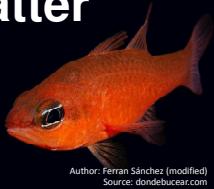


Apogon imberbis and its contribution of organic matter to the inside of marine caves from Menorca.

- Joan Mir Arguimbau -

Grau en Biologia Ambiental - Universitat Autònoma de Barcelona - 2013

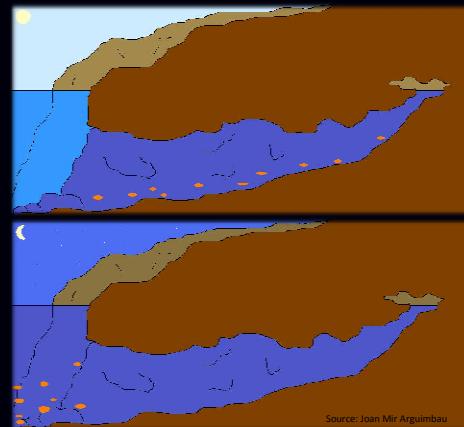


Introduction

Marine caves are **oligotrophic habitats** because of darkness and extreme reduction of water circulation → reduction in benthic, pelagic and fish communities.

The most abundant fish is ***Apogon imberbis*** → The abundance is not reduced in the inner portions of marine caves.

A. imberbis stay inside the caves during the day but they go out from the cave at night to feed.



Hypothesis

Apogon imberbis has an important role in the contribution of organic matter to the inner portions of marine caves.

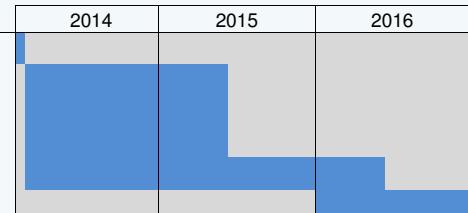


Objectives

1. To quantify the **abundance** and **relative abundance** of *A. imberbis* in fish communities from marine caves.
2. To evaluate the **OM input** by *A. imberbis*.
3. To assess the **OM annual variability** to provided by *A. imberbis*.
4. To study the variability between different caves according to its characteristics.

Timetable

2014	2015	2016
1. Characterization of caves		
2. Abundance of <i>A. imberbis</i>		
3. OM input		
4. Annual variability		
5. Treatment of samples		
6. Dissemination		



Methodology

1. Study area → 8 caves → 3 sections

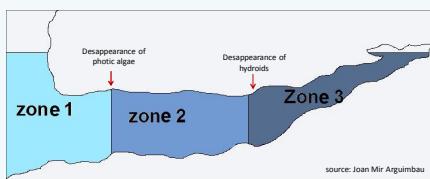


Image 2. Diagram of marine cave sections.



Image 3. Localization of marine caves to study.

3. OM input → Sediment trap (Day – night)



Image 6. Example of a sediment trap.



Image 7. Sediment trap *in situ*.

2. Abundance of *A. imberbis* → Visual transects



Image 4. Visual transect for fish quantification.



Image 5. La Catedral, a cave included in the study.

4. Annual variability → Sediment trap (24h) → Stable isotopes of $\delta^{13}\text{C}$ $\delta^{15}\text{N}$

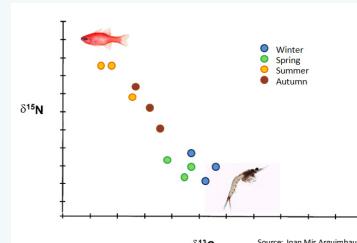


Image 8. Diagram of expected stable-isotope analysis.

Expected results

- Important presence of *A. imberbis* inside the caves.
- Relative **importance** of OM input by *A. imberbis*, especially in the **first hours of the day**.
- **Maximal** inputs of OM during **summer** but minimal inputs during winter.
- Important changes between different caves aren't expected.



Dissemination plan

- Publications in **science journals**.
- Conferences on marine science meetings.
- Publications in **outreach** magazines
- Outreach lectures.

References:

Fichez R (1990). Decrease in allochthonous organic inputs in dark submarine caves, connection with lowering in benthic community richness. *Hydrobiologia*, 207: 61-69.