Hydrologists

SOC: 19-2043 • Career Profile Report

■ Key Facts

$92,060	6,300	+0.0%
Median Salary	Employment	Growth Rate

■ Requirements & Salary Range

Education: Bachelor's degree

■ Automation Risk Assessment

Low Risk - 8.0% probability of being automated in the next 10-20 years.

This job is relatively safe from automation due to its creative, social, or complex problem-solving requirements.

■■ Work-Life Balance

7.5/10 - Good work-life balance

■ Personality Fit (RIASEC)

Higher scores indicate better personality fit for this career type.

Realistic	6.2/10	**Investigative**	9.4/10
Artistic	5.6/10	**Social**	6.4/10
Enterprising	4.8/10	**Conventional**	6.4/10

■ Top Skills Required

Analytical skills, Communication skills, Critical-thinking skills, Interpersonal skills, Physical stamina, Problem-solving skills

✓ Strengths

- High Demand
- Flexible Work
- Continuous Learning

■ Challenges

- Burnout Risk
- Rapid Technological Change

■ What They Do

Hydrologists study and analyze **the distribution, circulation, and physical properties of water in the environment**. They examine water resources, predict water-related hazards, and support environmental management and planning. Their work is critical in water conservation, environmental protection, and natural resource management.

This career is well suited for individuals who enjoy research, fieldwork, and applying scientific methods to solve environmental challenges.

What Do Hydrologists Do?

These professionals investigate water quality, quantity, and movement to inform environmental and engineering projects.

Common responsibilities include:

- Collecting water samples and environmental data
- Monitoring precipitation, groundwater, surface water, and runoff
- Analyzing data to assess water quality, availability, and contamination risks
- Developing models and simulations to predict water behavior
- Preparing reports, research papers, and presentations
- Advising government agencies, organizations, or communities on water management
- Collaborating with environmental scientists, engineers, and policymakers

Key Areas of Hydrology

Hydrologists may specialize in specific areas of water science and management:

- Surface Water and Groundwater Analysis: Studying rivers, lakes, aquifers, and wetlands
- Water Quality Assessment: Evaluating contamination, pollution, and ecosystem impact
- Hydrologic Modeling and Prediction: Simulating water flow and forecasting floods or droughts
- Environmental and Resource Management: Planning sustainable water use and conservation strategies
- Research and Policy Support: Informing regulations, planning, and public awareness

Skills and Abilities Needed

Hydrologists combine analytical, scientific, and technical skills.

Core Professional Skills

Personal Qualities That Matter

Education and Career Pathway

This role typically requires formal education and research experience:

- Bachelor’s Degree (minimum): Hydrology, environmental science, geology, or related field
- Master’s or Doctoral Degree (optional but common): Advanced studies for research, consulting, or specialized roles
- Field Experience and Internships: Gaining hands-on experience with sampling, monitoring, and analysis
- Professional Development: Training in GIS, modeling software, and water management techniques
- Continuous Learning: Staying current on water regulations, environmental trends, and research methodologies

Where Do Hydrologists Work?

They are employed in organizations that manage or study water resources and the environment:

- Government Agencies
- Environmental Consulting Firms
- Research Institutions and Universities
- Water Utilities and Resource Management Organizations

- Nonprofit Environmental Organizations

Work environments include offices, laboratories, field sites, and water resource facilities.

Is This Career Difficult?

This career requires scientific knowledge, analytical skills, and adaptability. Hydrologists must conduct fieldwork, interpret complex data, and communicate findings effectively.

Who Should Consider This Career?

This career may be a strong fit if you:

- Enjoy scientific research and environmental analysis
- Are detail-oriented and analytical
- Can work in field and laboratory settings
- Have strong problem-solving and communication skills
- Want a career contributing to water resource management and environmental protection

How to Prepare Early

- Take courses in hydrology, geology, environmental science, and mathematics
- Participate in research projects, internships, or volunteer work related to water and environment
- Develop skills in GIS, modeling, and data analysis
- Stay informed on environmental regulations, water management, and conservation techniques
- Explore graduate programs or certifications in hydrology or environmental science

Hydrologists study and manage water resources, providing critical insights that support environmental protection, resource planning, and sustainable water use.
