

Age validation, age verification and age calibration

Daniel Ricard - DFO Science Gulf Region

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Standard Operating Procedures document

- Our attempt at formalising the available information about ageing procedures

Standard Operating Procedures for marine fish ageing in the Gulf Region of Fisheries and Oceans Canada

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Campana (2001)

Validation - American Plaice

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ARTICLE

Bomb Radiocarbon Validates Age and Long-Term Growth Declines in American Plaice in the Southern Gulf of St. Lawrence

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Abstract

The growth rate and size composition of American Plaice *Hippoglossoides platessoides* in the southern Gulf of St. Lawrence has changed markedly over the past 40 years. The size at age recorded in commercial fisheries and research survey data has declined, particularly through the mid-1980s. Females of the 1969 cohort grew to an estimated maximum length of 59 cm (males, 42 cm); the 1994 cohort grew to a much smaller maximum of 37 cm (29 cm for

Verification

- Recent example for American Plaice and Winter Flounder
- R Markdown document that provides the information required to verify and validate the assigned ages
- Outliers are identified and flagged
- The first step is for the ager to go and re-age these otoliths
- The second step is to ascertain that the identified outliers are aged with certainty
- The ages are now ready to be included in the production database, in our case in the bio cards
- Winter Flounder ages by Marie-France
- White Hake ages by Andrew

Calibration

- American Plaice example
- R Markdown document that performs a calibration run, where the assigned ages are compared to the “true” ages in the reference collection
- Andrew White Hake experience

Otolith reference collection

- Physical collection
- Digital images of physical collection

Campana, S.E. 2001. Accuracy, precision and quality control in age determination, including a review of the use and abuse of age validation methods. Journal of Fish Biology 59: 197--242.