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Morlais Project

Summary of Advice Provided to Morlais with Respect to Tagging of Guillemots and Razorbills

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1 Introduction

One of several methods under consideration for inclusion in the Environmental Mitigation and Monitoring Plan (EMMP) for the Morlais Project is the deployment of tags on key seabird species (guillemot and razorbill). This document summarises the advice provided during discussions with three experts on the subject.

2 RSPB: South Stack Scoping

On 24/02/2020, RSPB provided a document outlining the findings of a site visit to South Stack on 31/10/2019 to assess the practicalities of "GPS tagging" auks on the colony during the breeding season. The majority of breeding cliffs are unsuitable for catching auks for tagging. Extensive rope work would be required, and it would cause significant disturbance to large numbers of breeding birds.

South Stack island has a small number of guillemots and razorbills on the southeast corner, and also the northeast corner, which would be approachable to catch and tag. They will already be partially acclimatised to people. Permission to undertake works would need to be sought. In addition, these areas are in full view of visitors to the reserve, so it is considered preferable to work before 10:00 each day.

The top of the buttress between Steps and Elyn Tower has a number of breeding razorbills which might be accessible without disturbing large numbers of guillemots. However, very experienced rope workers and bird handlers would be required. These areas are also in full view of visitors to the reserve, so it is considered preferable to work before 10:00 each day.

There is a small area to the south of RSPB land containing a gully with a very small number of razorbills and guillemots which may be accessible. As this is not RSPB land there may be permission issues.

The advice following the site visit was that GPS tags could be fitted to circa 15 adults of each species in a year. Given the great difficulty of working in the site, RSPB strongly advises the use of tags with remote download facility to a base station, since tag retrieval may be lower than 30%, while base station downloads would be greater than 80%, and should run for much longer period of time.

RSPB suggested that tags should be available which can look at dives as well as locations.

3 Dr James Waggitt, School of Ocean Sciences, Bangor University

Dr James Waggitt is interested in the distribution of animals in and around North Wales and the development of methods for the assessment of risk. Members of the Morlais Project team spoke with him on 08/09/2020 regarding his current work, and whether there is any potential to work with him to develop monitoring methods for the Morlais Project.

James's PhD was on bird behaviour in tidal sites, focusing on the European Marine Energy Centre (EMEC) test facility using a range of methods looking at fine scale behaviours of birds around tidal devices. He acknowledged that there is little scientific information on diving bird behaviour, and that many of the methods he investigated during his PhD for studying this were not cost effective. Currently, James is engaged in a project looking at cost-effective and automated methods of surveying birds in tidal environments. He also provides input into modelling the behaviour of birds in a range of marine environments.

Work to date has indicated that it would be relatively easy to survey fast, narrow inshore channel sites in a cheaper way using binoculars, scopes and cameras to record behaviour up to around 500m offshore using an automated system. Deployment of such methods would enable the collection of fine scale distribution, and the ability to comment on the behaviour of birds (e.g. dive duration), but this would be limited by the above water nature of these observations. This would mean that behaviour below the surface of the water could not be observed by these methods.

Surveying the behaviour of birds at greater distances from the shore would be more challenging.

The Morlais Project proposes to maintain contact with James with a view to potentially deploying survey methods developed in the future.

4 Emma-Louise Cole, School of Ocean Sciences, Bangor University

Emma-Louise Cole is a seabird researcher, working for the SEACAMS2 project at Swansea University. Members of the Morlais Project team spoke with her on 10/09/2020 regarding her current work, and whether there is any potential to work with her to develop monitoring methods for the Morlais Project.

Her main research interest of late has been seabird tagging work. In 2019, she tagged 13 guillemots at Puffin Island on Anglesey with tags that contained accelerometers, GPS and depth sensors. Seven of these tags were retrieved, and 20,000 dives were recorded.

These show tracks of the animals movement and their energy expenditure. High resolution tracks are capable of showing where the birds have chased prey in the area. Her future research plans include examination of seabird response to different current speeds and turbulence, and the deployment of novel tags e.g. magnetometer tags, which show the orientation of the dive.

Emma has also been involved in the development of the "ornithodolite" a modified laser rangefinder for use from coastal vantage points for observing birds at sea. Emma believes that such methods might be effective up to several kilometres from shore.

The Morlais Project proposes to maintain contact with Emma with a view to potentially obtaining existing tagging data from Puffin Island, working together on tagging programmes to support the EMMP, and deploying survey methods developed in the future.