

Fish Ageing Survey Report

St Erth Pool

NFL Ref: 24#077

Date 05/12/2024

About this water

The St Erth Pool is a 1.3 acres natural lake used for match and pleasure fishing. Depths within the pool vary from 3ft to 4ft. It contains a wide variety of coarse fish species, among the most abundant ones are common bream, common carp, eel, perch, roach, rudd and occasionally crucian carp, gudgeon, ide and small tench. Carp was the most dominant species, but recently common bream have become more prevalent.

The majority of the aquatic plants present within the fishery consist of marginal vegetation and some lily pads. Some historical problems with algal blooms being addressed with barley straw.

Summary of age data

Samples were obtained from St Erth Pool, through the use of rod and line, during the period between the 18th of August and the 21st of September 2024. The fish have been aged using a plus (+) notation, this is because the fish were sampled during the summer growth season (April - Sept). A total of 64 scale samples were submitted comprising of two coarse fish species: common bream (n = 30) which were aged up to 9+ years and roach (n = 31) up to 15+. Three scale samples from roach could not be aged due to the sample only containing replacement scales.

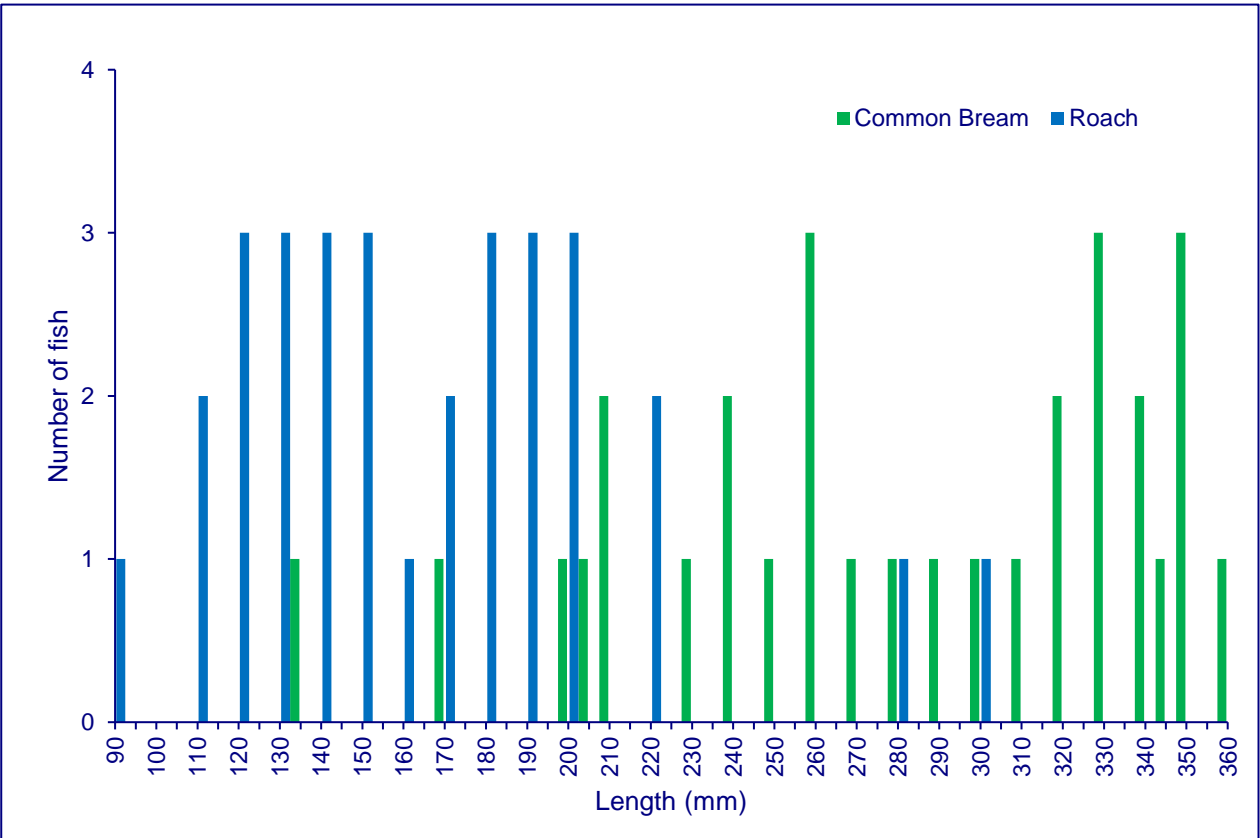


Figure 1. Number of fish and their size range from St Erth Pool.

The fork lengths of fish sampled ranged between 90 - 360 mm, with common bream's size ranges between 135 - 360 mm and roach between 90 - 300 mm.

To improve the dataset, further scale samples could be taken from younger specimens of both species, ideally with a length below 110 mm, and for roach with a length over 220 mm.

Average length at age

As a part of our examination of fish scales, we can measure the mark ('annulus') which shows the end of each year on the scales. We can then work out how long each fish was at the end of each year's growth. From this, we can calculate the average length at each age. This has been completed for both coarse fish species, but the data reported here is based on a small number of fish and may not be a true representation of the species populations as a whole.

Table 1. The estimated average length at age of the common bream and roach sampled from St Erth Pool.

Age (years)		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Average length (mm)	Common bream	52	95	137	182	215	249	276	297	332	-	-	-	-	-	-
	Roach	39	64	88	109	130	156	179	200	217	236	229	244	263	281	293

Percentage standard growth values

The average lengths at each age for common bream and roach from St Erth Pool were compared to their respective species standard growth data (Hickley & Dexter, 1979; National Fisheries Laboratory, unpublished data, respectively).

The Percentage Standard Growth (PSG) value for common bream was calculated to be 98% (where 100% is the National average), indicating that common bream are growing at an average rate in St Erth Pool (Figure 2). The average growth rate of the common bream has improved slightly, when compared to the survey conducted in 2022.

Roach had a slower growth rate (PSG of 84%) when compared to the National average growth (Figure 3), which is a decrease in the rate calculated for this species in 2022. It is of note that the age range of the roach samples submitted in 2022 was limited, which may skew the data. The PSG values for both roach and common bream sampled in 2022 are included in the figures below.

It is important to note that the number of samples submitted for both species was limited, and so caution must be taken when extrapolating these data to the wider population in St Erth Pool.

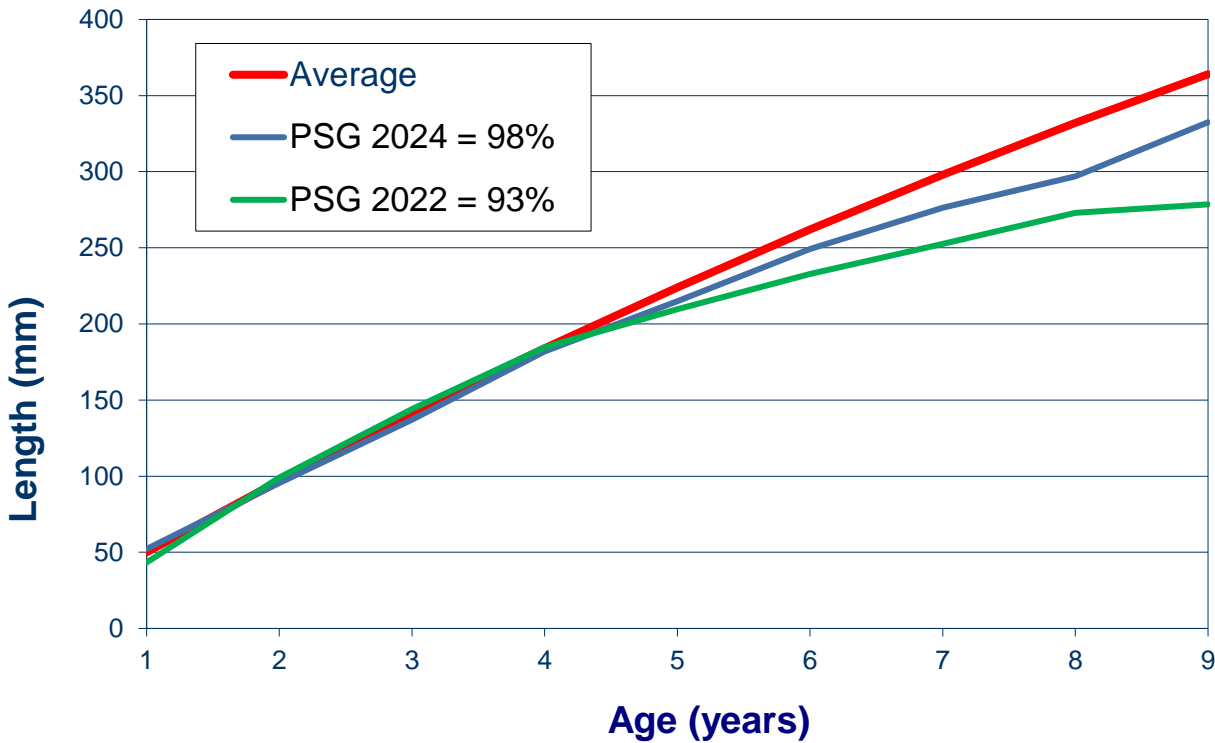


Figure 2. Growth of common bream from St Erth Pool in the year 2022 and 2024 compared to standard growth data for common bream (Hickley & Dexter, 1979).

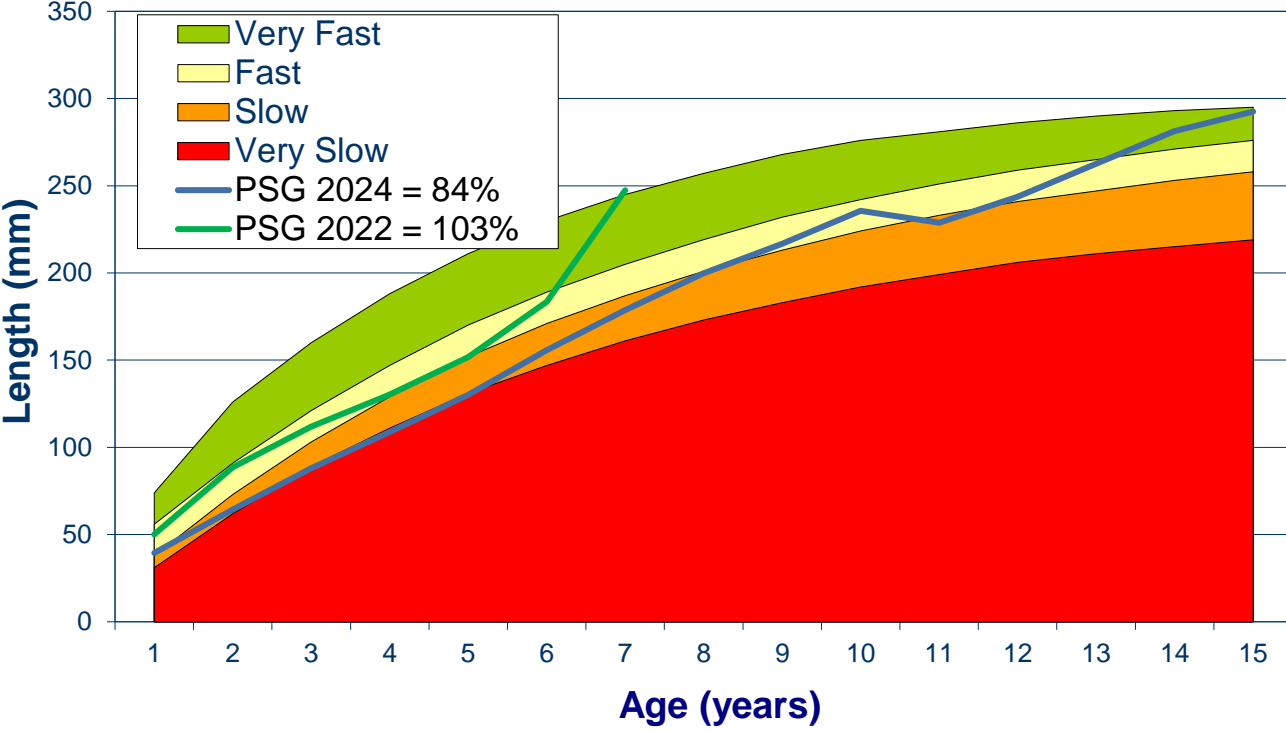


Figure 3. Growth of roach from St Erth Pool in the year 2022 and 2024 compared to standard growth data for roach (National Fisheries Laboratory, unpublished data).

Findings and recommendations

Common bream and roach are generally good indicators of a water's ability to maintain healthy fish populations. The overall growth rate of common bream in St Erth Pool was in line with the national average, indicating the presence of good conditions for growth.

It is also worth noting that the growth of the older roach appears to be particularly good, however as mentioned above, these larger fish are underrepresented in the sample and therefore caution should be observed in the interpretation of these data.

When compared to the previous survey from 2022, there is a slightly improvement in the PSG value for common bream, this could be explained with the better growth of older specimen.

By contrast, the PSG value recorded for roach is lower than the previous one (84% vs 103%), showing a slower growth of these fish for all class ages (please take into account that roach from 2022 survey were aged up to 7+).

The information noted in the ageing questionnaire indicates that there is still absence of aquatic plants within St Erth Pool, with a good proportion of marginal plants. By increasing the biodiversity of aquatic plants, it will provide natural food resources and a more diverse habitat for the fish within the lake.

In addition to this, aquatic plants uptake excess nutrients within the water, increase levels of dissolved oxygen (DO) and can in turn increase the bio loading of the water.

Ageing notation

The fish have been aged using a plus (+) notation. This is because the fish were sampled during the summer growth season (April - Sept).

Further information

If you require any further advice on managing your fishery please contact your local area officer, Sally Gallop on 07919 398162.

This report has been produced by the National Fisheries Laboratory. Always report signs of dead or dying fish to the Environment Agency immediately. For further information on fish health, please contact:

**National Fisheries Laboratory, Monitoring: Laboratories, Environment Agency,
Bromholme Lane, Brampton, Huntingdon, PE28 4NE.**

Tel: 02084 745244 or 07825 111723

fish.health@environment-agency.gov.uk | fish.ageing@environment-agency.gov.uk

Scale image

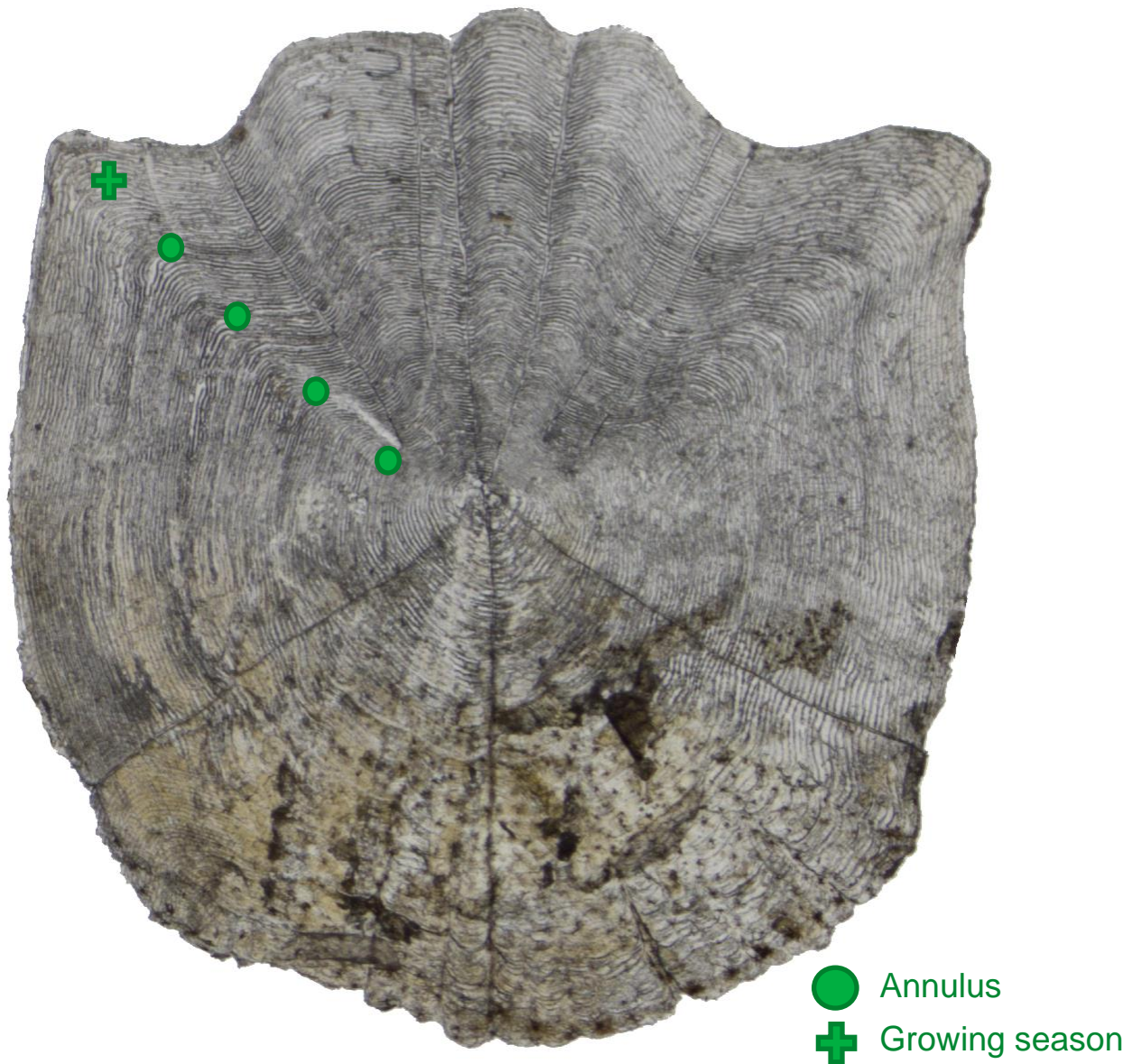


Figure 4. Image of a roach scale from St Erth Pool (Fish number 40, 140 mm, 4+).