

Skomer Marine Nature Reserve Wales, UK



Helping to monitor conservation efforts with MOBOTIX technology

Over twenty years ago, very few people knew about the hidden, underwater world off Pembrokeshire, on the west coast of Wales. However, in 1990 the creation of Skomer Marine Nature Reserve (MNR) covering the waters off the headland and around Skomer Island, gave the Countryside Council for Wales (CCW) a golden opportunity to study and protect this marine environment.

Skomer's waters are famed for their amazing range of underwater marine life. Situated on the boundary where northern and southern species overlap, there is a huge variety of wildlife of all shapes and colours – making it a great place to study and monitor changes in the marine environment.

An environmental wonderland

Many species are studied in detail. These range from sponges to grey seals, and from tiny, colourful sea slugs to graceful, slow-growing seafans, a 120 of which are monitored and photographed every year to study changes in them. Over the last 20 years, King scallops, which are protected from all forms of fishing within the MNR, have increased more than eight fold.

Eelgrass, a rare and sensitive habitat which harbours a wealth of wildlife, has increased in

area and density. It is protected in the MNR by marker buoys and by providing moorings for visiting boats - eelgrass is easily damaged if anchors are dragged through it. The environment at Skomer has also been identified as Wales' only Important Plant Area (IPA) for marine algae, with over 240 species recorded.

CCW Marine Conservation Officer for Skomer, Mark Burton said: "Keeping an eye on the Marine Nature Reserve which is only accessible by boat can be a challenge. This is especially tough in rough weather where winds of over 110 mph and waves over 13 metres high have been measured." Burton's duties include maintaining the site's oceanographic monitoring and weather station. CCW collates data on temperature, salinity, turbidity, chlorophyll, PH and oxygen from probes on the seabed of the Skomer MNR which I used as part of a UK wide research project on climate change.

Marine Reserve Officers also need to manage human activity, so that it is in line with the conservation objectives of the site. More than 145,000 people have visited the Marine Nature Reserve exhibition at Martin's Haven. Add to this more than 40,000 divers have explored the MNR – either for pleasure or to contribute to the survey and monitoring work.

"We also need to make sure that illegal fishing does not occur within the protected area but with limited staff, it was felt that a remote, high resolution camera would be a major benefit," explains Burton.

All weather capability essential

Based on a requirement for extreme reliability and ability to work in all-weather conditions, CCW selected a MOBOTIX solution from Ecl-ips (www.ecl-ips.com/mobotix); a highly regarded Advanced MOBOTIX Partner. The MOBOTIX M24-SEC cameras are installed within a converted coast guard hut on the mainland overlooking the island and provide wide angle coverage across several key locations such as protected scallop beds and wildlife areas.

The M24-SEC MOBOTIX cameras offers a higher 30 frames per second capture at megapixel resolutions. The two new cameras each have a 60 degree lens system. Together, the cameras can cover critical areas of the island and estuary from its vantage point in the coast guard hut. Featuring a 64 GB of internal storage capacity, the M24 cameras can ensure that even if a communication link is lost; the island can still be monitored with recording for later analysis.



„High Definition protecting stunning natural beauty“

CCW accesses the system via a fibre optic link and all footage is recorded for 10 days. Burton said: “The system also tags movement events and can generate an alert whenever a vessel comes into the area of coverage – this is useful for monitoring any illegal fishing within the area.”

The high resolution images produced by the camera allow for accurate identification of objects within the field of vision. The megapixel capability also offers software-based zoom capability without the need for an additional mechanical PTZ enclosure.

In common with all MOBOTIX cameras, the installation uses a decentralised concept which places intelligence within the camera. Through

decentralisation, CCW avoids the need for any additional costly video capture, encoding or storage devices. Conservation Officers can control the cameras using a simple internet browser with all video images viewed from a simple PC or even mobile devices such as smartphones or tablets. This technology innovation makes the monitoring process extremely flexible while reducing cost and complexity.

The cameras also have two way audio capabilities which allow ad-hoc communication between the mainland and the hut on the island.

To date, the cameras have proven extremely reliable and withstood extreme temperature changes and weather conditions without fail.

The system was installed by Worcestershire based MOBOTIX partner Ecl-ips, a specialist in delivering environmental and security threat management. “The implementation by the team from Ecl-ips was extremely professional and the cameras have worked well ever since,” Burton adds.

The real-time images have been made available to the public through the CCW website and also provide a guide for groups preparing to scuba dive or sail in and around the island. The installation is the first of its kind within a Marine Nature Reserve. The use of this innovative visual technology is helping to raise awareness and protect wildlife.

Retailer information: