

# Using novel techniques to understand the diving ecology of seabirds and assessing the impact of blue energy on bird behaviour

Emma-Louise Cole<sup>1</sup>, Emily Shepard<sup>1</sup>, Luca Börger<sup>1</sup>, James Waggitt<sup>2</sup>

<sup>1</sup>SEACAMS2, Department of Biosciences, Swansea University, Singleton Park, Swansea SA2 8PP

<sup>2</sup>School of Ocean Sciences, Bangor University, Menai Bridge, Bangor LL57 2DG

## RATIONALE

- ◆ We aim to investigate the diving behaviour of seabirds in relation to current characteristics under strong, tidal influence in Wales.
- ◆ We hope to develop an understanding of broad patterns of space-use by seabirds where marine energy installations are suited or have been proposed already. In addition, we aim to examine the fine-scale mechanics of diving seabirds.
- ◆ Environmental monitoring and assessing the susceptibility of seabirds to MRE installations remains a core ORJIP priority and this research will contribute to knowledge on the topic.



## METHODS

SEACAMS2 have used sophisticated animal-borne data-logging technology and laser-rangefinder binoculars to record the movements, in space and time, of seabird species at complex tidal sites across Wales. Not only have some of these focal areas already been earmarked for installation of underwater marine energy devices, but a combination of our survey techniques and high-resolution hydrographic models, has provided a useful resource to predict likelihood of interactions between birds and blue energy installations.

## OUTCOMES

- ◆ High resolution distribution maps overlaid on-to hydrographic models will provide new data on key hydrographic features that diving birds select.
- ◆ Movement models derived will allow understanding of seabird diving behaviour and predict disturbance and displacement of birds during installation and operation of blue energy devices.
- ◆ Development of successful environmental monitoring techniques.

