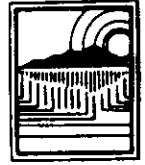




COAST NOTES



A Virgin Islands Marine Advisory Services Publication

VIMAS is a branch of

the University of Puerto Rico Sea Grant College Program & the University of the Virgin Islands Eastern Caribbean Center.

Marine Careers Series

Careers in Marine Biology

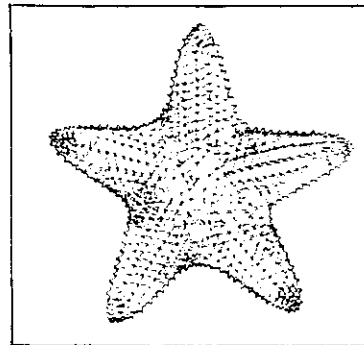
Marine biology is a broad professional field that includes the study of organisms that live in and near the oceans. Marine biologists study the factors that affect these organisms, including their habitats, ranging from coastal areas to the deep sea.

What do marine biologists do?

Ichthyologists, fisheries biologists and some marine biologists focus their studies on the behavior, life cycles and population dynamics of fish. Their work contributes to the protection of these vital food sources. Other marine biologists work to control the spread of "foreign" or introduced species to areas where they may threaten or even wipe out local or native populations of plants and animals. Marine biologists may study the life histories and habits of manatees, whales, seals and other marine mammals, or of invertebrates such as corals, crabs, barnacles, or worms. Still others specialize in areas such as water quality and the

impacts of water quality on marine and coastal organisms.

In the area of marine ecology, biologists study coastal ecosystems such as mangroves, salt ponds, and wetlands, as well as marine communities like coral reefs, sea grass beds, and deep sea hydrothermal vents. Their work helps us to better understand both these habitats and



the diverse forms of life they host. Some marine ecologists study the effects of water quality on ecosystems, and experiment with techniques designed to help restore areas that have been damaged by pollution. The results of such studies can be used to formulate public policy and regulations that protect species and habitats vital to environmental and human health. Marine biologists may also

assess environmental damage caused by phenomena ranging from oil and chemical spills to hurricanes and overdevelopment.

Education

Careers in the field of marine biology require at least a bachelor's degree in biology or marine biology. Due to the highly competitive nature of research positions in marine biology, advanced degrees and/or specialized experience are usually necessary.

High school students can prepare for a career in marine biology by completing as many math and science courses as possible, including calculus, chemistry, physics, earth science and biology. Computer courses are also very helpful. Math and science courses at the high school level (including advanced placement or college courses where possible) will prepare students for more specialized courses in college.

At the undergraduate level it is not necessarily better to select a large school with a large marine science program. Often, smaller schools provide greater opportunities for working closely with faculty on research projects. When selecting a school, choose a size and location where you are comfortable. A university that offers a wide variety of marine science courses will give you the best background, and will help you to choose an area of specialization at the graduate school level.

Financial aid, work study and scholarships are often available to help pay the cost of completing the bachelor's degree. Check with the college or university of your choice for more details. Most universities offer scholarships, fellowships and assistantships or internships for marine science studies at the graduate level.

Careers in Marine Biology

Aquaculturalist - researches, designs and implements methods used in commercial production of fish and algae.

Barrier beach manager - identifies and studies barrier beach areas; develops systems to preserve these beaches, and determines policies for barrier beach use.

Biochemist - studies the chemical composition of living organisms; identifies biological compounds in the ocean for use in treating illnesses affecting humans and animals.

Biological oceanographer - studies marine plant and animal life and the ways in which pollution may affect them; may work to extract food and pharmaceutical compounds from marine life.

Coastal zone manager - identifies natural areas within the coastal zone; analyzes the ways in which changes within the zone may affect coastal ecosystems; develops management criteria for land and water use in coastal areas.

Environmental planner - assesses the long-range needs of the coastal zone and those who use it; attempts to balance effective land use with conservation in order to prevent or mitigate environmental problems.

Fisheries scientist - studies biological, chemical and physical factors affecting fish and shellfish populations.

Marine bacteriologist - identifies diseases in marine life and seeks means to control them.

Marine ecologist - studies the relationships between organisms and their environment; examines the impact of external influences such as rainfall, temperature or pollution on marine ecosystems.

Marine mammologist - studies the behavior, reproduction, diseases, populations, migration and abundance of marine mammals in their natural habitat, in captivity, and after their death.

Marine microbiologist - identifies and investigates bacteria and the diverse roles they play in the food chain and marine ecosystems.

Physiologist - studies the structure and function of organs, tissues and cells in marine organisms.

Planktologist - studies the distribution, abundance, ecology, taxonomy and population dynamics of (plant and animal) planktonic organisms.

Salt marsh manager - develops systems for rating the health of existing salt marshes to help set preservation priorities; determines the possibilities for creating new and/or artificial marshes.

by Laurie Fletcher-Hall
intern, VIMAS St. Thomas

This is one of a series of Coast Notes on marine careers. The series includes Careers in Marine Biology; Physical and Chemical Oceanography; Ocean Engineering; Medicine and Health; Planning, Management and Legal Professions; and Technical Careers.

Fact Sheet # 30