Showcasing the effectiveness of Ocean Multi-use practices in the North Sea and Baltic Sea.

Contact

ultfarms.eu

jekjp@aqua.dtu.dk

@ULTFARMS

@ULTFARMS

Funded by the European Union

The project has received funding from the European Union´s Horizon Europe research and innovation programme under Grant Agreement No 101093888. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.

Get the latest news

SCAN ME

ULTFARMS Danish Pilot Samsø

ultfarms.eu

EU MISSIONS
RESTORE OUR OCEAN & WATERS

About the pilot

Paludan Flak OWF, located south of Samsø in the southwest part of the Kattegat, contributes to Denmark's commitment to expanding renewable energy by 2030. Currently comprised of 10 wind turbines, the farm has plans for expansion to support the Danish government's ambitious green energy targets.

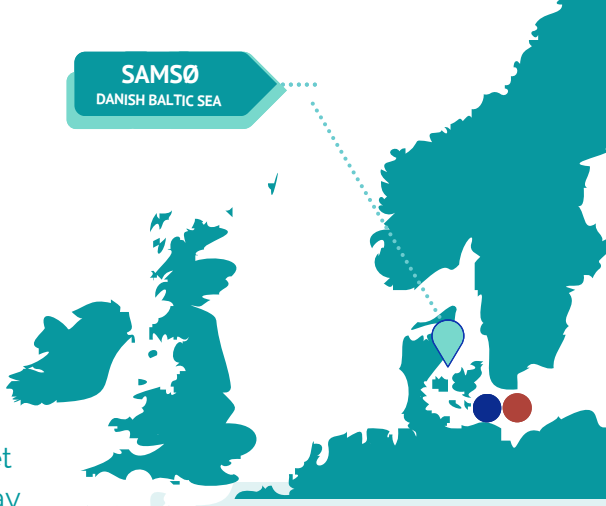
Situated in waters 15–20 meters deep, the area experiences strong currents of up to 3 knots and wind conditions that can generate waves as high as 3.5–4 meters. The interplay of opposing currents and wind directions creates unique and challenging working conditions. Despite these challenges, the site's proximity to the nearest harbor, just 7 nautical miles away, supports efficient operations and maintenance.

Paludan Flak OWF contributes to harnessing sustainable energy in Denmark while contributing to global climate action goals.

Main Achivements

- **Successful Deployment**: Deployment of tubes with nets demonstrated good mussel recruitment, comparable to nearby inshore estuarine sites, showcasing the potential for offshore mussel farming.
- **Production Potential**: The pilot validated the feasibility of offshore mussel farming, highlighting its promise for sustainable aquaculture in challenging marine environments.
- **Innovative System Testing:** Development and testing of a submersible tube system designed to enhance stability and adapt to offshore conditions is underway, offering new possibilities for future applications.

Main Challenges



- **Licensing Restrictions :**

Mussel farming zones in Denmark do not overlap with wind energy production areas, requiring exemptions to operate in these spaces.

- **Economic Feasibility:**

Relatively high capital investment of tube-net systems and related servicing equipment may serve as barriers to commercial expansion.

- **Resilience in Harsh Conditions:**

Offshore environments present challenges, including damage to systems caused by strong weather conditions and heavy mussel biomass.

- **System Design Enhancements:**

Ongoing efforts focus on improving system durability through thicker materials, optimized anchoring, and submersible tube designs with adjustable buoyancy and enhanced stability.

Application

Scientific

- **Mooring solutions adapted to wind and current conditions.**
- **Deployment and operation of monitoring and data collection systems in offshore environments.**
- **Mussel production potential and bottlenecks.**

Commercial

Production Capacity

- Tests at Paludan Flak serve to demonstrate the potential for offshore mussel farming in Danish waters.

Equipment Durability

- Developing robust, low-maintenance systems is essential for long-term offshore operations.

Cost-Effective Operations

- Minimizing maintenance between deployment and harvest may be important to the economic viability of offshore mussel farming.