

Workshop on Age Reading Of Chub Mackerel (*Scomber colias*)
(WKARCM)

Lisbon, 02-06 November 2015

Problem identification in ageing of otoliths of chub mackerel (*Scomber colias*)

ToR C

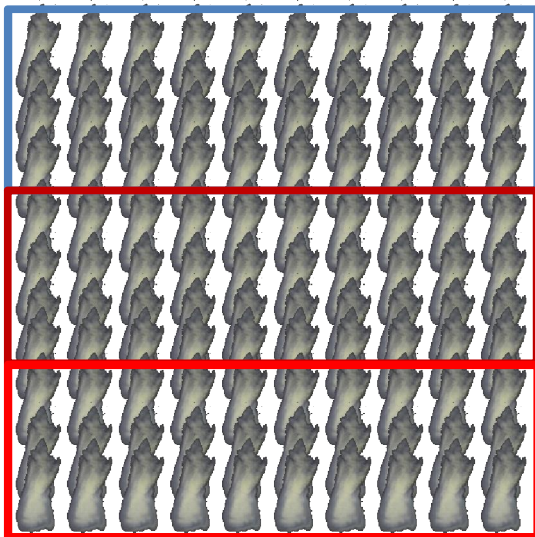
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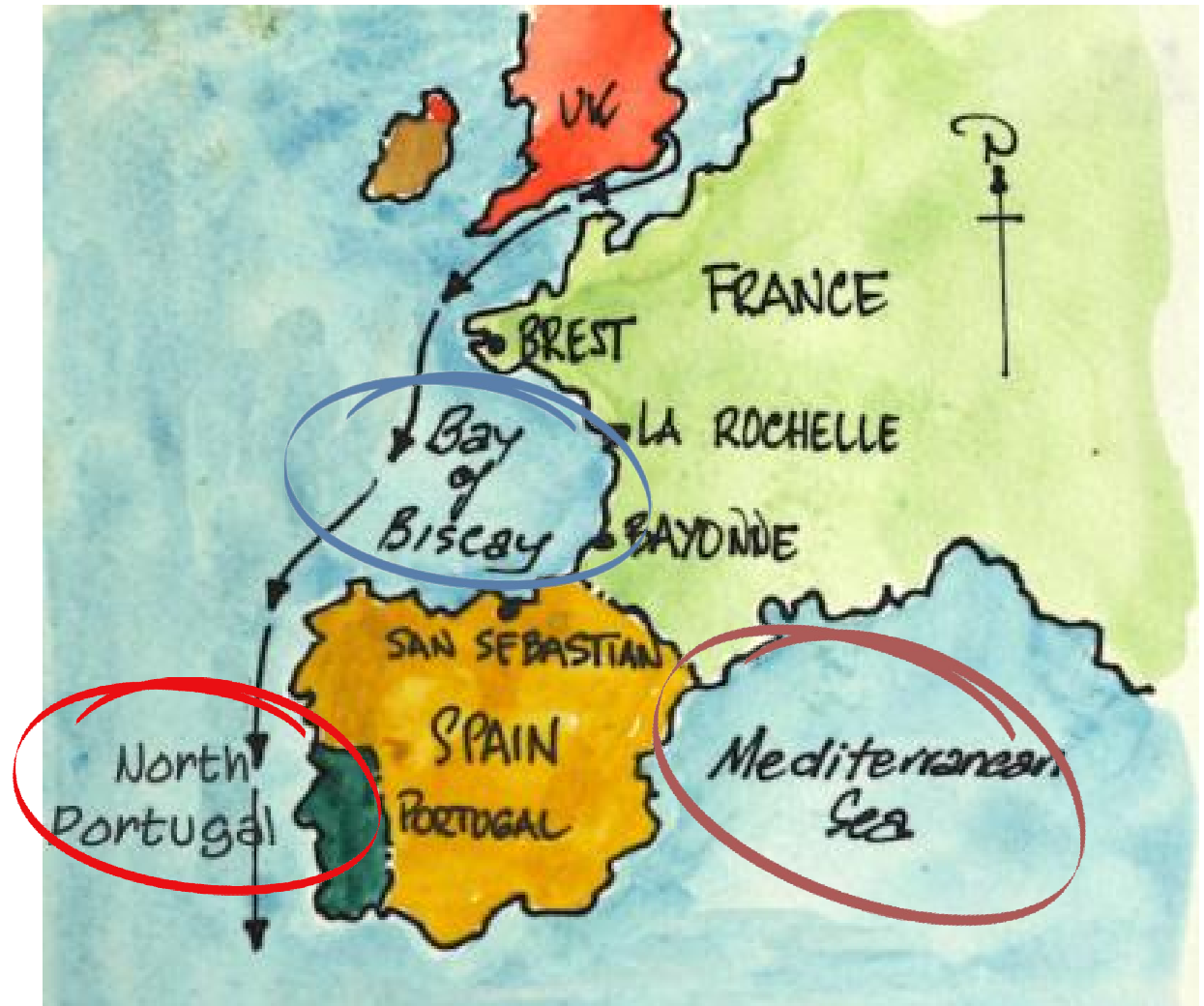
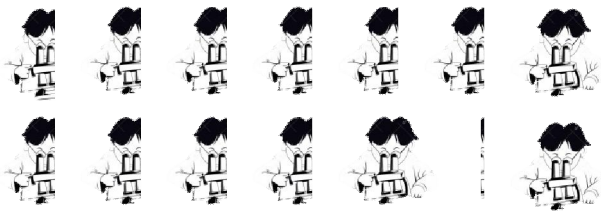
Image Analysis

Selection of 124 otoliths

3 sets



14 readers



Age criteria

- “ For the three sets of otoliths of this exchange the conventional birth date is the 1st January.
- “ The spawning period of this species occurs in spring, between March and June in Iberian waters (Martins, 1996; Navarro *et al.*, 2014).
- “ True annual rings will be those formed in winter each year.

Analysis

- 1 - Check the age range for each otolith by set
- 2 . Calculate the age difference
- 3 . Count the number of otoliths for each age difference
- 4 . Identify the possible causes of age differences by set





50 otoliths images, 1 with 100% of age coincidences

Bay Biscay Set				
N° OTOLITHS with difference age range of				
1	2	3	4	> 5
2	11	14	14	8

PROBLEM:

Identification of first annual ring





50 otoliths images, 1 with 100% of age coincidences

Bay Biscay Set				
N° OTOLITHS with difference age range of				
1	2	3	4	> 5
2	11	14	14	8

PROBLEM:

Double rings counts





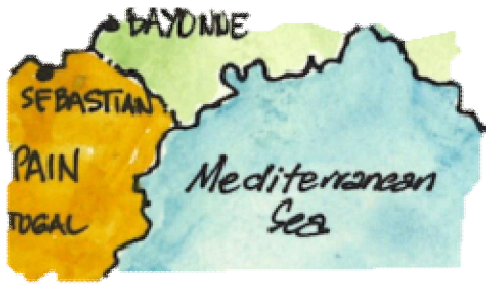
49 otoliths images, 1 with 100% of age coincidences

Mediterranean Set				
N° OTOLITHS with difference age range of				
1	2	3	4	> 5
12	25	7	3	1

PROBLEM:

Double rings counts



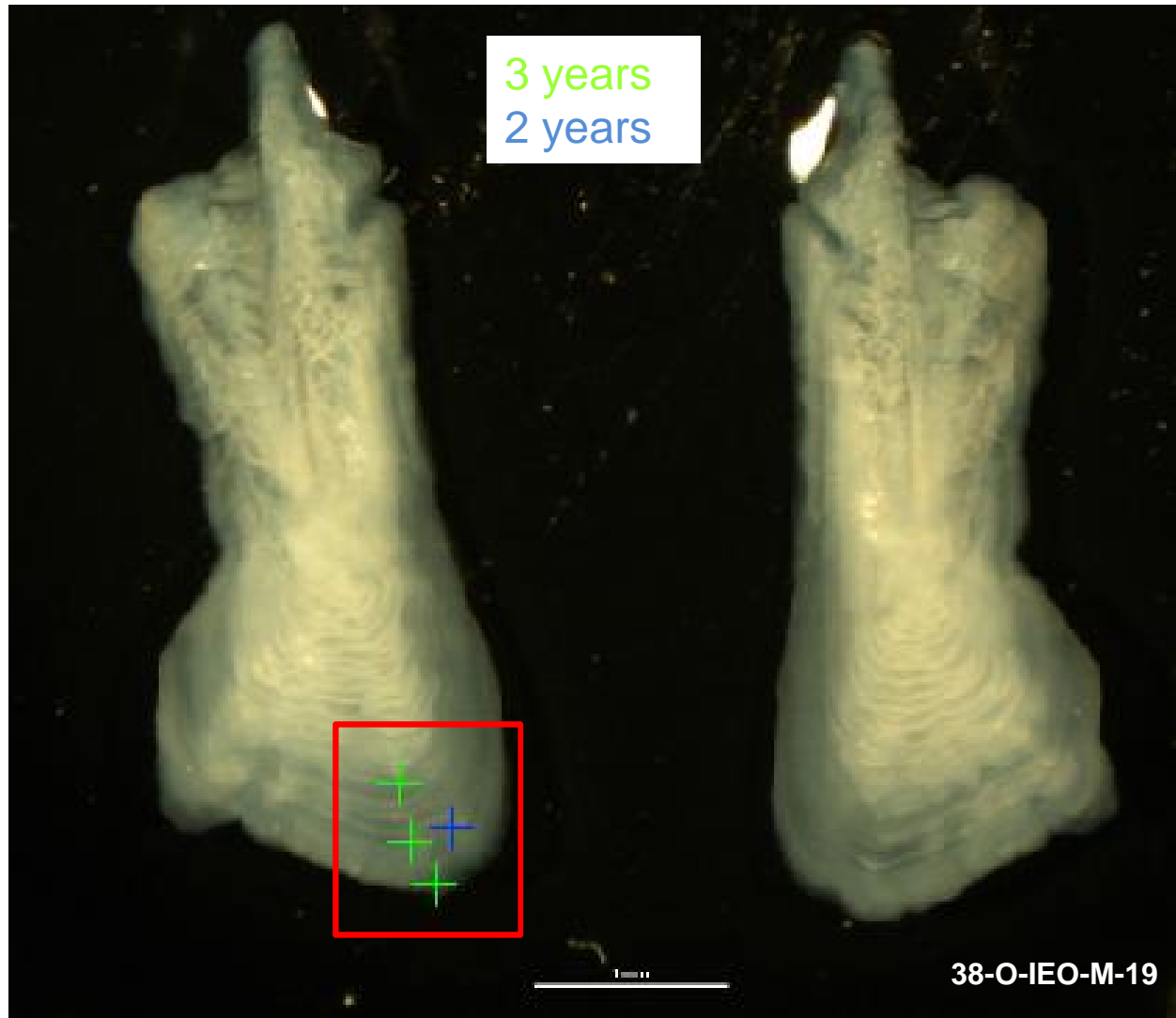


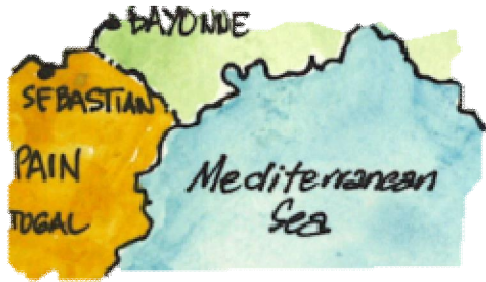
49 otoliths images, 1 with 100% of age coincidences

Mediterranean Set				
Nº OTOLITHS with difference age range of				
1	2	3	4	> 5
12	25	7	3	1

PROBLEM:

Edge type identification

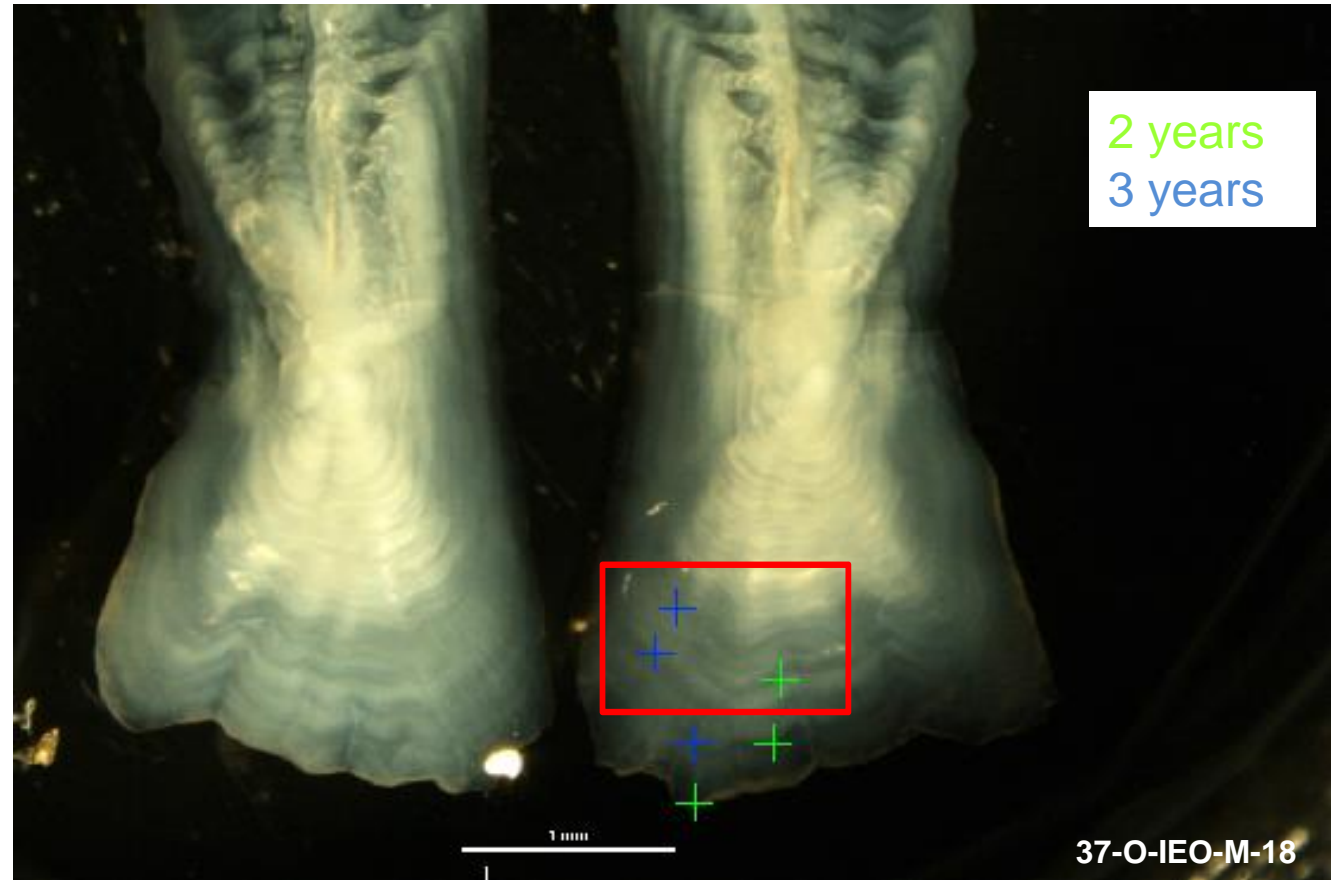




49 otoliths images, 1 with 100% of age coincidences

Mediterranean Set				
N° OTOLITHS with difference age range of				
1	2	3	4	> 5
12	25	7	3	1

PROBLEM:
First annual ring identification





25 otoliths images, 0% of age agreement

Portugal Set				
Nº otoliths with number of years difference from modal age equal to:				
1	2	3	4	> 5
3	14	4	3	1

PROBLEM:
First ring identification
Edge type



103-Mas
MAT101 2011Jan



121-Mas
MAT367 2011Jul



25 otoliths images, 0% of age agreement

Portugal Set				
Nº otoliths by age difference				
1	2	3	4	> 5
3	14	4	3	1

PROBLEM:
Double rings counts



116-Mas MAT294
2011Mai

Main Problems

1-2 years of age differences

- First ring identification (specialy in Bay of Biscay)
- Edge type identification

3-5+ years of age differences

- First ring identification;
- Double rings counts each as an annual growth ring;
- Problem in the interpretation of the otolith growth structure.

