

FISH 6005 Project 1

Due March 17, 2021

Marks: 50% of course total.

Continue developing a state-space age-structured catch-at-length (ACL) stock assessment model using the catch and survey data provided for redfish in NAFO Divisions 3LN. Relevant NAFO assessment documents are provided for your reference. Based on the priorities listed in the lab 5 presentation, students are expected to attempt to improve the model. However, a modification may not lead to improved model fit, and this is OK, but it will be important to demonstrate this clearly in your report. Students are expected to collaborate with each other, and each student should focus on a different aspect of model improvement.

Your report must be written as a scientific report, with detailed results (tables/figures) provided in Appendices.

Grading scheme:

- i. grammar, report structure, clarity and readability/succinctness (10)
- ii. description of model assumptions (e.g. self-weighting survey indices or not) and justification of decisions (10)
- iii. innovative problem solving (e.g. literature reviews, soliciting expert advice, team work with other students) (10)
- iv. investigation of model robustness to key assumptions (10)
- v. demonstration of model reliability and performance (e.g. goodness of fit, retrospective patterns) (10)

Grading will be focused on demonstration of an effective problem-solving process rather than the final model selected.

Provide R and cpp scripts as an appendix.

After the winter 2021 semester, a SGAM_NL meeting will be organized with DFO scientists and others to review your project results, with the objective of contributing new ideas, methods, and results to improve the stock assessment of 3LN redfish. You will be expected to present some of your project research at this review meeting and it is a good opportunity for you to demonstrate your expertise. This could also contribute to a group project throughout the remainder of 2021 leading to a primary publication.