



OTOLITHS: LISTENING IN ON THE PAST

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Otoliths are the inner-ear bones found inside most fishes' heads that provide both a sense of balance and help fish to hear. Otoliths grow throughout a fishes' lifetime, and changes in growth-rate between seasons means that the age of the fish can be 'read' by counting the annual rings (annuli) in the same way we would age a tree.

Within the rings, the chemical makeup of each otolith provides an indirect record of each environment the fish has experienced, making the otolith an on-board 'black box flight recorder' from which lifetime movements and migration routes can sometimes be deduced.

Cefas have been collecting otoliths for over a century. The age data generated from otoliths underpins fish stock assessment by allowing calculations to be made of how many fish spawned in one year survive until the next, and to estimate how many fish are removed from the stock through fishing. In 2009 Cefas became the world's first otolith laboratory to become ISO 17025 accredited.

Our team of highly skilled specialists processes and ages over 60,000 otoliths from exploited fish stocks in the UK and surrounding waters annually. We catalogued our millionth otolith in September 2009 – a six year old, 26 cm Thames herring; eight years on we have in excess of 1.75 million age records in our database, and over a million otoliths dating back to the 1940s in our archive. This archive is a trusted (FishDAC) storage facility for our own and other institutes data and samples.

For more information please visit:

www.cefas.co.uk/services/laboratory-services-and-analysis/age-determination-and-otolith-science



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