MT4113 Intro to Assignment 2

Fish Lengths as Mixture Distributions

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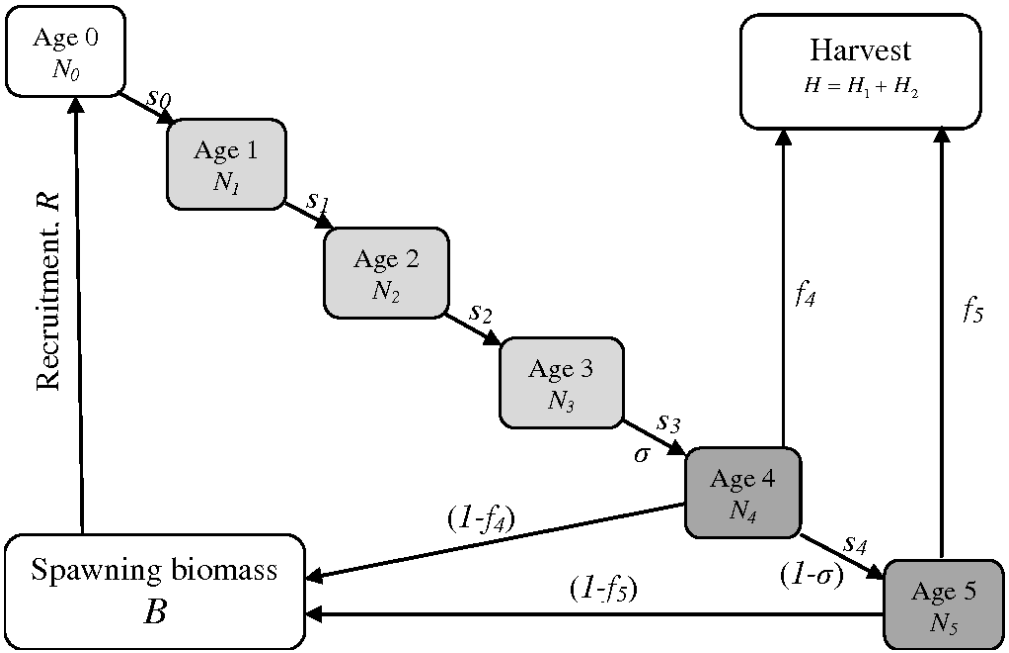
3 October 2018

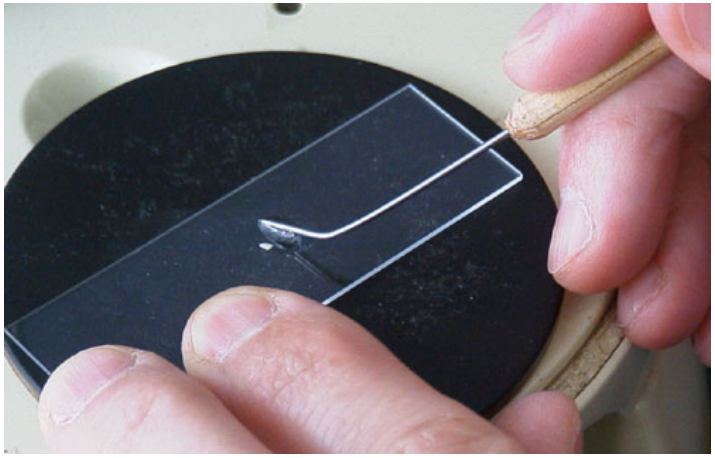
Motivation

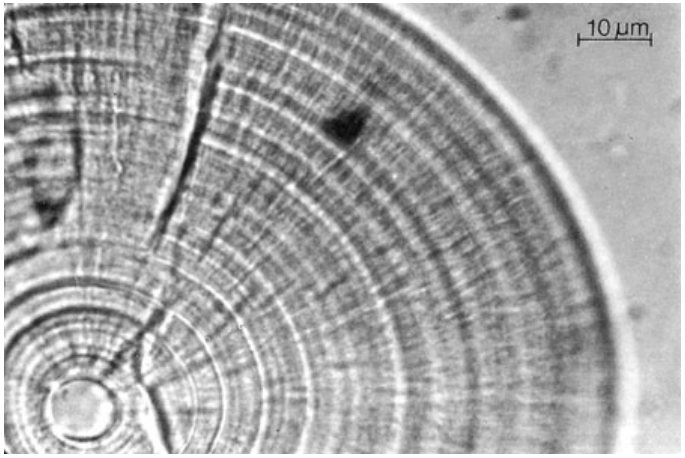
- Fisheries models require information about the age structure of fish populations



Motivation

- To get this info, take a sample of the population
- Count growth layers on a tiny ear bone called an otolith





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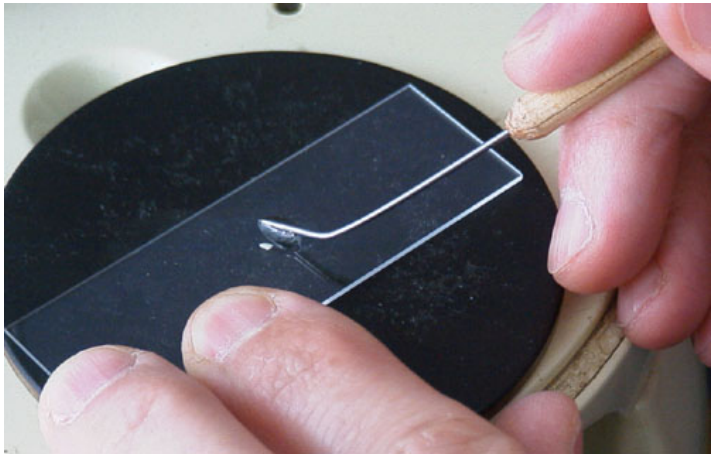
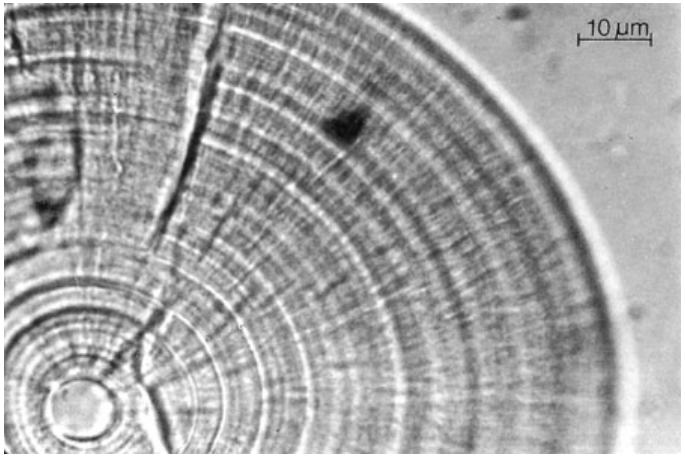
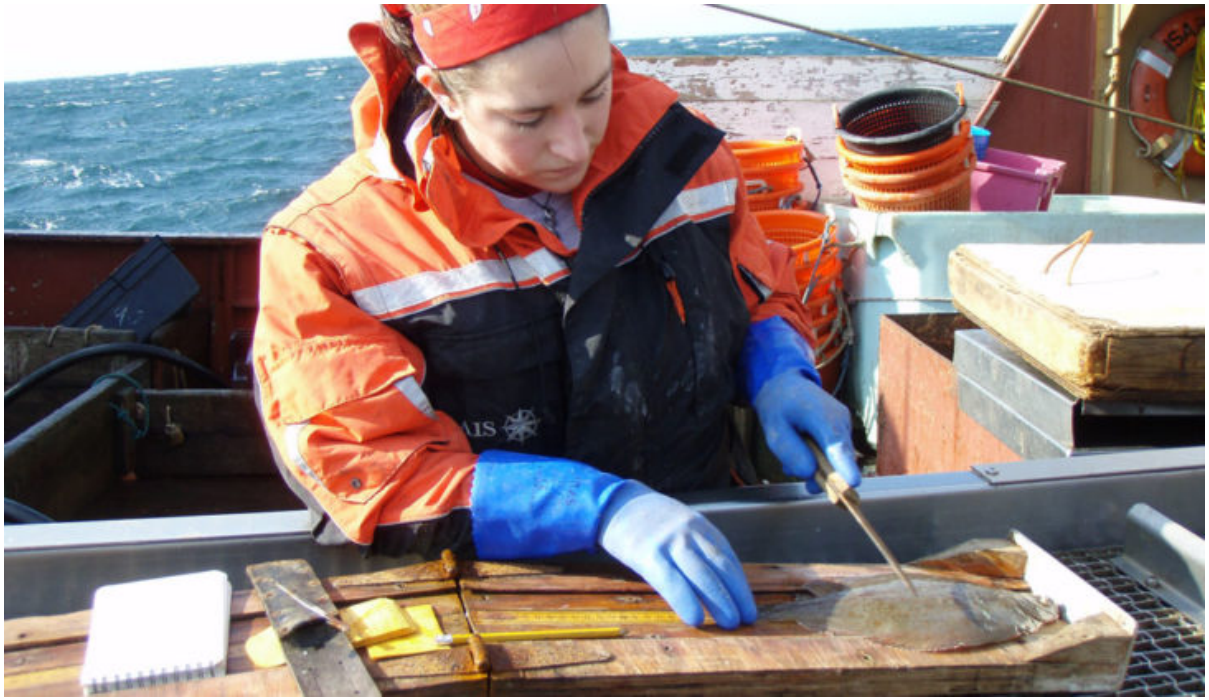




- But this process is time-consuming and therefore expensive

Motivation

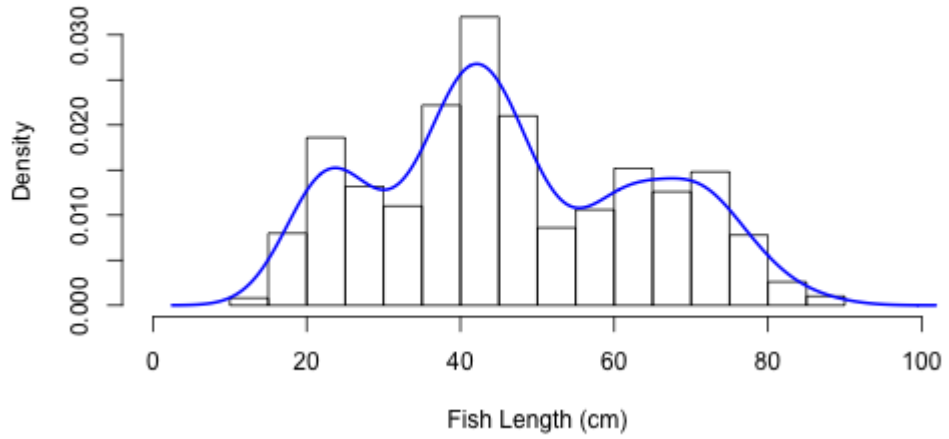
- It is easier and cheaper to measure fish lengths



- But fish lengths do not correspond perfectly to fish ages

Your Assignment

- Treat the 1000 observations of fish lengths as a Gaussian mixture
- Estimate the proportion that belong to each of 3 age cohorts
- Estimate the expected mean and sd of length-at-age



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- You will be working in randomly assigned teams of 4 and collaborating via Git and GitHub
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    - Resources are posted on the course GitHub/Moodle
- Assignment tasks are clearly outlined in the brief
    - Some are specific, some are open-ended
    - Please follow the instructions!

Your Assignment

- Due on October 19th at 11:59AM
- Mark comprises 20% of your final grade
- All team members will receive the same mark
- Criteria:
  - 10 marks for automated tests
  - 10 marks for code design and testing
  - 10 marks for programming style
  - 10 marks for documentation
  - 10 marks for additional enhancements