

## End of Grant Report 2025

### Non-invasive methods to study Endangered sharks

#### Overview

Thanks to the generous support from the Alice McCosh Trust, we have successfully developed and tested two benthic, baited remote underwater video (BRUV) systems to study local elasmobranchs (sharks, skates and rays) around the Isle of Man. These BRUVs were trialled across a range of depths, current strengths, tidal conditions, and habitats to establish the optimal weighting and configuration for reliable deployments. During our first research season, we gained valuable insights into the presence, relative abundance and behaviour of several local shark species. This work represents the first non-invasive field method for studying coastal elasmobranchs around the Isle of Man and lays the foundation for long-term conservation.



Figure 1 – Tope shark (*Galeorhinus galeus*), nursehound/bullhuss (*Scyliorhinus stellaris*) and small-spotted catshark (*Scyliorhinus canicula*) captured on our benthic BRUVs.

## Successes

- **Successful BRUV Trials:** BRUV systems were tested and refined through multiple deployments under various environmental conditions, confirming their suitability for use in Manx waters.
- **Initial Data Collection:** We are in the process of obtaining a dataset of local elasmobranch species (and others), offering baseline information on species presence and behaviour within and surrounding protected areas (Marine Nature Reserves).
- **Community Engagement:** Collaboration with local anglers was instrumental in getting out on the water for our research. Their enthusiasm and logistical support were key to our successful field days this year, highlighting the value of integrating local ecological knowledge.
- **Educational Outreach:** BRUVs footage makes great educational content, that can be used for raising awareness of local species. We were able to use this data to engage the public in our BRUVs research at the Manx Wildlife Trust's Festival of the Sea and on social media.



*Figure 2 – Benthic BRUV systems being deployed around the Isle of Man.*

## Lessons Learned

A key lesson from this season was the logistical complexity of fieldwork, particularly around coordinating suitable tide windows for boat launch and retrieval. Field operations were challenged by the unpredictable Manx weather, which limited the number of replicates achievable to ground truth some deployments. Another important lesson involved understanding the influence of buoyancy on BRUV stability, which has informed improved modifications – a few deployments failed this season due to the unit falling over on the seabed. Our mitigation strategy for next season focusses on increasing deployment opportunities further collaboration with engaged anglers to maximise deployments for next season.



## Looking to the Future

Building on the success of this initial phase, we aim to:

- Expand BRUV deployments across a broader range of habitats and depths, particularly targeting areas where skates and rays are more likely to occur.
- Capture our first visual records of local skate and ray species to complement existing shark observations and provide a more complete understanding of Manx elasmobranch diversity.
- Use a combination of benthic and pelagic BRUVs as part of a long-term monitoring programme inside local Marine Nature Reserves, surrounding habitats and within the Western Irish Sea Mudbelt (WISMB).
- Continue to use BRUVs footage for education and community engagement.
- Strengthen partnerships with the local community, government, and conservation organisations (namely Manx Wildlife Trust) to integrate findings into evidence-based management and education.

This project has provided a strong foundation for non-invasive, collaborative elasmobranch research on the Isle of Man, and we look forward to continuing this work in future seasons to reveal more about the island's elasmobranch populations.



*Figure 3: MARECO Researcher Gemma at the Manx Wildlife Trust's Festival of the Sea showcasing BRUVs/footage for education and raising awareness of local shark species.*