



Assessment of spawning stock biomass (SSB) for commercial fish stocks is based on crude measures of maturity and little effort has been devoted to understanding the relationship between stock demography and either egg production or egg survival. Methods to assess reproductive potential also need to be more cost effective if they are to become part of a sound fish stock management. The aim of RASER is to investigate these issues focussing on cod and hake.

Methods

Laboratory studies



Cod dissected to study reproductive potential

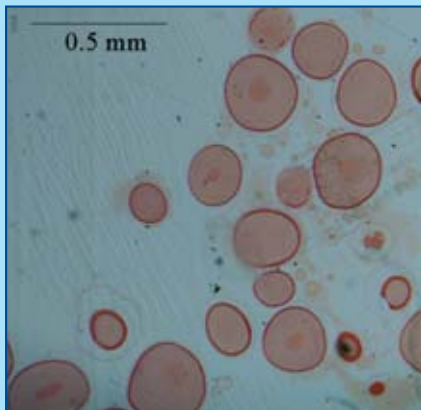
Aquarium experiments



Matre Aquaculture Research station Norway

Aims

- Study fecundity regulation in relation to follicle development and regression



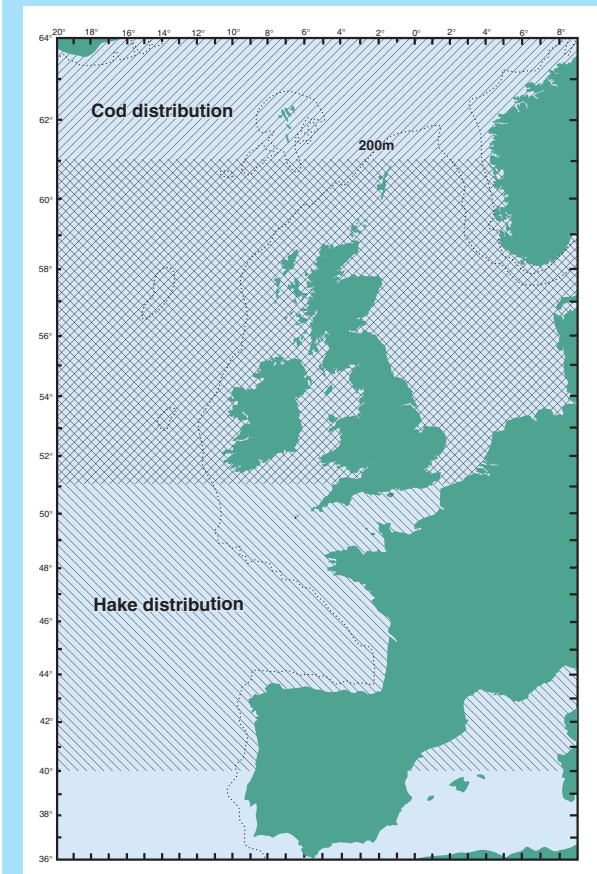
Section of cod ovary biopsy

Aims

- Automate fecundity determination with image analysis
- Lower costs by analysing formaldehyde fixed tissue rather than histology

Survey

Reproductive potential of cod and hake across a large part of their distribution.



Picture Europe from 36 – 64 degrees North 9 east – 12 west showing 200 metre contour
Cod 51 – 64 North
Hake 40 – 61 North

Synthesis

- Quantify the benefits of including environmental fluctuations, stock dynamics, revised biological reference points of reproductive potential, and fisheries interactions on fisheries management.
- Investigate latitudinal and environmental effects on cod and hake reproductive potential.
- Investigate the sensitivity of egg production methods of stock assessment to including a model of fecundity down regulation through atresia.
- Assess feasibility of assessing hake SSB using the mackerel/horse mackerel Triennial survey.