

# **Obtaining and cataloguing ageing structures, preparation methods, storage and inventory**








Daniel Ricard - DFO Science Gulf Region

2023-01-31 - TESA Workshop





# Standard operating procedures

HomeTools



techreport-english.... x









1 (1 of 92)

















45.8%





Bookmarks



 CONTENTS  
 ABSTRACT  
 RÉSUMÉ  
>  Introduction  
>  Shared procedures  
>  Family Gadidae  
>  Family Pleuronectidae  
>  Family Clupeidae  
>  Family Rajidae  
 Glossary of terms  
 References  
>  APPENDICES

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

Daniel Ricard, Eliane Aubry, Andrew Darcy, Isabelle Forest, Karen Robertson, Marie-France Robichaud, Sylvie Robichaud, Nicolas Rolland, Joëleen Savoie and François-Étienne Sylvain

Gulf Fisheries Centre  
Fisheries and Oceans Canada, 343 Université Avenue  
Moncton, NB, E1C 9B6, Canada

2023

Canadian Technical Report of  
Fisheries and Aquatic Sciences #####

# Obtaining ageing structures

- Samples from commercial landings
  - Port sampling
  - At-sea observers
- Samples from research surveys
  - Length stratified sampling
  - Sex and length stratified sampling
- Other sampling opportunities
  - Trapnet
  - Recreational fisheries
  - ...

# Cataloguing

- Procedures to identify the otoliths that are collected
- Maintain the unique identity of each otolith through the documentation of its source, date collected, fish species, fish length, . . .
- Ideally, storage of information in a database, but a well-curated spreadsheet or collection of ASCII files can work too

# Preparation

- Cleaning
- Polishing
- Mounting in epoxy resin
  - Clear resin
  - Opaque resin
- Mounting on wax
- Mounting on microscope slide
- Crack and burn
- Sectioning
  - Saws, noise and dust
- Imaging (more on that tomorrow)

# Storage

- Ideal situation - Central quality-controlled environment with archival level documentation of physical samples - No deterioration of physical otoliths - Maintain the readability of otoliths
- Reality - Hapzard collections of different ageing structures located in a number of places, and with varying levels of documentation - Storage in glycerin that deteriorates otoliths in the longer term



# Inventory of otolith collections

- OpenData and FGP datasets as a starting point
- write a metadata record for each “otolith collection”
- the dataset shared in the public domain is the summary of physical otoliths in the collection
- by also adding the number of otoliths that have been aged, the “git diff” on the OpenData dataset represents a [progress report of sort](#)
- Gulf Region otolith collections on [dmapps](#)
  - 4T American Plaice on [dmapps](#), on [OpenData](#) and on [FGP](#)
  - 4T Atlantic Cod on [dmapps](#), on [OpenData](#) and on [FGP](#)
  - 4T White Hake on [dmapps](#), on [OpenData](#) and on [FGP](#)
  - 4T Yellowtail Flounder on [dmapps](#), on [OpenData](#) and on [FGP](#)
  - 4T Winter Flounder on [dmapps](#), on [OpenData](#) and on [FGP](#)
  - 4RST Witch Flounder on [dmapps](#), on [OpenData](#) and on [FGP](#)

# Workshop homework

- How can we best summarise the results of our regional homework?



# Thoughts and discussion