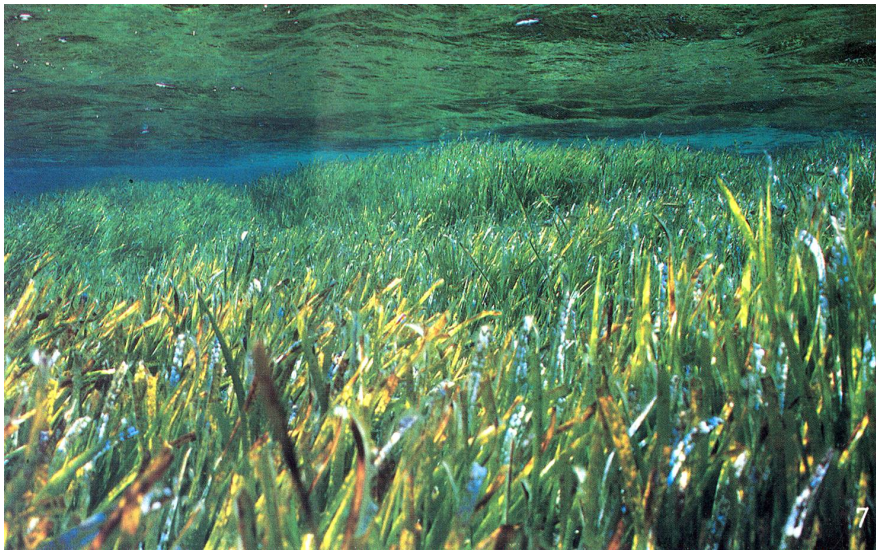
1.02 Carbon sinks / Practicum (P2)



Posidonia oeanica

- Endemic Mediterranean
- Low turnover (P/B)
- Refractory debris (high C/N)
- Mat formation (high B/A)

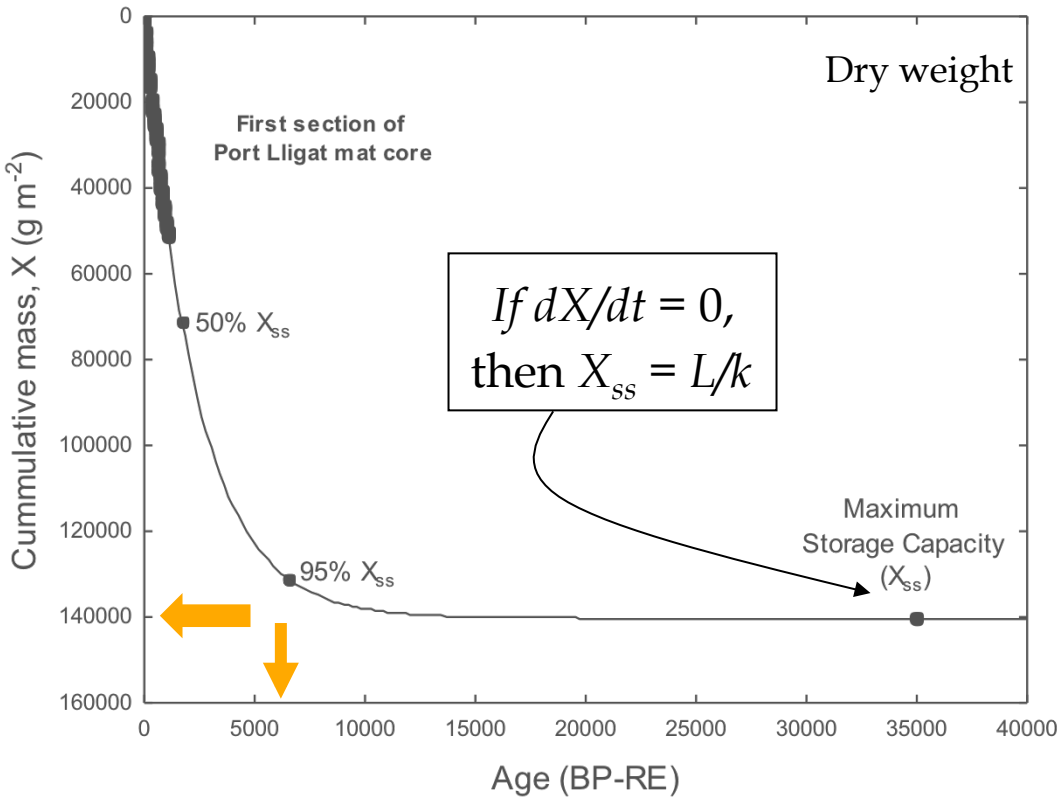
Zostera marina

- Wide distribution
- High turnover (P/B)
- Refractory debris (Low C/N)
- No mat formation (low B/A)

Practicum (P2)

Accumulation equation:

- Describes **balance** between **inputs** (accretion) and **outputs** (decomposition/ erosion).
- Allows estimating the **maximum storage capacity**.
- Sink '**maturity**'



$$X = \frac{L}{k} \times (1 - e^{-k \times t})^{*}$$

X = Cumulative biomass
L = accretion rate
K = fractional loss

* **Olson JS (1963)** Energy storage and the balance of producers and decomposers in ecological systems. *Ecology* 44:322-331

Practicum (P2)

Characterize the **carbon sink** constituted by *P. oceanica* and by *Z. marina*

- *L* (accretion rate; g/m^2 y) and *k* (fractional loss; y^{-1})
- 50%, 95% and 99% storage capacity (g/m^2)
- Maximum storage capacity (MSC; g/m^2)
- Provide results in DW and in C
- Time to all three levels of storage (y)
- Time to MSC (maturity)
- Maximum sink thickness (MST)
- Stocks at MST
- Any other relevant variable you can think of.
- Compare both seagrasses and discuss differences

Provide tables and graphs in a small presentation

Miguel Ángel Mateo Mínguez - Centro de Estudios Avanzados de Blanes - CSIC

Practicum (P2)

Material needed

Databases:

https://imedea.uib-csic.es/master/cambioglobal/Modulo_1_02/Practicum_P2_Data.xlsx

Equation and questions:

https://imedea.uib-csic.es/master/cambioglobal/Modulo_1_02/Practicum_P2_Explanations.pdf

Spreadsheet and stats program that allows to fit custom functions (SPSS, STATISTICA, PRIMER, etc.).

Software for presentations