

Robot cameras reveal secret lives of basking sharks

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An autonomous SharkCam has been used in the UK for the first time to observe the behavior of basking sharks in the Inner Hebrides.

The ground-breaking technology is set to reveal the secret lives of the world's second largest fish—a [species](#) that little is known about, despite being prevalent in the waters off the west coast of Scotland.

Scientists hope the stunning images captured by the [autonomous underwater vehicle](#) (AUV) will reinforce the case for creating the world's first protected area for basking sharks in this part of the sea.

The REMUS SharkCam technology is owned and operated by the Woods Hole Oceanographic Institution (WHOI).

The project is funded by WWF/Sky Ocean Rescue, Scottish Natural Heritage (SNH), WHOI and the University of Exeter.

The team used the AUV to follow basking sharks below the surface of the water and collect high-quality oceanographic data and wide angle high-definition video of their behavior from a distance. Initial footage from the innovative REMUS-100 metre rated SharkCam Robot deployed off the coast of Coll and Tiree last month shows the sharks moving through the water column, potentially searching for food, feeding near the surface and swimming close to the seabed.

It is hoped that further analysis of the many hours of video footage from the AUV, as well as visuals from towed camera tags attached to the sharks and the deployment of advanced sonar imaging, will uncover more about the underwater behavior, social interactions, group behavior and courtship of the species.

Fieldwork for the project took place in July in the proposed Sea of the Hebrides Marine Protected Area (MPA) – one of four possible MPAs currently under consultation by the Scottish Government. MPAs are specially designated and managed to protect marine ecosystems, habitats and species, which can help restore the area for people and wildlife.

The area is one of only a few world-wide where large numbers of basking sharks are found feeding in the surface waters each year.

It is suspected that basking sharks may even breed in Scotland—an event that has never before been captured on film.

Dr. Jenny Oates, WWF SEAS Programme Manager, said: "Our seas and coasts are home to some incredible wildlife. As our oceans come under increasing pressure, innovative technology like the REMUS SharkCam Robot can reveal our underwater world like never before and help to show why it must be protected. It is essential that we safeguard our seas, not just to enable magnificent species like basking sharks to thrive, but because all life on earth depends on our oceans."

Dr. Suzanne Henderson, Marine Policy and Advice Officer at SNH, who has worked on the basking shark tagging and research project run by SNH and the University of Exeter since 2012, said: "These giant fish are spectacular and watching them feed gracefully at the sea surface is such a special and memorable experience.

"This year's collaboration has allowed us to use a combination of camera technologies and given us a glimpse of basking sharks' underwater behavior—a real first and very exciting. The footage has already made us reassess their behavior, with the sharks appearing to spend much more time swimming just above the seabed than we previously thought.

"It really brings home why it's so important that the species and its habitat are protected by designating the Sea of the Hebrides as a Marine Protected Area."

Dr. Matthew Witt, of the University of Exeter, said: "This year saw the culmination of a decade of work at Exeter to support the conservation of this species. In collaboration with SNH, we have deployed state of the art

equipment over several years to learn of the behaviors of these elusive animals.

"This year, our [collaborative efforts](#) expand with exciting new partners, to bring advanced video techniques to help reveal even greater detail on the underwater lives of these animals. Our efforts and resulting information highlight why the proposed MPA is important for securing a more positive conservation future for this iconic Scottish species."

Amy Kukulya, WHOI Research Engineer and SharkCam Principal Investigator, said: "Every time we deploy REMUS SharkCam, we learn something new about the species we are studying.

"We're able to remove the ocean's opaque layer and dive into places never before possible with this ground-breaking technology answering questions about key species and revealing new ones."

Footage gathered by the REMUS SharkCam technology will help support and promote basking shark conservation work by demonstrating how important this area is for the life cycle of the species, adding weight to the case for the MPA designation and providing a better understanding of measures which might help protect this iconic species and its habitat.

Provided by University of Exeter

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