Poster number: 299_11

Can we use fish scales to identify **spring** and **autumn** spawning herring?

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BACKGROUND

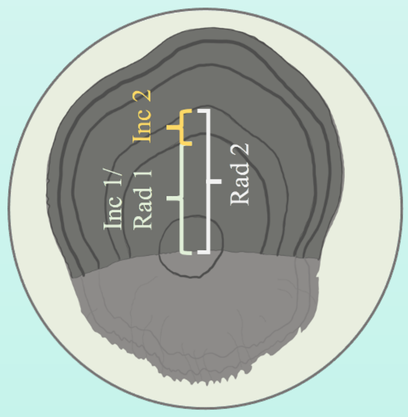
- Atlantic herring (Clupea harengus) spawn both in the **autumn** and in **spring** (1).
- **Autumn spawned larvae** overwinters the first winter and have longer growth seasons (2).
- Just like tree trunks, fish scales can give us information about the age of the herrings, and how the growth have been through the seasons. Scales are formed after metamorphosis.
- Fin clippings for DNA-analysis and otolith samples were taken in addition to the fish scales.
- Hypothesis: **Autumn spawners have relatively wider first scale increment size due to longer first growth season**

METHOD

1. Gathering of materials

2. Placing scales on objectives

3. Analyzing the scales



4. Calculating data in ImageJ

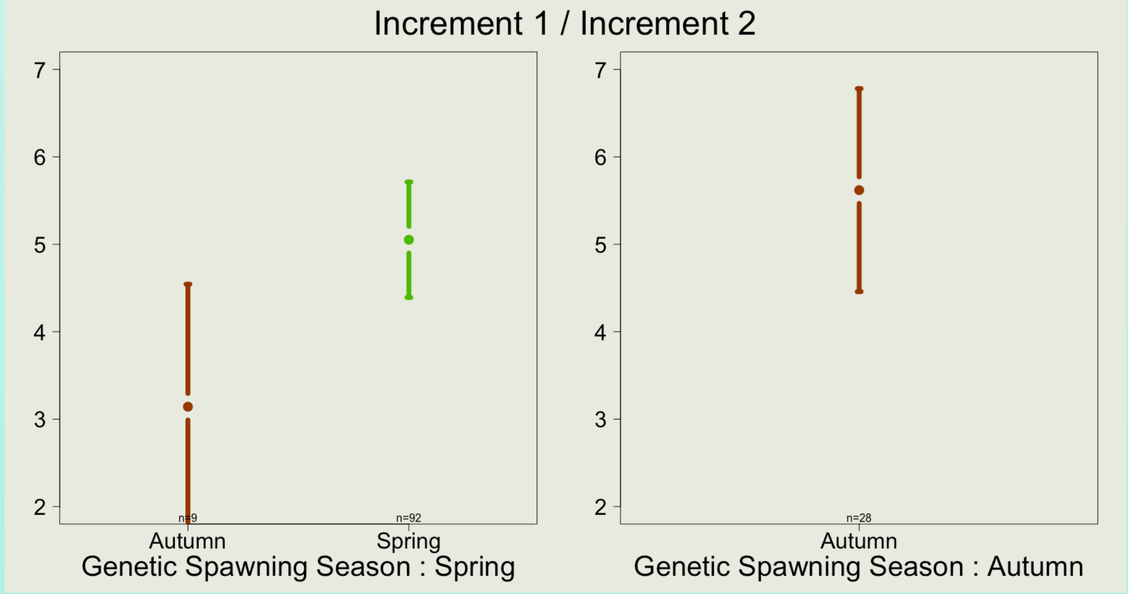


Figure 1: Plot of increment 1 divided by increment 2 of the scales, grouped by autumn and spring spawners and categorized by genetic spawning group

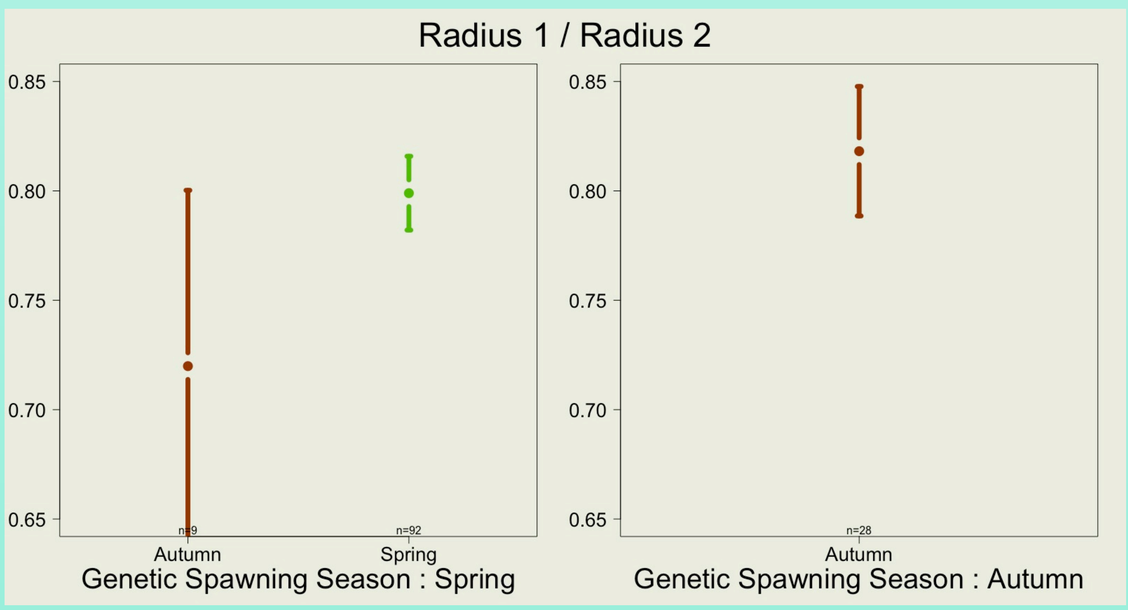


Figure 2: Plot of radius 1 divided by radius 2 of the scales, grouped by autumn and spring spawners and categorized by genetic spawning group

KEY RESULTS

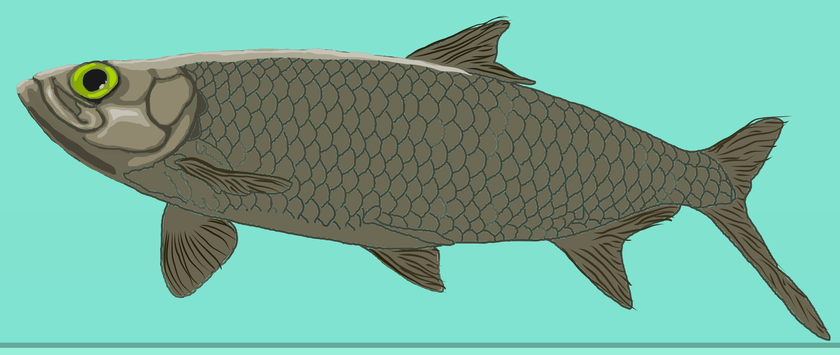
No significant differences between autumn and spring

- Too small difference in length of growing season?
- Unknown life history?
- Limitations in method?

HOWEVER…

Difference between genetic spring spawners spawned in autumn, and genetic autumn spawners spawned in autumn.

- Better fit to take advantage of longer growth season?



REFERENCES: (1) Berg F, et.al (2017) Spawning time of Atlantic herring (Clupea harengus) populations with a restricted area reflects their otolith growth at the larval stage. Fisheries Research 194:68-75. (2) Sinclair M, Tremblay MJ (1984) Timing of spawning of Atlantic herring (Clupea harengus harengus) populations and the match-mismatch theory. Canadian Journal of Fisheries and Aquatic Sciences 41:1055-1065

SCAN ME