

Tethys: Knowledge Hub on the Environmental Effects of Marine Energy

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Do you have questions about the potential impacts of marine energy? Tethys has the answers!



What is Tethys?

Tethys (<https://tethys.pnnl.gov>) is a free online knowledge hub with information and resources on the effects of marine energy, including wave, tidal, ocean current, riverine, salinity, and ocean thermal energy conversion, on the marine environment. Key features include a documents library, an events calendar, archived webinars, a bi-weekly Tethys Blast newsletter, educational resources, international project metadata, and much more.

Tethys also serves as the main outreach and engagement platform for the International Energy Agency's Ocean Energy Systems (OES) Environmental task. **OES-Environmental** is a collaboration among 16 countries dedicated to studying the environmental effects of marine energy, disseminating the state of the science, and developing useful resources for different stakeholders.

After 15 years of operation, Tethys is an internationally trusted broker of information and resources, with over 500,000 pageviews in the past year alone!



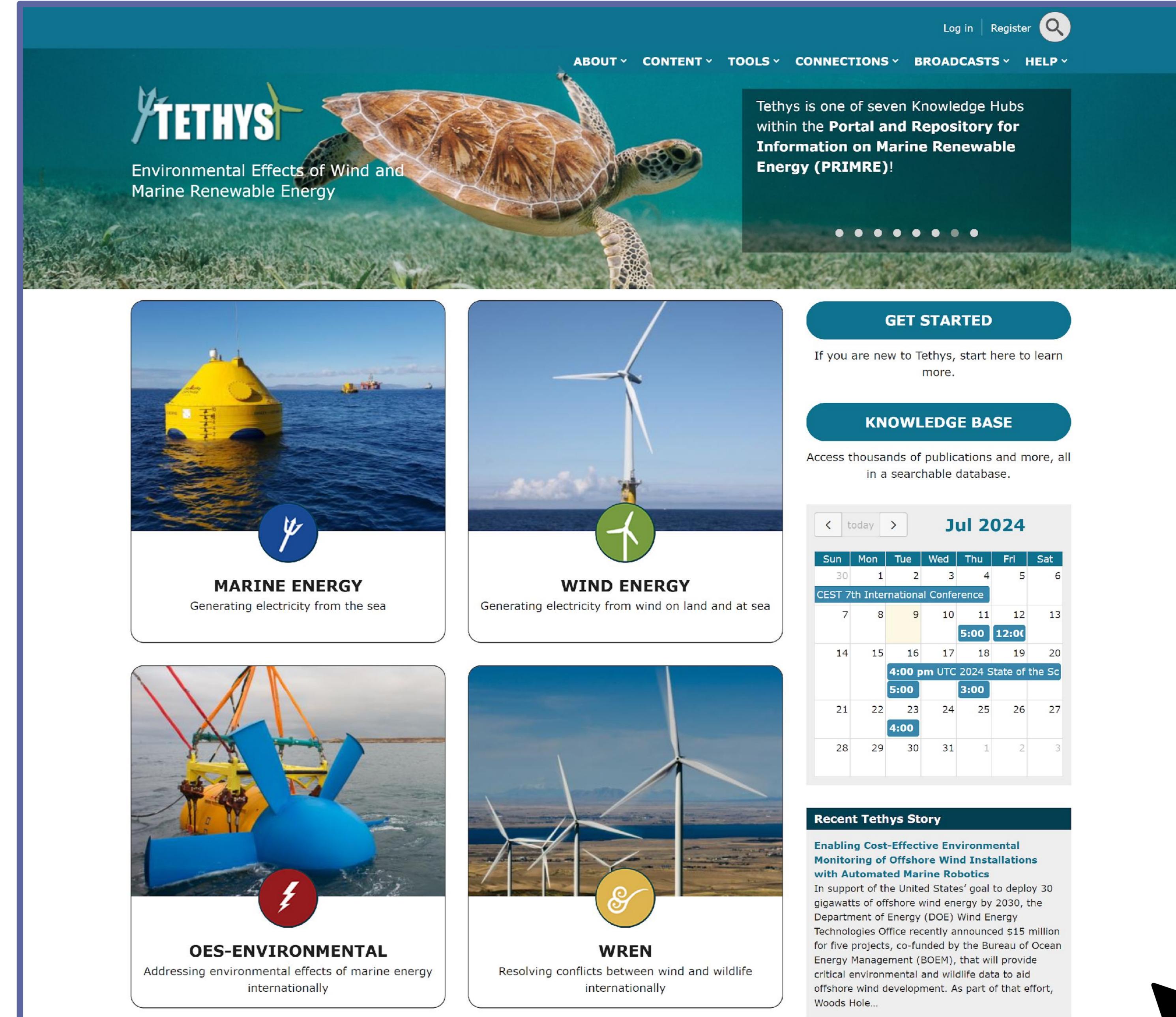
Connection to PRIMRE

Tethys is actively maintained and curated by a multidisciplinary team at the Pacific Northwest National Laboratory and funded by the U.S. Department of Energy's Water Power Technologies Office.

Tethys is one of seven knowledge hubs within the **Portal and Repository for Information on Marine Renewable Energy (PRIMRE)** (<https://primre.org>), which hosts a variety of data, information, and resources relevant to marine energy development around the world. Visit the PRIMRE poster to learn more!



Explore the Tethys Homepage



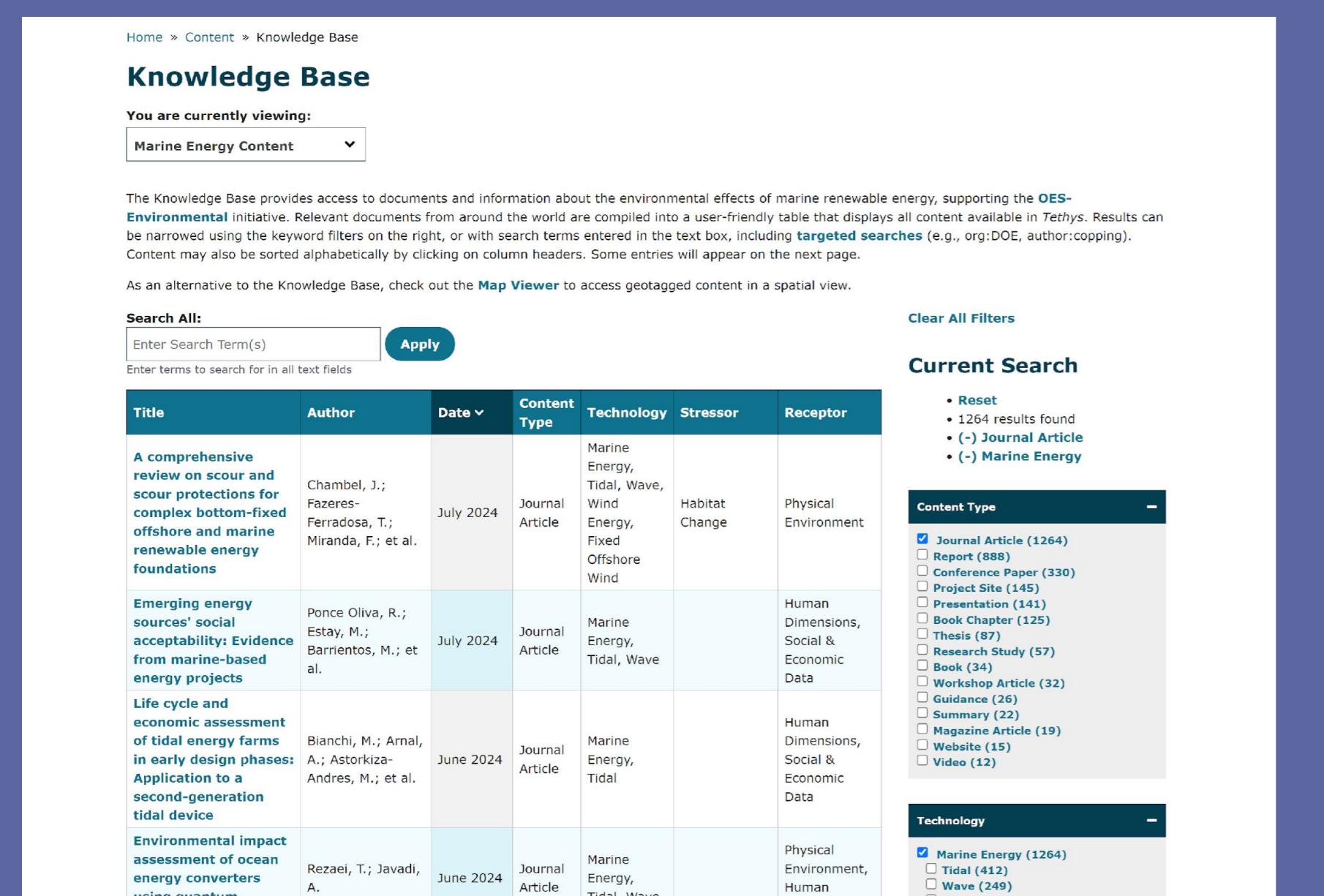
The homepage features a large image of a sea turtle. Key sections include:

- MARINE ENERGY:** Generating electricity from the sea.
- WIND ENERGY:** Generating electricity from wind on land and at sea.
- OES-ENVIRONMENTAL:** Addressing environmental effects of marine energy internationally.
- WREN:** Resolving conflicts between wind and wildlife internationally.
- CALENDAR:** July 2024, showing the 7th International Conference.
- RECENT TETHYS STORY:** Enabling Cost-Effective Environmental Monitoring of Offshore Wind Installations with Automated Marine Robotics.



Knowledge Base

Comprehensive documents library with thousands of journal articles, conference papers, and grey literature reports that can be filtered, searched, and sorted based on several facets, including document type, environmental topic area, and location.



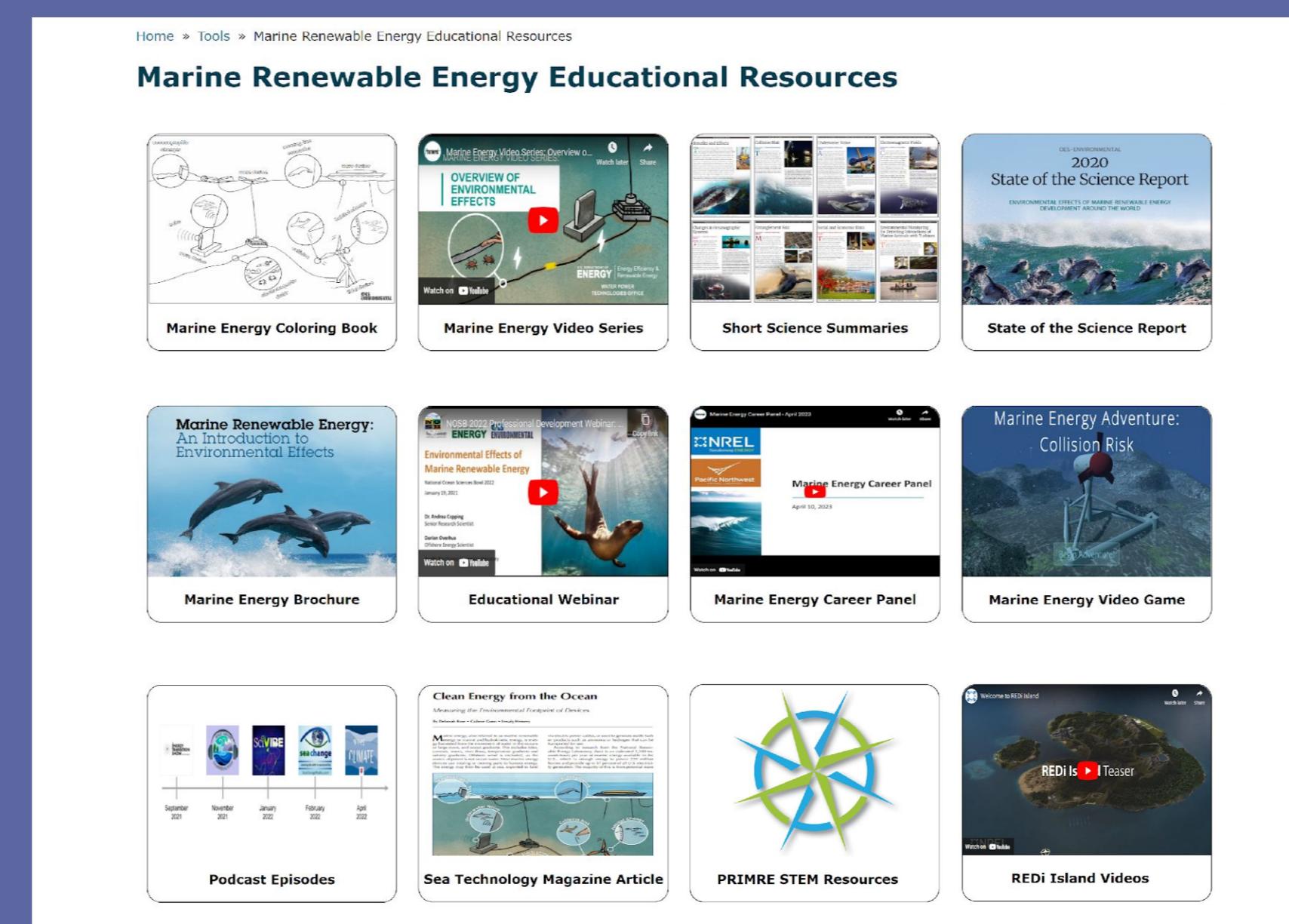
Search filters include:

- Content Type: Journal Article, Book Chapter, Report, Conference Paper, Project Site, Book Site, Dataset, Model, Video, Podcast, Sea Technology Magazine Article, PRIME STEM Resources, REDI Island Videos.
- Technology: Marine Energy, Tidal, Wave, Offshore Wind, Human Dimensions, Social & Economic Data.
- Receptor: Physical Environment, Human Dimensions.
- Location: California, Oregon, Washington, Alaska, Hawaii, International.



Educational Resources

Educational materials and resources developed for students, educators, and other groups (e.g., aquariums, museums) to increase awareness and understanding of marine energy and associated environmental effects.



Resources include:

- Marine Renewable Energy Educational Resources
- Marine Energy Coloring Book
- Marine Energy Video Series
- Short Science Summaries
- State of the Science Report
- Marine Energy Brochure
- Marine Energy Video Game
- Educational Webinar
- Marine Energy Career Panel
- Marine Energy Adventure: Collision Risk
- Podcast Episodes
- Sea Technology Magazine Article
- PRIME STEM Resources
- REDI Island Videos



Project Metadata

Information on marine energy projects around the world and the environmental monitoring conducted at each, including links to related reports, studies, and public data when available, to improve data discoverability and encourage open sharing.

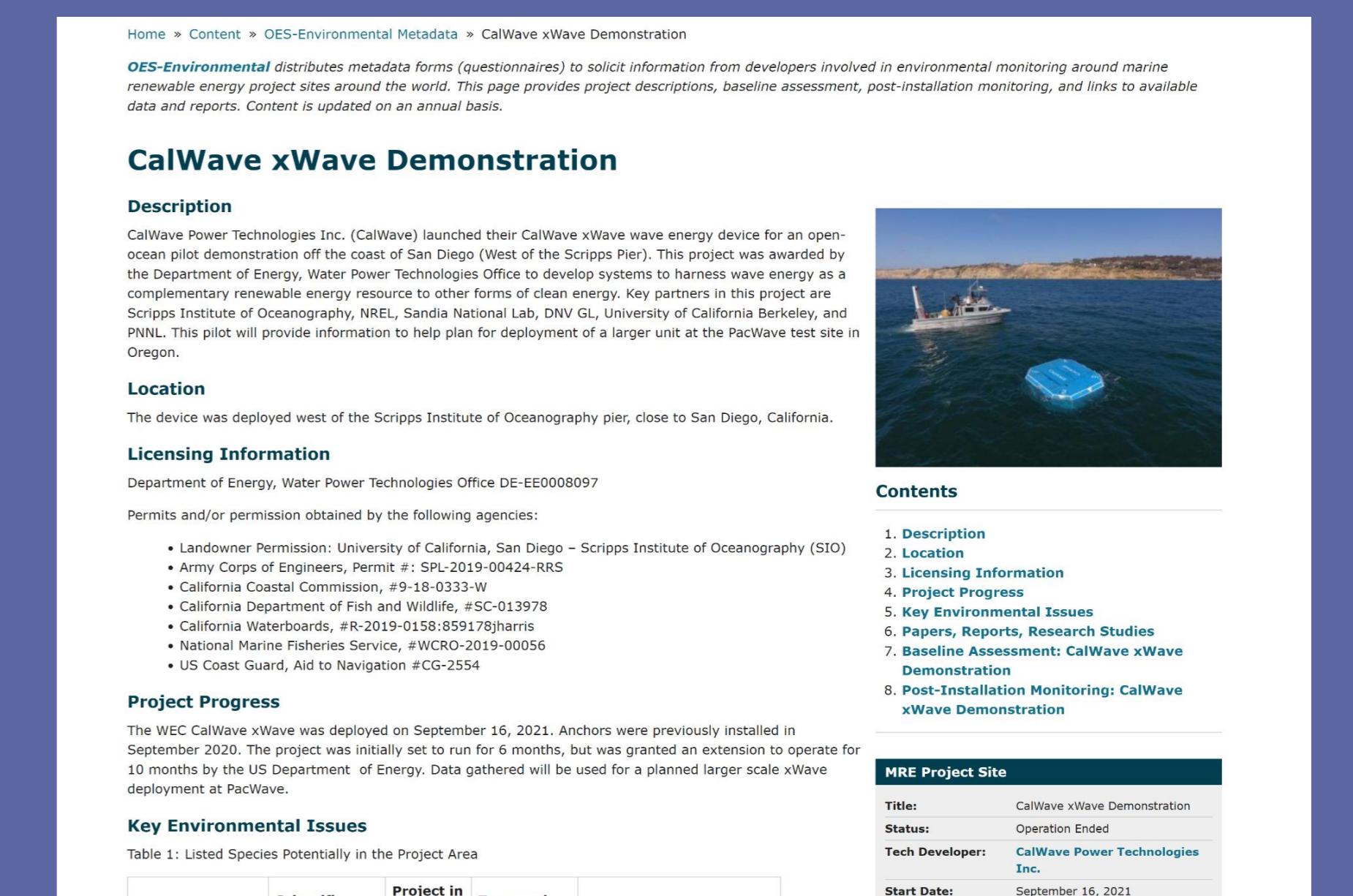


Table 1: Listed Species Potentially in the Project Area

Common Name	Scientific Name	Project in Critical Habitat	Temporal Distribution	Habitat
Albatross	Diomedea	Yes	Year-round	Marine

Project Progress: The WEC CalWave xWave was deployed on September 16, 2021. Anchors were previously installed in September 2020. The project was initially set to run for 6 months, but was granted an extension to operate for 12 months. Deployment of the system is dependent on weather. Data gathered will be used for a planned larger scale xWave deployment at PacWave.

Key Environmental Issues: Table 1: Listed Species Potentially in the Project Area

Project Site: CalWave xWave Demonstration

Location: The device was deployed west of the Scripps Institute of Oceanography pier, close to San Diego, California.

Licensing Information: Department of Energy, Water Power Technologies Office DE-EE0000897

Description: CalWave Power Technologies Inc. (CalWave) launched their CalWave xWave wave energy device for an open-ocean demonstration off the coast of San Diego (West of the Scripps Pier). This project was awarded by the Department of Energy, Water Power Technologies Office to develop systems to harness wave energy as a complementary renewable energy resource to other forms of clean energy. Key partners in this project are Scripps Institution of Oceanography, University of California San Diego, University of California, San Diego, and PNNL. This will provide information to help plan for deployment of a larger unit at the PacWave test site in Oregon.

Contents:

- Description
- Location
- Project Description
- Project Progress
- Environmental Issues
- Project Reports, Research Studies
- Baseline Assessment: CalWave xWave
- Post-Installation Monitoring: CalWave xWave Demonstration

Project Site: CalWave xWave Demonstration

Status: Operated Ended

Start Date: September 16, 2021

End Date: July 19, 2022

