

Hvor gammel er vår lysing?

Lysing (*Merluccius merluccius*) er en torskefisk, som er utbredt i hele Nordatlanten. Fangster av lysing har økt betydelig de siste 5 år, og arten har derved fått større kommersiell interesse.

Alderslesing av otolitter er viktig for å kunne gjennomføre forvaltningen av arter på en bæredyktig måte. Vi ønsker en masterstudent, som er interessert i å jobbe med alderslesing av lysing.



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Prosjektet kommer til å bestå av to deler:

- 1) Studere dagsoner i otolitten, for å se på vekstforskjelle mellom norske og skotske bestander, samt tidspunkt for settlement
- 2) Sammenligne alderslesing fra otolitter og skjell

Som masterstudent, vil arbeidsplassen være både på universitetet og på Havforskningsinstituttet.

En stor del av arbeidet vil foregå i laboratoriet med å preparere og analysere 200 otolitter fra Vestlandet og Skottland.

Veiledere/kontaktpersoner: Jane Godiksen, Arved Staby (Havforskningsinstituttet), Audrey Geffen (BIO)

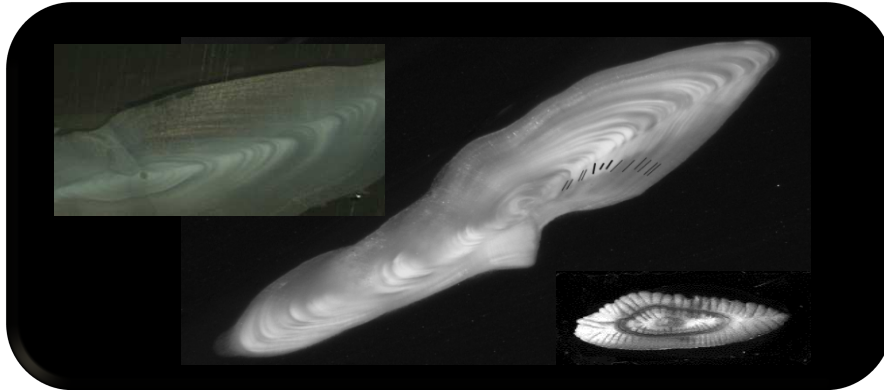


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The problem of ageing Hake

Study programme: Fisheries biology and Management / Aquaculture Biology / Marine biology

Supervisors: prof. Audrey Geffen (BIO), email: Audrey.Geffen@bio.uib.no, phone: 55584435 and Jane Godiksen (IMR), email: jane.godiksen@imr.no, phone: 55 23 84 83



Objective: To identify the first annual growth increment in hake otoliths through analysis of microstructure.

Background: Management of most commercial fish species is dependent on age based analytical assessments of the stocks. Accurate age estimation techniques are a cornerstone of the data collected supporting sustainable management policies. For many commercial species, the techniques are well established, and there is good agreement in age estimation. For other species, reliable ageing techniques have not yet been established. Hake (*Merluccius merluccius*) in particular presents difficulties in age estimation because otolith annuli are not easy to recognize. A comparison between readers revealed that estimates can differ in 70% of the cases.

Hake otoliths are full of complex bands, and it is difficult to determine whether these are yearly increments (making the fish very old), or more random events (making the fish very young). Only two methods are available to uncover the truth of whether hake grow very fast or very slow: (1) tag and recapture fish, or (2) improve the interpretation of otolith increments. Tagging experiments have shown that hake do grow twice as fast as originally thought (de Pontual et al., 2006). This also confirmed that otolith features need to be re-evaluated. Previous work has helped to determine the first year's growth in otolith from hake in southern areas. (Kacher and Amara, 2005, MoralesNin and Aldebert, 1997, Morales-Nin et al., 2005, Pineiro et al., 2008), but hake from Norwegian waters have never been investigated. This project will be the first to determine otolith age estimates for local hake.

Method: Otoliths will be prepared for image analysis of microstructure to determine when the first annual growth increment is formed. Counts and measurements of microincrements will be compared between fish of different sizes and from different locations.

Prerequisites: An interest in fish biology and ecology. The work will involve otolith preparation, microscopy, image analysis and basic data exploration and analysis. There may be opportunities for field work to collect new material

References:

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