

CAREERS

#GREENCAREERSWEEK

# JOB OF THE DAY



Hydrologist  
Salary range: £20k-£45k



## JOB PROFILE

A **Hydrologist** is often also called a Water Engineer, Flood Engineer, or a Hydrology Engineer. A Hydrologist concerns themselves with research and development of long-term approaches to managing and safeguarding water resources, examining rainfall, rivers, and other waterways. They will work with a variety of organisations in business, government and academia, and be active in monitoring, managing and protecting water.

To address issues with water, such as amount, quality and availability, Hydrologists use scientific knowledge and mathematical concepts. Additionally, they might focus on identifying new water sources, forecasting droughts or floods, and lowering wastewater.

## SKILLS AND CAPABILITIES

### Technical knowledge

Hydrologists need to have strong numeracy skills and an understanding of mathematical modelling. They also require knowledge of engineering science, technology, geography and chemistry for analysing water samples. As the position may involve working on or around waterways, knowledge of boat handling or personal safety on boats would be an advantageous but not essential skill set to have.

### Transferable skills:

Analytical thinking, Project management, Attention to detail, Effective communication, Listening, Influencing, Collaborating

## A DAY IN THE LIFE

Hydrologists are responsible for determining the optimum management practices for the available water resources and providing stakeholders with sustainable water usage advice.

The work environment could vary; you may carry out your work indoors, outdoors, in a lab, or both. Much of the time, work is project-based and involves coordinating with coworkers, consultants and external organisations. A driving licence is usually a requirement and access to a company vehicle may be provided.

- Hydrologist giving advice to a client about water flow
- Typical duties and responsibilities include:
- Taking measurements and studies of water levels, flows and movement, both above and below the surface, as well as their responses to changes in land use
- Investigating the causes of flooding and drought as well as the effects they have on water flow
- Simulating rain and snowfall patterns in various climates
- Examining water samples for chemicals and contaminants, and, as appropriate, offering advice on corrective measures
- Assessing water use in businesses and agriculture
- Water resource management planning
- Gathering information from flood events to enhance predictions and risk control and responding to questions from public and private sources.

## HOW DOES THIS ROLE ALIGN TO THE GREEN AGENDA?

Variations in water quality and quantity, particularly water flow, impact the surrounding ecology. These alterations may be the result of human activity (such as the opening of a dam), natural occurrences (such as flooding), or a combination of both (such as rainfall runoff brought on by subpar farming practices).

Building resilience, safeguarding health, and saving lives through sustainable water management aids in society's adaptation to climate change. By preserving ecosystems and lowering carbon emissions from the transportation and treatment of water and sewage, it also lessens the effects of climate change itself.

## ENTRY ROUTES

An assistant, apprentice or trainee Hydrologist would have a strong academic background, and likely a degree in a science or environmental subject such as Environmental Science, Geography, Civil Engineering, Environmental Engineering, Earth Sciences or Ecology. Your employer may also encourage you to take a postgraduate qualification, like a master's or PhD in Hydrology.

The training courses you may expect to undertake as a Hydrologist include health and safety and emergency first aid. It is also considered desirable to have waterways and boat safety skills. Some example courses and qualifications for these can be accessed through the Royal Yachting Association (RYA) and the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (SWTC).

- Relevant GCSE subjects include Sciences and Geography
- Relevant A level subjects include Sciences, Geology and Geography
- Level 6 Environmental Practitioner Degree Apprenticeship, (typically takes 53 months for completion)
- Undergraduate and postgraduate degrees in areas such as Environmental Science, Earth Science or Water Management

## POTENTIAL CAREER PROGRESSION

As a senior or principal Hydrologist, you could direct and coordinate the work of a group of researchers and Hydrologists on various projects. As a consultant, you might provide sustainable water use advice to businesses and government agencies. In your area of expertise, you could potentially move into teaching or research.