CAREERS USING SPATIAL TECHNOLOGIES

ALISON LEWIS, Water Scientist
Department of Planning and Environment – Water

SNAPSHOT

Favourite Subjects at School: Geography, Maths, English, Design & Technology

Tertiary Study Completed: Bachelor of Science majoring in Sustainable Resource Management and Marine Science.

Within my science team, we use spatial information to assess the environmental value, condition, and types of rivers in NSW. Spatial information (or spatial data) describes a location or information that can be linked to a location.

We collect, analyse, and model this data and I look for creative ways to visualise or map the data to make it more useful and meaningful. These maps help us to better understand and track changes to the river's physical form, its surrounding vegetation, and the wildlife that depends on river ecosystems.

The role of Geography and spatial technologies in my career

Alison Lewis

When I was in high school, I did Geography by Distance Education. There were not enough participants for Geography to be offered as a class for Year 11 and 12 (having a dad as a Geography teacher also helped!). I loved the diverse topics it covered, as well as getting outdoors and studying the environment.

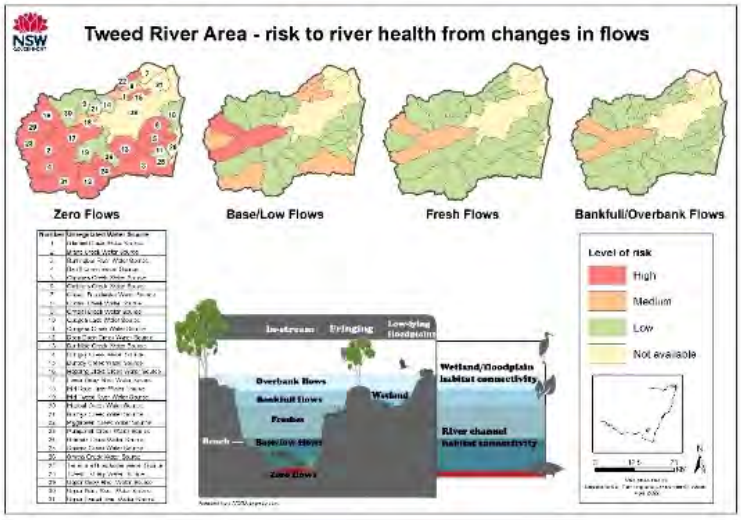
I then went on to complete a Bachelor of Science University Degree with majors in Sustainable Resource Management and Marine Science. This degree focused on resource management, ecological monitoring, and environmental science. I was introduced to new and exciting technology such as baited underwater video, statistical analysis programs, GIS mapping software, and went on many incredible field trips to various environments including rock platforms/pools, mangroves, lagoons, and bushlands.

My current role as a water scientist has led me to using spatial information and mapping software to assess the environmental value, condition, and types of rivers in NSW. Recent training in drone technology will enable my science team to monitor key areas and field sites. Drone images help to precisely map an area and detect changes to the shapes of river channels, sediments, and surrounding vegetation over time. Drones can provide a much higher level of detail than satellite imagery as well as improve access to difficult to reach places. Drone imagery will help contribute to monitoring and evaluation programs that support water sharing in NSW.

Thanks to my foundation in Geography, I have held varying environmental science positions over the years and accumulated a diverse range of skills in natural resource management. I have participated in water quality sampling across northern NSW and conducted vegetation surveys and water bug collections in amazing remote locations such as the Macquarie Marshes and Gwydir Wetlands. I have been responsible for blue-green algal sampling, monitoring and management in the Hunter area and I have contributed to numerous water policy developments through evaluation, scientific studies, and data analysis.

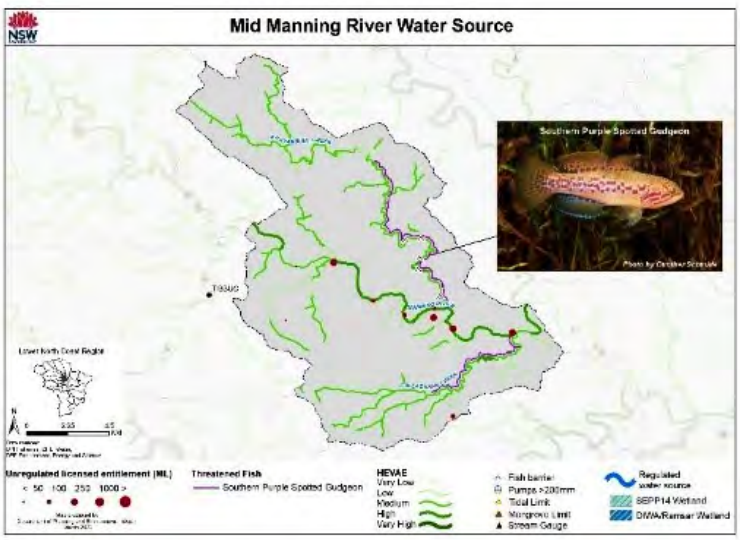
My favourite part of being a water scientist is being able to collect, analyse and explain scientific data in creative, useful, and meaningful ways. Being able to get out in the field and fly drones is great fun too!

Image: Comparison of drone derived orthomosaic with satellite imagery at Lakelands oval.



Two examples of maps created to visualise environmental data for analysis.

These images have already been published in other departmental material.



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