

A career in marine biology

What do marine biologists do? How can school students plan for a career in this desirable field? Paul Greer explains.

Marine biology is the study of all aspects of life in the sea and the environment on which it depends. The main aims are to improve our understanding of the marine world and to understand and predict changes in ecosystems affected by human and natural disturbances.

Marine biologists share a fascination for marine animals and plants and a desire to spend a large proportion of their lives close to the coast or on the open ocean. Many are motivated by a desire to ensure that future generations enjoy healthy and productive seas. The popular image is of wetsuit-clad figures swimming past tropical fish to examine coral reefs. This is a narrow view. In fact, marine biologists work in many areas including policy, industry, communications and media, research, education, conservation and recreation (e.g. ecotourism).

Research scientists study ocean systems at scales from molecules to ecosystems, and their relationships to people and changing environmental conditions. They also study basic biology (often using marine organisms as 'models' —see pages 11 and 28) and develop ways to solve problems. Areas of concern right now are climate change, ocean acidification, overfishing, degradation of habitats and invasive non-native species.

A typical project may last between 6 months and 3 years, and focus on specific processes related to how organisms function and interact with each other and the environment.

Operational stages will probably include gathering samples, examining these to acquire relevant data and using specialist equipment or computer models for analysis.

Once established, findings will be disseminated through papers in scientific journals, reports or articles in the mass media, and presentations to academics, government, industry and environmental pressure groups.

Many marine biologists work exclusively in laboratories and offices for a research organization, consultancy, government agency or university, analysing observations

or data and developing ideas for further investigations. At universities, they may have teaching responsibilities, perhaps instructing newcomers to the subject, or (with experience) supervising graduate research students. They also inform and learn from other professionals and scientists, such as geologists, physicists and biochemists.

The capacity for fine and accurate observation, and care in gathering and presenting data, are important. So are patience in unfavourable conditions or when progress seems slow, physical fitness for collecting samples, and a disposition sociable enough to work and live with others (sometimes for quite long periods) on, for instance, a ship or remote research base. A high level of IT and communication

skills are needed, too.

Good GCSE passes in English and maths, plus high grades in sciences (notably biology and chemistry), provide a sound base. Geography, too, is useful, though rarely compulsory. A-level choices should include biology and (preferably) chemistry. Applicants to university with other qualifications (such as BTEC) should consult institutions first, as competition for places is strong. Open days are good sources of information, too.



Not all marine biologist work in the field – but some do! Image: MBA.

First (undergraduate) 3–4 year degree courses in marine biology are offered at about 16 British universities, all by (or very near) the sea (see www.mba.ac.uk/marinebiologist/issue-3-career-in-marine-biology for a list, and the article below about studying marine biology). Alternatively, a relevant but broader subject (e.g. biological science) may be followed by a second, higher degree such as MSc (Master's) or Phd (Doctorate). The second route allows anyone hesitant about committing to marine biology as a career more time to decide, as well as providing the level of qualification typically required for research posts.

A first degree is sufficient for many non-research jobs, and GCSE/A-levels may be enough for technician posts. Though often hard to obtain, work experience in marine biology is important, and 'ways in' might be found through university departments, marine laboratories, research institutes and government bodies.

If you would be interested in finding out more about careers in marine biology at an MBA event, please contact Jack Sewell jase@mba.ac.uk

Dr Paul Greer (paulgreer1@aol.com)