

Data Transferability and Collection Consistency for Environmental Effects of Marine Renewable Energy



Due to concerns and uncertainty about potential environmental effects of marine renewable energy (MRE), permitting/consenting processes for MRE developments can be slow and challenging. OES-Environmental has developed a data transferability process that facilitates the examination and cataloging of data and information (such as reports, research studies, etc.) collected from already permitted/consented MRE projects. This process provides regulators and stakeholders access to information from existing MRE projects that has been synthesized and put into the appropriate context to address environmental concerns.

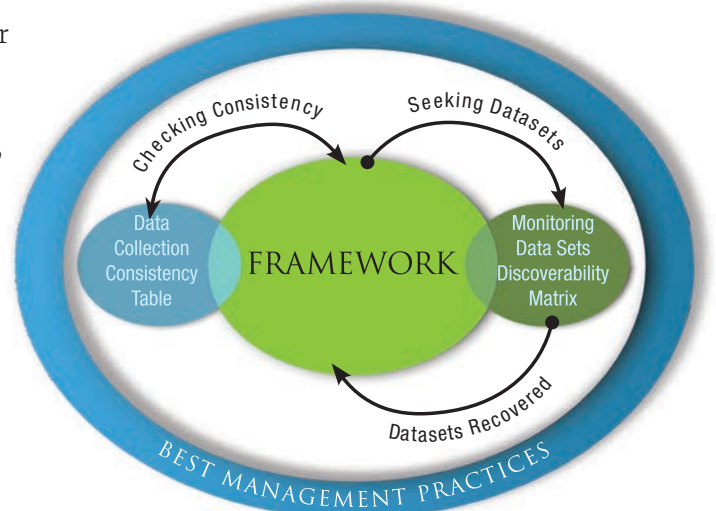
Employing the data transferability process allows for learning, analyses, and datasets to be shared from one country to another, among projects, and across jurisdictional boundaries. Through data transferability, OES-Environmental strives to decrease scientific uncertainty, support a common understanding of the environmental effects of MRE devices, reduce risks to the MRE industry, and accelerate permitting/consenting processes.

DATA TRANSFERABILITY PROCESS

The data transferability process ensures that datasets from permitted/consented MRE projects are readily available and catalogued. By doing so, two projects (an already permitted/consented project and a project subject to permitting/consenting and licensing permission) can be compared in terms of stressor-receptor interactions (such as collision risk on marine mammals or underwater noise effects on fish), the size and technologies involved in the projects, and the methodologies used to collect data.

DATA TRANSFERABILITY FRAMEWORK

The data transferability framework brings together datasets in an organized fashion, compares the applicability of datasets for use in another location, and guides the process of data transfer. The framework classifies MRE projects by stressor of interest, overall site conditions, type of wave or tidal technology, and receptors at the project site.



DATA TRANSFERABILITY PROCESS



DATA COLLECTION CONSISTENCY

Comparing datasets from one permitted/consented project to another requires consistency between the methods and instrumentation used to collect the data. As MRE is an international industry with processes and research norms that differ from country to country and region to region, it would be difficult to enforce the use of specific protocols or instruments for pre- or post-installation monitoring data collection. Therefore, OES-Environmental has developed guidance for collecting data consistently that includes measurement tools, reporting units, and analysis/interpretation methods for key stressor-receptor interactions.

DATA DISCOVERABILITY

As a companion to the framework, a Monitoring Datasets Discoverability Matrix classifies monitoring datasets from already permitted/consented projects. The matrix provides key information for each dataset (i.e., collection location, collection methods, contact information). The matrix will be available on Tethys (<https://tethys.pnnl.gov/riskretirement>) and will be updated as additional permitted/consented data become available. By providing this access, the process of data transferability gives regulators and developers a basis for discussion at the start of a permitting/consenting process.

BEST MANAGEMENT PRACTICES

Best Management Practices (BMPs) help guide the data transferability process. The BMPs include practical steps for implementation of the data transferability process, data consistency needs and quality assurance requirements, the use of numerical models to delineate stressor-receptor interactions, and the use of additional contextual datasets to enhance the interpretation of data and information.

PATHWAY TO RISK RETIREMENT

By understanding the potential environmental risks from MRE devices, concentrating monitoring and analysis resources on high priority risks, and avoiding or mitigating those risks, the MRE industry can move forward and “retire” certain risks. Sufficient data are needed for risk retirement — through a systematic process of examining and cataloguing datasets from wave and tidal projects that have been permitted/consented, ensuring that the datasets are accessible and understandable to regulators, and developing criteria to remove or “retire” those risks that are not likely to cause harm to the marine environment, there is a pathway towards lowering barriers to permitting/consenting and licensing MRE projects for wide spread and rapid development.

FOR MORE INFORMATION

Visit <https://tethys.pnnl.gov/data-transferability> for more information as well as a collection of reports, presentations, and webinars related to data transferability and collection consistency.

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