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Population structure and connectivity of coastal pelagic fish: *Scomber colias* holistic approach

Objectives

- Delimitation of stocks based on phenotypical variation
 - Body morphometry-based stock delimitation
 - Otolith shape-based stock delimitation
 - Temporal variability of population structure – otoliths
- Delimitation of stocks based on molecular and isotopic markers
 - Genetic variation-based stock delimitation
 - Molecular and **isotopic signature-based** connectivity patterns reconstruction
- Evaluate the correspondence and consistency of population structure among methodologies
- Describe environmental/exploitation influence on performed population structure

Connectivity and Natal Origin

- Natal origin of individuals using the **stable isotopic composition of the otoliths** ($\delta^{18}\text{O}$ and $\delta^{13}\text{C}$), deposited during the first year of life - as a natural tag of the individual's place of origin
 - Yearlings - whole otolith (corresponding to the first year)
 - Adults - area corresponding to the first year will be identified and nucleus material isolated
 - Expected results - isotopic natal origin separation among populations related to ^{18}O variation as a function of salinity and temperature
- Natal origin of individuals using the **stable isotopic composition of the eye lenses** ($\delta^{15}\text{N}$ and $\delta^{13}\text{C}$)

Course contributions

- Understand the principles of stable isotopes
- Contact with its multiple applications
- Deepen knowledge and interest in this field

- Improve laboratory methodology knowledge – spatial proposes
population structure and connectivity of small pelagic fish

- Add new perspectives and methods/approaches to my PhD project
e.g. applications of stable isotopes to ecology and trophic proposes