

Marine Renewable Energy Services



OUR BACKGROUND

H. T. Harvey & Associates has been working on marine renewable energy projects since the United States' first West Coast commercial wave energy project developer applied for a license with the Federal Energy Regulatory Commission. We are currently involved with a range of projects supporting Pacific Ocean offshore wind and other marine renewable energy efforts in U.S. Waters. In addition, our team members have experience with permitting, Endangered Species Act consultations, and environmental assessments in marine environments. We combine this background with deep scientific expertise in birds, marine mammals, sea turtles, and fishes to deliver high-quality ecological consulting services on issues related to marine renewable energy projects.

OUR EXPERTS

Principal, Sharon Kramer, Ph.D., is a marine ecologist with more than 30 years of experience. She is the marine renewable energy team lead for the company and has been involved in every proposed U.S. west coast offshore marine renewable energy project to date.

Principal, Dan Duke, J.D., is an experienced lawyer and regulatory specialist who has worked on hundreds of ecological projects in California, including stewarding the development of the first coastal onshore wind project in Santa Barbara County.

Principal, Amy Sparks, J.D., has applied her training and experience in both ecology and law to client projects for more than two decades. She is regulatory expert who has worked on some of California's most complex permitting efforts for major energy and transportation projects.

Principal, Scott Terrill, Ph.D., is an internationally recognized avian ecology and behavior expert. He leads the avian-related components of marine renewable energy projects.

Senior Associate, Jim Harvey, Ph.D., is a marine ecologist with more than four decades of experience. He serves as a senior advisor on marine mammals and sea turtles.

Senior Ecologist, David Ainley, Ph.D., is a noted avian ecologist who has studied all aspects of marine ecosystems, including seabird ecology, for more than 40 years.

Senior Ecologist, Gregory Spencer, B.S., is a marine ecologist who specializes in developing conservation strategies for threatened and endangered species in Hawai'i and elsewhere in the Pacific.

SERVICES



- » Environmental evaluations for site characterization and planning
- » Pre-project ecological modeling
- » Environmental permitting
- » Environmental effect assessments
- » Feasibility studies
- » Post-project ecological studies
- » Biological monitoring
- » Applied scientific research



PROJECTS

Developing a three-dimensional model of seabird flight height to evaluate relative vulnerability of seabirds in different offshore wind development regions off the California and southern Oregon coasts.

Evaluating and validating stereo thermal camera (Thermal Tracker 3D) data of seabirds from the Humboldt Wind Energy Area offshore of Northern California.

Developing a digital twin of a floating offshore wind installation that incorporates environmental data in order to evaluate environmental impacts and mitigation strategies for offshore wind projects.

Providing biological support for NEPA/CEQA for the Redwood Marine Multipurpose Terminal Replacement Project in Humboldt Bay. The project will support Pacific Coast offshore wind development activities.

Evaluated environmental considerations in development of offshore wind projects off Northern California, including transmission (both on land and subsea), as part of a larger [California North Coast Offshore Wind Study](#).

Assisted in the preparation of the first unsolicited lease request in California—the Redwood Coast Offshore Wind Project—off of the state's Northern coast.

Evaluated the potential for wave and tidal energy devices to function as artificial reefs and fish aggregating devices on the U.S. West Coast and Hawai'i. [BOEM publication 2015-021](#).

Served as environmental technical lead for the DOE-funded project "Improving the Efficiency and Effectiveness for MHK Permitting: A Toolkit and Engagement for Success" (www.marineenergy.app).

Contributed permitting and environmental expertise to DOE-funded "MHK Environmental Compliance Cost Reduction Strategies" to detail the environmental compliance costs and lessons learned from U.S.-based MHK projects that have gone through the permitting and compliance process.

Supported the permitting process, including identification of potential project effects and uncertainties, negotiation of monitoring and adaptive management plans, and preparation of biological assessments and NEPA documents for four wave and tidal energy projects in California and the Pacific Northwest.

Coauthored West Coast Environmental [Protocols Framework](#): Baseline and Monitoring Studies for DOE and BOEM.

Supported the permitting, development, and construction of on-shore high voltage transmission line projects throughout California.



EXAMPLES OF CLIENTS

U.S. Bureau of Ocean Energy Management

U.S. Department of Energy

Sandia National Laboratories

California Energy Commission

California Ocean Protection Council

Pacific Northwest National Laboratory

Humboldt Bay Harbor, Recreation and Conservation District

Schatz Energy Research Center,
Cal Poly Humboldt

Oregon State University

Private Developers



COMPANY OVERVIEW

Since 1970, the highly trained ecologists and professionals at H. T. Harvey & Associates have delivered exceptional consulting services to public agencies, private entities, and nonprofits. We have more than 80 team members in four offices in California and one in Hawai'i.

CONTACT US

Sharon Kramer

707-822-4848

skramer@harveyecology.com



H. T. HARVEY & ASSOCIATES

Ecological Consultants

50 years of field notes, exploration, and excellence

www.harveyecology.com

