Strategic Research Theme : Natural Resources and Sustainability

Research Project undertaken within the **Centre for Marine and Freshwater Research**

Project Title: Atlantic Herring (Clupea harengus) Population Structure around the Irish Coastline, Tracing Populations of the Past and Present

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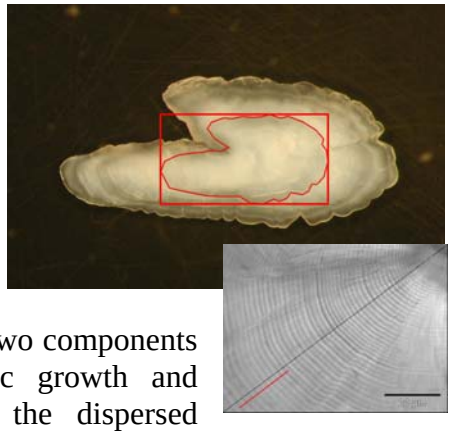
Project Summary



Movement and mixing of Atlantic herring (*Clupea harengus*) stocks during the early life phases has important implications for recruitment patterns and management of the associated fisheries. The Celtic Sea herring stock shows considerable dispersal during the first year of life. Celtic Sea fish that move into the Irish Sea grow more slowly and hence recruit to the adult population later than those that are retained close to the spawning grounds. Consequently, there are two components within the Celtic Sea stock with characteristic growth and recruitment patterns. The rate of return of the dispersed component to the Celtic Sea, the relative contribution of each component to the adult stock, and its inter annual variation is unknown.

This project aims to discriminate between juvenile Atlantic herring (Clupea harengus) from different nursery grounds using otolith microstructure and shape analysis. Otolith shape variables that show significant differences between areas will be used in combination with otolith size and increment width in the development of the classification model. This model can then be used to determine juvenile origin of adult fish and to assess the relative importance of each nursery area in terms of recruitment to the adult stock. The project addresses important questions relating to the stock structure and connectivity of the Irish and Celtic Sea populations.