Sea-surface monitoring with an AUV

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Aims

Overall: quantify cumulative impacts of OWFs on seabirds and the ecosystem

Here: quantify fish distributions in and around offshore wind farms (OWFs)

Context:

Fish distribution data will be related to data on seabird distributions

Investigate the impact of OWFs on seabird-fish predator-prey spatial interactions

One key receptor, kittiwakes, feeds at or near the sea surface

The problem

Sonar on conventional surface vessels can't sample near the surface

On our USV, upper 7m of water column goes unsampled

The solution

IVER3

An autonomous underwater vehicle (AUV), with upward-facing sonar

Additions to our AUV:

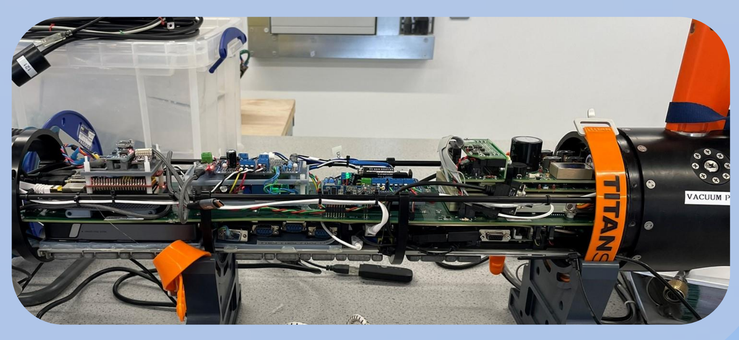
Simrad EK80 echosounder

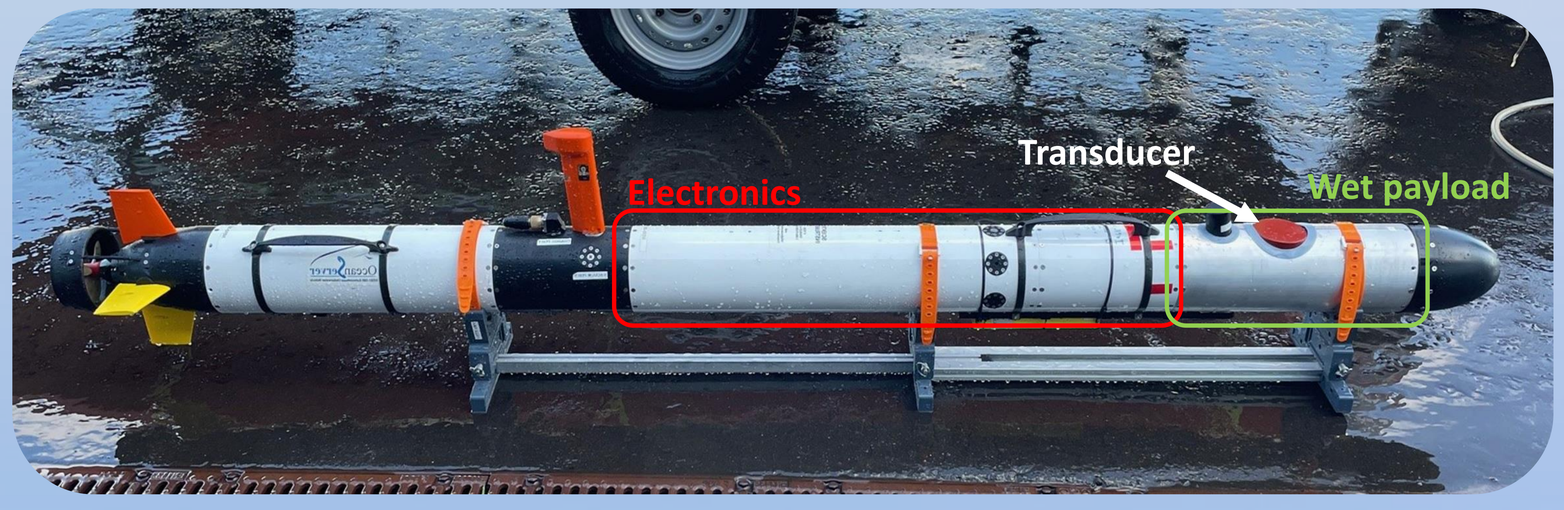
Control computer + storage

Batteries and wet charging port

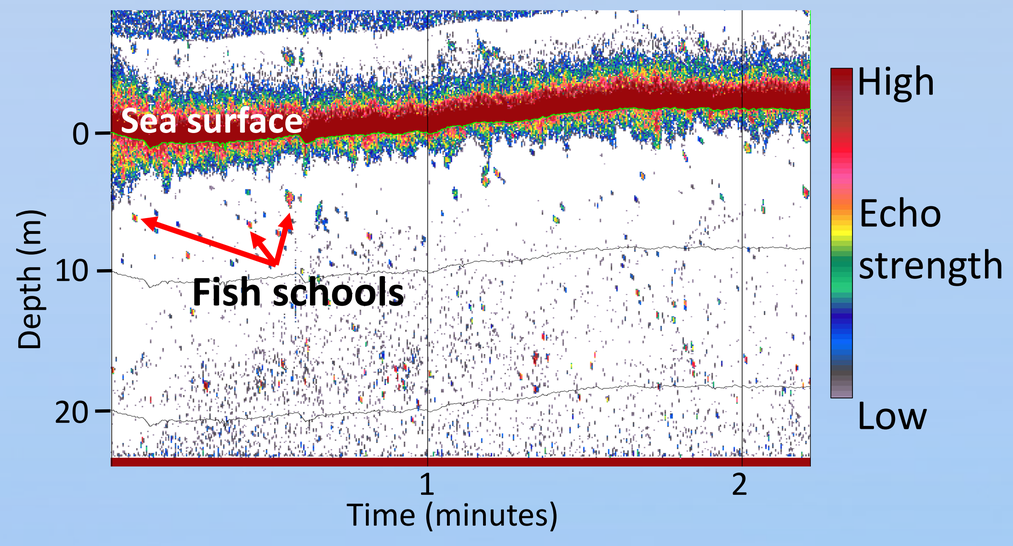
Wifi connection for data offload

200 kHz transducer





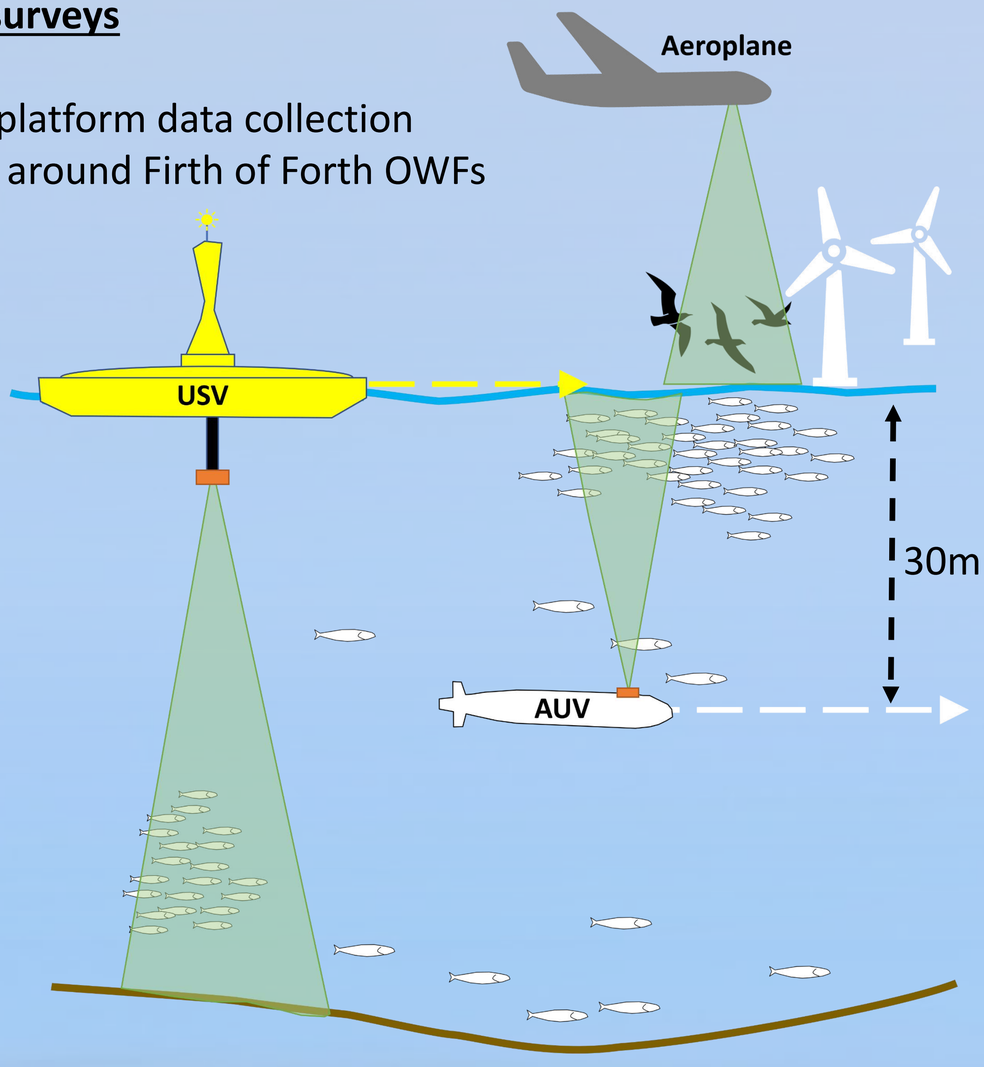
AUV data from recent sea trials in the Firth of Forth



Data is high quality, and the control system worked well

2025 surveys

Multi-platform data collection
In and around Firth of Forth OWFs



USV will follow AUV on the same transect: sea-surface to sea-bed coverage

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