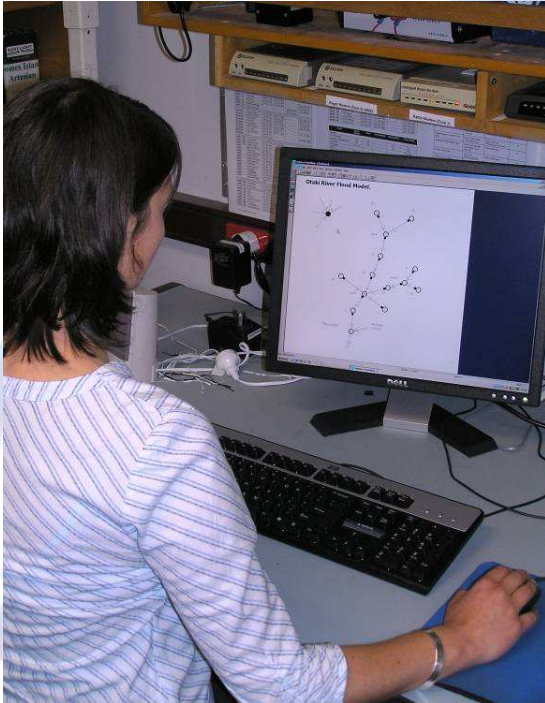


Hydrologist



Laura Watts is a hydrologist at the Greater Wellington Regional Council. Laura interprets hydrological data, identifying patterns and trends in long term records, reporting flood statistics and investigating low flows.

So what do you actually do?

I do a range of things. Essentially I analyse and interpret the hydrological data that our technical team collects, looking at floods, droughts, low flows, long term patterns, and trends.

If there is a major storm event I drop everything and either help with flood warning or analyse the data. The flood warning team watch the weather radar and keep an eye on the rainfall and water levels via telemetry. When water levels go up we issue flood warnings via the media. After a flood I report the statistics to the media and politicians.

Another major part of my job is low flow surveys and instream flow assessments. Instream flow assessments combine models and field data to estimate the habitat available at different water levels. This information is then used to set minimum flows in our Regional Freshwater Plan.

I've also recently reviewed the regional council's hydrological monitoring network. When suggesting changes to our monitoring network I have to think about issues like what the data is going to be used for, and how much funding is available for new rain gauges and river flow stations.

My job is mostly project based, and I usually have several projects on the go. I have regular reporting duties, such as summarising rainfall and flow data on a monthly basis. I also deal with data requests from the public, consultants and students.

I'm office based and get out into the field about one day a month. In summer I might get out more often for minimum flow studies and low flow surveys.

What hours do you work?

I work a 40 hour week and sometimes I'm on standby for floodwarning duty. We get paid extra for after hours floodwarning call outs.

What equipment and software do you use?

I use current meters for stream gaugings, and temperature loggers for instream flow assessments. I also use specialised hydrological software, including Hilltop, Hystra flood modelling module, HydroTel for telemetry and also some GIS packages.

What skills do you need?

A sound understanding of hydrological processes is vital for this job. Good skills in statistical analysis and problem solving are also important. I calculate lots of statistical parameters and then need to be able to work out which are important and which aren't, and what the key trends are. If the numbers don't seem quite right, I need to work out why and report what might be going on.

Communication skills are also very important. I write a lot of reports and make presentations regularly. I report to council committees several times a year. I'm also invited to present to community groups a couple of times

Laura's route



- ◆ Bachelor of Science (Hons) in Physical Geography, including courses in statistics and hydrology.
- ◆ MSc in Physical Geography with taught courses and a thesis
- ◆ One year as a Water Quality Technician and two years as a Consents Officer at Greater Wellington

Laura's tips



- ◆ Get a job as a summer student at a regional council - you may never leave!
- ◆ Be prepared to take a different job initially, for example, consents officer, in order to learn about the regional council and its role and fill gaps in your knowledge

Who do you work for?

I work for the Greater Wellington Regional Council. The regional council is responsible for environment management, flood protection and land management, provision of regional parks, public transport planning and funding, and metropolitan water supply in the Wellington Region.



a year. After a storm event, a stream care or river watch group may request a presentation on rainfall and flood levels. I also present my work at conferences, such as the Hydrological Society Conference.

Do you work alone or as part of a team?

I often work independently on projects. When I need technical or policy advice I consult my colleagues. Some of my projects are multi-disciplinary and so I work with other scientists at the regional council. For example, when assessing if minimum flows provide for aquatic habitat, I work with an aquatic ecologist.

What is good about your job?

My work is largely project based and it's rewarding to complete projects. I have input into setting my work programme and help to identify research priorities. I like doing something good for the environment, for example working on a water allocation strategy for a stressed catchment. I also like playing with numbers and the problem solving side of my job. The regional council also has a supportive environment.

Is there any on-the-job training?

When I started my job the compulsory training included courses on writing skills, delivering presentations, dealing with the media, advanced driver training and a 4WD course. I've also been on courses run by other organisations, for example the NIWA course on hydrological statistics.



Salary information

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- You could expect a salary for a position like mine in the range \$45,000 to \$68,000 depending on your qualifications and experience. Once employed, pay rises are based on performance and movement in market rates.

Getting in



- Apply for a summer job and get to know the staff at your local regional council. These positions are often not widely advertised so write a letter to the appropriate manager.
- Although it's possible to work as a hydrologist using work experience alone, the majority of hydrologists have a postgraduate degree.

For more information – careers profiles, info on hydrology courses, thesis database, water information directory and other watery stuff – take a look at www.h2know.org.nz and www.hydrologynz.org.nz

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