

Introduction

Particle-tracking models can simulate the drift of floating objects in the ocean, and provide a valuable tool for search and rescue operations at sea. The Marine Institute has been collaborating closely with the national police service of the Republic of Ireland (*An Garda Síochána*) to help in the search for missing persons at sea. On the other hand, the choice of model parameters can have a big impact on the prediction, and thus can greatly affect the success of the searching operations. In particular, the way in which windage is introduced into the model largely determines the dispersion and final distribution of the numerical floats.

Methods

In this work, the performance of two different particle-tracking models, Ichthyop and OpenDrift, has been compared by assessing their ability to replicate the path of two missing paddleboarders in Galway Bay in August 2020.

Results

It was found that the OpenDrift simulation was closer to the observed path, probably because of its better representation of windage. Since then, the Marine Institute has conducted several experiments with OpenDrift, which have proven to be useful to help in search and rescue operations and to investigate the important connection that exists between people missing from the coast of Ireland and being found on the Welsh coast.

Conclusion

This has culminated in the implementation of a new version of an OpenDrift-based, open-access web application called ADRIFT, which allows to select between a range of different objects with specific leeway properties.