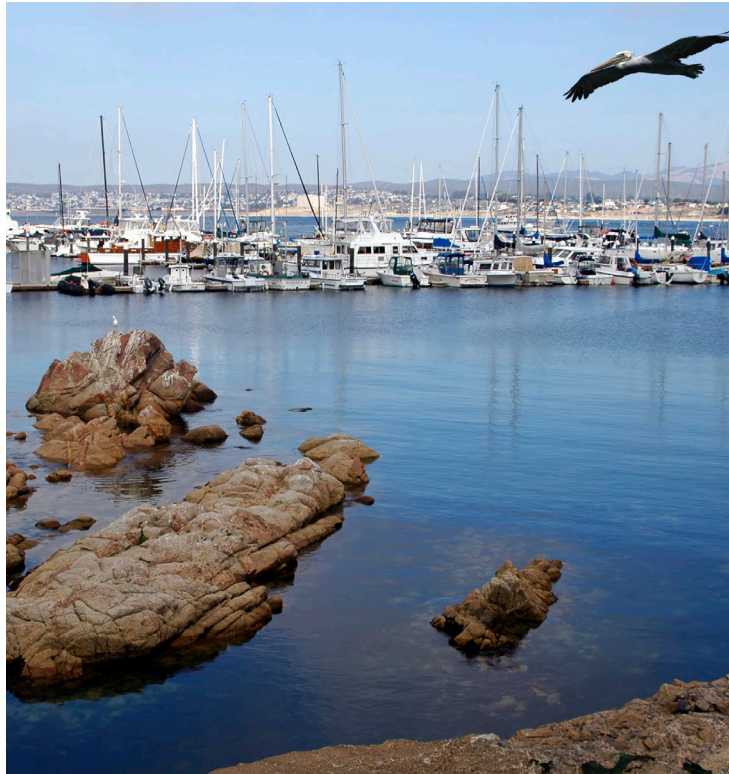


## Marine Services



AECOM excels at helping private and public clients with permitting complex marine projects through design, engineering, siting, feasibility, due diligence, and risk management.

### Areas of Expertise

- Physical Oceanographic Studies
- Biological Oceanographic Studies
- Chemical Oceanographic Studies

**More Information:** [AskEnvironment@aecom.com](mailto:AskEnvironment@aecom.com)

### Overview

Some of the most complex environmental issues are centered around coastal and offshore development. Commercial development of these environments is important for economic growth but often requires considerable agency stakeholder attention and time. Also, coastal and offshore projects are not only costly, but have management risk given their complexity. Our marine subject matter experts (SMEs) understand the science and the regulations governing the marine environment, which is essential for project success. Many of our SMEs have previously held professional positions with state and federal agencies so they fully understand the agency's mandates, guidelines, and processes.

### Our Approach

AECOM has experience in all aspects of coastal and offshore development, management, and regulatory permitting. We have assisted countless private and public sector clients and have numerous marine experts with the necessary skills and experience to successfully complete projects in sensitive marine ecological systems around the world.

AECOM staff have extensive field experience performing a wide range of coastal and offshore field investigations using conventional and advanced sampling gears, including remote system monitoring, Remote Operated Vehicles (ROV), acoustic Doppler current profilers, vibracores, Sediment Profile Imagery (SPI), and *in situ* data loggers. AECOM owns and operates a large inventory of sampling equipment to meet specific client needs and provide the best possible data collection. Our field experience has been used to meet regulatory requirements in the US, and abroad.

In addition, AECOM has licensed US Coast Guard Captains and an American Academy of Underwater Sciences (AAUS) accredited Scientific Dive Team with experience working in a variety of aquatic environments. Our marine experts can lead a wide range of field projects and conduct advanced predictive modelling, such as oil spill, acoustic, and community ecology.

### Key AECOM Attributes

As the leading global environmental and energy consulting and engineering firm, AECOM has over 40 years of hands-on experience permitting large, complex marine projects. Given our AECOM talent, we can execute multidisciplinary marine studies throughout the world. We have experience addressing emerging issues, such as climate change, contaminants, and sediment/water remediation. AECOM can provide engineering solutions, structural/mechanical aspects, laboratory services, and restoration expertise.

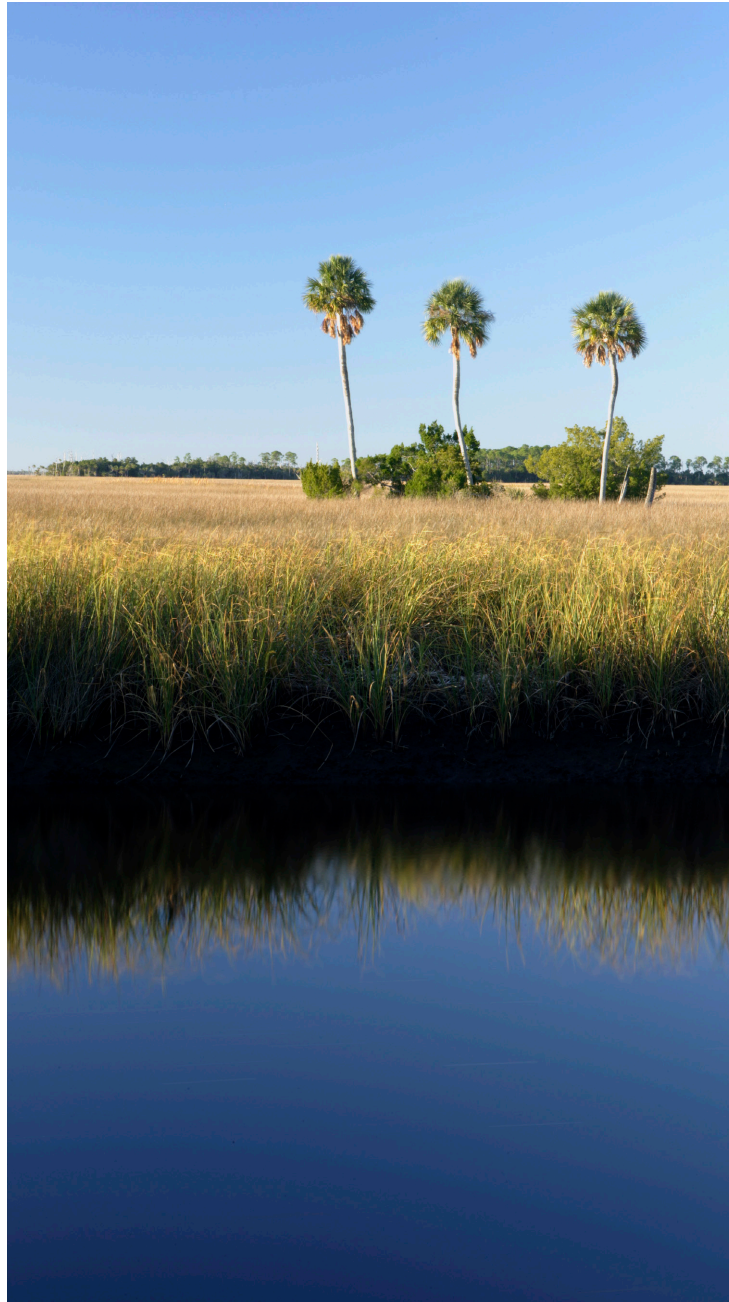
Our professionals are experts in a variety of marine science disciplines that includes conducting baseline studies, licensing/permitting, mitigation monitoring, and other technical services required for successful project development. AECOM staff can lead a typical project life cycle from concept/feasibility to decommissioning for different global business sectors, such as oil and gas.

AECOM also has ports and harbors engineering and permitting experience. Our team is recognized throughout industry for having the knowledge and skills to develop and upgrade existing in-water infrastructure, submarine cables/ pipelines, linear projects, waterways and channels deepening and widening, and energy related infrastructure, including renewable energy. Specifically, our team has experience in:

- Port Projects Permitting
- Marine Infrastructure Permitting
- Upstream Permitting
- Coastal Development
- Subsea Cable
- Oil and Gas
- Marine Archaeology
- Power Plants
- Offshore Renewable Energy
- Water Withdrawal for Cooling and Heating
- Wastewater Treatment
- Baseline Community Assessments
- Statistical Design and Analysis
- Engineering, Feasibility
- Due Diligence
- Conceptual Design
- Visual Impact Assessment
- Cultural Resources, Nautical Archaeology



## Marine Services



### Specialty Expertise

#### CONTAMINATED SEDIMENT MANAGEMENT

Sediment management is an important aspect of project development, site closure, and environmental restoration processes. Recent stakeholder interest in sediment assessment and remediation is expected to substantially increase the number of sites requiring management, restoration, and remediation for contaminated coastal environments, globally. Contaminated Sediment Services offered by AECOM include:

- Sampling and Monitoring
- Bioavailability Studies
- Remote sensing of impacts
- Sediment Characterization and Assessment
- Risk Assessment
- Remediation and Restoration

#### PHYSICAL, BIOLOGICAL, CHEMICAL STUDIES AND OCEANOGRAPHY

**Physical.** Understanding physical processes and conditions within coastal and offshore environments are essential relative to a wide variety of environmental programs, including linear corridor permitting, dredge material management, and coastal development. AECOM offers a wide range of expertise, including:

- Geophysical/Geotechnical Surveys
- Current and Wave Measurements
- Marine Geology and Sedimentology
- Marine Site Investigation Reporting

**Biological.** Understanding ecological relationships between marine organisms and their environments requires a wide range of biological skills. Our marine biologists are experts at balancing the needs of development project proponents with conservation, recreational, commercial, and regulatory needs. In fact, AECOM is frequently called on to use our biological experts to assist with complex decision making and risk assessments. Skills we offer include:

- Benthic Ecology and Marine Botany
- Fisheries, Plankton, Ichthyoplankton
- Acoustic/Underwater Noise
- Estuarine and Saltmarsh Ecology
- Submerged Aquatic Vegetation (SAV) Mapping and Mitigation
- Coral Reef Ecology
- Artificial Reef Development and Monitoring
- Threatened and Endangered Species Surveys
- Fisheries Biology and Management
- Essential Fish Habitat Assessments
- Impingement and Entrainment Studies

**Chemical.** Specialized skills are required to understand the cycling of chemicals in marine systems, and to evaluate potential impacts associated with anthropogenic activities and discharges. These skills are critical relative to marine dredging programs, understanding groundwater/surface water interactions, and a wide variety of site development and cleanup activities. AECOM scientists and engineers have expertise in the following disciplines:

- Marine Chemistry
- Water Quality Sampling and Monitoring
- Contaminants
- Nutrients/Eutrophication
- Chemical and Toxicological Testing
- Water Quality Modeling
- Plume Tracking
- Fate and Transport Studies
- Oil Spill Response and Planning

