

TRITON SUPPORT OF ENVIRONMENTAL MONITORING

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Triton is a U.S. Department of Energy initiative supporting development of advanced and cost-effective environmental monitoring technologies for marine renewable energy (MRE) applications. The Pacific Northwest National Laboratory is leading the Triton initiative which includes providing an underwater test site, expertise in program planning and execution, and a scientific dive team with vessel support. PNNL scientists are assisting with technology development of associated hardware and software to enhance MRE monitoring devices. The expertise and capabilities of the Triton initiative are leveraged to support DOE funding opportunity (FOA) awardees improving technical performance while reducing costs.

The FOA awardee projects are researching ways to improve the measurement of electromagnetic fields, underwater noise, animal interactions, and benthic characterization around MRE installations. Improvements made from this research should increase the efficiency of environmental monitoring and allow MRE industry developers to more easily test devices while satisfying regulator and resource managers statute authorities.

PNNL is currently evaluating the concept of data transferability to allow compatible data to be applied from one MRE project to another if appropriate. As support for the DOE funded FOA awardees completes in 2019, the next phase of Triton will begin. The Triton Field Trials, or TFiT, will continue to advance environmental monitoring for MRE by creating a set of common standards and guidelines for data collection and analysis. Producing a set of common standards for data collection will reduce the uncertainty associated with measurements and data analysis.

TFiT tasks detail environmental concerns associated with marine energy, review of existing monitoring methods used to date and compare them in a variety of field settings. Additionally, modelling used for certain environmental concerns will be investigated, determining model availability and what inputs are needed for verification. Lastly, a common set of standards for measurement and analysis for MRE environmental monitoring will be created.