

Risk Retirement and Data Transferability



Risk retirement is the process whereby each potential risk need not be fully investigated for every small marine renewable energy (MRE) project. Rather, MRE developers and regulators may rely on what is known from already consented/permited (hereafter consented) projects, from related research studies, or from findings from analogous offshore industries. Risk retirement does not take the place of any existing regulatory processes, nor does it completely replace the need for all data collection before and after MRE device deployment; these data are needed to verify risk retirement findings and add to the overall knowledge base. When larger arrays of MRE devices are planned, or when new information comes to light, these risks can be revisited and new decisions about the level of risk down-scoping or retirement can be made.

Risk retirement is a term that originated in other technology-focused industries and has been used loosely by the MRE community to describe a means of simplifying consenting processes for single or small numbers of devices by focusing on key issues of concern. By determining which potential risks of MRE development are unlikely to cause harm to marine animals or habitats, those risks can be “retired” so that extensive investigations at every new MRE project are not required.

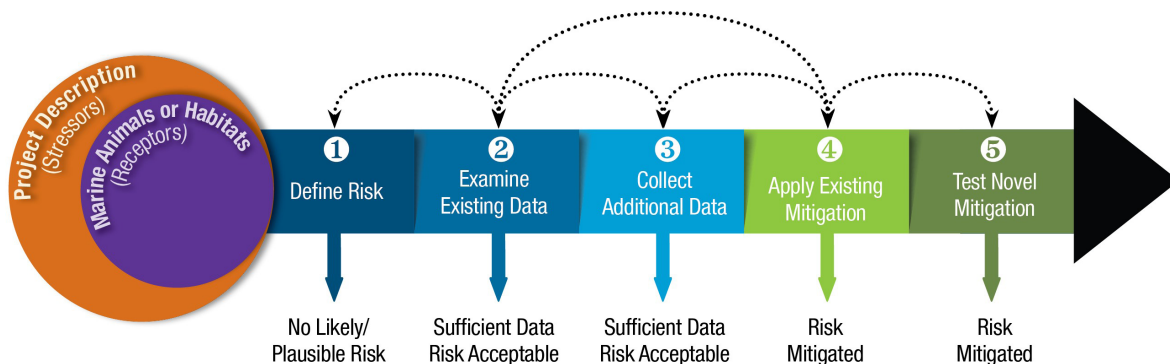


Figure 1. Risk retirement pathway. The dotted arrow lines represent the feedback loops between each stage of the pathway. The downward arrows at the bottom of each stage indicate the off ramps where a risk might be considered retired. (Graphic by Robyn Ricks)

RISK RETIREMENT PATHWAY

Ocean Energy Systems (OES)-Environmental has developed a risk retirement pathway (Figure 1) as a guide for MRE projects consisting of single or small numbers of devices. As the pathway indicates, the specific project details must first be defined including a description of the project (i.e., site characteristics, technologies involved) and the animals or habitats that may be affected. The risk retirement pathway figure delineates a series of steps which involve:

- ◆ determining whether a likely/plausible risk exists for a particular project;
- ◆ determining whether sufficient data exists to demonstrate whether the risk is acceptable;
- ◆ collecting additional data to determine whether the risk is acceptable;
- ◆ applying existing mitigation measures to determine whether the risk can be mitigated; and
- ◆ testing and applying novel mitigation measures to determine whether the risk can be mitigated.

Between and among these steps, available data and information need to be examined to determine whether the risk is acceptable or can be mitigated, thereby providing an off-ramp by which the risk can be retired. If none of the steps determine that the risk can be retired, the project may need to be redesigned or abandoned.

DATA TRANSFERABILITY

The success of the risk retirement process depends on having data and information from existing MRE projects readily available, cataloged, and accessible to regulators and other stakeholders. This will allow comparison of existing data and project descriptions to MRE projects for which development permission is sought. This data transferability process, as shown in Figure 2, consists of four parts: (1) the data transferability frame-

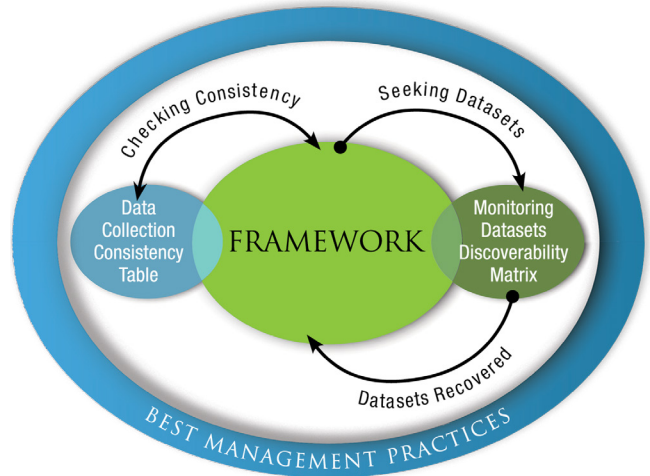


Figure 2. The data transferability process consists of a data transferability framework, data collection consistency table, monitoring datasets discoverability matrix, and best management practices. (Graphic by Robyn Ricks)

work, (2) data collection consistency table, (3) monitoring data sets discoverability matrix, and (4) best management practices. By making data and information readily available through this process, 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 consenting processes.

The risk retirement and data transferability processes are intended to assist regulators in their decision-making, inform the MRE community of what is likely to be required for consenting small developments, and help distinguish between perceived and actual risk to the marine environment. Additional information can be found on the *Tethys* risk retirement (<https://tethys.pnnl.gov/publications/risk-retirement-environmental-effects-marine-renewable-energy>) and data transferability webpages (<https://tethys.pnnl.gov/publications/data-transferability-collection-consistency-marine-renewable-energy-update-2018-report>).

REPORT AND MORE INFORMATION

OES-Environmental 2020 State of the Science full report and executive summary available at:
<https://tethys.pnnl.gov/publications/state-of-the-science-2020>

CONTACT

Andrea Copping
Pacific Northwest National
Laboratory
andrea.copping@pnnl.gov
+1 206.528.3049

Go to <https://tethys.pnnl.gov> for a robust collection of papers, reports, archived presentations, and other media about environmental effects of MRE development.