

DEVELOPING NEW TECHNOLOGY TO SUPPORT MONITORING AND MITIGATING FOR PROTECTED SPECIES OFFSHORE

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Creating shared value by solving problems that matter.



New technologies could help offshore wind and other marine industries comply with environmental regulatory requirements in place to protect marine wildlife. Stephanie Milne, RPS Senior Environmental Manager – US Offshore Renewables, explains how technology is changing and what advantages this could have for the industry.

Protected species monitoring and mitigation has been a requirement in the United States for certain marine industries, including offshore energy, for nearly two decades. Monitoring has typically been undertaken by degreed and certified professionals deployed offshore; they join vessels or platforms where activities that have the potential to disturb wildlife, usually through sound production, will take place. Federal regulatory agencies in the US have published various sets of guidelines and requirements where, with each iteration, the trend has been towards increased monitoring requirements.

Monitoring requirements in the energy industry, including offshore wind development, have featured a significant component of visual monitoring and real-time acoustic monitoring. The development of technology including,

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but not limited to, open-source software solutions has been significant. Underwater marine mammal monitoring hardware developed for eco-tourism has been replaced by robust, commercial systems that are now technically proven in the energy industry. So what are some of the latest developments – and why are they needed?

Remote monitoring technologies for protected species observation: Acoustic and visual

Technical advances in satellite technology have now enabled large volumes of acoustic data, spanning a wide range of frequencies, to be streamed in real-time (<700ms) to remote shore-based locations. These relatively new remote monitoring capabilities have had significant impacts in reducing risk in health and safety as they remove operatives from higher risk marine industry locations, allowing them to work from the relative safety of their homes, in some cases.

Until recently, visual monitoring advancements in this space were more limited, primarily focused on camera and optical technology improvements but still requiring bodies on boats, i.e. a human presence with accompanying health and safety considerations. However, there is increasing interest in similar remote technology solutions, such as drones, in the visual monitoring space – a space that has seen very little development in the nearly two decades that it has been a regulatory

requirement. That being said, the majority of marine activities still implement an in-field Protected Species Observer program, either as a regulatory measure or as best practice.



Using drones in aerial surveys for protected species

Aerial surveys have been used for many years by scientists to monitor marine mammal population abundance and distribution trends. Traditional methodology for these aerial surveys involves the use of small, fixed wing aircraft flying at a set altitude and speed along a designated transect line, typically with Protected Species Observers on board, reporting observational data to a designated data transcriber. By their very nature, these small plane operations are usually characterized as very high risk.

The use of drones is one technology solution that is currently being explored as an alternative method of aerial monitoring. Drones equipped with high-definition,

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military-grade camera systems are being tested as a means of augmenting protected species monitoring, primarily in the offshore wind industry. Obvious benefits include but are not limited to:

- **Reduced costs:** Aerial surveys are labor-intensive and expensive drones have the potential to significantly reduce costs
- **Reducing safety risk:** Drones reduce safety risks for human teams by removing the need for flights in small aircraft
- **Reducing environmental footprint:** Traditional manned aircraft have a high carbon footprint whereas drone systems have comparatively low energy requirements.

RPS has made significant recent investment in the development of drone technology for visual monitoring in a variety of marine industry applications. These include platform decommissioning, and most recently, offshore wind development. We believe that it will be critical to have the best available technology used *in support of* more traditional monitoring methods, in order to continue offshore development in a way that is sustainable, cost-effective and compliant with regulatory frameworks. Watch this space for the next innovation!

Do you have questions about protected species monitoring and mitigation?

You are welcome to contact me –

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