Marine Biologist

Introduction

Marine Biologists study plants, animals and micro-organisms that live in the sea. Their findings help us to manage and protect marine life, monitor environmental damage and explore ways to make safe use of the sea's resources.

Also known as

- Biologist, Marine

Work Activities

As a Marine Biologist, you will study and carry out research into all aspects of marine life.

You will often use sophisticated technology, such as submersible vehicles, satellite tracking technology and microscopes to investigate marine ecosystems. You'll analyse the results using statistical and Global Information System software.

You might be involved in pure research - for example, studying and mapping marine populations. Your findings will help to build up a national and international picture of marine life, and how it changes and is affected by environmental factors.

You could help to investigate the effects of climate change on oceanographic processes, and their effects on habitats and species. You will be helping us to learn more about our oceans and how to protect them for future generations.

Some Marine Biologists apply their knowledge to solving problems, especially in conservation and protecting endangered species. For example, you could play a vital role in protecting fish populations from pollution and over-fishing.

To do this you will try to gain a biological and ecological understanding of fish populations, enabling you to work out how many fish we can take while ensuring that the population is not endangered.

'Environmental impact assessment' is also an important area to work in. You will examine the impact on biodiversity in coastal zones of activities such as port development, commercial fishing, oil and gas exploration, renewable energy site development, sea defence construction and sewage treatment. To monitor pollution, you'll sample and test water samples in the laboratory.

You could study climate change or the development of new methods to tackle pollution.

We farm some species of marine and freshwater life, such as salmon and shellfish. Marine Biologists' research can help Fish Farmers to achieve maximum production and efficiency by ensuring fish have the correct amount and type of food, and that captive conditions encourage growth.

A huge number of organisms live in the seas and oceans; many have benefits for humans. For example, Biologists have found anti-cancer compounds in some types of sponge. There is a continuing need to find out more about the medicinal properties of marine life.

As a Marine Biologist, you will present your findings in reports, scientific journals and at conferences. These findings help government departments to negotiate and set fishing quotas, and to develop and enforce pollution regulations.

In some posts, you might spend periods of time working in the field, either by the coast or at sea, but you will also have to spend time in the office, writing up your work for publications and writing proposals to secure funding for new research.

Being able to read, write and speak Welsh may be an advantage when you're looking for work in Wales.
Personal Qualities and Skills

To become a Marine Biologist, you'll need:

- to be accurate and methodical in field and laboratory work
- patience to repeat experiments several times
- analytical and problem-solving skills
- strong team skills, especially when working at sea
- to be able to work on your own for long periods of time
- the ability to explain results clearly and concisely, including in written reports
- to know how to use statistics and other mathematical methods to analyse experiments
- the ability to use a wide variety of equipment and technology, including computers

An interest in conservation is an advantage in many areas of marine biology.

Physical fitness is an advantage for sample and data gathering expeditions.

Pay and Opportunities

Pay

The pay rates given below are approximate.

- Starting: £27,500 - £30,000
- With experience: £35,000 - £41,000
- Senior Marine Biologists earn £44,500 - £50,000

Hours of work

Marine Biologists usually work 35-39 hours a week, but not necessarily during normal office hours, especially when working in the field.

Where could I work?

The Natural Environment Research Council, environmental consultancies, sea life centres and aquaria, university research departments, fisheries and fish farms employ Marine Biologists.

Government departments, such as the Department for Environment, Food and Rural Affairs (Defra) can have research posts.

Opportunities for Marine Biologists occur in towns, cities and rural/coastal areas throughout the UK.

Self-employment

Some Marine Biologists set up their own businesses, working as consultants. For example, you might carry out field survey work or environmental monitoring for oil companies, national agencies, port authorities and fisheries committees.

Where are vacancies advertised?

Vacancies are advertised in national/local newspapers, on the Civil Service jobs website, and in science magazines such as New Scientist (which also has job vacancies on its website). Jobs related to marine conservation sometimes appear in online publications such as The Environment Post and on environmental job websites such as:

www.environmentjob.co.uk

GreenJobs is a job board aimed at people interested in green careers:
Entry Routes and Training

Entry routes

Usual entry is with at least a relevant first (undergraduate) degree. There are specialist degrees in marine biology (sometimes with freshwater biology). Some universities combine marine biology with related subjects such as zoology and oceanography. A number of sandwich degree courses are also available.

Entry is also possible with a degree in a related subject, such as biology, zoology, oceanography or biochemistry.

Some universities offer degree courses with a foundation year. This is an extra year for students who don't have the specified science A levels for entry.

Entry can be possible with a relevant HND or foundation degree, although this will usually be into a technician-level post.

For some jobs, particularly research posts in higher education, you'll need a postgraduate qualification.

Before entry to a career in marine biology, you can develop skills through relevant work experience. This could be either paid or voluntary, for example, with a conservation body, local aquarium, or scientific or natural history club/society.

A great way to get into this career is through an internship. Take a look at our information article 'Internships', for more details.

Training

If you would like some training, then The Marine Biological Association offer some short courses. These are suited for people who have an interest in marine biology, which topics include:

- introductory species identification courses
- introduction to survey skills
- practical skills for marine scientists
- scientific illustration

Check the website for dates and availability.

Other courses could be available in your area.

Progression

Some experienced Marine Biologists run their own businesses as consultants. For example, you carry out field survey work and environmental monitoring for oil companies, national agencies, port authorities and fisheries committees.

Work Experience

Previous experience working in fieldwork in a marine environment would be really useful for this career.

Qualifications

For entry to a degree in marine biology, the usual requirement is:

- 2/3 A levels, including biology and many universities ask for at least one other science subject, preferably chemistry
- GCSEs at grade C/4 and above in your A level subjects
- a further 2/3 GCSEs at grade C/4 and above, including English and maths
Alternatives to A levels include:

- BTEC level 3 qualifications
- the International Baccalaureate Diploma

However, course requirements vary, so please check college/university websites carefully.

Some universities accept the Welsh Baccalaureate as equivalent to 1 A-level.

Adult Opportunities

Age limits

It is illegal for any organisation to set age limits for entry to employment, education or training, unless they can show there is a real need to have these limits.

Skills/experience

Some entrants have developed skills and knowledge during relevant fieldwork in a marine environment.

Courses

If you don't have the qualifications needed to enter a degree, foundation degree or HND course, you might be able to start one after completing an Access course, for example, Access to Science. You don't usually need any qualifications to enter an Access course, although you should check this with the course provider.

A foundation year before the start of a science degree or HND is available at some universities and higher education colleges for students who don't have the science A levels usually needed for entry to the course.

Funding

Funding for study and research is available, through universities, from the Biotechnology and Biological Sciences Research Council (BBSRC).

The Natural Environment Research Council (NERC) funds postgraduate (PhD and MSc) students. This is through studentships, funded through university departments and NERC research councils (NERC does not deal directly with students).

Further Information

Contacts

- Civil Service Jobs
  Website: [www.civilservice.gov.uk/jobs](http://www.civilservice.gov.uk/jobs)

- GreenJobs
  Email: info@greenjobs.co.uk
  Website: [www.greenjobs.co.uk](http://www.greenjobs.co.uk)

- New Scientist
  Publisher: Reed Business Information Ltd
  Email: ns.subs@quadrantsubs.com
  Website: [www.newscientist.com](http://www.newscientist.com)

- Biotechnology and Biological Sciences Research Council (BBSRC)
  Address: Polaris House, North Star Avenue, Swindon SN2 1UH
  Tel: 01793 413200
  Email: webmaster@bbsrc.ac.uk
  Website: [www.bbsrc.ac.uk](http://www.bbsrc.ac.uk)
• Natural Environment Research Council (NERC)
  Address: Polaris House, North Star Avenue, Swindon SN2 1EU
  Tel: 01793 411500
  Website: www.nerc.ac.uk

• Earthworks-jobs.com
  Website: www.earthworks-jobs.com

• Department for Environment, Food & Rural Affairs (Defra)
  Address: Nobel House, 17 Smith Square, London SW1P 3JR
  Tel: 0845 9335577
  Email: defra.helpline@defra.gsi.gov.uk
  Website: www.gov.uk/government/organisations/department-for-environment-food-rural-affairs

• Maritime UK Careers
  Tel: 020 7417 2837
  Email: enquiries@seavision.org.uk
  Website: www.seavision.org.uk

• Institute of Marine Engineering, Science and Technology (IMarEST)
  Address: Aldgate House, 33 Aldgate High Street, London EC3N 1EN
  Tel: 020 7382 2600
  Email: info@imarest.org
  Website: www.imarest.org

• Marine Scientist
  Publisher: Institute of Marine Engineering, Science and Technology (IMarEST)
  Website: www.imarest.org/Publications/MarineScientist.aspx

• Marine Conservation Society (MCS)
  Address: Unit 3, Wolf Business Park, Alton Road, Ross-on-Wye, Herefordshire HR9 5NB
  Tel: 01989 566017
  Website: www.mcsuk.org

• Marine Biological Association (MBA)
  Address: The Laboratory, Citadel Hill, Plymouth, Devon PL1 2PB
  Tel: 01752 633207
  Email: sec@mba.ac.uk
  Website: www.mba.ac.uk

• Scottish Association for Marine Science (SAMS)
  Scottish enquiries
  Address: Scottish Marine Institute, Oban, Argyll PA37 1QA
  Tel: 01631 559000
  Email: info@sams.ac.uk
  Website: www.sams.ac.uk

• People Exchange Cymru (PEC)
  Public sector recruitment portal for Wales
  Email: peopleexchangecymru@gov.wales
  Website: www.peopleexchangecymru.org.uk/home

Related Careers

• Biochemist
• Materials Scientist
• Biomedical Scientist
• Astronomer
• Biotechnologist
• Botanist
• Analytical Scientist
• Analytical Chemist
• Colour Technologist
• Ecologist
• Forensic Scientist
• Biology Laboratory Technician
• Chemistry Laboratory Technician
• Physics Laboratory Technician
• Microbiologist
• Acoustician
• Zoological Scientist
• Toxicologist
• Clinical Research Associate
• Process Development Technologist
• Soil Scientist
• Laboratory Technician
• Scientist
• Biologist
• Physicist