PO.066

# Bat monitoring in a floating offshore wind platform in Spain: DemoSATH

**Natalia Vélez Jiménez, Ane Ugena Ispizua, Lucia Eggers Ruiz, Javier Del Real Tuñón, Laura Zubiate, Mario Castellanos, Juan Tomás Alcalde**

Saitec Offshore Technologies, BiMEP

**At least seven species of bats have been identified in the vicinity of DemoSATH, with low activity rates in general and mostly concentrated in September (month of high migrations and beginning of mating season).**

Check out the bat flights spotted with the CCTV cameras

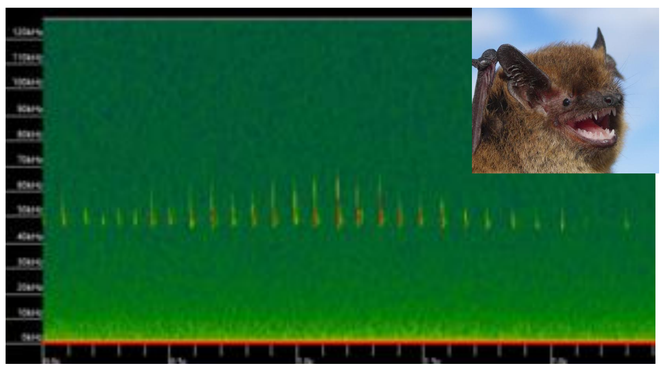
Pipistrellus *sp.* roosting in DemoSATH (03/06/2024)

*Pipistrellus kuhlii* flying around DemoSATH (19/09/2024)


## INTRODUCTION

- Numerous studies carried out on offshore wind farms have characterized the activity of bats over the sea, mainly in the North and Baltic Sea.
- Some bats species are capable of traveling long distances over the sea, particularly during the migration seasons (May and August-September).
- Currently, there is limited information on the presence of bats in the offshore areas of northern Spain.
- In August 2023, Spain's first floating wind platform prototype **DemoSATH** was installed, which is a 2 MW floating wind turbine located 3 km off the coast of Biscay.
- Offshore wind turbines tend to attract some bats that sometimes hunt or try to rest in these structures during their migrations, facing risks such as collisions or barotrauma.

## RESEARCH GOALS



1. Characterize for the first time the activity of bats in the vicinity of DemoSATH during its most active period.
2. Evaluate the necessity of mitigation measurements.

## METHODS

### 1 DATA COLLECTION

- 05/06/2024 – 22/11/2024 (150 days of recordings)
- SM4BAT-FS and SMM-U2 microphone at 5 masl.

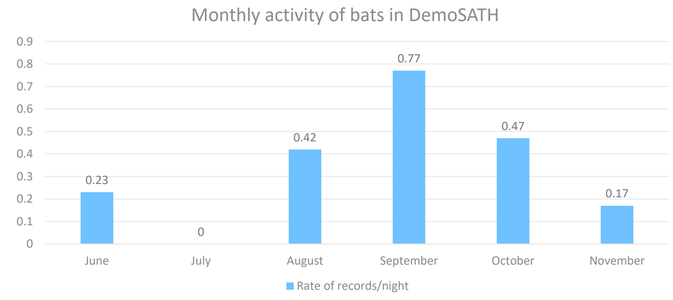
- Program of recordings: -30 min sunset → +30min sunrise.
- Environmental data of interest: Air temperature, wind speed, wind direction.

### 2 DATA ANALISIS

- Bats identification by a bat expert and softwares Kaleidoscope & Batsound.
- Contrast of bat ultrasonic detections with recordings of CCTV and DTBird/DTBat cameras.

## RESULTS

- 52 contacts (of 5 s) were recorded with an **overall activity rate** of 0.34 contacts/night.
- Highest contact activity in **September** (0.77 contacts/night).
- Greater activity between the **3rd and 6th hour** after sunset (79% of contacts).




- At least **seven species** were detected with between 58% and 77% of contacts belonging to non-migrating species:

| Bat Species | % | Movements | Presence in Spain |
|---|---|---|---|
| **Kuhl's pipistrelle** (*Pipistrellus kuhlii*) LC | 25 | Resident | Very common and abundant in the Iberian Peninsula and in Biscay. |
| **Common pipistrelle** (*Pipistrellus pipistrellus*) LC | 21 | Resident | Very common and abundant in the Iberian Peninsula and in Biscay. |
| **Leisler's** (*Nyctalus leisleri*) LC | 19 | Partial long- distance migrant | Sedentary males and migrant females in Northern Spain. |
| **Leisler's/Serotine** (*N. leisleri/E. serotinus*) LC | 17 | - | - |
| **Savi's pipistrelle** *(Hypsugo savii)* LC | 8 | Resident | Found on the Cantabrian coast. |
| **Giant noctule/Common noctule** (*N. lasiopterus/N. nocula*) VU LC | 4 | Long- distance migrant | Uncommon species in the Iberian Peninsula. |
| **Barbastelle** (*Barbastella barbastellus*) NT | 2 | Sedentary, Occasional | Found on the Cantabrian coast. |
| **Soprano pipistrelle** (Pipistrellus pygmaeus) LC | 2 | Short- distance seasonal | Found on the Cantabrian coast. |
| **Kuhl's pipistrelle/Nathusius Pipistrelle** (*P. kulhii/P. nathusii*) LC | 2 | - | - |

- High activity with **light winds** (71% < 3.1 m/s), **warm temperatures** (19.4°C± 0,2 SE) and preference for **southerly** (37%) **and easterly** (35%) **winds**.
- Two flights spotted with the CCTV cameras (day and night).

## DISCUSSION

Results coincide (timing and good weather conditions) with bat studies in other marine offshore areas in Europe, despite the low activity rate found.

At DemoSATH, bats are probably coming from the Basque coast and enter the offshore sea area in search of insects carried by those same winds.

Mitigation measures like smart curtailment would be discussed after increasing the monitoring study period and assessing a mortality rate study.

## FUTURE WORKS

- Study bat activity on spring (migration of bats from the Iberian Peninsula to higher latitudes).
- Study other marine structures near DemoSATH (BiMEP buoys, coastal areas) to compare species composition and activity.
- Study height risk collision (recordings on the nacelle).
- Study mortality rates (nets to capture possible carcasses).

Wind EUROPE ANNUAL EVENT 2025 COPENHAGEN 8-10 APRIL

windeurope.org/annual2025
#windeurope2025

Meet us at C2-A70-2

Watch this presentation

Download the poster