

Developing a towed array for acoustic fish tracking; applying to Shad

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Rationale

Swansea Bay is a potential site for Marine Renewable Energy (MRE) in the form of a Tidal Lagoon. However, development proposals have been delayed due to a lack of vital information on diadromous fish distributions within the area due to the challenges associated with monitoring. This is the case for Twaite Shad, which could pass through the proposed lagoon site during their life cycle. The aim of this project therefore is to develop a method to track shad movements within the bay to provide evidence for the tidal lagoon consent.

Methods

90 shad were tagged with 69kHz VEMCO tags near Gloucester as part of the Unlocking the Severn project. SEACAMS2 then deployed 17 acoustic receivers around Swansea Bay to form a fence. Active tracking using a Towed Array occurred inside the fence and its ability to detect fish tags and search an area for multiple tags was compared to the use of the VEMCO deck box.

Results

- Swansea Bay range 400-500m
- 15 fish in total detected so far
- All fish detected on inner receivers also on outer fence
- 1-2 fish currently resident
- 4/10 detected fish passed through in a single day
- Can decode tag signals using the deck box



Outcomes

This will provide information on shad distribution in Swansea Bay and whether it overlaps with the tidal lagoon draw zone, whilst demonstrating acoustic tracking methods for future fish tracking studies and monitoring.



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