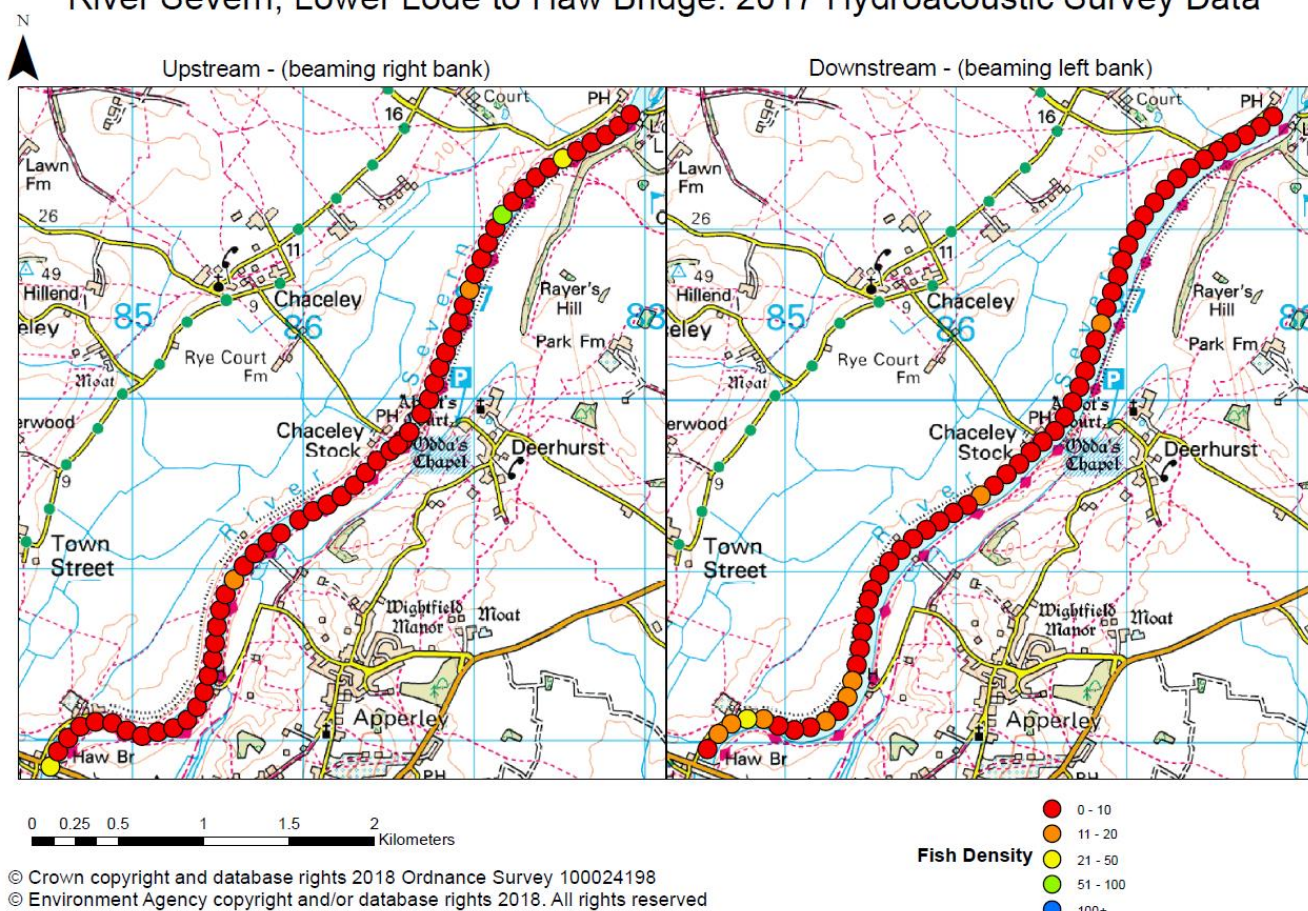


Figure 8 Fish densities recorded during hydroacoustic surveys between Lower Lode and Haw Bridge in July 2017

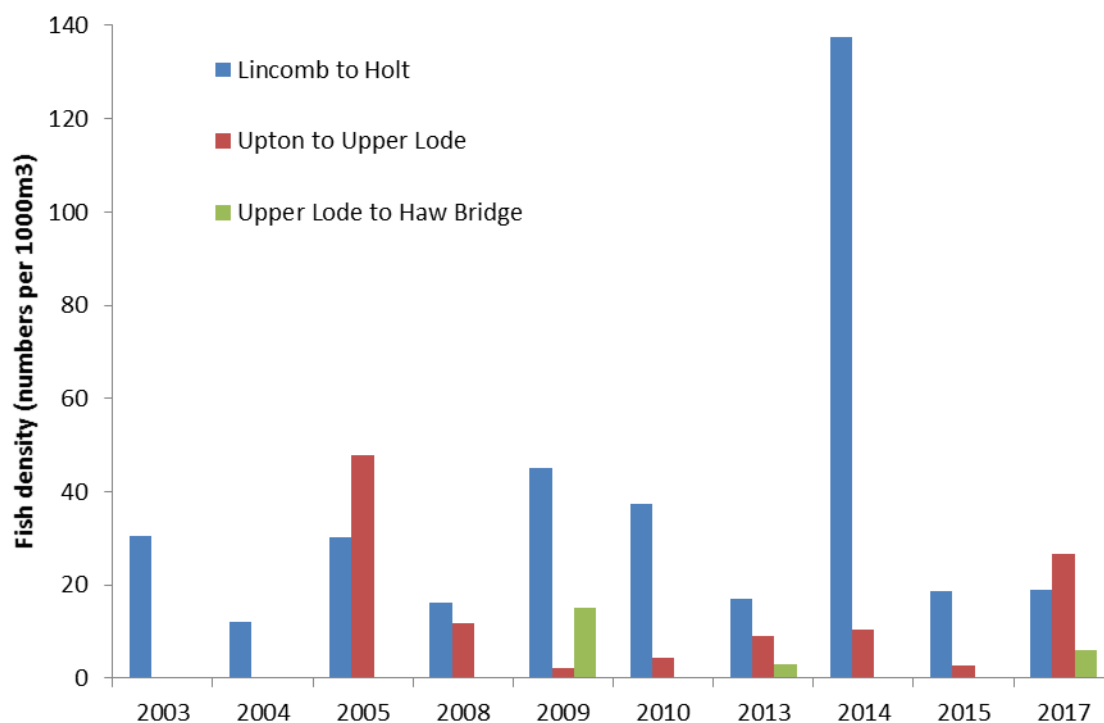


Figure 9 Fish densities of hydroacoustic surveys since 2003

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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 Severn are roach. Fish were caught using electric fishing from a boat. All fish caught by this method were identified, counted and measured.

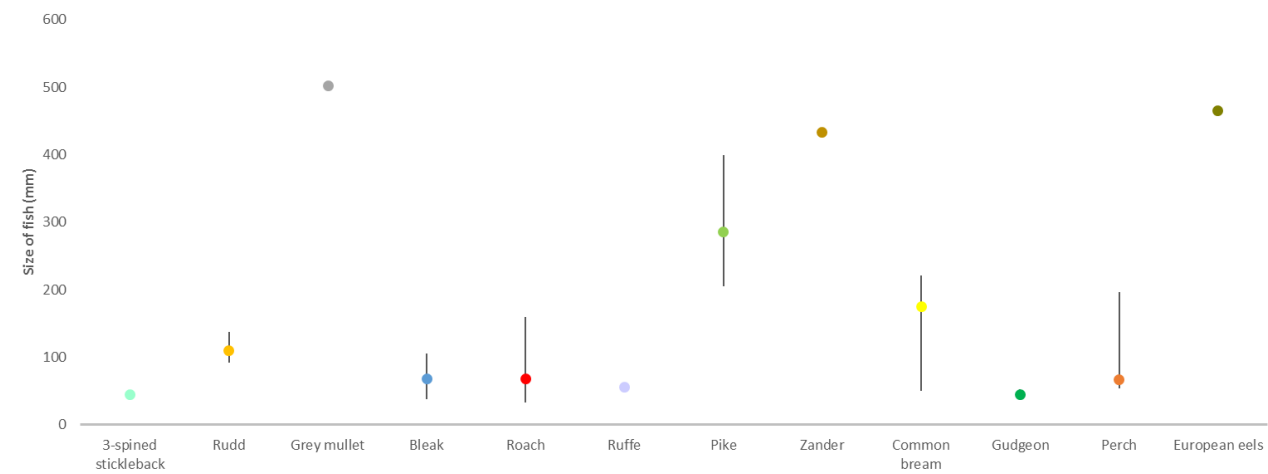


Figure 10 Fish size ranges for species caught during EQSD surveys May 2017

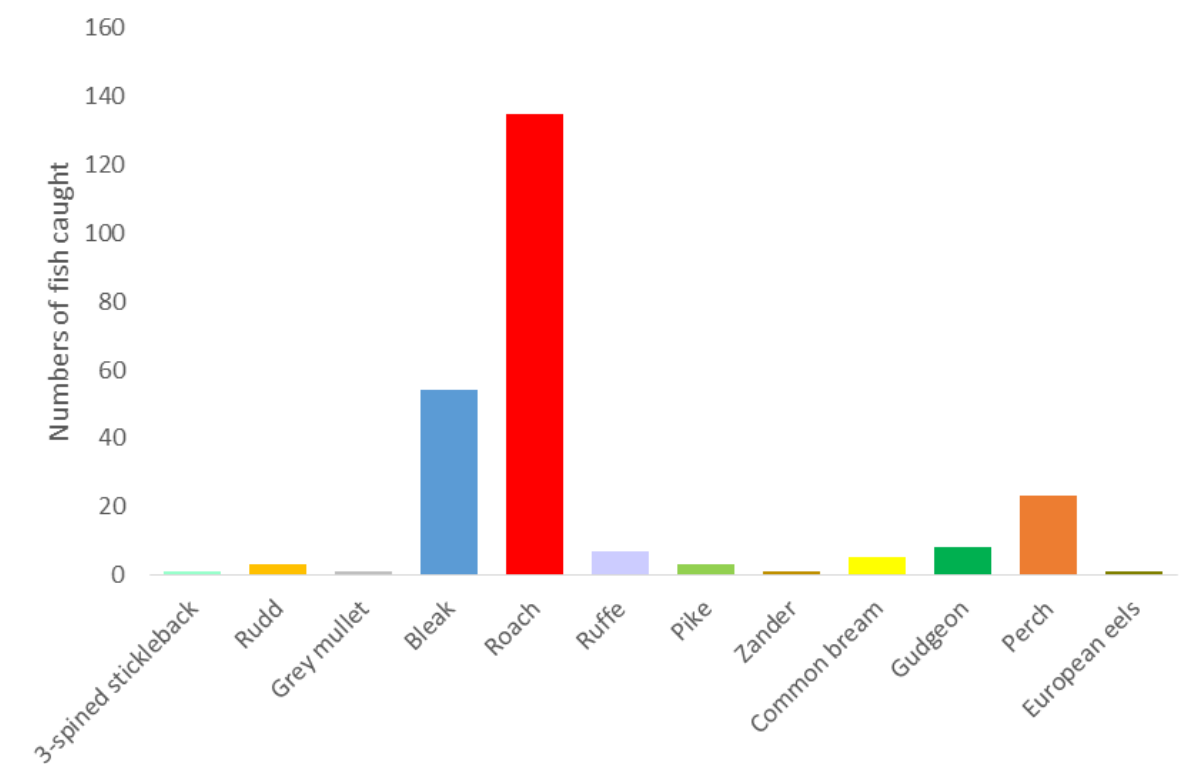
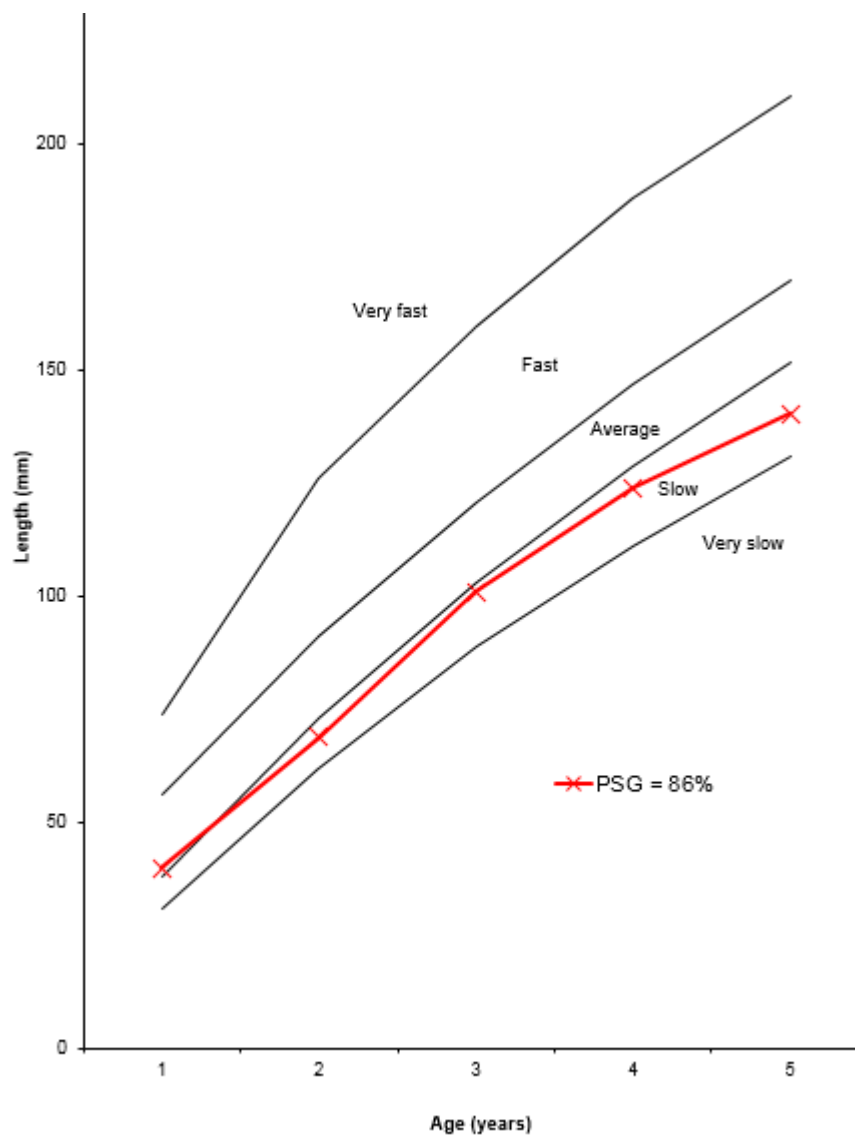


Figure 11 Number of fish caught during EQSD surveys May 2017



Graph to show the growth of roach in the River Severn compared to the standard growth of roach in Southern rivers (National Fisheries Services unpublished data)

Figure 12 Growth rate of roach caught during EQSD surveys May 2017

Match catch

Rowley and District Angling Club have shared their match catch results with us for a number of years. Match catch data gives an idea about the adult fish population in this section of the river, but is always biased due to anglers targeting specific species to get largest weight.

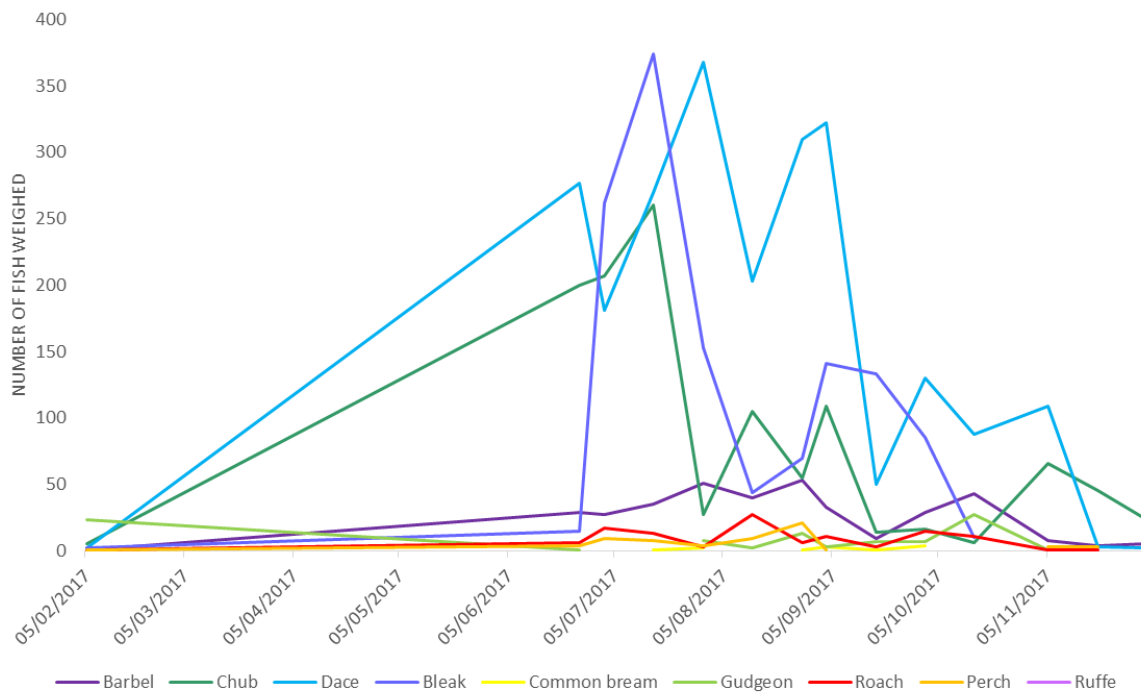


Figure 13 Number of fish caught during Rowley and District Angling matches on River Severn Coalport during 2017

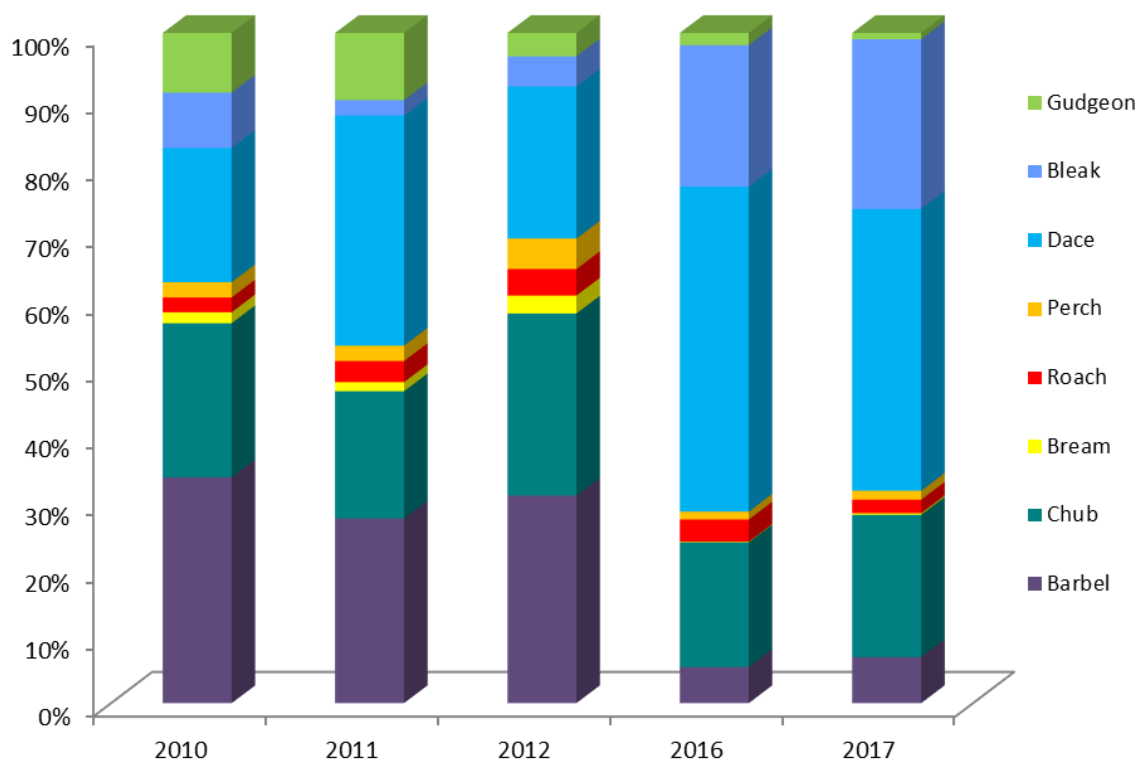


Figure 14 Proportion of species caught during matches from 2010 to 2017

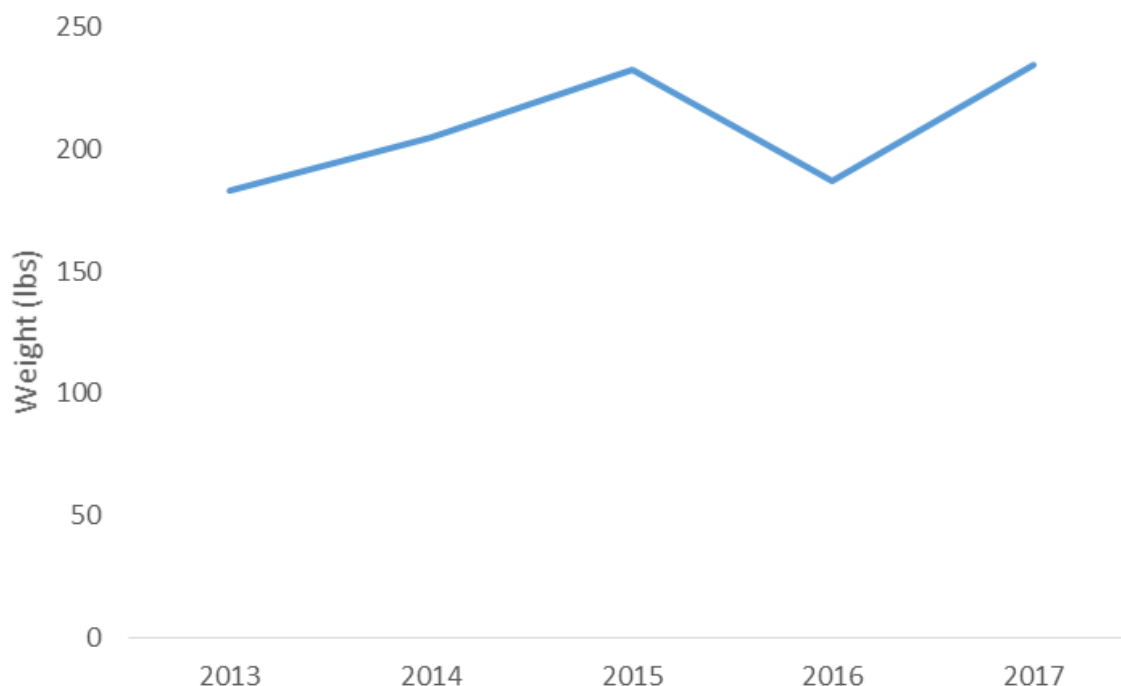


Figure 15 Average weight of fish caught per match from 2013 to 2017

WFD Classification

The English section of the River Sever is split into several waterbodies (see Table 2). The large size of the river means that it is not possible to electric fish using WFD methodology and so we do not have a fish classification. The main issues for the River Sever are linked to nutrient inputs.

Table 2 Water Framework Directive waterbodies within survey area. Note no fish status as River Sever too large to be able to fish using WFD methodology

Water body ID	Waterbody name	Fish status	Driving element	Overall status
GB109054049142	Severn – conf Bele Bk to conf Sundorne Bk	None	Phytobenthos and phosphates	Moderate
GB109054049141	Severn – Sundorne Bk to conf M Wenlock-Farley Bk	None	Macrophytes/phytobenthos and phosphates	Moderate
GB109054049143	Severn – conf M Wenlock-Farley Bk to conf R Worfe	None	Macrophytes and phosphates	Moderate
GB109054049145	Severn – conf R Worfe to conf R Stour	None	Macrophytes and phosphates	Poor
GB109054049144	Severn – conf R Stour to conf R Teme	None	Phosphates	Moderate
GB109054039760	Severn – conf R Teme to conf R Avon	None	Phytobenthos and phosphates	Moderate

GB109054044404	Severn – conf R Avon to conf Upper Parting	None	Invertebrates and phosphates	Moderate
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Health of fish population

- Fry surveys on the River Severn in 2017 showed a good mix of juvenile fish. As seen with match catch data dace and chub appear to be the most abundant angled for fish (not counting gudgeon). Barbel fry were only found in low numbers at two sites, although results were not available for the sections where barbel tend to have been found in larger numbers (see Figure 16);

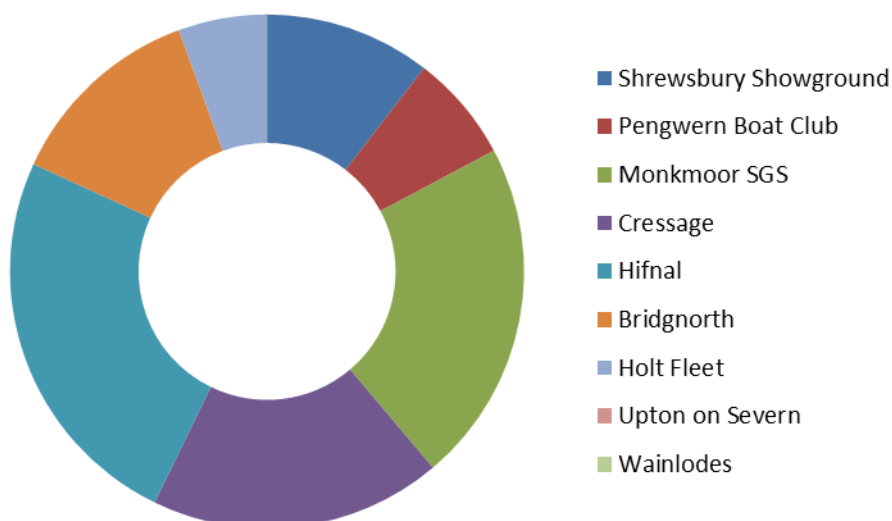


Figure 16 Results from fry surveys 2011 to 2017 showing barbel distribution

- Hydroacoustic surveys for the River Severn were generally showing low fish densities, although Upton upon Severn to Lower Lode had above average fish densities for that site;
- Roach caught on the EQSD survey at Upton upon Severn showed slower than average growth, compared to standard growth in Southern rivers. The reason for this slower growth is uncertain
- At Coalport dace continue to be the main fish caught during matches. Although barbel are a smaller proportion of the overall catch, actual numbers caught have not varied drastically over the last 7 years
- Overall as a coarse fish river the Severn holds a diverse range of species. Fry surveys show continued dominance of the silver fish with lower numbers of barbel fry caught in 2017. The new site found at Holt Fleet Mutton Hall was very productive indicating plenty of fish in this section, although hydroacoustic data continues to show reasonably low fish densities. Slow growth in roach at Upton upon Severn is also concerning.

Next survey

During 2018 we are expecting to complete another EQSD survey at Upton upon Severn during May, hydroacoustic surveys during July and fry surveys in late August early September

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

- Martin Fenn Senior Environmental Monitoring Officer, Analysis and Reporting, Shrewsbury

- 03708 506 506
- enquiries@environment-agency.gov.uk

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

- Ed Noyes Fisheries Officer, 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/>.