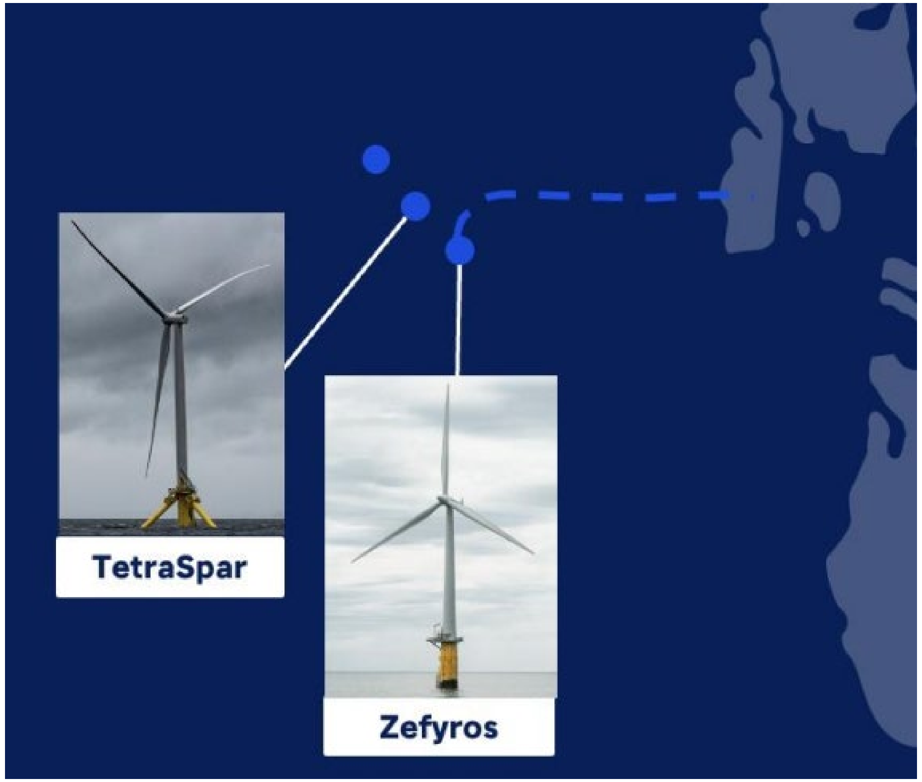
Overvåkning av fugleaktivitet METCentre Karmøy

METCentre

The Marine Energy Test Centre

METCentre



Provides the opportunity to test and validate floating offshore wind technologies

Offshore bird monitoring programme

Equipment

- Mono vision camera mounted on Zephyros floating turbine by company Spoor

Location

- 1,5 km away from TetraSpar Demonstrator
- 10 km off Norways West Coast

Timeframe

- 2.5 years of monitoring across two periods
  (Jan 2022–Feb 2023, Oct 2023–June 2024)

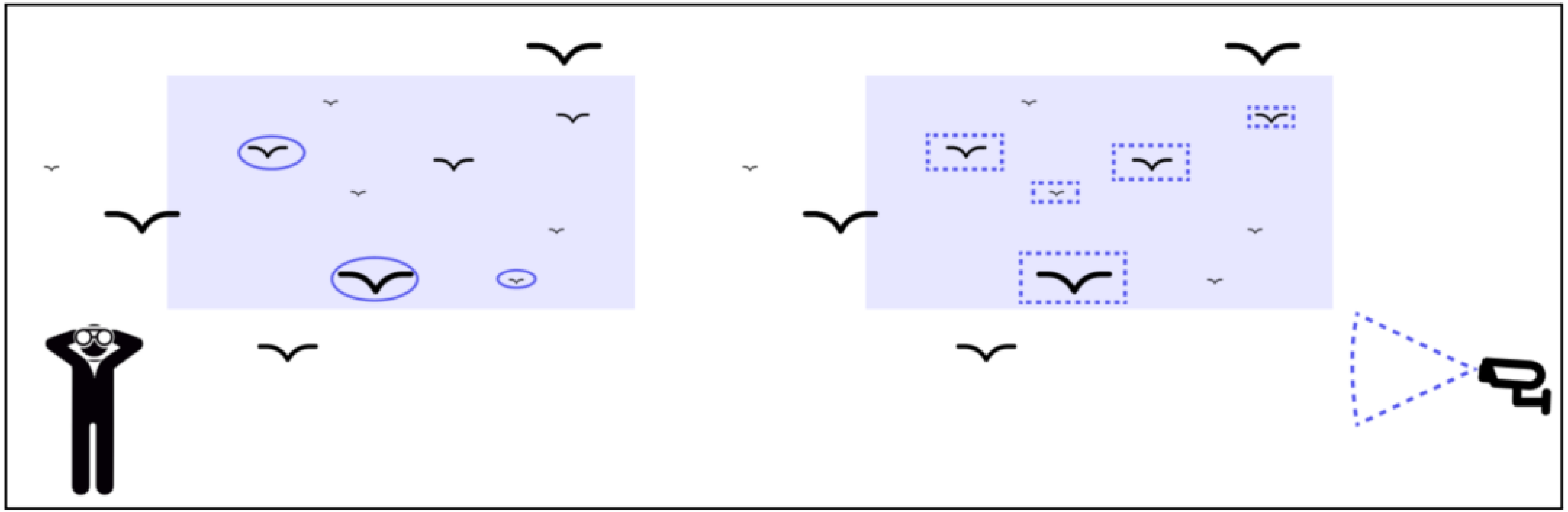
Data collection - Automated

- **5,487 hours of video**
  - **Spanning 588 days**
- **21,138 bird tracks recorded using AI**
  - **A subset species identified**

Data collection - Manual

- **34 bird observations were made**
  - 11 lying on the water and
  - 23 in the air
- **Observations period**
  - 1 hour and 27 minutes

Human observation versus AI technology



Results

Species recorded

- Gulls (91%)
- Predominantly Great Black-backed Gull (67%) and European Herring Gull (23%)
- Endangered, high-risk and migratory species
- E.g. Black-legged Kittiwake, Northern Gannet and Hen Harrier

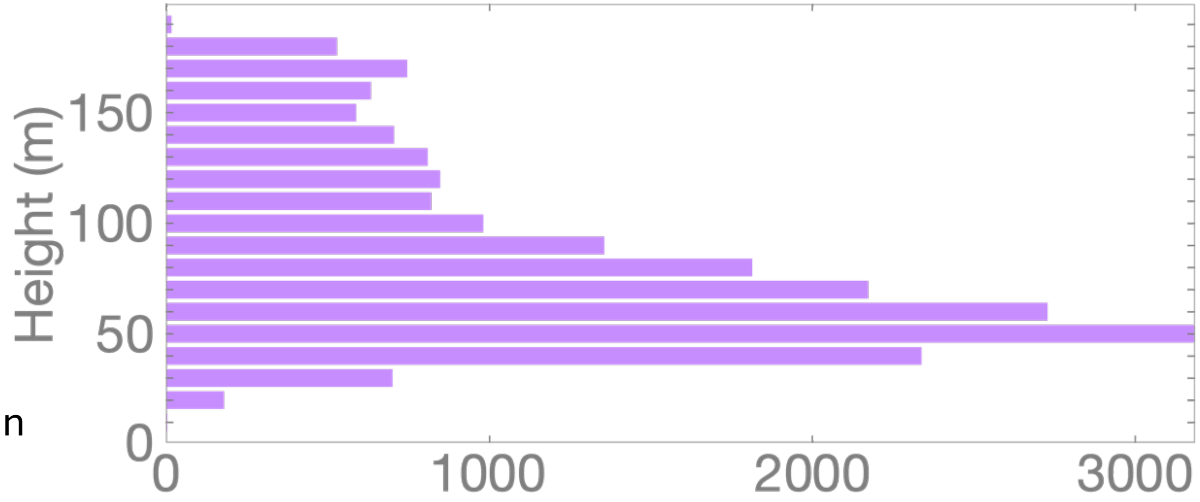
Behavioral trends:

- Flight heights concentrated around 25-55 m.
- Observed migration patterns aligned with expected seasonal movements

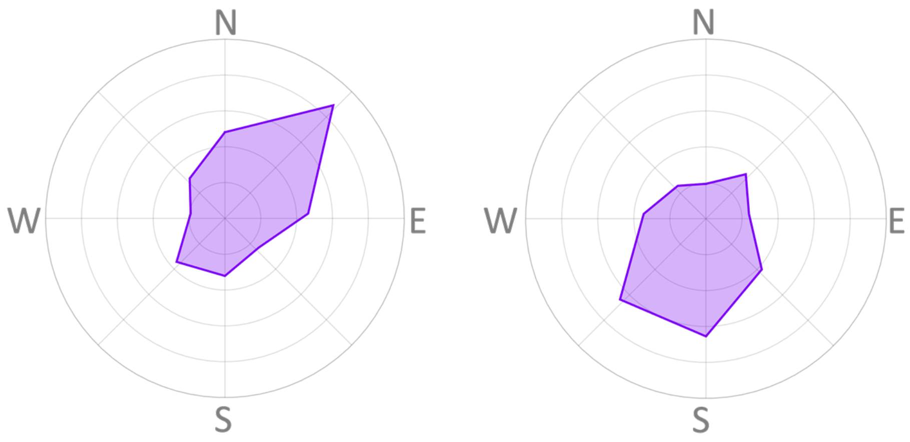
Collision detection

- 2,630 bird tracks (12% of total) crossed the rotor swept zone
- Manual visual inspection with quality control by our in-house ornithologist

Zero collisions detected

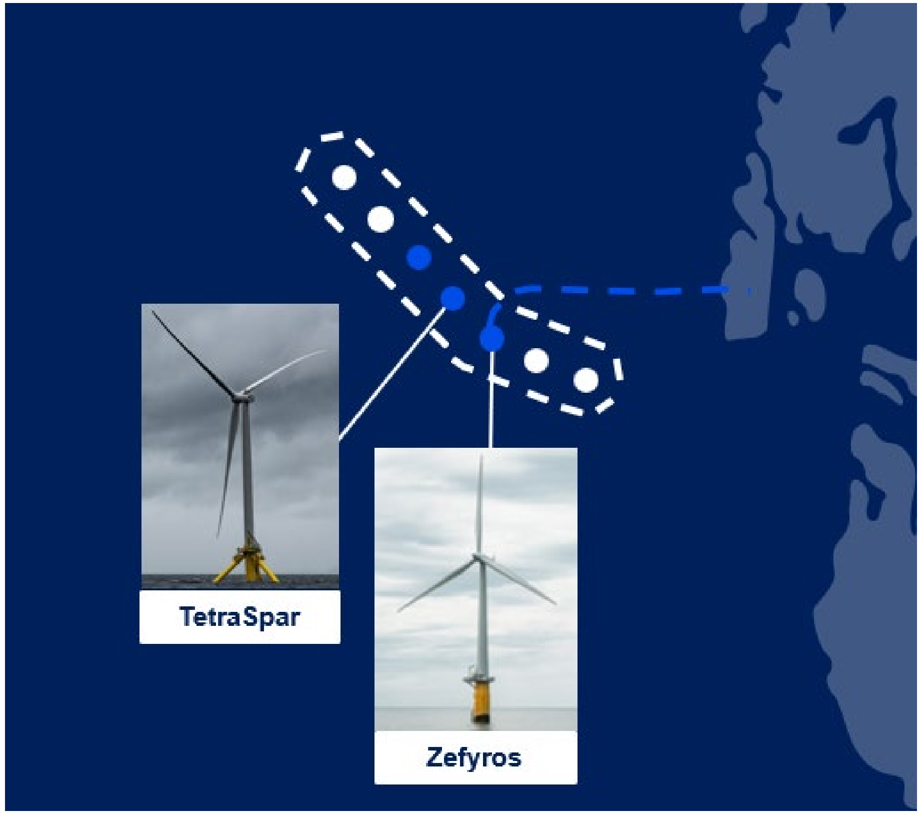


Flight height distribution of observed birds during the monitoring period. (n = 418,906 points, normalized by total number of birds)



Distributions of flight directions during Spring (left; n = 2,135) and Autumn (right; n = 4,144) of 2022 align well with expected migration patterns.

Site Expansion from 6 MW ⇨ 82 MW



- New concession is final
  - 66 kV grid infrastructure
  - Up to 5 new 15+ MW turbine pilots
  - In operation 27/ 28
- New monitoring requirements
  - Expand monitoring to include night-time observations
  - Further refine AI-based species identification and flight behavior analysis with advanced stereo-vision setups
  - Including monitoring of other species like bats

METCENTRE

MARINE ENERGY TEST CENTRE, NORWAY

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