The importance of monitoring oysters

Once we release oysters into the Firth of Forth, we monitor them. It is vital to monitor them to see if they are surviving in their new sites, and whether they are having any impact on biodiversity or causing other ecological changes.

The data collected from monitoring enables us to manage the project and make any changes needed as we learn what works best. It also provides data for funders and stakeholders to demonstrate the value of the project.

What do we monitor?

- Oyster survival and growth – Using oysters attached to strings pinned to the seabed we can measure what percentage of oysters are thriving and how big their shells are growing.
- Biodiversity - We record the type and number of marine species near the oysters to assess ecosystem changes.
- Reproductive success - we plan on monitoring how many juvenile oysters grow on the surface of adult shells.

Monitoring techniques for researchers

Restoration Forth partner, Heriot-Watt University, is experienced in carrying out monitoring surveys in and out of the water. They have used two main methods of surveying the Firth of Forth:

1. Drop-Down Video Surveys - can be used for site selection. Towing a camera from the side of a boat allows us to see the sea floor and assess things like what the sediment looks like or any interesting seabed features.
2. SCUBA/Snorkelling - allows researchers to get up close and investigate underwater habitats in detail. We use this to monitor biodiversity and check whether the oysters are surviving.

Monitoring techniques for citizen scientists

Restoration Forth has engaged hundreds of citizen scientists, with the support and guidance of Marine Conservation Society. This increases our capacity and allows local communities to contribute in a meaningful way in the following ways:

1. Using our 'Oyster Observer Guide' to monitor the number of historic oyster shells found on beaches, which also helps assess the suitability of different parts of the Firth of Forth for oyster restoration.
2. Monitoring oysters at our intertidal sites. They have undertaken survival and growth monitoring as well as biodiversity surveys.
3. Assisting in researcher-led surveys using drop-down video to assess the seabed.

Citizen scientists' involvement provides hands-on experience of monitoring techniques and enables people to see the positive biodiversity impacts of oysters for themselves.

For more information on monitoring see the NORA (Native Oyster Restoration Aliance) **monitoring handbook**.