

# WOMEN IN TECH!

## MAKING WAVES IN THE SUBSEA CABLE INDUSTRY



Marine Environment Specialist **Dr. Lorraine Gray** is considered an expert in her fields of marine biology and conservation and the impact of human activity on the marine environment. She has worked in government, various utility industries, has set up her own consultancy and brought up a family. She currently works for submarine fibre optic telecommunications consulting and project management company Pioneer Consulting. In this interview with Optical Connections editor **Peter Dykes**, Dr. Gray talks about her career development and some of the issues which, despite progress in gender equality, are still facing women who are trying to build a career in technology.

**PD** What is your current position at Pioneer Consulting and what are your responsibilities?

**LG** I am currently Director of Permitting at Pioneer Consulting, which provides full-service submarine fibre optic telecommunications consulting and project management. Since joining Pioneer in early 2019, I've guided survey and installation efforts for many submarine fibre optic cable projects, including trans-Atlantic, trans-Pacific and trans-European. I lead regulatory and proprietary permitting for surveys and installations, in addition to acting as a liaison between local governments, organisations, and those who install the cables.

**PD** How did you become interested in marine conservation and the impact of subsea technologies, in particular, cables?

**LG** My career began with my study of biology, which prompted me to question how society has negatively impacted our planet, and from there I became involved in environmental

sciences. Early on in my career, I developed a passion for spatial mapping and using Geographical Information Systems (GIS) to map marine features, so that industries such as cable, would have more certainty about where their development would be successful and where it would not. Marine conservation features and human activities such as fishing, are often in conflict with new developments, and this is what really fascinates me.

**PD** How do you think we can take subsea technology forward in a more sustainable and eco-friendly way?

**LG** Emerging subsea technologies, such as autonomous survey vehicles, could accelerate progress towards sustainability. The output of these surveys expands our knowledge of what's on the seafloor, which is translated into maps. I love maps, and we've seen over the past 10 years an increase in mapping platforms to expand our understanding of biodiversity and natural capital. We need more of this knowledge gathering to prevent harming what we don't know is

out there; the problem is that it's usually left to governments to fund this kind of research.

**PD** What has your career path been up to this point?

**LG** Doing a PhD is a great learning experience, because it allows you to develop key skills that you don't necessarily get in undergraduate courses. Those critical skills include presenting at conferences, which is normally left to the more experienced staff in a company; teaching, which is a great way to add to your stipend; and development of project and business skills. I had to apply for scholarships based on a proposal and this ultimately brought me to Australia for research!

I then entered government work, where I learned to use GIS for urban planning. I then combined this skill with my academic background in fish ecology and commercial fishing -- that is how I entered the subsea industry. I've worked across most sectors, including oil and gas, renewables, aquaculture, ports and harbours, and more recently, cables. The beauty about a career in permitting and environmental consultancy is there are a

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lot of cross-cutting issues with only the engineering design that changes. Also, because these industries are governed by regulation, there are options to work in government, which I have done for half my career. It's a very diverse career path and one that continues to inspire me.

**PD** **Do you think there are enough female role models in the tech sector, and did you have a role model when you were starting out?**

**LG** The permitting and environmental consultancy world is actually very well represented by women. The technology sector does have a different demographic, with subsea industries largely dominated by men. When I started in the cable industry, the Southern Cross-NEXT team had some great female role models and this provided me with confidence in knowing that there are opportunities for career growth and development. Exposing the younger generation to female role models is the most effective way to help them recognise and fulfil their potential.

**PD** **Did you find that your gender was a factor when it came to getting jobs in a predominantly male sector? If so, in what ways did it have an impact on your advancement, positively or negatively?**

**LG** I think confidence is an issue that especially affects young girls. It impacts ambitions and belief in what you're capable of. Furthermore, OECD (Organisation for Economic Co-operation and Development) research shows that adolescent girls express a greater fear of failure than boys – I think lack of self-confidence negatively affected my advancement. Personally, I believe the reason science subjects are less popular with girls is because they require trial and error, where accepting failure is par for the course.

**PD** **Are issues such as remuneration parity, the likelihood of taking time out to raise a family impacting women in the tech sector?**

**LG** Yes. When I first began my professional journey in STEM (Science, Technology, Engineering and Mathematics), while getting my PhD, I was a home carer. Decades ago, this was seen as a woman's role, and to some extent it still is, as uncompensated labour and family leave inequality continues to be an issue. Lack of affordable childcare is a challenge that many families encounter. Ten years ago, while caring for two small children, I considered whether to continue working in government, where the majority of my salary would go to childcare, or start my own company to do contracting, in order to work flexible hours around my children - the latter being the far riskier option, which I opted to take. The less childcare is shared with men or underpinned by affordable care options, the more domestic responsibilities fall on women, and the more difficult it is for them to pursue demanding jobs in technology.

Job security around family leave is also a challenge commonly faced by women in any industry. Once I entered the subsea field after working in government, I realised that there is a much higher number of women in academia and government, due to a greater safeguarding of your position, especially regarding maternity and family leave. Many women don't have the time to pursue an intense career and this significantly restricts their choices.

**PD** **How do you think the gender imbalance in tech can be addressed?**

**LG** Seeing a woman's achievements, especially on social media, can lead to more attention being paid to women in professional careers. This

could inspire young people to get involved in STEM subjects. Companies should be sure to publicise the achievements of their female employees and get the word out about what's possible for women in the field. By supporting and advocating for more women to become involved in STEM careers, greater diversity can be achieved that will benefit both the organisations that employ them and society as a whole.

Having a workplace mentor will also go a long way. On an individual level, you can look for someone you admire and speak up about initiating the mentorship with your company. You may find that you receive support and encouragement that will help forge a path for other women in your workplace.

**PD** **Thank you.**



**Dr. Lorraine Gray, Director of Permitting, Pioneer Consulting.**