

Career Sheet: Deputy Head



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I am a marine scientist working at the European Marine Observation and Data Network (EMODnet). I originally studied Natural Sciences (Majors in Biology and Geology) at the University of Birmingham, UK. I then chose to specialise in marine sciences and moved to the University of Southampton, School of Ocean and Earth Sciences where I completed a PhD in deep-sea biogeochemistry. Later, I worked at the National Oceanography Centre in Southampton, UK. My career to date has included marine scientific research, field expeditions (research cruises), scientific project management, science communication, knowledge transfer and science-policy-industry-society interfaces.



OVERVIEW OF THE JOB

In my current job, I talk to a wide diversity of people from the marine and maritime sectors that may be scientific researchers, industry (the 'blue economy' e.g. offshore renewables, dredging, aquaculture, ports), European policymakers e.g. European Commission, civil society e.g. Non-Governmental Organisations, and many other communities including citizens themselves through citizen science and ocean literacy. In my role, I am a 'knowledge broker' connecting the people that produce data about the ocean environment (e.g. the sea temperature, salinity, microscopic algae), and the human impact on the Ocean (e.g. pollutants, shipping and vessel density etc) with the people that need the data and information (e.g. for running their industry operations at sea, environmental impact assessments, conducting scientific research, computer modelling and simulations of past and future environmental scenarios like sea-level rise), or a policymaker that needs to know the state-of-the-art information on European seabed habitats to inform decision-making on Marine Spatial Planning. My work is very varied and I call upon my marine scientific training every day, whether it is speaking with marine professionals experts, reviewing scientific written content (e.g. technical reports, or communicating to the wider public, social media (@EMODnet), [website](#), [popular press news articles](#)). It takes a level of experience to know how to tailor content to different audiences in both the content and the delivery. And this is set in the wider context of a large marine and maritime community of professionals working to better understand how the oceanic environment functions and how we can better manage ocean space, protect the ocean environment and use it sustainably. A lot of my current work is centralised around the EU Green Deal that has ambitious targets for Europe to be climate neutral by 2050, including a green transition for businesses, industry and wider society, and the global context of the United Nations (UN) 2030 Agenda with 17 Sustainable Development Goals (SDGs) and the UN Decade of Ocean Science for Sustainable Development.



WHAT INSPIRED YOU

I have always loved nature and the environment. As a kid, I started a Nature Club, and was a WWF Young Ambassador (in the 80s) when the Ozone Layer was a relatively new concept and I spent my time checking that people were saving electricity by switching off lightbulbs! This combined with biology A' level and a passion for wildlife, Sir David Attenborough and for outdoor activities like hiking and rock climbing made me realise that a job related to the environment would be a good fit. However, I was not a natural-born oceanographer. I was not particularly keen on swimming and did not grow up by the Ocean. But somehow the Ocean drew me in. I researched oceanography when I was choosing my undergraduate degree, but I did not want to specialise too early, so the Natural Sciences undergraduate degree was perfect for me to study a range of scientific disciplines, including Geology which I did not have the chance to study in my school. In my last year of my BSc undergraduate, I was progressively drawn again to marine science as the Ocean is a 4D environment (in space and time) where you need to bring many scientific disciplines together. I was inspired by Professors at the University of Southampton who were so passionate about the Ocean and I even made regular trips from Birmingham to Southampton to the dedicated ocean and earth sciences library to study for my dissertation on the 'biogeography of marine phytoplankton. I then moved to Southampton full-time and from there I had the incredible experience to join a few research cruises, living at sea for weeks on end, first in the Arabian Sea and then later in the North-East Atlantic Ocean. It was the dedication of marine scientists that inspired me. But I soon realised at the end of my PhD that laboratory work was not for me long-term. I loved the bigger picture, taking a birds-eye view on the research and connecting pieces of the puzzle rather than specialising in one specific topic. This is what led me more into knowledge transfer where I act as a connector between the science and the user, bridging the gap between the complex scientific data and the information and knowledge required by stakeholders.



TYPICAL WORKING DAY

My typical working day is extremely varied, and often the plan changes throughout the day! I work on a lot of different time scales, organising large events to connect marine communities together which can be months or even years in the planning, whilst also managing a team of people involving daily and weekly activities and deadlines. We often receive last-minute requests from the European Commission or other important stakeholders for information with a very tight turnaround and I am also often requested to speak at external events to present European marine data and ocean science. I am also lucky to work with incredible experts from across the marine data and ocean science community who are all passionate about what they do, and who are extremely international. My colleagues span many nationalities from Belgian to Canadian, Chinese to Irish and this is just the small team – daily I will speak to people across Europe and increasingly international. So this job is great if you love connecting with people! In normal times I would also have a fair amount of travel e.g. Ostend (office) and Brussels (EC meetings), European travel e.g. to project meetings and wider Conferences, and 1-2 international travels per year. Post COVID-19 we are trying to reduce our Carbon footprint considerably so I would imagine travel will be reduced for meetings that can be held online. But there is nothing that can replace

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the person-person meetings at Conferences for the professional networking and community connections that are needed for truly effective pan-European and international collaborations, and also for engaging the public and wider society there is nothing like a live demonstration, education tool or science discovery museum or centre to learn and become aware of the Ocean and our shared Planet through all the senses.



STUDY & CAREER PATH

If I could start over I would not do anything differently. It was a good choice for me to start general (with Natural Sciences) and then specialise as this has been a good broad foundation and retained the appreciation of the wider Planet and environment when I then specialised in Oceanography. I would potentially follow a Masters (MSc) in Oceanography before the PhD as this is now mandatory whilst for me, over 15 years ago, this was not always required, as this would have further solidified my oceanographic training. However, I learnt a lot by doing through practical fieldwork on ships as I spent 4 months at sea in the first year of my PhD alone, so this both taught me a lot and also inspired me to read up on topics in ocean sciences that I had not received formal training for up to that point.

My colleagues followed STEM, but different career paths. For example, some studied engineering (chemical engineering or biomedical engineering) and then switched to marine. Others did pure marine biology or marine geology/geophysics. It's important to recognise that you can also do a mix of STEM with wider subjects e.g. communication / web design / ICT / engineering and these are all useful. And even now with the 'marine revolution' and the expansion to the ocean/blue economy, many current jobs on land e.g. wind power are turning to marine/offshore solutions e.g. marine offshore renewables, so having marine and engineering training is a big plus.

And bear in mind that to successfully run field campaigns, e.g. on research ships and in Antarctica etc, there is a wide range of science support jobs, from electricians to cooks, to mariners and mechanical engineers, so if you like any of these subjects and also have a passion for the Ocean and environment there will be jobs out there for you!



KEY SKILLS

Analytical reasoning and critical thinking are key in any STEM subject to troubleshoot, question everything and be driven by curiosity and by the process to come up with sound solutions. This is vital and something I developed over time through a STEM undergraduate, postgraduate and then in the professional work environment.

Communication with colleagues and externally is also crucial as life – including professional life – is all about relationships. In addition, to social and communication skills with diplomacy, other communication skills such as writing and editing are key to my job. I have learnt these through work experience on the job, writing outside of work (any writing can hone skills in summarising and translating complex topics for a wider readership with storytelling). This was developed over years but also by doing short professional development courses and internships e.g. at Nature journal through the UK British Science Association Media Fellowship Scheme.

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Management is something that I am now more experienced in, having been a line manager for a number of years. People management is very important and since every person is different this takes time and dedication to develop the skills for effective communication, delegation and a collaborative working environment. Hand in hand comes authentic leadership which is something I am passionate about and I am just completing a training where I learned more about how I work, my personality traits and how to bring the best out of others – and myself, so we can be the best we can all be. I also enjoy coaching and mentoring people which I do not have training in, but it is something that develops as you manage people and see how best to advise them, listen to them and mutually learn from each other.

Adaptability and resilience are really important in my work. Our day can change in an instant with an urgent unexpected activity, and also we have to also look for new funding and write new proposals which take time, energy and does not always result in funding being awarded. Resilience when times are busy (most of the time) is also really important.

Curiosity is for me a fundamental skill that has driven me from the start of my career in research and keeps me getting up in the morning to do my job. It is something I like to read the wider news or science communication and to attend EU and international meetings when possible to see the bigger picture and this makes my job count as it is contributing to something bigger which then gives me more motivation and inspiration to continue.

Presentation skills are important so that the key messages can be communicated, and taken up, by the people you want to influence. I have learned by doing hundreds of presentations and by short courses on presentation and meeting facilitation and chairing.

Project management skills are also important but it depends on the job whether you need formal (e.g. PRINCE) training. I did a starter course and then was a scientific project manager for a European project where I needed to follow project management methods but I also needed the scientific knowledge to be able to manage the people in the network, and to be able to review and write content on the research, for the scientists and for the wider stakeholders and society.

Personal responsibility, self-discipline and commitment are all important in the work I do as ultimately we are not driven by money, profits or shares etc. The salaries are good but not as high as many other jobs e.g. in finance, and there are no big pay-out bonuses. What drives me and many of my colleagues is the knowledge that we are doing a job that contributes to the wider society in terms of knowledge and facts about our Planet that people can use for making our society, business and politics more green and sustainable. You also need to be quite a self-starter as people will manage you in small teams, but for any research or wider STEM job, your own self-discipline to plan and kick-start your own work and to take the initiative and responsibility to deliver in your job is important as it is not a structured institution that e.g. the military, police or school system could be more familiar with.

Other skills such as social media, content marketing, strategic planning, administrative skills, business management etc can all be an asset but are something that you learn as additional skills by doing.



CAREER PROSPECT

With my skills, I could work in academia (marine scientific domain) which I did for a couple of years after completing my PhD. I could also work in a national (or more local) government authority or public sector

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job in the marine or wider environment/sustainability sector e.g. for a Ministry or Department of the Environment in a particular country. I could also work in more policy-related hobs at the European level e.g. for the European Commission which has a number of Directorate Generals (DGs) where my expertise could be useful e.g. DG Maritime Affairs and Fisheries (DG MARE), DG Environment, DG Research and Innovation. I could equally work in the private sector for an industry dealing with marine data and information e.g. all blue economy sectors from oil and gas to renewable energy and from fishing and aquaculture to dredging and shipping, to name a few. If I wanted to move into education I could be a teacher (after a post-graduate teaching diploma) where I could potentially teach biology, chemistry, geology, geography and environmental studies. My experience in science communication could also be used to work in that area e.g. as a science writer (which I have previously done for Nature News and for Frontiers), or in the more broadcasting domain (e.g. Radio, TV, documentary) as a researcher or part of a wider production team or presenter. So the main message is that having a degree and speciality/expertise in a STEM subject – even to a high post-graduate level – does not mean you have to stay in Academia. At the time I was studying and doing my PhD it was the expectation of most PhD students to stay in academia. But this is not the reality as there are few academic / research jobs and also because the expertise and skills you gain in a post-graduate STEM programme are useful also for wider career pathways and this is increasingly recognised and in fact encouraged. So don't restrict your horizons, choose a STEM subject you are curious and passionate about and the rest will follow.



CHALLENGES

It can be a challenge for my husband and me who are both working full-time to juggle a work-life balance. This is especially true when you do a career you are passionate about so work is also very interesting and there is a temptation to do overtime at the expense of free time with kids, family and friends. This was accentuated during COVID-19 for all working parents and for us the job expectations grew with many hours online and juggling this with homeschooling. But the benefits are that a lot of our work is on the computer so we can be flexible and in fact, it's a good job to have kids as you can have the flexibility to attend important events in your child's life e.g. end of school shows etc, and then work flexi-time to catch up on work. And despite the high workload and the extra hours e.g. some work evenings and weekends, it is also very inspiring to be at the forefront of science. For example, for the past 4 weeks, my husband is currently working on a pCO₂ sensor inter-comparison experiment with the International Carbon Observation System (ICOS) to calibrate many sensors from across the world to produce higher quality and accurate, inter-comparable pCO₂ ocean measurements which are crucial for understanding the CO₂ drawdown in our Ocean and its role as a Carbon sink, to mitigate Climate Change and how this is affecting ocean life and ultimately the whole planetary system.

There can also be few women at the top in a number of STEM jobs. This can be a challenge but it is something being positively addressed and recognised to ensure women have the same/ far/ equal chances as men for all positions.

Finally, it can be a challenge having to jump across many topics and themes all day. For example, starting with a meeting on marine data for aquaculture followed by a technical meeting on Ocean Best Practices and the need for more standardised metadata (describing the data) to make sure all society can use the information. Also, attending a team meeting with all staff to look at the week, month deadlines and

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priorities, and receiving a call from a large industry network wishing to discuss data needs and requirements and interest in collaborations. Then editing an article for ECO Magazine on the benefits of open marine data for the society for the UN Decade on Ocean Science for Sustainable Development, followed by tuning into a meeting hosted by the OECD on the value of marine research data. Finally, watching clips from a recent Conference to decide which quotes and clips we will use for a promotional video to summarise the Conference key highlights and outcomes. Pretty varied!



YOUR ADVICE TO STUDENTS

My advice to students is if you want a job in STEM then choose a topic or subject that really interests you within the wider STEM subjects – you don't have to specialise too early but explore everything you can, and if you find things that fascinate you, you are on a good track! Then build up expertise in a certain area. Talk to professors, link with online events and networks in your subject area and don't be afraid to ask if people offer internships. Explore options for a further study like Masters. With this, you can develop solid expertise.



YOUR ADVICE TO TEACHERS AND PARENTS

Teachers can explore the many resources now available to discover content for formal - and non-formal - education. One example of the European Atlas of the Seas which provides an online resource for creating maps from marine/maritime data in Europe, and has increasing content for teachers to use <https://twitter.com/EuropeAtlasSeas>. There is also the EU4Ocean European Ocean Literacy network where teachers can sign schools or classes up for the Blue Schools network. There is also a young ocean advocates network, offering lots of ways to do activities and to connect with other schools, people and stakeholders – also good networking for anyone interested in work experience related to the ocean, or to find future jobs.

Parents can discover the many resources at a local level e.g. science centres e.g. Edinburgh's Dynamic Earth, the European aquaria network, Planetariums etc, that are all increasingly including ocean-related content. Also, don't miss the European Maritime Day, held in May each year hosted in a different city across Europe but with many events for wider society both at the host city and also across Europe in an initiative called 'EMD in my country'. There are also open days for the European Commission and European Parliament.

Finally, don't worry if a student is undecided at 16-18 about what they want to do. Whilst some careers have a pathway from 18 and a specific degree, many STEM jobs require a broader undergraduate degree (or similar training) that can then open doors to many fields and careers.

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LEARN MORE

Here you can share links to the external resources (YouTube, Twitter, etc.) / webpages related to the career profile.

EMODnet website:

www.emodnet.eu

EMODnet Twitter account:

<https://twitter.com/EMODnet>

EMODnet YouTube account:

https://www.youtube.com/channel/UCaXRktHQoM5VdtRsCB_Z2YA

Seascope Belgium website:

www.seascopebelgium.be

Seascope Belgium Twitter account:

<https://twitter.com/SeascopeBelgium>

Kate Larkin Twitter account:

https://twitter.com/larkin_kate

Kate Larkin LinkedIn account:

<https://www.linkedin.com/in/kate-larkin-96a35121/?originalSubdomain=be>



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