

A simulation modelling approach to investigate precision and bias estimates of fish population age structure using otoliths

Daniel Ricard ¹ *, Alice Anonymous ² , Bob Security ² ,

- 1 Gulf Fisheries Centre, Moncton, NB, Canada, E1C 5K4
- 2 Department 2, Street, City, State, Zip

* Corresponding author: Daniel.Ricard@dfo-mpo.gc.ca

Abstract

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Curabitur eget porta erat. Morbi consectetur est vel gravida pretium. Suspendisse ut dui eu ante cursus gravida non sed sem. Nullam sapien tellus, commodo id velit id, eleifend volutpat quam. Phasellus mauris velit, dapibus finibus elementum vel, pulvinar non tellus. Nunc pellentesque pretium diam, quis maximus dolor faucibus id. Nunc convallis sodales ante, ut ullamcorper est egestas vitae. Nam sit amet enim ultrices, ultrices elit pulvinar, volutpat risus.

Author summary

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Curabitur eget porta erat. Morbi consectetur est vel gravida pretium. Suspendisse ut dui eu ante cursus gravida non sed sem. Nullam sapien tellus, commodo id velit id, eleifend volutpat quam. Phasellus mauris velit, dapibus finibus elementum vel, pulvinar non tellus. Nunc pellentesque pretium diam, quis maximus dolor faucibus id. Nunc convallis sodales ante, ut ullamcorper est egestas vitae. Nam sit amet enim ultrices, ultrices elit pulvinar, volutpat risus.

Introduction

Relevant literature include [1], [2], [3], [4], [5] and [6].

References

1. Laslett GM, Eveson JP, Polacheck T. A flexible maximum likelihood approach for fitting growth curves to tag-recapture data. Canadian Journal of Fisheries and Aquatic Sciences. 2002; 976–986.
2. Hart DR, Chute AS. Estimating von Bertalanffy growth parameters from growth increment data using a linear mixed-effects model, with an application to the sea scallop Placopecten magellanicus. ICES Journal of Marine Science. 2009; 2165–2175.
3. Jr. LGC, Gwinn DC, Allen MS. Evaluation of Age-Length Key Sample Sizes Required to Estimate Fish Total Mortality and Growth. Transactions of the American Fisheries Society. 2013;3: 832–840.

4. Goodyear CP. Modeling Growth: Consequences from Selecting Samples by Size. Transactions of the American Fisheries Society. 2019; 528–551. 13
5. Ailloud LE, Hoenig JM. A general theory of age-length keys: Combining the forward and inverse keys to estimate age composition from incomplete data. ICES Journal of Marine Science. 2019; 1515–1523. 14
6. Zheng N, Cadigan N, Morgan MJ. A spatiotemporal Richards–Schnute growth model and its estimation when data are collected through length-stratified sampling. Environmental and Ecological Statistics. 2020; 415–446. 15