

Fish Ageing Survey Report

Barton-under-Needwood
Village Pond

NFL Ref: 26#017

Date 28/04/2026

About this water

The Village Pond (also known as Fishponds) in Barton-under-Needwood is approximately 1.7 acres in size and features average depths of around 6ft. The lake was dug in the 1700's by local farmers and livestock keepers to provide water for their animals. Today, it is a pleasure fishery that is used by locals and membership holders and is managed by Barton Parish Council. This clay-lined fishery contains a variety of coarse fish species including common carp, mirror carp, carp hybrids, goldfish, common bream, roach, rudd and perch. Roach and common bream are considered to be the dominant species. There is a variety of marginal plants present (approximately 40% coverage) and 10% of the surface is covered by lilies. The surrounding land use around the fishery consists of playing fields and urban housing developments.

In 2024, the Village Pond experienced a fish mortality event, prompting an investigation by the National Fisheries Laboratory that confirmed the presence of an extensive blue-green algal bloom, identified as *Oscillatoria redekei*, at concentrations exceeding established warning thresholds. In addition, spiky diatoms belonging to the genus *Synedra* were detected, which are known to cause physical harm to fish, particularly to gill tissues. Such algal and diatom blooms have occurred frequently in the pond, and fish mortalities have become a chronic issue in recent years.

Summary of age data

Samples were collected from the Village Pond through the use of a seine net whilst undertaking a stock assessment on the 3rd of March 2026. Of the 76 scales submitted for age analysis, 66 scales were successfully aged, while the remaining 10 were unreadable due to being replacement scales. Roach ($n = 32$) were aged to 11 years old, and the common bream ($n = 34$) were aged to 13 years old.

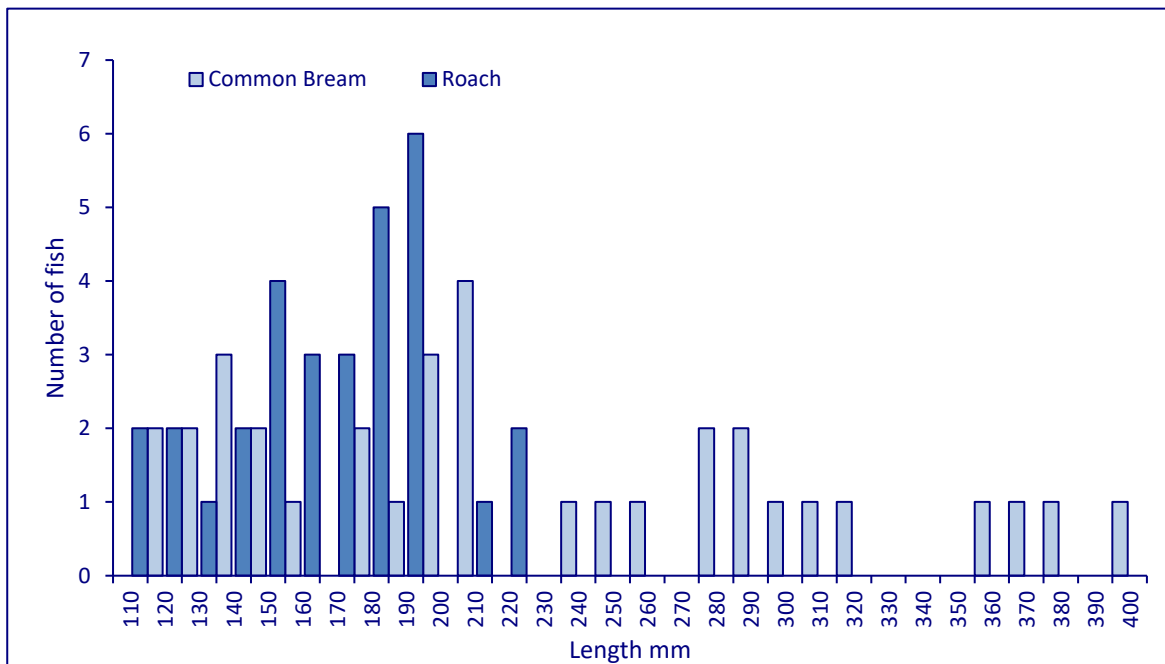


Figure 1. Number of roach and common bream sampled and their size ranges.

The fork lengths of fish sampled from the Village Pond ranged between 110 - 392 mm, with the majority of the roach ranging between 110 - 220mm, and the common bream ranging between 113 - 392 mm. A wide range of sizes were submitted for both roach and common bream, with a good representation from multiple age classes.

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.

Table 1. The estimated average length at age of roach and common bream sampled from the Village Pond.

Age (years)		1	2	3	4	5	6	7	8	9	10	11	12	13
Average length (mm)	Roach	50	82	110	133	155	171	186	195	205	237	245	-	-
	Common Bream	55	129	184	231	263	288	301	321	321	305	316	369	380

Percentage standard growth values

The average lengths at each age for common bream and roach from the Village Pond were compared to their respective species standard growth data (Hickley & Dexter, 1979; National Fisheries Laboratory, unpublished data), the common bream had a fast growth rate attaining a Percentage Standard Growth (PSG) value of 113%, whereas the roach had a PSG value of 98%, indicating average growth (Figure 2 and Figure 3).

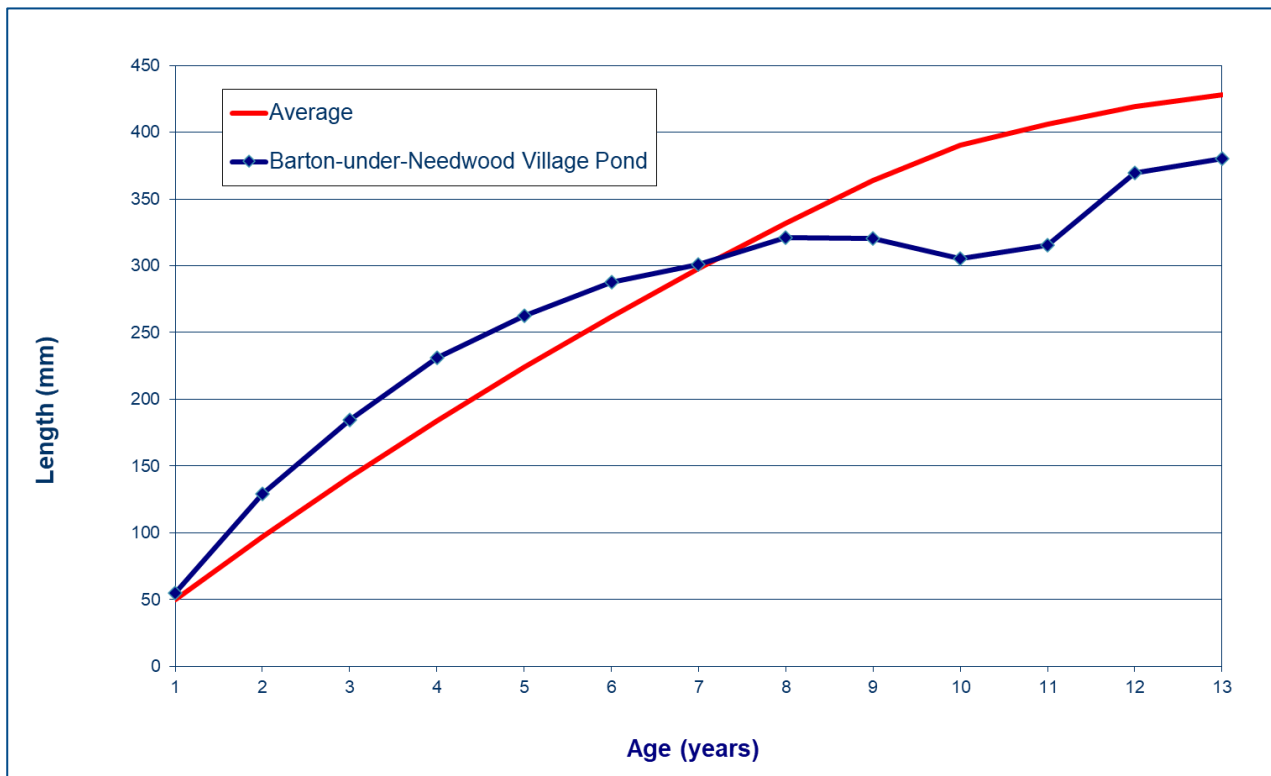


Figure 2. Growth of common bream from the Village Pond compared to standard growth data for common bream (Hickley & Dexter, 1979).

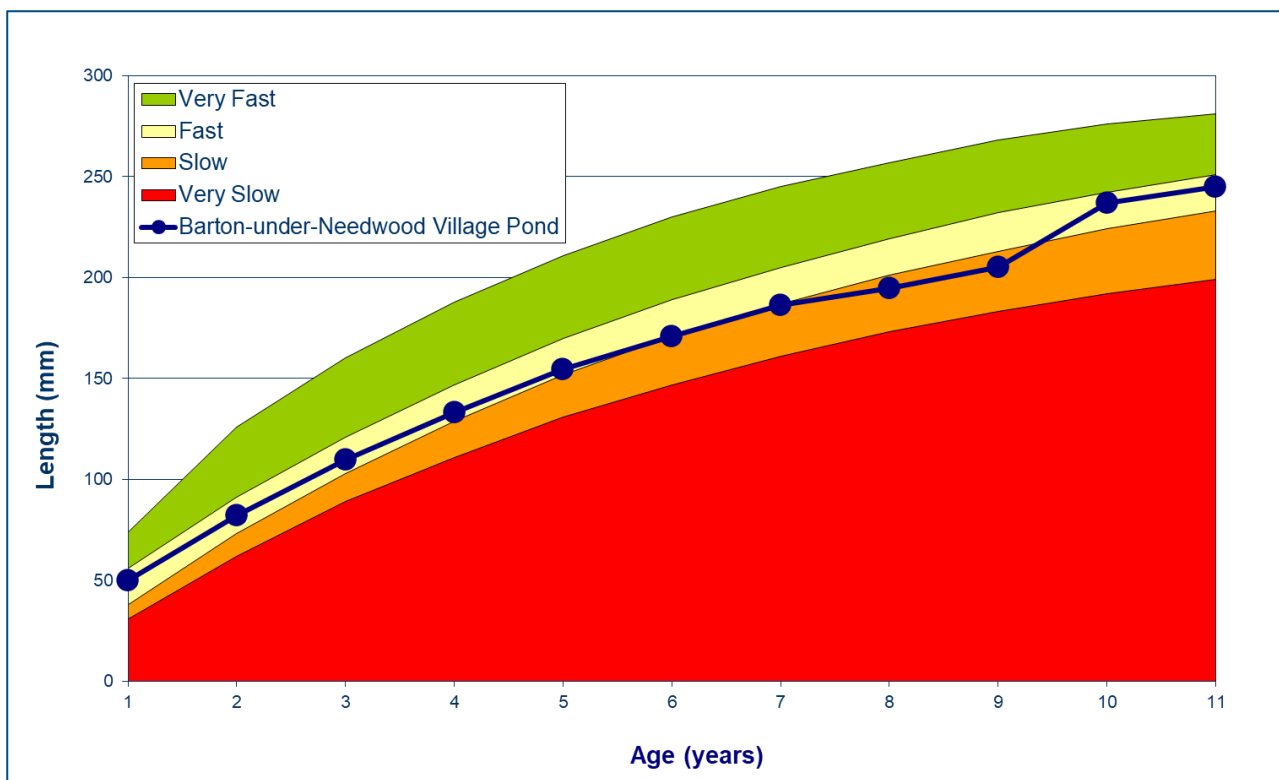


Figure 3. Growth of roach from the Village Pond compared to standard growth data for roach (National Fisheries Laboratory, unpublished data).

Findings and recommendations

Roach, which are commonly used as indicator species for fishery performance, are exhibiting average growth rates in the pond, indicating that conditions are adequate but could be enhanced. As Figure 3 demonstrates, the initial years appear to be growing at a fast rate, then, as the fish gets older, it slows significantly. The same can be said for the common bream (Figure 2). However, interpretation of growth rates in the later life stages of both species should be treated with caution, as the available data are based on a small number of older fish and may not be fully representative.

It was noted within the recommendations part of the post incident report that there was significant tree cover within the Village Pond (approximately 60% coverage) which will subsequently reduce the wind action on the waterbody, thereby limiting surface mixing and potentially leading to reduced dissolved oxygen (DO) levels. This could contribute to the organic loading on the waterbody through seasonal leaf fall and limits the establishment and propagation of marginal and emergent aquatic plants. Therefore, management of arboriculture should be considered.

Continuous stock assessment surveys will help to determine the existing stocking densities in the lake. Should this highlight excessive biomass within the Village Pond, the cropping (removal) of some of the fish could help to improve the growth of the fish that remain.

Additional aquatic plants would provide increased habitat and in turn, increased food resources for the fish. Aquatic plants also help improve water quality and dissolved oxygen levels, benefitting resident fish populations. Regular water quality monitoring is recommended to assess current and temporal water quality parameters.

Ageing notation

When fish are sampled during the period October to March, they are aged by counting the edge of the scale as the end of the previous growing season. The age is, therefore, given in terms of a full year without a plus (+) notation. Plus notation is used when the fish have been sampled between April to September and show some summer growth.

Further information

If you require any further advice on managing your fishery please contact your local area officer, Jody Hughes on 07407 186599.

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, Bampton, Huntingdon, PE28 4NE.**

Tel: 02084 745244 or 07825 111723

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

Scale image

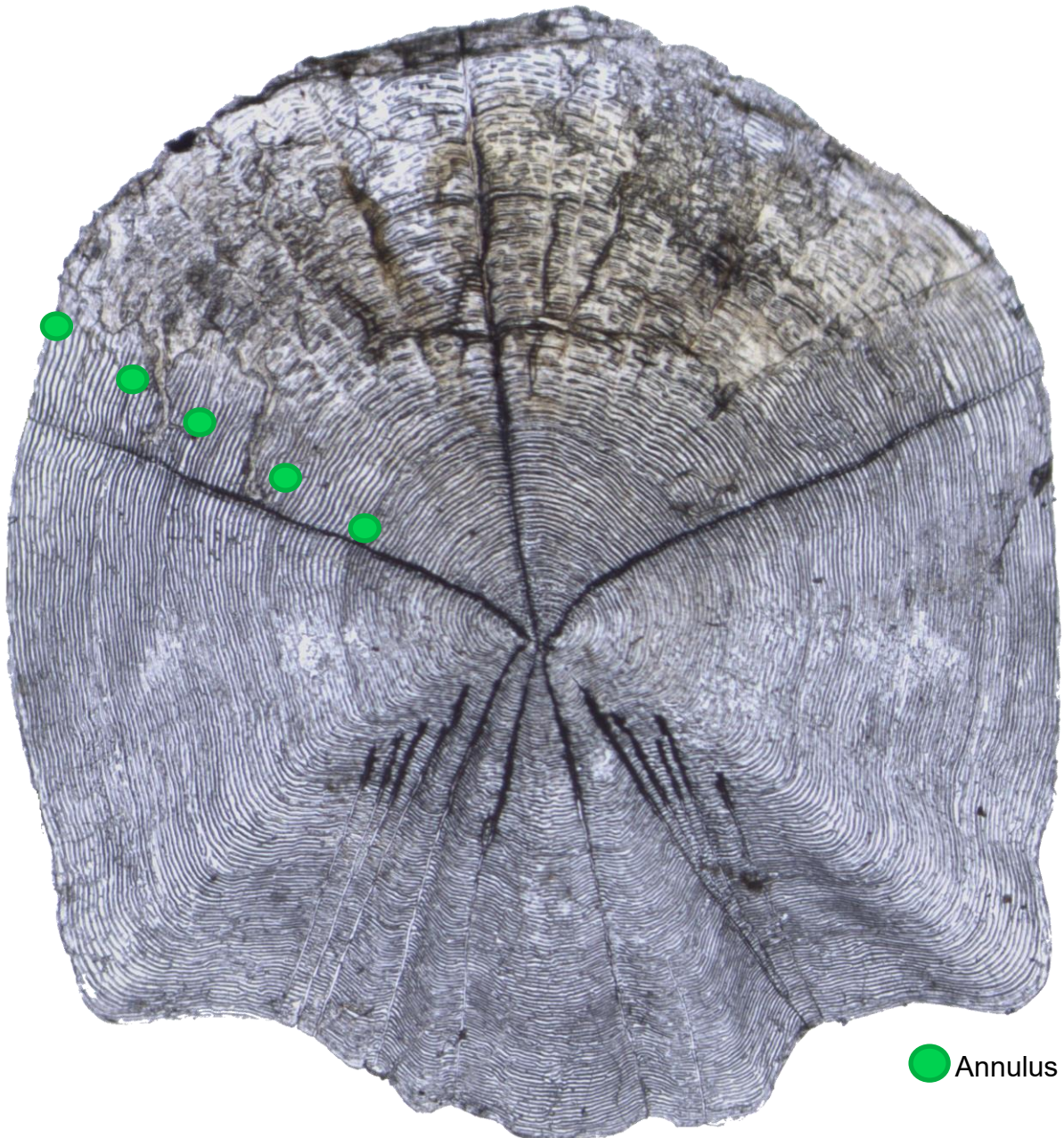


Figure 4. Image of a roach scale from the Village Pond (Fish number 10, 149mm, 5 years old).