Temporal variation of the free-living Isopoda (Crustacea: Peracarida) in two subtidal muddy bottoms of the Ría de Aldán (Galicia, NW Iberian Peninsula)

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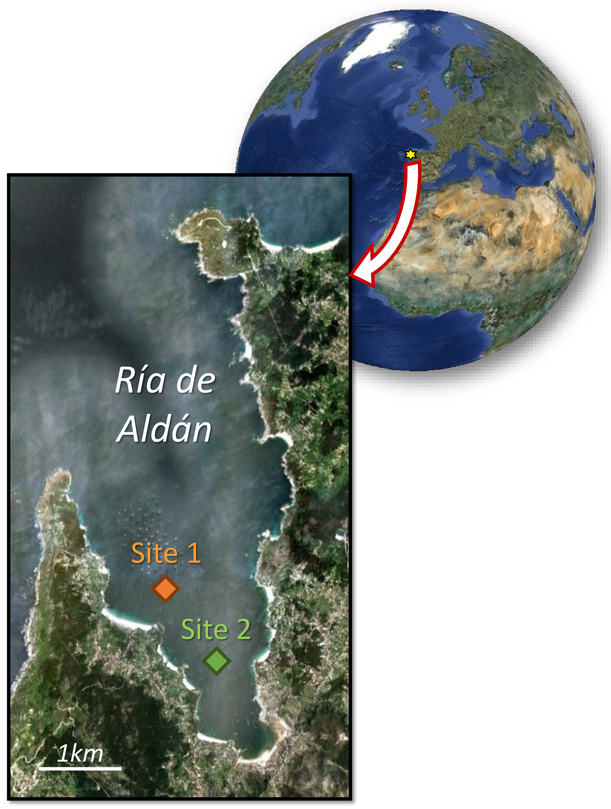
STUDY AREA: RÍA DE ALDÁN

- **Small bay** located in the NW of the Iberian Peninsula
- **Galician Rías** area: group of tectonically-formed estuarine-like bays
- Highly **exposed** to oceanic swell and currents
- Subjected to **coastal upwelling and downwelling** processes
- High variety of sedimentary habitats
- Diverse benthic fauna



FREE-LIVING ISOPODS

- **High morphological and functional diversity**
- Present in all kinds of substrata
- More abundant and diverse in **sandy sediments** and on **different kinds of hard substrata**
- **Less studied in subtidal fine sediments**

METHODOLOGY

- **2 sampling sites**
- **Monthly** samplings
- May 1998 to May 1999
- **Van-Veen grab** (operating surface of 0.056m^2)
- 5 replicate samples
- Sieving through **0.5mm** mesh
- Additional sample to study **sediment features**:
  - Grain size
  - Carbonate content
  - Total organic matter (TOM) content

THE STUDIED BOTTOMS

	Site 1	*Site 2*
Depth (m):	18	17
Sediment type:	**Muddy Sand**	**Mud**
Q_{50} (mm):	0.34 ± 0.48	0.01 ± 0.01
Silt + Clay (%):	**6.34 ± 3.49**	**80.86 ± 9.39**
TOM (%):	**3.19 ± 0.86**	**12.72 ± 1.66**
Carbonate (%):	58.29 ± 7.35	28.93 ± 5.32

RESULTS

- **176 specimens** belonging to **14 different taxa**
- Abundance and taxa richness were higher at **Site 1** overall
  - ***Site 1:*** 150 specimens, 12 taxa
  - ***Site 2:*** 26 specimens, 5 taxa
- List of taxa found at Site 1, Site 2 or Both Sites

Family Gnathiidae
Gnathia sp.
Gnathia af. oxyuraea (Lilljeborg, 1855)

Family Cirolanidae
Conilera cylindracea (Montagu, 1804)
Eurydice af. inermis Hansen, 1890
Eurydice af. truncata (Norman, 1868)
Natatolana neglecta (Hansen, 1890)

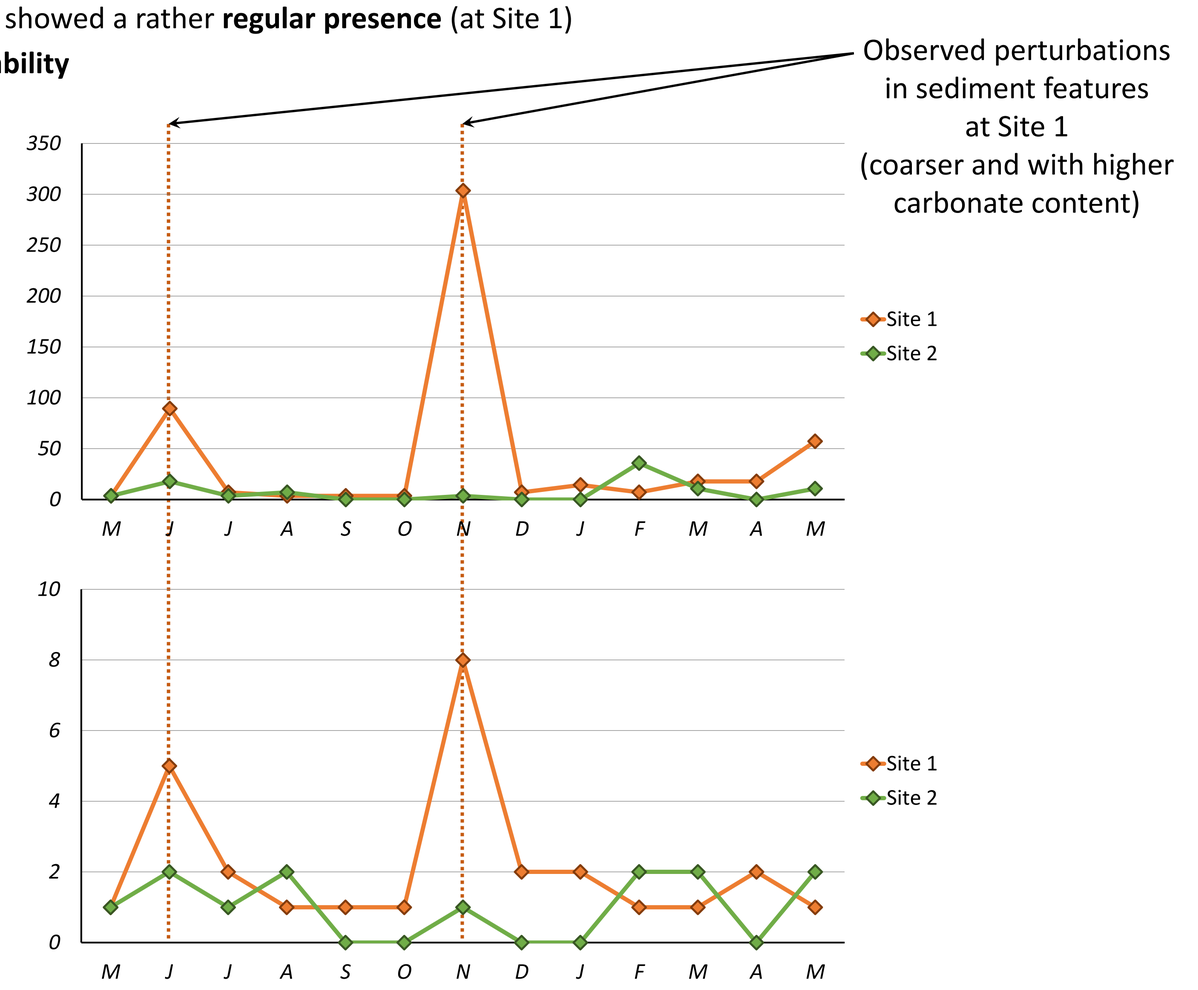
Family Sphaeromatidae
Campecopea hirsuta (Montagu, 1804)
Cymodoce cf. robusta Nierstrasz, 1918
Dynamene bidentata (Adams, 1800)
Lekanesphaera rugicauda (Leach, 1814)

Family Janiridae
Jaera (Jaera) nordmanni (Rathke, 1837)
Janira alta (Stimpson, 1853)
Janira maculosa Leach, 1814

Family Munnidae
Uromunna sp.

- *Jaera (Jaera) nordmanni*, *Uromunna sp.* and *Lekanesphaera rugicauda* were the **most abundant taxa** both at Site 1 and overall
- **Only *Uromunna sp.*** showed a rather **regular presence** (at Site 1)
- **High temporal variability**

- ***Abundance (n/m^2):***



- ***Number of taxa:***

- There were **significant correlations** ($p<0.05$) between biotic and abiotic variables at **Site 1**: **total abundance and taxa richness** present **positive** correlation with **coarser** and **more heterogeneous** sediment
- At **both sites**, the abundances of **some species** present those **same significant correlations**, and some of them also show **positive** correlation with **carbonates content** and **negative** correlation with **TOM content**

DISCUSSION

- Isopods are **rather scarce** at both sites
- **Most of them were collected at Site 1**, the one with a **coarser and less organically enriched sediment**, and even there only one taxa was found regularly
- This agrees with **previous findings**: Isopods usually present **low abundances in fine sediments**
- **Correlations** found **between biotic and abiotic** data, especially at Site 1, also **support this** pattern
- Such correlations are **not related to a seasonal pattern**, they are highly influenced by the results from **June and November 1998 at Site 1**: the **sediment was considerably coarser** than in the rest of the studied months, and **both abundance and diversity of Isopods were much higher** than during the rest of the study

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