

Séminaire du
plan national d'actions
en faveur du Puffin des Baléares

24 au 26 juin 2024



Spatial and temporal distribution of the Balearic shearwater in the south of the Bay of Biscay

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plan national d'actions
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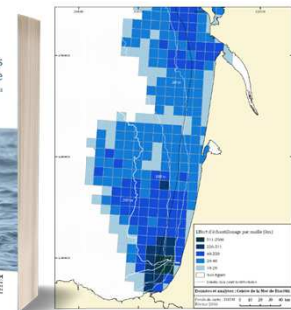
At-sea monitoring of the Balearic shearwater in the south of the Bay of Biscay



1/ ERMMA protocol (Marine Environment and Resources of Aquitania)



- **Standardized monitoring based on random line transect** since 1976 (> 200 000 data)
- **Monthly campaign on coast-guard vessels**
- > 70 species seabird and cetaceans observed
- Data useful to design and manage **Marine Protected Area** of French Atlantic coast
- **Pluridisciplinary** researches on marine biodiversity evolution (oceanic-climatic changes, oil spill impacts, anthropogenic activities...)



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Adaptations for the NAP

Using **Distance Sampling** for each Balearic shearwater observation

Diffusion of Balearic shearwater observations to the OFB



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2/ Dedicated protocol for the NAP

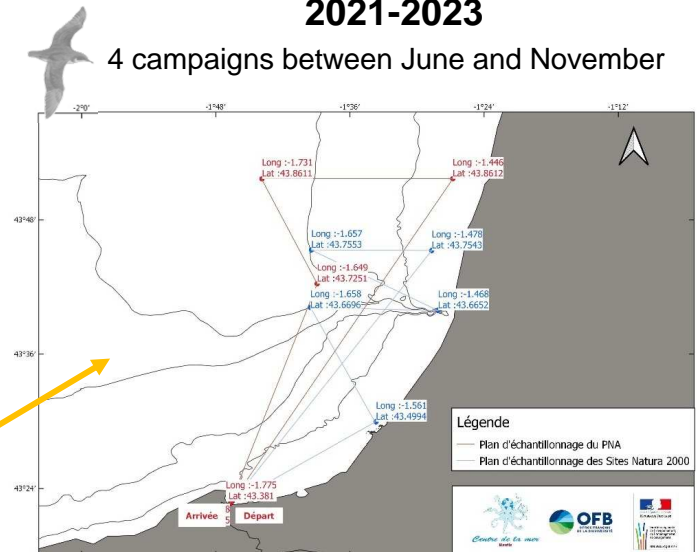
- Standardized monitoring based on set line transect
- Campaign only from **June to November**
- **Distance sampling method**
- **Dedicated private boat**
- Protocol compatible with others studies



Two areas studied

Capbreton canyon 2021-2023

4 campaigns between June and November



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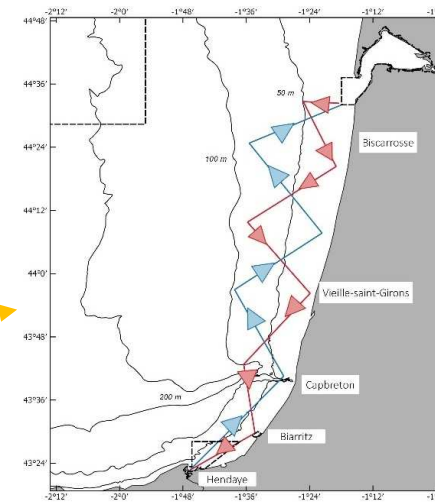


Two areas studied

Landes plateau and south of Arcachon bay 2023-2024



3 campaigns (2 days) in summer
(July-September)

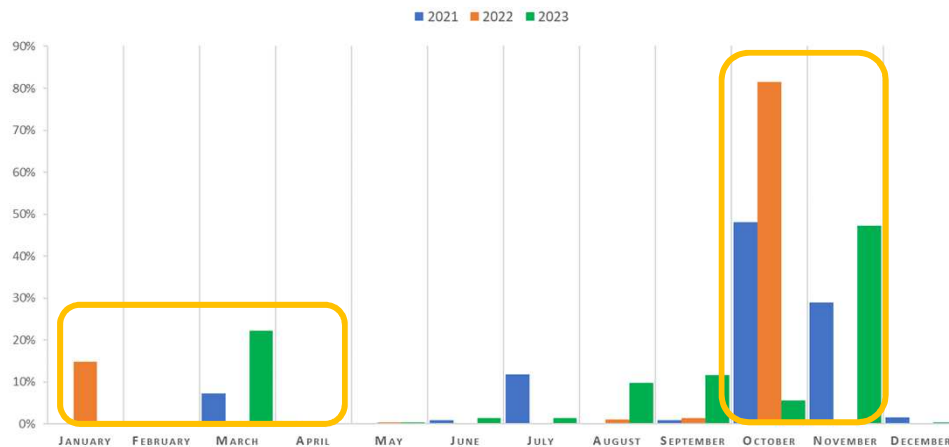


At-sea monitoring of the Balearic shearwater in the south of the Bay of Biscay



Phenology

- 3 years of dedicated monitoring (2021-2023) with available annual reports
- **15 dedicated campaign (18 at-sea days ~ 164h)**
- Data from dedicated protocol AND others compatible programmes



Part (%) of Balearic shearwater count per month from 2021 to 2023

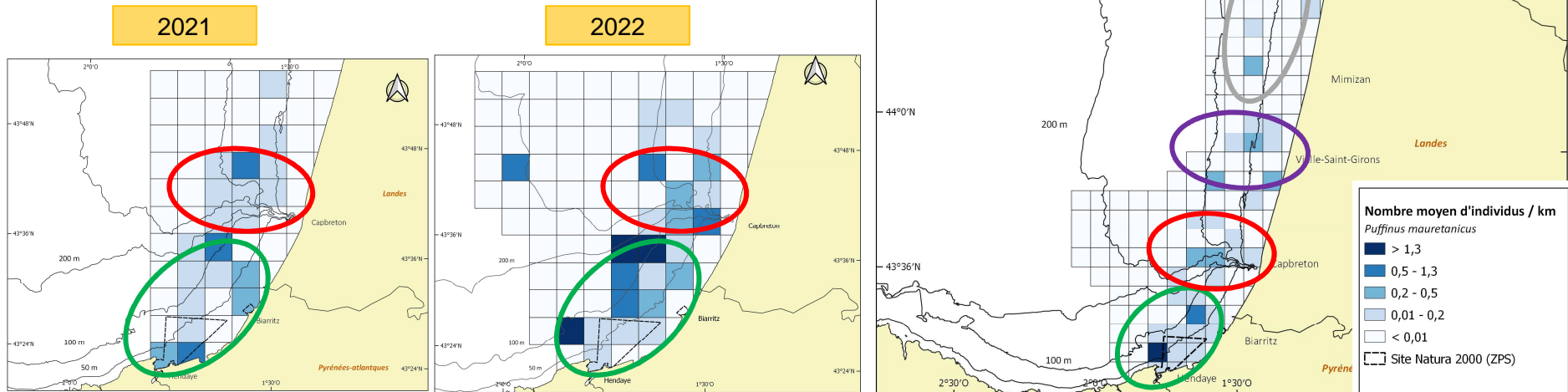
- **Peak density in autumn** (October/November)
- Inter-annual variability
- **Presence of the species all the year**
=> non-breeding birds in winter



At-sea monitoring of the Balearic Shearwater in the south of the Bay of Biscay

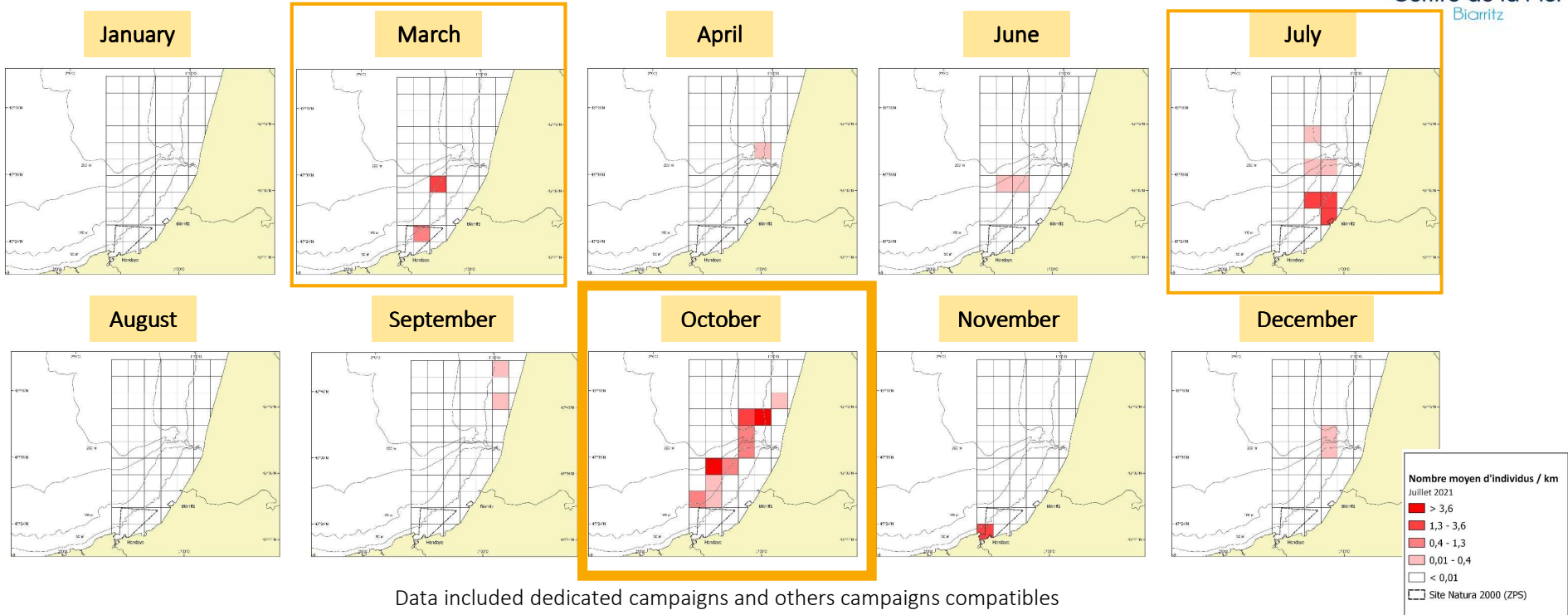
Spatial occupation

- Regularly observed in the whole area, especially nearshore
- Corridor between depth of 50-100m (except for Capbreton Canyon)
- Important areas identified:
 - French basque coast**
 - Capbreton canyon**
 - Landais plateau**
 - South of Arcachon bay**



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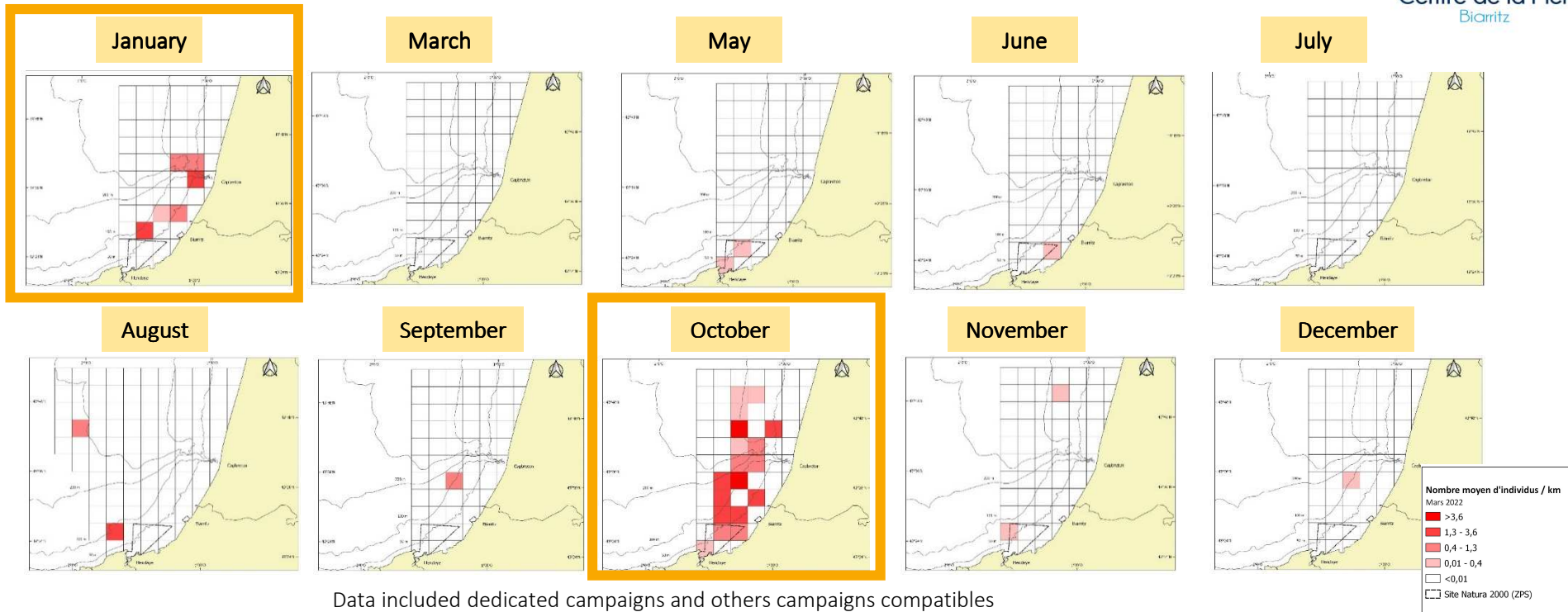
Spatial occupation varies during the year
2021



Data included dedicated campaigns and others campaigns compatibles

At-sea monitoring of the Balearic Shearwater in the south of the Bay of Biscay

Spatial occupation varies during the year
2022

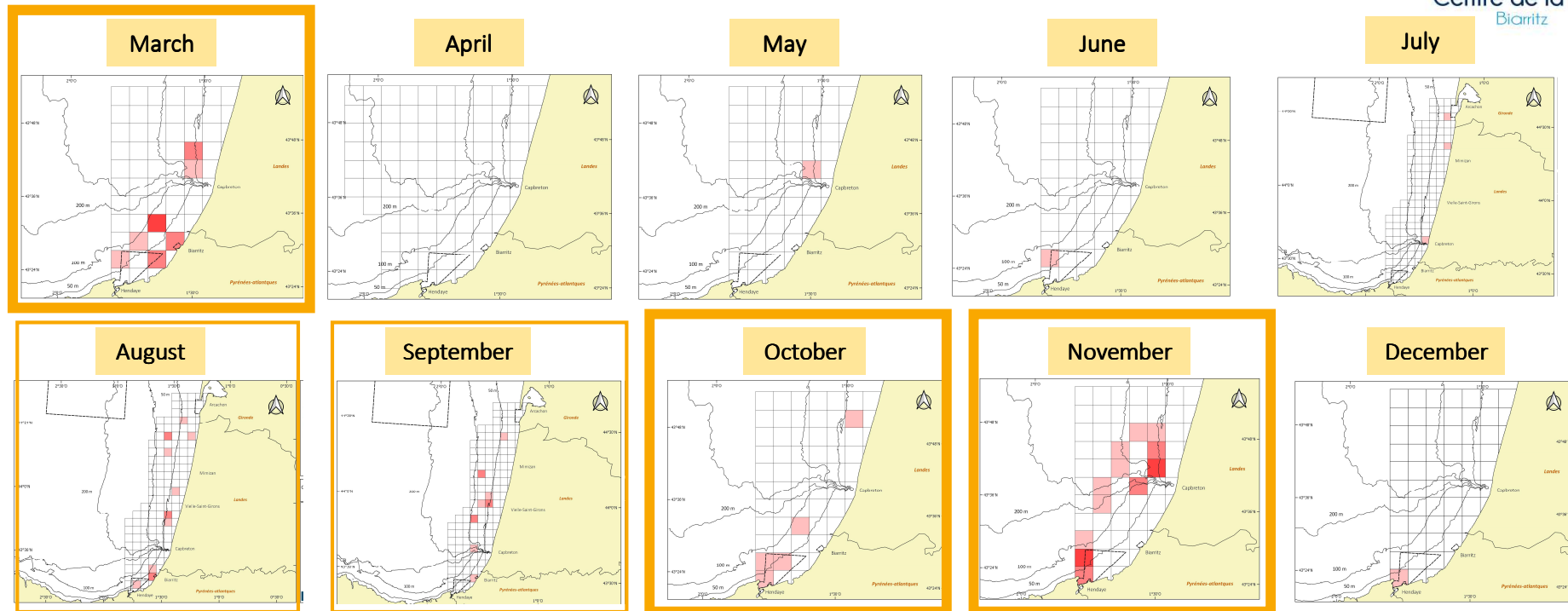


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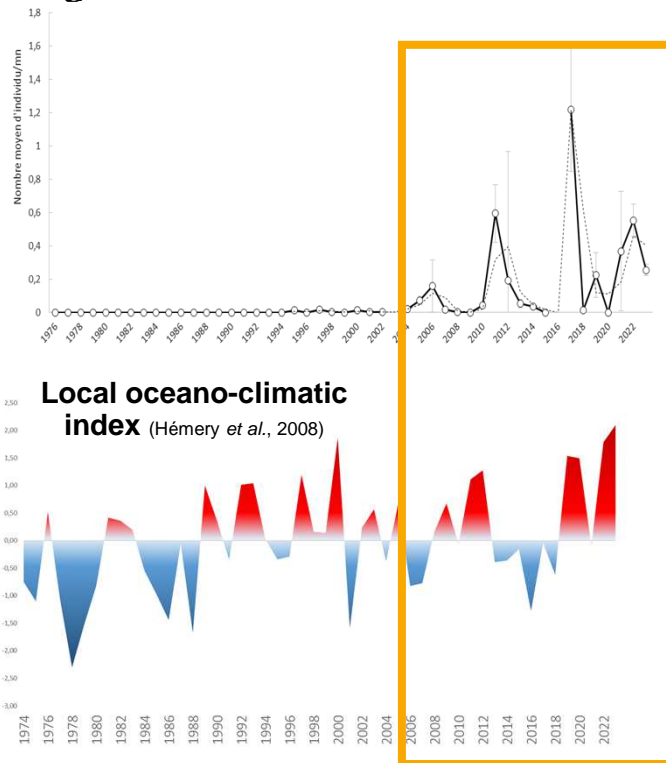
Spatial occupation varies during the year
2023



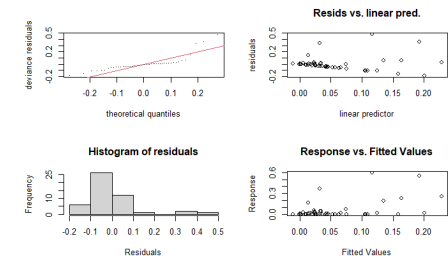
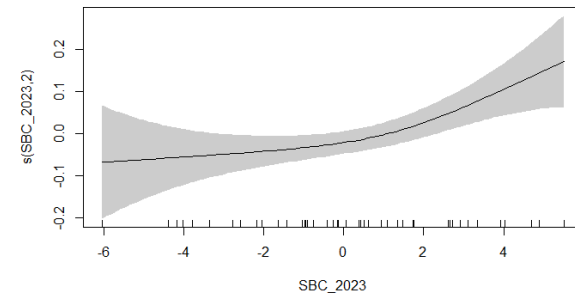
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Temporal changes

- Significant increase of mean abundances since 1976 ($\tau = +0,604$; $p < 0,001$)



- Local oceanic-climatic index could explained 22.6% of the deviance (R-sq = 0.192)



Example of GAMM analysis

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Conclusions

- South of the bay of Biscay is an important area for Balearic shearwater
- Peak density in autumn (october/november) but birds are observed all along the year
- Inter-annual and intra-annual variability
- Need to carry on at-sea monitoring to better understand the use of the area
- Investigate prey availability and oceano-climatic impacts
- Plurispecific rafts with others shearwaters ⚠





Thanks for your attention

Based on:



www.ermma.fr



Dedicated monitoring

