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## From Science to Consenting: Applying Environmental Effects Information to Support Regulatory Decision-Making

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### INTRODUCTION

- Uncertainty about effects of marine renewable energy (MRE) continue to slow consenting/permitting processes.
- Sharing the considerable body of information on MRE environmental effects can facilitate decision-making and regulatory processes.
- Ocean Energy Systems (OES)-Environmental, an international initiative, focuses on collaboration and knowledge sharing to progress MRE in a responsible manner.

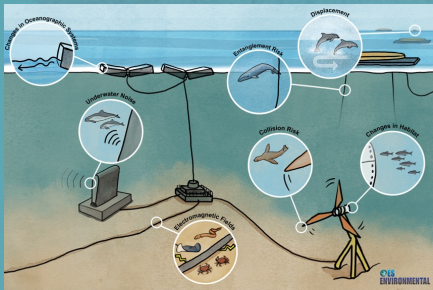


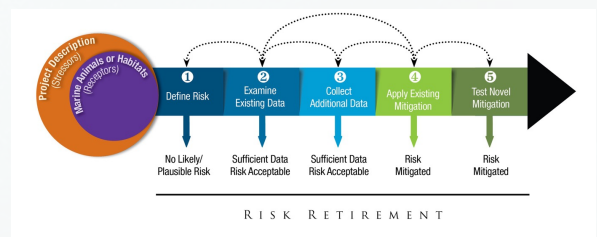
Illustration of key environmental interactions from MRE devices. (Illustration by Stephanie King/PNNL).

### INCREASING SCIENTIFIC UNDERSTANDING

- Scientific understanding of environmental effects of MRE is increasing as monitoring results from early deployments and the first commercial arrays are published.
- OES-Environmental has efforts underway to synthesize and translate these findings for application in consenting processes.

#### Risk Retirement

- A process to identify environmental risk unlikely to cause harm to marine animals or habitats.
- Interactions deemed low risk can be "retired" and need not be fully investigated for every small-scale MRE project.
- Relies on information from already consented projects, related research studies, or analogous offshore industries.



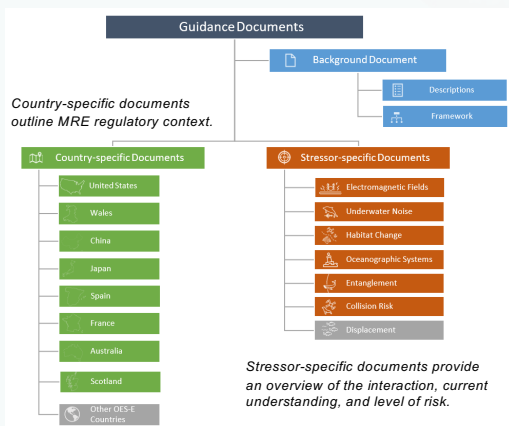
Risk retirement pathway showing how risks can be defined, evaluated, and potentially mitigated for MRE developments.



**Evidence bases** compile key information from already consented projects, related research, or analogous industries. Those for collision risk, underwater noise, electromagnetic fields, habitat change, changes in oceanographic systems, and entanglement have been completed to date.

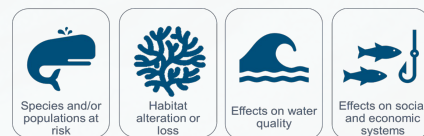
### SUPPORTING REGULATORY DECISION-MAKING WITH GUIDANCE DOCUMENTS

- Guidance documents have been developed to bridge between scientific information and application in regulatory contexts.
- They provide a guide that can be used internationally to evaluate stressor-receptor interactions of interest and to apply risk retirement in consenting processes.
- The documents are tailored for regulators, advisors, and MRE developers to simplify the search for up-to-date scientific information by making current knowledge accessible and by providing tools.

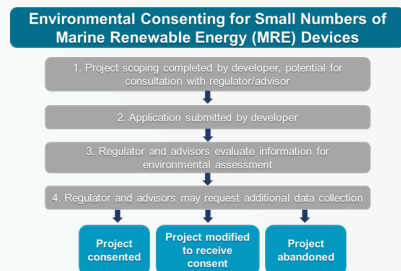


Components of the guidance documents. Boxes in color have been drafted or completed, boxes in grey indicate next steps.

Stressor-specific documents provide an overview of the interaction, current understanding, and level of risk.



The background document includes descriptions of the four regulatory categories relevant for MRE consenting (above) and includes a framework to aid application of risk retirement and data transferability (shortened version below).



### MORE INFORMATION

Risk Retirement



Evidence Bases



Guidance Documents



### CONTACT INFORMATION

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