



North Devon Marine Pioneer

WasteShark – gathering plastic and data

The challenge

- Eight million tonnes of plastic are dumped in the oceans every year.
- Marine wildlife can be severely injured or even killed by mistaking plastic for food or becoming entangled in it. Ninety per cent of the world's seabirds have fragments of plastic in their stomachs; up to 80 per cent of mussels taken from a number of British beaches were found to contain microplastics.
- For people, along with the health risks of consuming plastic via fish and seafood, there are huge financial consequences. The United Nations estimates that the environmental damage caused by ocean plastics costs [US\\$13 billion a year](#).

Activities

- WWF and Sky Ocean Rescue have launched an autonomous marine robot – the WasteShark® – in a bid to help clear up marine litter in Ilfracombe Harbour.
- The WasteShark roams distances of up to 5 kilometres of water, capturing up to 60 kilograms of waste at a time, including plastics and microplastics.
- If used five days a week, the WasteShark is likely to collect over 15 tonnes of waste a year, with the plastic recycled to make new products. The collected waste is put into harbourside bins and recycled through Keep Britain Tidy's Ocean Recovery Project.
- Ilfracombe Harbour has also been working with the fishing community to collect discarded fishing gear

and nets to help to clean the marine environment and protect wildlife.

- This is the first time a WasteShark has been used in the UK, following successful launches in five countries, including South Africa and the United Arab Emirates.
- Ilfracombe Harbour is a key area within the North Devon case study area for the WWF-led [UK SEAS project](#). The project focuses on two case study areas – North Devon and the Outer Hebrides – and will share lessons across the UK and beyond.

Created by **RanMarine Technology**, the WasteShark is the world's first marine robot designed specifically to eat waste and collect data. Designed to be harmonious with the environment, it emits no carbon, noise or light pollution, and poses no threat to wildlife.



In practice

- The WasteShark collects plastics (including microplastics), solid waste, oils and other floating chemical run-off, and invasive alien plant and animal species. The Wasteshark has a camera on the front so that, when it is in remote control mode, the user can specifically steer it towards alien plants and avoid native ones.
- Marine data that the WasteShark can record include depth, seabed contours, temperature, acidity, salinity, turbidity, dissolved oxygen, nitrogen, bacteria and chlorophyll, as well as audiovisual recordings.

Ilfracombe Harbour is within the **Bideford to Foreland Point** Marine Protected Area, which protects a number of important species and diverse habitats including rocky reefs and spiny lobsters. The area is regularly visited by seabirds and cetaceans, including the elusive harbour porpoise.



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This North Devon Marine Pioneer project contributes to the policies of the Government's 25 Year Environment Plan, A Green Future, by connecting people to nature.

The future

- In a second phase of the project, WWF and Sky Ocean Rescue will add sensors to the WasteShark to capture further information on water quality to help inform protection of the marine environment.
- We can use the WasteShark to educate the public – including schools and groups visiting the harbour – about the impacts of plastics on Marine Protected Areas and the wider seas.
- The WasteShark is a great solution to addressing the threat of plastics for marine wildlife. But the only way we can truly tackle the problem is to turn off the tap on plastics. That is why WWF is fighting to ensure the producers – those who create plastic pollution – are taking responsibility for it.

Project partners

The WasteShark project is part of the WWF UK SEAS project funded through a partnership between Sky Ocean Rescue and WWF.



This project is a contribution to the North Devon Marine Pioneer (northdevonbiosphere.org.uk/marinepioneer)
For more information go to: WWF UK SEAS Project (<https://ukseasproject.org.uk/>)
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