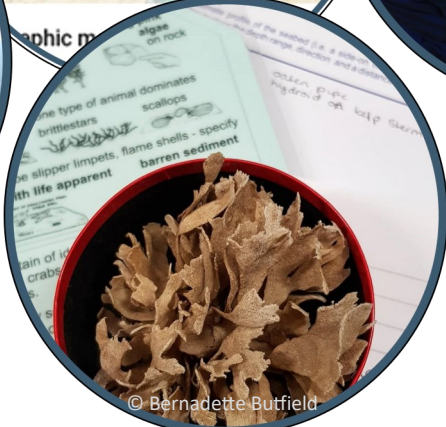
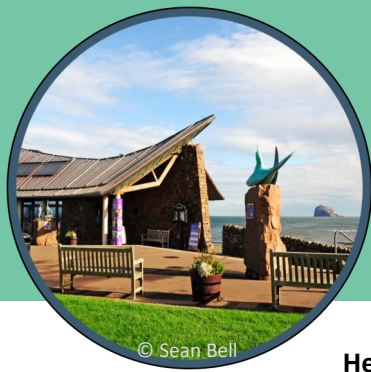




SSC DIVE IN! MARINE CAREERS





WELCOME!

Hello, and welcome to “SSC Dive In!” - packs of resources providing seaside fun directly into family homes and classrooms.

This pack’s theme: **Marine Careers**

Ever wondered what sort of jobs there are that involve working with the ocean? The good news is there is a huge variety of work out there for all types of people from all sorts of different backgrounds.

Take a look inside for information and advice from variety of experts in the field of marine science and technology.

Inside this pack:

- **Activity: Describe a marine scientist**
- **Discover: Marine Job Profiles**
- **Discover: Marine Careers on film**
- **Glossary: Scientific words**

We’d love to hear from you! If you’ve enjoyed reading our pack, or been inspired to look at a job in marine science, let us know. Please send any comments or pictures you are happy for us to share and have permission for can be sent to marineengagement@seabird.org.

Enjoy using our packs and want to see more? The Scottish Seabird Centre is an environmental education and conservation charity. Every penny we raise helps us deliver our important conservation and education work. If you enjoy using our resources and would like to support our work, please consider making a donation through our [JustGiving page](#). Thank you.

More resources available on our [website](#).

We hope you enjoy diving in to the pack!

Scottish Seabird Centre Learning Team

The Scottish Seabird Centre would like to thank all our participants for their kind contributions to this pack.

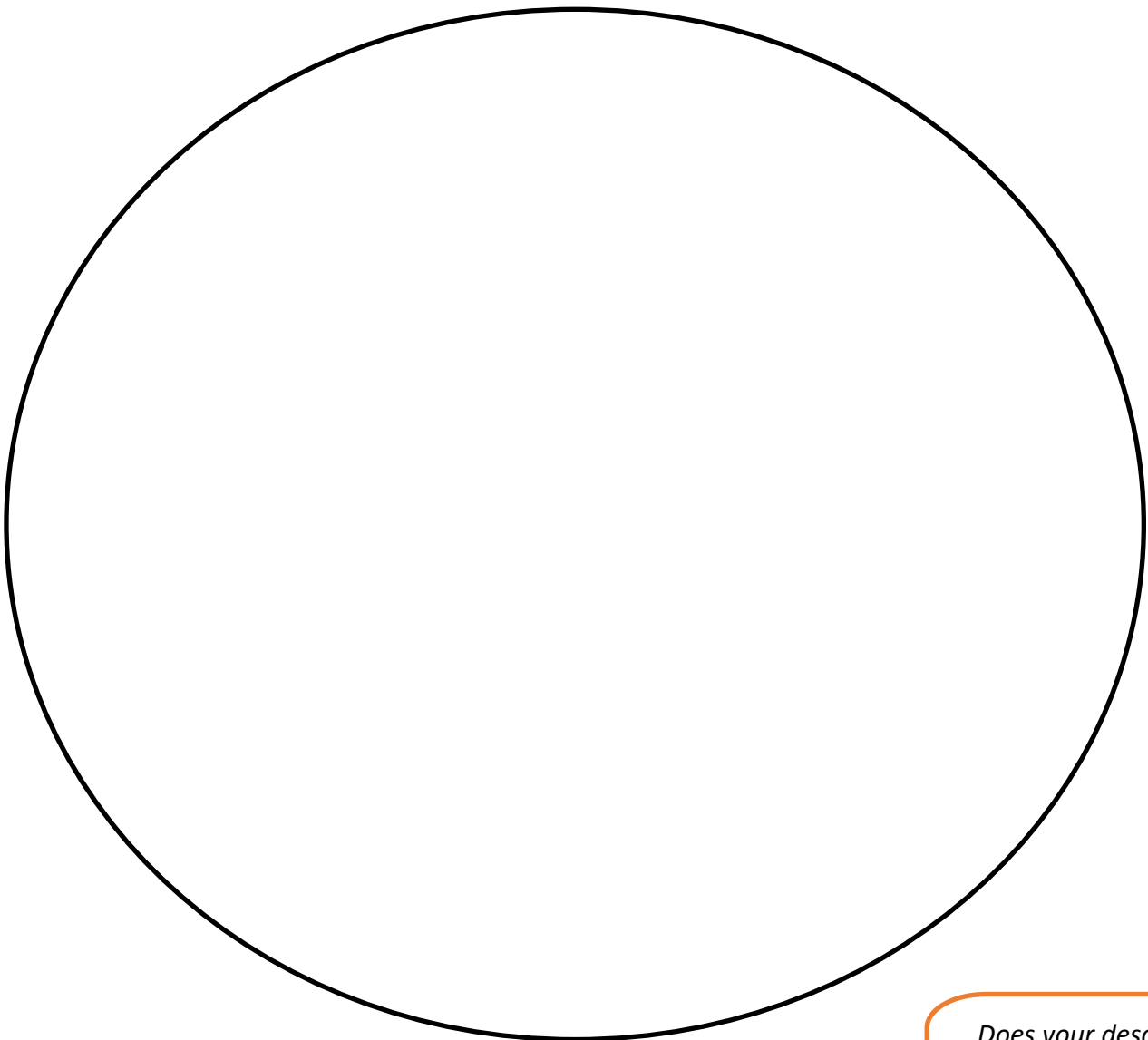


ACTIVITY



DESCRIBE A MARINE SCIENTIST

Before you read the pack, have a go at describing what you think someone who works in marine science does in the circle below or on a piece of paper. It can be a drawing of a person, things people work with in the ocean, or simply write words that you associate with 'marine science'.



Does your description match a real person in our pack? Read on to find out.



Hint: The meaning of words in **purple** can be found in the Glossary at the end of the pack. Words in **blue** contain links to websites.

DISCOVER

MARINE JOB PROFILES



NAME: Clare Cavers

JOB: Senior Projects Manager



WHAT DO YOU DO?

I'm Senior Projects Manager at Fidra, a Scottish organisation that works all around the world to stop plastics and chemicals getting into the wrong places, including us, which is called pollution. We look at work scientists have done to understand how pollution happens and what it does to us and the world around us. Then we try to come up with ways to stop it as much as possible, and ask whoever is making the pollution to change what they are doing.



HOW DID YOU BECOME A PROJECTS MANAGER?

After school I went to university to study Biology, which is learning all about plants and animals. When I finished I did a 3 month trip to Africa, to do 'marine **conservation**', which is stopping things that harm the sea and sealife. It was amazing, I learnt to scuba-dive and camped on an island, collecting information about the local sealife and mangroves, which are trees that grow on beaches and in the sea. We also learnt how locals fished lots of different things, from tuna to octopus. Not so amazing was people using dynamite to kill fish, which just blew up everything around them. I got a job to help run more of these trips, called 'expeditions', and writing reports with the information we collected. The place where we worked is now a protected area, which is great as it means they can't use dynamite to fish anymore.



That all made me really want to work with looking after the sea, and I went back to university to learn more about it. Then I got a job in an office, but helped at the [Royal Botanic Gardens](#) in Edinburgh in my spare time and met a someone who worked on mangroves. We put together a project to look at how they are used by fish and other sea creatures to protect their babies...



When I'd finished this project I took a break from science but after a few years met someone at Fidra, who asked me to find out about plastic cotton buds on our beaches.

I got a job as a Project Officer at Fidra and turned that work into [The Cotton Bud Project](#). I've been at Fidra for nearly 6 years now and worked on lots of different things.

WHAT IS YOUR FAVOURITE THING ABOUT YOUR JOB?

We've persuaded companies who are causing pollution to change what they are doing, or at least think about it, and it's fantastic to feel we are making a difference.

WHAT IS YOUR ADVICE TO SOMEONE WANTING TO GET INTO THIS LINE OF WORK?

Go to university to study a science subject and get experience through jobs and doing things in your spare time, like beach cleans or learning more about nature.

WHAT IS YOUR FAVOURITE MARINE SPECIES AND WHY?

Ooh that's a hard one! I'll say the [scallop](#), I love they way they swim along by opening and shutting their shell.



Find out more about Fidra by visiting their website: www.fidra.org.uk



© Bernadette Butfield

NAME: Bernadette Butfield

JOB: Marine Policy Officer



WHAT DO YOU DO?

I am the Marine Policy Officer for the Scottish Wildlife Trust, working as part of the **policy** team.

It is my role to develop a set of ideas and ways in which Government can protect and promote the marine environment...



... I currently focus on **sustainable** fishing and the use of marine **nature-based solutions**, like **seagrass beds**, to tackle the **climate change** and **biodiversity** loss.

HOW DID YOU BECOME A MARINE POLICY OFFICER?

While marine science and conservation has always been an interest of mine, I wanted to learn more about the law and policy that governs our ocean. Therefore, I decided to study law at university, before later completing a Master's degree in marine systems and policies.

I also volunteer with environmental charities like the [Marine Conservation Society](#), and I am a scuba diving instructor with the [British Sub Aqua club](#) (BSAC).



WHAT IS YOUR FAVOURITE THING ABOUT YOUR JOB?

Not only do I get to learn more about the ocean every day, I have a chance to make a difference in an area I feel very passionately about.

WHAT IS YOUR ADVICE TO SOMEONE WANTING TO GET INTO THIS LINE OF WORK?

Marine conservation needs people from all walks of life, so my advice would be to pursue your passion. Studying for a degree or similar takes time and effort, so it is important that you chose a topic of interest to you.

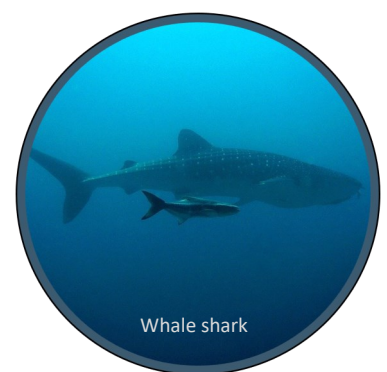
I have a keen interest in environmental law and policy, so I used my academic studies to gain qualifications and specialist knowledge in that field.

Also, get involved, become a volunteer and develop skills, understand your own interests and meet other like-minded ocean lovers.

WHAT IS YOUR FAVOURITE MARINE SPECIES AND WHY?

This is such a difficult question to answer! I have too many favourites, for example, the [Northern gannet](#) and the [Basking shark](#).

For me though, the number one spot has to go to one of the 440 known shark species we have in the world. Sharks have always caught my interest and I have been lucky enough to dive with species likes [whale sharks](#) in the Maldives, and even [blue sharks](#) here in the UK.



My top fact about sharks is that they have existed for more than 450 million years, making them 100 million years older than the first trees!

Find out more about the Scottish Wildlife Trust on their website: www.scottishwildlifetrust.org.uk





NAME: Tara Proud

JOB: Volunteer & Community Engagement
Manager



WHAT DO YOU DO?

I am currently the Marine Conservation Society's Volunteer & Community Engagement Manager, engaging with people across Scotland.

This is a varied role involving:

- Teaching young people about marine **conservation**
- Supporting our network of volunteers to protect our seas
- Working on beaches helping **citizen scientists** to understand more about our coasts
- Working with **policy** colleagues to campaign for change



HOW DID YOU BECOME A VOLUNTEER & COMMUNITY ENGAGEMENT MANAGER ?

Before I worked for the Marine Conservation Society, I was volunteering for a couple of marine charities in my spare time around my conservation job. I enjoyed my job at the time, but it was about protecting land species and I wanted to focus on the sea. So when I saw this job opportunity I was excited to be able to move into marine conservation as it is something I am so passionate about.

Previously I worked for the [Royal Society for the Protection of Birds](#) (RSPB) leading an international conservation project to save Turtle Doves as well as working in science and hands-on conservation for the [Mauritian Wildlife Foundation](#). Before that I studied Biology degrees at both the Universities of Oxford and Bristol.

WHAT IS YOUR FAVOURITE THING ABOUT YOUR JOB?

I was inspired to get involved and work in conservation by my love of nature. For as long as I remember the natural world has filled me with wonder and I can't imagine not doing everything within my gift to help protect it. I feel very lucky to be able to share my love for nature with others as part of my job, and to help people to protect nature...



... I am also fortunate that I often work on beaches all around Scotland for my job – that’s certainly one of the highlights of my job.

WHAT IS YOUR ADVICE TO SOMEONE WANTING TO GET INTO THIS LINE OF WORK?

There are so many different types of job in marine conservation, using many different skills. Most people don’t realise how wide a range of options there are. So I’d recommend volunteering and doing work experience if you can, as a way to find out more about what sort of job will be good for you. Do what you enjoy and what you are good at – that is so important to feel fulfilled in your work.

WHAT IS YOUR FAVOURITE MARINE SPECIES AND WHY?

I am asked this question quite often, and the answer is always changing because I am regularly in awe of nature and so I don’t have one single favourite species! Before lockdown, I was incredibly lucky to see a pod of [Orca](#) off the coast of Shetland whilst I was up there for work. This is a species I've always wanted to see and so I was blown away by the encounter.



Find out more about Marine Conservation Society on their website: www.mcsuk.org




EMEC 
THE EUROPEAN MARINE ENERGY CENTRE LTD

NAME: Paul Tait

JOB: Environment & Consents Officer

WHAT DO YOU DO?

I am an Environment & Consents Officer at the European Marine Energy Centre (EMEC). The purpose of my role is to assist in the **consenting process** at EMEC’s tidal and wave test sites and in some cases, at test sites in other locations...



... In other words, I help to make sure that EMEC carry out marine activities in line with the rules written by the Government, to help protect the environment and reduce risk to wildlife in the locations where testing activities are taking place. I also help developers coming to EMEC's sites to follow the rules correctly. Developers are companies who have come up with a new **marine renewable energy** technology which they want to test at EMEC. The other part of my role is to monitor the environment at EMEC sites to make sure we aren't causing any harm. This can involve doing boat-based surveys and much more!

HOW DID YOU BECOME AN ENVIRONMENT & CONSENTS OFFICER ?

Ever since I was young, I have been passionate about the environment (particularly marine) and doing what I can to stop it coming to harm. I left secondary school with grades mainly in the science courses and then made the decision to study Applied Sciences at Aberdeen College. Once I completed college, I studied at the University of Aberdeen and obtained my dream degree in Marine Biology. Whilst I was going through education, the marine renewables industry in Orkney continued to progress. Luckily, when I moved home to Orkney, this job also appeared in the local paper and suited my views and passions perfectly. I couldn't not apply!



WHAT IS YOUR FAVOURITE THING ABOUT YOUR JOB?

I enjoy a lot of aspects of my job, helping developers to get onto our test sites, working with new innovative technologies, making sure we are protecting wildlife and meeting new people - there is so much to enjoy. The favourite thing about my job, however, is that I know that I am finally playing a role in reducing carbon emissions and achieving a **net zero climate**. With the ongoing fight against **climate change**, and the critical point we now find ourselves, much of earth's plants and animals are in danger. As I mentioned above, I have always been passionate about the environment and now I have a chance to help – it's a great feeling.

WHAT IS YOUR ADVICE TO SOMEONE WANTING TO GET INTO THIS LINE OF WORK?

There are so many opportunities here in Orkney to get into marine renewables. Heriot-Watt University offer brilliant courses in Stromness, for example, and there are many companies based in Orkney which offer lots of different jobs in marine renewable energy. Studying Marine Biology at University set me up well for this role because I learnt about the environment that I would then work to look after, as we **decarbonise** our energy system. All energy projects need to go through a consenting process and must consider their impact on the environment. As we continue to tackle the climate crisis, it is becoming increasingly important to create more opportunities for people to be able to study and work in renewables throughout Scotland, the UK and internationally too!...



WHAT IS YOUR FAVOURITE MARINE SPECIES AND WHY?

My favourite marine species (although there are several) must be the [humpback whale](#). I have chosen this species because of how highly adapted it is and its survival behaviours. The humpback's feeding techniques, such as bubble net feeding, and its ability to intake massive amounts of water, are a result of millions of years of evolution. They are super intelligent animals but also like to have good fun, jumping out of the water and tail slapping.



Find out more about the European Marine Energy Centre on their website: www.emec.org.uk



NAME: Jerry Gibson

JOB: Operations Technician

WHAT DO YOU DO?

My job title is 'Operations Technician', which means I am in charge of the operations and maintenance of EMEC's equipment, to make sure it works well and is safe to use. I get to help with a lot of exciting projects in Orkney. Most of these projects involve hydrogen, a gas which, if produced from renewable energy, is a completely clean fuel; and I am involved in many of the marine energy projects as well. I work with people from many different industries, and an important part of my role is also to share knowledge and experiences, because the marine energy and hydrogen industries which I work in are still so new. Recently, for example, I supported the training of people working on the ferries that operate in Orkney, as they were learning how hydrogen behaves and how to use it safely as a fuel. It was the first time in the world that this course had been taught and I got to be a part of it - that was so exciting!...



HOW DID YOU BECOME AN OPERATIONS TECHNICIAN?

Originally, I trained as a Marine Engineer with the [Merchant Navy](#). As part of the training, I did a three-year cadetship through [Clyde Marine](#) with Northlink Ferries, a training which gives you a really good grounding on a lot of engineering subjects. When I qualified, I worked for an energy company called [Petrofac](#), where I was taken on as Operations Technician.

The learning and work experience that I gained from doing a cadetship gave me the skills to move onto to work for a larger company. Working for a large company provided me with a really great base to develop and practice my skills, before then moving into the renewable energy industry. Since hydrogen is so new, there aren't that many hydrogen specific training opportunities available, so gaining the relevant skills through a cadetship and practicing in other industries was really useful. But don't worry - they are being developed all the time now! Hopefully by the time some of you are thinking about joining the renewables industry, you'll have many different courses to choose from that will help you develop a really exciting career.



WHAT IS YOUR FAVOURITE THING ABOUT YOUR JOB?

My favourite thing about my job is the variety, it makes every day exciting and different! I get to work on many projects, with different industries like marine renewables and hydrogen. I work in many locations around Orkney and, before the pandemic, I would travel further afield too. There is no opportunity for this job to be boring!

WHAT IS YOUR ADVICE TO SOMEONE WANTING TO GET INTO THIS LINE OF WORK?

Never pass up an opportunity to get hands on experience and take things apart, it allows you to learn how they work. Learning by doing and being confident is very important, and even more for this type of role, where you have to apply your skills and experiences in new sectors, while ensuring safety standards at all times. University can be very useful, but it is not the path for everyone, and it is not the only path - there are many other ways to get to where you want to be. They all involve working hard to learn and develop skills, but in different ways. There are lots of wonderful [apprenticeships](#) available in many different disciplines that involve engineering, the type of career skills for my type of work. The most important thing is that you enjoy what you are learning and that you feel passionate about your work.

WHAT IS YOUR FAVOURITE MARINE SPECIES AND WHY?

My favourite marine species is a [seal](#), we have so many of them in Orkney! They always look so relaxed when they're basking on the shore and on the rocks, and they swim so gracefully in the sea...



... I always think about how nice it would be to be a seal. I used to listen to my mum reading me old Orkney folk tales about selkies and I was amazed by them. Selkies are magical creatures from Orkney folk tales who are actually humans disguised as seals – they live underwater in the ocean but can come up on land as well. The idea that a seal could take off its skin and be human underneath is pretty cool.



Find out more about the European Marine Energy Centre on their website: www.emec.org.uk



UK Centre for Ecology & Hydrology

NAME: Dr Sarah Burthe

JOB: Animal Population Ecologist

WHAT DO YOU DO?

I am a research scientist working at a research institute called the UK Centre for **Ecology** and **Hydrology**. My role is to conduct scientific research to try to understand how humans are affecting the marine environment. To do this we study [seabirds](#) including kittiwakes, razorbills, puffins, guillemots and shags. Seabirds nest in large numbers and are easy to watch, which means it is easy to measure how well birds are doing by counting how many chicks they produce each year, what they are eating and what condition they are in. Seabirds are marine top predators that sit right at the top of the marine food chain and because of this, when seabirds are not doing well it warns us that things are not well further down the food chain, for example because there are not so many fish. By monitoring seabirds every year we can understand how **climate change** is affecting them. To do my scientific research I spend a lot of time on my computer analysing the data that I have collected and writing my findings into **scientific papers**, which get published so other people can see what we have found out. I also collect the data- every summer I spend a month or two on the Isle of May, a big seabird colony out in the Firth of Forth...



... I spend a lot of time observing the seabirds with binoculars, but we also catch birds to put coloured rings on them so we can measure how well they survive, and see how fat they are. I also look to see whether they have any parasites and we collect up any vomit to see what fish the seabirds are eating!

HOW DID YOU BECOME AN ECOLOGIST?

To become a researcher I did a degree in Zoology at Aberdeen University and then did a PhD at Liverpool University looking at diseases in wild rodents which trained me in how to analyse data to address a scientific question.

WHAT IS YOUR FAVOURITE THING ABOUT YOUR JOB?

I really like finding things out and learning something new. I also really enjoy the fieldwork on the [Isle of May](#)- it's very hard work but it is so much fun to be able to spend time on an island with so many seabirds. I feel lucky to work there, even though it can be a very noisy and smelly place and the birds poo on you all the time!



WHAT IS YOUR ADVICE TO SOMEONE WANTING TO GET INTO THIS LINE OF WORK?

I think you have to be really interested in the subject area- I feel very passionate about the marine environment and trying to understand how humans might be affecting it. Working in research is great fun but it can also be very demanding and stressful, so you need to be prepared to work hard and also to study hard and learn lots of skills such as how to analyse data.

WHAT IS YOUR FAVOURITE MARINE SPECIES AND WHY?

I like the [shags](#) - these are small black cormorants. When visitors come to the Isle of May they always want to see the puffins and nobody ever really looks at the shags. I work a lot on shags and have looked at them a lot- they have the most incredible lime-green coloured eyes and their feathers are not black at all, but a beautiful iridescent dark-green colour. The males also make a really funny honking noise and they are very funny- they like to steal sticks from each other's nests and when they have stolen one they do a really funny display where they parade the stick in the air. They also have an amazing miniature comb on one of the claws on their feet that they use to preen their feathers.



Find out more about the UK Centre for Ecology and Hydrology by visiting their website: www.ceh.ac.uk



UK Centre for Ecology & Hydrology



NAME: Dr Dmitry Aleynik

JOB: Physical Oceanographer

WHAT DO YOU DO?

I consider myself a physical **oceanographer** for over thirty years. My major research interests are studying the processes driving the motion of the sea, the impact of different forces on the flow of currents and mixing caused by the interaction of tides with **topography**.

My favourite research method is in developing **hydrodynamic mathematical models**, such as regional ocean and weather forecast models, and run them at the world largest **Super Computers**. At Scottish Association for Marine Science I produce weather and ocean circulation forecasts based on a fine-scale West Scotland Coastal Ocean Modelling System (WeStCOMS) and teach students how to make it happen.

HOW DID YOU BECOME AN OCEANOGRAPHER?

I fell in love with the sea since my first encounter with beautiful marine life at **subtropical** rocky and sandy shores when I was two years old and a stingray left me a mark to remember. Later at the age of twelve my geography teacher Malvina gave me an inspiring gift that helped me choose my destiny. It was an excellent reprint of the original 'The Voyage of the Beagle' book by **Charles Darwin** in 1839.

This encouraged me to take a part in several Physics, Maths and geography country-scale **Olympiads** for scholars and finally pass the entry exams for the country's only oceanography department.

WHAT IS YOUR FAVOURITE THING ABOUT YOUR JOB?

Freedom of thought and open discussions, opportunity to test **hypotheses** and even established theories about nature, which may explain how things work and interact in a real world...

Click on the image below to see a model in action





... also the opportunity to do lovely work, travel around the globe and meet the smartest minds in oceanography science - **Jacques Cousteau**, for example. All that was especially important for me at earlier stages of my career in oceanography.

WHAT IS YOUR ADVICE TO SOMEONE WANTING TO GET INTO THIS LINE OF WORK?

Deep learning of Physics, Maths and computing languages will open the door for you in every and all fields of marine science: from physical oceanography to **geochemistry** and **genetics** and researching inhabitants of our seas, or even the other ocean worlds beyond this planet.

WHAT IS YOUR FAVOURITE MARINE SPECIES AND WHY?

I love dolphins, they are friendly and very kind creatures!



Find out more about the Scottish Association of Marine Science by visiting their website: www.sams.ac.uk



© Kevin Hunter



NAME: Kevin Hunter

JOB: Discovery Experience Assistant

WHAT DO YOU DO?

I work in the Discovery Experience - the science centre on the ground floor of our building in North Berwick.

My main role involves leading visitors around the displays and being on hand to add information or stories about our fascinating seabirds, their environment and also why and how this environment exists. This means I talk about a wide range of environmental subjects including:

- Geology - also known as deep Earth history detailing how the environment came into existence and what it's made up from...





... Human history - our place in this environment and how we have affected it and continue to affect it today.

Nature - On a local level we are lucky to live next to the Firth of Forth which has lots of different habitats that are home to many and varied species. On a national scale we let our visitors know about Scotland's special environment, whilst on a global scale we look at wider threats to nature such as pollution and **global warming**, letting our visitors know more about how they can help.

HOW DID YOU BECOME A DISCOVERY EXPERIENCE ASSISTANT?

When I went to University from school I thought I'd better get a serious degree so I studied Scottish History and Marketing. This led me to become a Project Manager before I decided to try my hand at teaching. This was a bit of a problem though as I discovered I really didn't like being in a classroom and wanted to be outdoors. I had been volunteering as a **Ranger** with the [National Trust for Scotland](#) and decided that this line of work was much more my thing. The Head Ranger was great and encouraged me to study Countryside and Environmental Management at the [Scottish Rural College](#) (SRUC). This fitted well with my kids and becoming a stay at home dad. So when the family moved to North Berwick I volunteered at the Centre and when a position came up I was asked to apply!



WHAT IS YOUR FAVOURITE THING ABOUT YOUR JOB?

I love being able to talk with people about the Scottish marine environment and the Firth of Forth in particular. It's such a fascinating place to work and the local populations of seabirds constantly change with the seasons. However, the absolute best thing about my job is being able to get out to the [Bass Rock](#), the world's largest Northern gannet colony. Getting up close to these fascinating creatures is an absolute privilege with the highlight so far being rescuing an injured **Guga** last summer.

WHAT IS YOUR ADVICE TO SOMEONE WANTING TO GET INTO THIS LINE OF WORK?

My advice would be to start volunteering with a conservation charity. Get in touch with your local **Ranger Service** as well as they're always looking for help. This will build up your knowledge, experience and understanding. From this you should be able to tell whether you want to go onto College or University to study an appropriate subject. I studied part-time as an adult at the SRUC so there are lots of courses out there that can fit around all sorts of lifestyles and budgets.

WHAT IS YOUR FAVOURITE MARINE SPECIES AND WHY?

[Leatherback turtles](#) are my favourite marine species. They have been here on the planet much, much longer than humans. Roughly 110 million years which makes them older than the dinosaurs!...



...They're also one of the biggest reptiles in the world at up to 3 metres long and weigh up to 916 kilograms.

They eat up to 260 kilograms of jellyfish a day and we can see them here in Scotland after they travel from their Caribbean breeding grounds on the warm Gulf Stream in search of the tonnes of jellyfish found in and around Scottish coastal waters.



NAME: Mal Watson

JOB: Discovery Experience Manager &
Science communicator



WHAT DO YOU DO?

My roles within the Scottish Seabird Centre are that of Discovery Experience Manager and **Science Communicator**.

My role as manager means I am responsible for the smooth running of the Discovery Experience (our science centre), so that visitors to the centre have an enjoyable and informative experience. I am also responsible for the maintaining of the interactive equipment as well as making sure staff are confident, approachable, and happy with the information they deliver.

As a Science Communicator my job is to deliver high quality, entertaining and informative live science shows. I create the initial concept, scripts, props and sets, and perform the shows. The shows are aimed at family audiences and cover a wide range of science topics such as plastic pollution and weird marine biology. Turning science discoveries into forms that are fun and engaging takes time and trying different things. Using toys and gunge usually gets the job done though. I find that if an audience enjoys a moment in the show, they are more likely to find out about our chosen subject by themselves...





HOW DID YOU BECOME A DISCOVERY EXPERIENCE MANAGER & SCIENCE COMMUNICATOR?

I have worked at the Seabird Centre for more than 7 years. I started as a seasonal science communicator in 2013. After my contract ended, I was asked to stay on in the Discovery Experience. I worked my way up through the positions of guide, supervisor, assistant manager and finally manager.

I have been a science communicator for around 20 years. One of my first jobs was working for the [Edinburgh International Science Festival](#) (EISF). There I found my **niche** of performing entertaining science shows. For EISF I have performed, written and directed over 15 different shows and workshops. 1 of my shows "Body Builders" has been seen now by over 50,000 school pupils in Scotland.



Mial performing in one of his shows

I have also helped script an Arabic version of the show and has been performed to over 3,000 pupils in the United Arab Emirates. I have performed all over Scotland, in the United Arab Emirates as well as New Zealand.

WHAT IS YOUR FAVOURITE THING ABOUT YOUR JOB?

My favourite thing about my job is that it changes weekly, daily, hourly and sometimes minute by minute.

WHAT IS YOUR ADVICE TO SOMEONE WANTING TO GET INTO THIS LINE OF WORK?

Try and get as varied experience as you can. Play to your strengths as no-one else has what you have to offer.



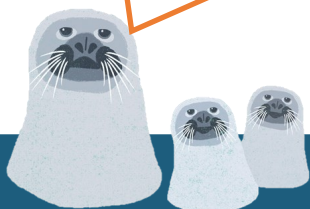
Sea cucumber

WHAT IS YOUR FAVOURITE MARINE SPECIES AND WHY?

I love the [Sea cucumber](#). It doesn't have a brain but has great defence mechanisms.

Go to the next page to watch videos on even more marine jobs!

Find out more about the Scottish Seabird Centre by visiting our website: www.seabird.org



NAME: Rohan Holt

JOB: Marine biologist and cameraman



WHAT DO YOU DO?

I am a Marine Biologist—someone who studies marine life—and an underwater cameraman— someone who scuba dives and takes photos and video footage of life under the waves. I have set up my own business to combine underwater wildlife filming and photography with marine biological **survey** work. I also use drones for taking photos and videos from the air.



HOW DID YOU BECOME A MARINE BIOLOGIST & CAMERAMAN ?

I've always wanted to be a marine biologist since I was 3 years old. I was inspired by TV programmes such as those with **Jacques Cousteau** and was desperate to learn to dive and study the marine world. Eventually I left school with 3 science grades and went to the University of Liverpool to study marine biology at their marine station on the Isle of Man. I learned to dive with the university club and took up underwater photography at the same time. After graduating, and taking a year out volunteering at various marine labs around the world, I decided to go back to university to complete another research degree at the Zoology Department at the University of Glasgow and spent all my spare time diving in the Scottish sea lochs to improve my diving qualifications, learning to identify marine species and practicing underwater photography. Eventually that led to taking part in marine biological **surveys** while working for the [Joint Nature Conservation Committee](#) (a group that advises the government on how to protect the environment) all around the UK. This work included finding areas that are important places for wildlife and recording the species and habitats that are found there. I then continued to work for the government's conservation agencies for over 30 years and helped create many methods for studying marine habitats and species.

WHAT IS YOUR FAVOURITE THING ABOUT YOUR JOB?

I love being able to visit wild places that many other people might never see. This includes finding new and exciting dive sites and discovering rare and interesting species.

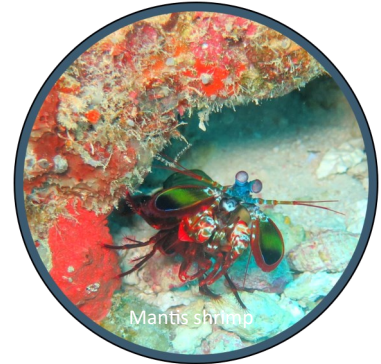


WHAT IS YOUR ADVICE TO SOMEONE WANTING TO GET INTO THIS LINE OF WORK?

Work hard at school to get the exam results you need to get into university. Combine this with plenty of practical experience such as snorkelling and diving, and start taking interesting pictures and video of what you see.

WHAT IS YOUR FAVOURITE MARINE SPECIES AND WHY?

Although I think that some of the bigger marine species, such as sharks, whales and dolphins are really interesting one of my favourite animals is the [mantis shrimp](#). These animals look a bit like a big prawn but they have the most amazing front claws that make them look like a praying mantis. They use these claws to snatch passing prey that they see with their large eyes. I was the first person to ever find mantis shrimps in Wales over 20 years ago and ever since then I've studied and photographed them.



Find out more about CloudBase Productions Ltd by visiting their website: www.cloudbasepro.co.uk



© Graeme Munro



TOBERMORY OYSTERS

NAME: Graeme Munro

JOB: Oyster Farmer

WHAT DO YOU DO?

I own an oyster farm in Tobermory on the Isle of Mull that grows and sells oysters to restaurants and individuals...



... We grow oysters from when they are very young until they grow to a size that is good to eat. They grow in large bags that are placed on trestles on the sea bed. The bags need to be turned upside down every 3 months to make sure the oysters are not growing into the bags or into each other. All oysters are put into big tanks before we sell to customers. This makes sure the oysters are safe to eat and no one gets an upset tummy .



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HOW DID YOU BECOME AN OYSTER FARMER?

My father-in-law sadly passed away a few years back and left the farm to my wife (Shauna) and myself. We are carrying on our family business that was started by Shauna's father back in 1977. We still use the same techniques that he used with no machinery so we are as eco-friendly as possible.

WHAT IS YOUR FAVOURITE THING ABOUT YOUR JOB?

Working in the fresh air (in all weathers) and looking at the oysters as they grow big.



© Graeme Munro

WHAT IS YOUR ADVICE TO SOMEONE WANTING TO GET INTO THIS LINE OF WORK?

Contact oyster farms and ask to have a look around and be prepared for physical work.



WHAT IS YOUR FAVOURITE MARINE SPECIES AND WHY?

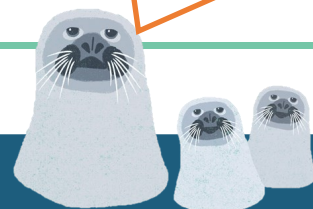
Obviously oysters - I think they are fascinating as no two are the same.

Find out more about fisheries and the shellfish industry in our Dive In! pack [here](#) .



TOBERMORY OYSTERS

Go to the next page to watch videos on even more marine jobs!



DISCOVER

MARINE JOBS ON FILM

Double click on the photos below to watch Marine Scientists answer a question about their area of expertise in just 60 seconds.



Videos courtesy of Alik Aleynik and SAMS.

DR ADRIAN MACLEOD

A marine ecologist that grows seaweed.



DR MARIE PORTER

Uses marine robotics to study physical oceanography.



DR NATALIA SERPETTI

Studies creatures that lurk in the Deep Sea.



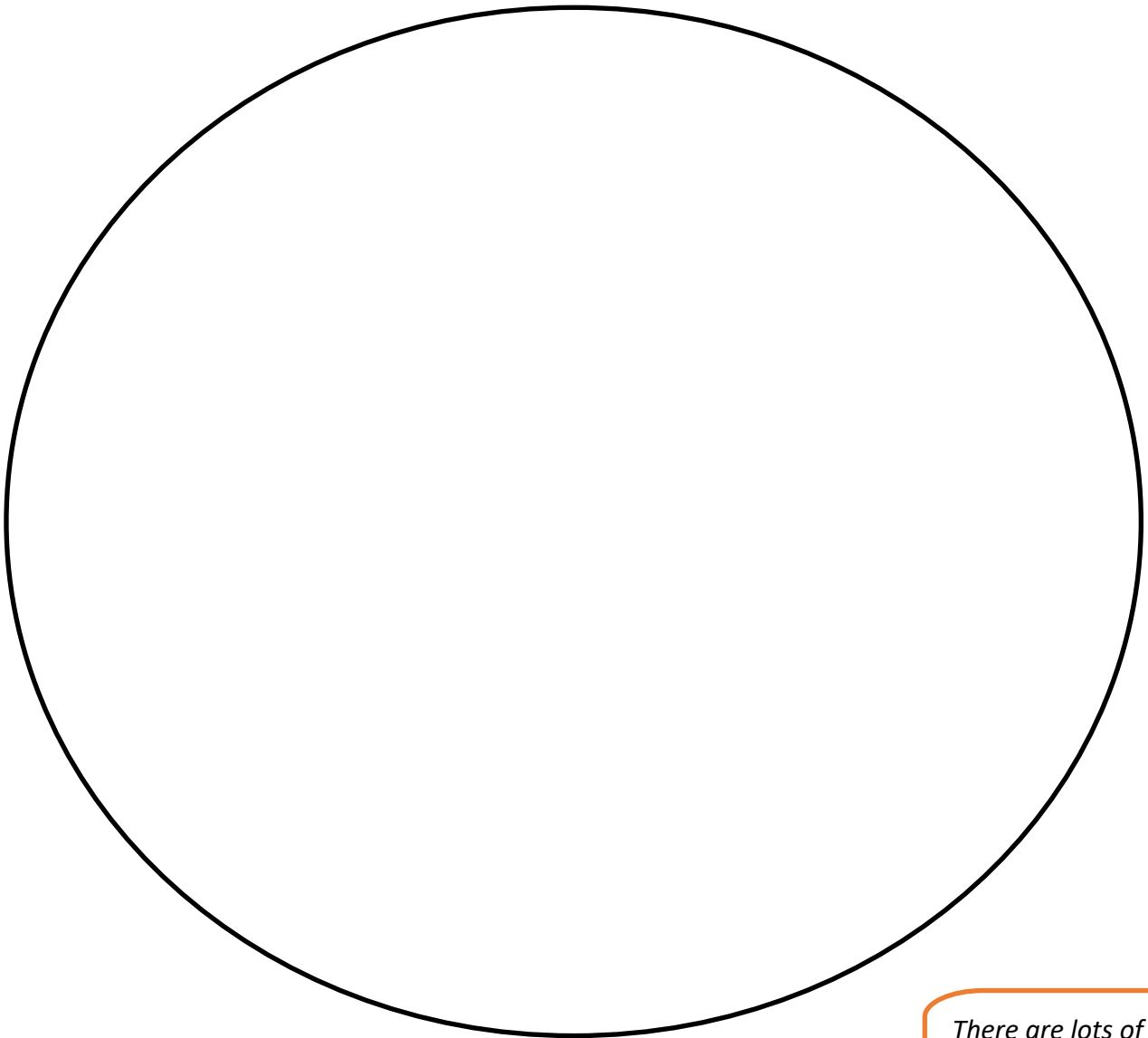
ACTIVITY



DRAW A MARINE SCIENTIST-AGAIN

Now you have read our profiles, have another go at this activity.

Have you done anything differently the second time around? If so, what changes have you made?



There are lots of different jobs you can do in the field of marine science!



DISCOVER

GLOSSARY

ADAPTED / ADAPTATIONS

How something is suitable for a place or task. For example, seabirds are adapted for catching fish in the sea because they have waterproof feathers and special hunting techniques.

BIODIVERSITY

How many different plants and animals are in an area. The more species there are, the healthier the environment is.

CHARLES DARWIN

A famous 19th century English naturalist (someone that studies the natural world), best known for his theory of evolution that we still use today.

CITIZEN SCIENTIST

A member of the public who helps collect or analyse data for researchers. Anyone can get involved. Click [here](#) for a list of projects you can get involved in!

CLIMATE CHANGE

A change in the world's climate caused by changes to the atmosphere. Climate change is leading to more extreme temperatures and severe weather around the world.

CONSENTING PROCESS

Where someone agrees to do something, or someone allows another person to do something.

CONSERVATION

Where people protect, preserve, or restore the environment.

DECARBONISE

Where the amount of carbon being released is reduced, such as carbon dioxide (a greenhouse gas which causes global warming).

ECOLOGY

A branch of biology that studies the numbers of animals or plants in an area and how they interact with other species and their environment.

GENETICS

A branch of biology that studies the building blocks of life and the variety of living things on Earth.

GEOCHEMISTRY

A science that uses chemistry to explain the non-living world around us, including the Earth's crust and the ocean.

GLOBAL WARMING

An increase in temperature around the world over many years.

GUGA

A young gannet (a type of seabird).

HYDROLOGY / HYDRODYNAMIC

The study of how fluids move.

HYPOTHESES

A theory that researchers propose at the start of their research. The theory will either be proved or disproved by the results they get.

JACQUES COUSTEAU

A famous French naval officer, ocean explorer, and inventor that lived 1910-1997, known for his underseas investigations and contributions to marine conservation. Find out more about him [here](#).

MARINE RENEWABLE ENERGY

Sources of energy from the sea that will never run out and don't contribute to climate change, for example tidal energy, wave energy, and offshore windfarms. [See our Marine Renewables Dive In pack](#) for more information.

MATHEMATICAL MODELS

Special computer programmes that use maths to explain how systems work and make predictions about how they will change. Weather forecasts are made using mathematical models.

NATURE-BASED SOLUTIONS

The use of nature to tackle challenges in the environment and our communities. For example, creating a park that is good for wildlife and also provides space for people to exercise and relax.

NET-ZERO CLIMATE

When the amount of greenhouse gases going into the atmosphere is balanced by the amount taken out. A way of stopping global warming.

NICHE (IN WORK)

A job or position that is very suitable for someone, especially one that they like. People often say "find your niche" when looking for a job.

OCEANOGRAPHER

Someone who studies the ocean. There are different types of oceanographer depending what area they study. Dr Dmitry Aleynik is a 'Physical Oceanographer', meaning he studies the physical conditions and physical processes within the ocean such as waves, currents, and the interaction between the ocean and the atmosphere. More information [here](#).

OLYMPIADS

A team competition where students compete in different science challenges, including earth science, biology, chemistry, physics, and engineering.

PARASITE

A living thing that lives on or in another living thing.

POLICY

A system of rules to guide decisions and achieve good outcomes. Policy teams create and amend rules.

RANGER SERVICES

People that take care of landscapes and wildlife in national parks and other areas we enjoy nature. Rangers work mostly outdoors, doing practical tasks and managing the land. See [here](#) for information on what makes a good Ranger and how to get involved.

SCIENCE COMMUNICATOR

Someone who provides information, educates, and raises awareness of science-related topics.

SCIENTIFIC PAPER

The name of the piece of work scientists complete after their research is finished. It contains information on how they did the research, their results, and discussions on what their findings mean.

SUBTROPICAL

Something that is found in the 'subtropics' – areas that border the 'tropics' and have very hot weather at certain times of the year.

SUPERCOMPUTER

A very powerful computer than can generate results from lots of complicated data.

SURVEY

To investigate, examine and record something. Marine biologists conduct surveys to find out answers to all sorts questions about the environment, such as how many species live in on a coral reef.

SUSTAINABLE

Something that is able to continue at the same level for a long period of time. For example, fishing sustainably means fishing in a way that doesn't take all the fish away at once so there will be more in the future.

TOPOGRAPHY

The appearance of land and any features that are there, such as cliffs.



We hope you've enjoyed learning about different marine careers! The profiles in this pack are just a few of the types of jobs on offer.

Discover more about how to get into this field and start looking for opportunities at school [here](#).