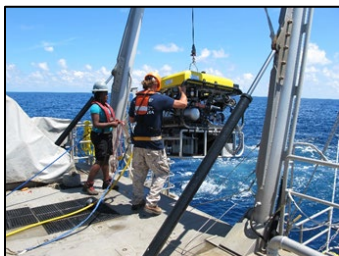


Coastal & Marine Science is the discipline focused on understanding the physical, chemical, biological, and ecological processes that shape oceans, estuaries, coasts, and coastal communities. Coastal and marine scientists study interactions among marine organisms, coastal ecosystems, climate systems, ocean circulation, water quality, and human activities to better understand and manage marine environments. As coastal populations continue to grow and climate change accelerates sea-level rise, coastal flooding, habitat loss, and ocean warming, professionals in this field play an increasingly important role in conservation, resource management, climate adaptation, environmental monitoring, and scientific research. Some of the critical questions that might be addressed with a career in these fields include:

- *How are climate change and sea-level rise affecting coastal ecosystems and communities?*
- *How do estuaries, wetlands, coral reefs, and coastal waters support biodiversity and ecosystem services?*
- *How are marine ecosystems responding to pollution, ocean warming, acidification, and overexploitation?*
- *What management strategies best support sustainable fisheries, coastal resilience, and habitat conservation?*
- *How can science guide restoration and protection of coastal ecosystems?*
- *How do oceanographic processes influence environmental conditions and ecological communities?*



Careers

Careers in **Coastal & Marine Science** involve research, environmental consulting, natural resource management, conservation, environmental monitoring, policy, and education.

Career	Potential Employers
Research and Academia	
Marine Scientist	Universities, NOAA, Research Institutes
Oceanographer	NOAA, Naval Research Laboratories, Universities
Marine Ecologist	Universities, NGOs, Research Institutes
Estuarine Scientist	National Estuarine Research Reserves, Universities
Coastal Geoscientist	USGS, Universities, Consulting Firms
Resource Management and Conservation	
Coastal Resource Manager	State Coastal Programs, NOAA, NGOs
Marine Conservation Scientist	The Nature Conservancy, WWF, NGOs
Fisheries Scientist	NOAA, State Agencies, Marine Research Centers
Marine Protected Area Specialist	Government Agencies, International NGOs
Habitat Restoration Specialist	NGOs, Consulting Firms, Government Agencies
Environmental Consulting and Monitoring	
Environmental Consultant	Consulting Firms, Engineering Firms
Coastal Resilience Specialist	Consulting Firms, NGOs, Government Agencies
Water Quality Scientist	Consulting Firms, Watershed Organizations
Marine Environmental Analyst	Consulting Firms, Government Agencies
Wetland Scientist	Consulting Firms, Regulatory Agencies
Education and Outreach	
Marine Educator	Aquariums, Nature Centers, Universities
Science Communicator	NGOs, Government Agencies, Media Organizations
Environmental Outreach Coordinator	Conservation Organizations, Public Agencies

Coursework & Degree Options

The **Coastal & Marine Science** pathway is a natural fit for Environmental Science majors interested in marine environments, coastal ecosystems, climate change, environmental monitoring, resource management, or scientific research. Environmental Studies majors interested in marine policy, conservation, or coastal management may also pursue this pathway. Students interested in careers in **Coastal & Marine Science** may wish to consider the following courses to fill elective requirements within the Environmental majors:



4-cr. Science & Technology laboratory courses:

- GEV 4322 – Ocean Environments
- GEV 4324 – Wetland Science and Management
- GEV 4362 – Coastal Geohazards
- BIO 3805 – Conservation Biology¹

3-cr. Science & Technology elective courses:

- GEV 3309 – Coral Reefs
- GEV 4351 – Oceanography
- GEV 4511 – Climate Variability
- GEV 4514 – Geomorphology



3-credit elective Environmental Policy & Management courses:

- GEV 2500 – Global Change in Local Places
- GEV 3580 – Natural Resources and Conservation
- GEV 4331 – Environmental Policy and Management

Degree Options

- Students may wish to consider a **Minor in Biology**.

Notes:

- Many careers in the **Coastal & Marine Science** pathway will be enhanced by or require an advanced degree. Students pursuing this pathway may wish to consider graduate program prerequisites. Students may wish, for example, to complete the 2nd semester of the introductory Biology course sequence: Introductory Biology II (BIO 2106) with laboratory to meet some graduate school requirements.
- ¹ Courses in the Biology Department require the introductory Biology sequence (BIO 2105 and/or BIO 2106) with labs. Students without these prerequisites will need to ask permission to enroll in these courses.
- Many study abroad programs have courses that are relevant to this pathway and may count towards major requirements. Your academic advisor and the Chair of the Department can provide guidance, along with the Office of Education Abroad, about programs and courses that would be a good fit with this pathway.
- There are additional thematic courses offered every semester that can count towards elective requirements that may be relevant to this pathway.

Alumni Spotlight

Brian Donnelly

B.S. Environmental Science, Class of 2016

Following graduation, Brian worked as a field and laboratory technician in a coastal wetland science laboratory for several years before pursuing a Ph.D. in Marine Science at Northeastern University, which he completed in 2024. Brian is currently a postdoctoral researcher at Bryn Mawr College. <https://www.linkedin.com/in/brian-donnelly-5b1b0567/>



To learn more about this and other career pathways, use the QR code, contact your academic advisor, or contact the Chair of the Department of Geography and the Environment for guidance.

The GEV Career Pathways Page:

