

# Efficient biodiversity monitoring



## Background

The installation of large-scale offshore wind farms in the North Sea makes it both possible and necessary to strengthen nature within and around the wind farms. The North Sea Foundation (Stichting De Noordzee) and Natuur & Milieu have launched The Rich North Sea (De Rijke Noordzee or DRN) - project in which we investigate ways to enhance nature in offshore wind farms. We introduce reef building species like oysters or install artificial reefs to attract marine life.

In the coming years DRN continues to expand with new partners and more locations to run projects. This means more research into the possibilities of nature enhancement which requires extensive monitoring. To make future projects a success, innovation is needed both for monitoring and the way artificial reefs are constructed.

Currently, biodiversity monitoring or the monitoring of offshore nature enhancement structures is a very extensive exercise. Diving is not allowed in OWFs so mostly monitoring is performed by video surveys, retrieval of structures, water-, sediment- and grab samples. A ship with the capacity to move all monitoring devices, lifting capacity, enough crew and permission to enter the OWF is needed and can be very expensive. The monitoring is dependent on weather and water conditions such as wave height, tides and turbidity.

**The goal of this challenge is to find less expensive and more efficient ways of biodiversity monitoring in offshore windfarms.**

## The Challenge

Our challenge is to come up with innovative ways to make monitoring of nature enhancement projects within offshore wind farms easier and more cost-efficient. For biodiversity monitoring, video images can give a lot of information about the bigger species. (Semi)continuous monitoring could greatly improve current knowledge on biodiversity development in offshore windfarms. Examples of innovations are semi-permanent underwater cameras which are remotely controlled, software which automatically identifies species from raw dropcam/ROV footage or a method to perform ROV monitoring from a monopile or platform. The optimal methods are easy-to-use, cost efficient and safe to use within offshore windfarms perimeters. It is regarded as a plus if the method delivers high quality images, which can be used for public communication.



Foto: Udo van Dongen