

# Career Fields in Environmental Science

The following are the five main career fields in Environmental Science

Career Fields/Careers	Holland Code	Major	Length of Study
<b>1. Environmental Scientist</b>			
<p><b>(a) <u><a href="#">Oceanographer</a></u></b>            (Marine biologist)            Biological oceanographers and marine biologists study plants and animals in the marine environment. They are interested in a number of marine organisms and how these organisms develop, relate to one another, adapt to their environment, and interact with it.</p>	IR	Biology	Masters
<p><b>(b) <u><a href="#">Climatologist</a></u></b>            (Atmospheric or Space Science)            Study of atmosphere and weather patterns over time. This field of science focuses on recording and analyzing weather patterns throughout the world and understanding the atmospheric conditions that cause them.</p>	IR	Climatology, Meteorology, Atmospheric Science	Bachelors, Masters
<p><b>(c) <u><a href="#">Environmental Risk Assessment Manager</a></u></b>            Compiles environmental risk assessments in support of regulatory submissions. Prepares input for post-submission regulatory inquiries. Assures scientific accuracy, cost-efficiency and regulatory compliance. Plans and coordinates environmental studies. Evaluates and applies relevant computer based prediction tools.            For more on risk management: <a href="https://www.epa.gov/risk/risk-management">https://www.epa.gov/risk/risk-management</a></p>	IRC	Environmental Safety or Engineering, Health & Safety field	Bachelors, Masters  Sometimes less with work experience
<p><b>(d) <u><a href="#">Environmental Scientist and Specialist, including Health</a></u></b>            Conduct research or perform investigation for the purpose of identifying, abating, or eliminating sources of pollutants or hazards that affect either the environment or the health of the population. Using knowledge of various scientific disciplines, may collect, synthesize, study, report, and recommend action based on data derived from measurements or observations of air, food, soil, water, and other sources. Might require certifications, e.g., Environmental Auditor or Certified Environmental Professional.</p>	IRC	Environmental Science or Engineering	Bachelors, Masters

<p><b>(e) <u>Environmental Science Teachers</u></b>  Teach courses in environmental science at the post-secondary level. Includes both teachers primarily engaged in teaching and those who do a combination of teaching and research. Evaluate and grade students' class work, laboratory work, assignments and papers. Prepare course materials, supervise students' laboratory and field work and advise students on academic and vocational curricula and on career issues.</p>	<p><b>SIA</b></p>	<p><b>Environmental Science, Biology, Geology</b></p>	<p><b>Masters, Ph.D</b></p>
<p><b>(f) <u>Geographic Information System (GIS) Specialist</u></b>  Assist scientists, technologists, or related professionals in building, maintaining, modifying, or using geographic information systems (GIS) databases. May also perform some custom application development or provide user support. Design or prepare graphic representations of GIS data, using GIS hardware or software applications. Analyze GIS data to identify spatial relationships or display results of analyses. Review data.</p>	<p><b>IRC</b></p>	<p><b>GIS, Geography, Surveying, Environmental Studies or related field</b></p>	<p><b>Associate, Bachelors</b></p>
<p><b>(g) <u>Environmental Consultant</u></b>  (Industrial Ecologists, Environmental Engineer)  Industrial Ecologists apply principles and processes of natural ecosystems to develop models for efficient industrial systems. Use knowledge from the physical and social sciences to maximize effective use of natural resources in the production and use of goods and services. Examine societal issues and their relationship with both technical systems and the environment. Environmental consultants provide advice to companies and other organizations on a wide range of environmental issues such as green manufacturing, hazardous-waste remediation (disposal and cleanup), environmental disasters, sustainability initiatives, compliance, renewable energy, and water, air, and soil quality.</p>	<p><b>IE</b></p>	<p><b>Environmental Science Engineering or Policy, GIS</b></p>	<p><b>Bachelors, Masters, PhD</b></p>
<p><b>(h) <u>Environmental Planner</u></b>  (Environmental Restoration Planners, Urban and Regional Planners)  Collaborate with field and biology staff to oversee the implementation of restoration projects and to develop new products. Process and synthesize complex scientific data into practical strategies for restoration, monitoring or management.</p>	<p><b>IRE</b></p>	<p><b>Environmental Science, Planning, Engineering ore related discipline.</b></p>	<p><b>Bachelors, Masters</b></p>
<p><b>(i) <u>Environmental Research Analyst</u></b>  (Environmental Scientists and Specialists, including Health)  Environmental research analysts spend much of their types compiling data, researching, and analyzing data. They typically spend time working both in laboratories and in the field, and their laboratory tasks involve scientific analysis of soils, hydrology, geology, air pollution, mineralogy, and more.</p>	<p><b>IRC</b></p>	<p><b>Environmental Science or Engineering</b></p>	<p><b>Bachelors, Masters</b></p>

<p><b>(j) <a href="#">Energy Analyst</a></b>          (Energy Auditor)          As an energy analyst, you measure energy efficiency, analyze data on energy use, develop an energy model for buildings, recommend improvements, and assist contractors with technical support for installations.</p>	CE	Environmental Science or Engineering	Bachelors
<p><b>2. Environmental Engineer</b></p>			
<p><b>(a) <a href="#">Agricultural Engineer</a></b>          Apply knowledge of engineering technology and biological science to agricultural problems concerned with power and machinery, electrification, structures, soil and water conservation, and processing of agricultural products.</p>	IRE	Agriculture, Biology, Environmental Science	Bachelors
<p><b>(b) <a href="#">Energy Analyst</a></b>          (Energy Auditor)          As an energy analyst, you measure energy efficiency, analyze data on energy use, develop an energy model for buildings, recommend improvements, and assist contractors with technical support for installations.</p>	CE	Environmental Science or Engineering	Bachelors
<p><b>(c) <a href="#">Bioinformatics Technicians</a></b>          (See also <a href="#">Bioinformatics Scientists</a> – ICR, Biology, Masters/PhD)          Apply principles and methods of bioinformatics to assist scientists in areas such as pharmaceuticals, medical technology, biotechnology, computational biology, proteomics, computer information science, biology and medical informatics. Apply bioinformatics tools to visualize, analyze, manipulate or interpret molecular data. May build and maintain databases for processing and analyzing genomic or other biological information.</p>	IRC	Bioinformatics or related discipline	Bachelors, Masters
<p><b>(d) <a href="#">Health and Safety Engineers</a></b>          (Industrial Safety and Health Engineers)          Promote worksite or product safety by applying knowledge of industrial processes, mechanics, chemistry, psychology, and industrial health and safety laws. Includes industrial product safety engineers.</p>	ICR	Occupational Safety and Health Management	Bachelors
<p><b>(e) <a href="#">Environmental Engineering Technicians</a></b>          Apply theory and principles of environmental engineering to modify, test, and operate equipment and devices used in the prevention, control, and remediation of environmental problems, including waste treatment and site remediation, under the direction of engineering staff or scientist. May assist in the development of environmental remediation devices.</p>	RIC	Environmental Engineering  Varies depending on job	Bachelors
<p><b>3. Environmental Lawyer</b></p>			

<p><b>(a) <u>Environmental Lawyer</u></b>  Environmental law is a broad area of law that encompasses a range of issues surrounding the environment including water and air quality, hazardous waste, species protection, agriculture, wetlands, biodiversity, waste management, green initiatives, sustainability strategies and alternative energy sources. They represent clients in legal issues related to environmental law. It is a large and complex specialty within the practice of law.</p>	<p><b>EI</b></p>	<p><b>Environmental Science and Law degree</b></p>	<p><b>Bachelors and JD</b></p>
<p><b>4. Environmental Biologist</b></p>			
<p><b>(a) <u>Ecologist</u></b>  Apply principles and processes of natural ecosystems to develop models for efficient industrial systems. Use knowledge from the physical and social sciences to maximize effective use of natural resources in the production and use of goods and services. Examine societal issues and their relationship with both technical systems and the environment.</p>	<p><b>IE</b></p>	<p><b>Environmental Science/Studies</b></p>	<p><b>Bachelors, Masters</b></p>
<p><b>(b) <u>Biogeochemist</u></b>  (Biochemists and Biophysicists)  Biogeochemistry is the scientific discipline that involves the study of the chemical, physical, geological, and biological processes and reactions that govern the composition of the natural environment (including the biosphere, the cryosphere, the hydrosphere, the pedosphere, the atmosphere, and the lithosphere). Biochemistry is offered at <a href="#">SCSU</a>. Biogeochemistry is offered at <a href="#">UMD</a>, <a href="#">Minnesota State University Mankato</a> and <a href="#">UMN</a>.</p>	<p><b>IAR</b></p>	<p><b>Biochemistry, Biogeochemistry</b></p>	<p><b>Bachelors, Masters</b></p>
<p><b>(c) <u>Marine Biologist</u></b>  Marine biologists study life in the oceans, and sometimes the oceans themselves. They may investigate the behavior and physiological processes of marine species, or the diseases and environmental conditions that affect them. They may also assess the impacts of human activities on marine life. Many marine biologists work under job titles such as wildlife biologist, zoologist, fish and wildlife biologist, fisheries biologist, aquatic biologist, conservation biologist, and biological technician.</p>	<p><b>IR</b></p>	<p><b>Biology, Zoology, Fisheries, Ecology, or other animal sciences</b></p>	<p><b>Bachelors, Masters</b></p>
<p><b>(d) <u>Wildlife Biologists</u></b>  Study the origins, behavior, diseases, genetics, and life processes of animals and wildlife. May specialize in wildlife research and management. May collect and analyze biological data to determine the environmental effects of present and potential use of land and water habitats.</p> <p>For more on this career and training:  <a href="https://mn.gov/deed/newscenter/publications/review/march-2017/zoologist.jsp">https://mn.gov/deed/newscenter/publications/review/march-2017/zoologist.jsp</a></p>	<p><b>IR</b></p>	<p><b>Wildlife, Fish and Wildlands Science and Management, Ecology, Entomology</b></p>	<p><b>Bachelors</b></p>

<p><b>(e) <u>Zoologist</u></b>          Zoologists study animals and their interactions with ecosystems. They may be involved in a wide variety of duties in various environments. They may observe and study animals in their natural environments or plan and conduct experiments involving animals in nature, in zoos or other controlled areas.          For more on this career and training:  <a href="https://mn.gov/deed/newscenter/publications/review/march-2017/zoologist.jsp">https://mn.gov/deed/newscenter/publications/review/march-2017/zoologist.jsp</a></p>	<p><b>IR</b></p>	<p><b>Zoology</b></p>	<p><b>Bachelors</b></p>
<p><b>5. Environmental Geologist</b></p>			
<p><b>(a) <u>Paleontologist</u></b>          A paleontologist is a scientist who studies the history of life on Earth through the fossil record. Fossils are the evidence of past life on the planet and can include those formed from animal bodies or their imprints (body fossils). Trace fossils are another kind of fossil. A trace fossil is any evidence of the life activity of an animal that lived in the past. Burrows, tracks, trails, feeding marks, and resting marks are all examples of trace fossils.</p>	<p><b>IR</b></p>	<p><b>Geology and advanced degree in Paleontology</b></p>	<p><b>Masters or Doctorate</b></p>
<p><b>(b) <u>Hydrologists</u></b>          Research the distribution, circulation, and physical properties of underground and surface waters; and study the form and intensity of precipitation, its rate of infiltration into the soil, movement through the earth, and its return to the ocean and atmosphere.</p>	<p><b>IR</b></p>	<p><b>Geology/Earth Science Hydrology and Water Resources</b></p>	<p><b>Bachelors</b></p>
<p><b>(c) <u>Geochemist</u></b>          (Geoscientist)          Geochemists study the composition, structure, processes, and other physical aspects of the Earth. They examine the distribution of chemical elements in rocks and minerals, as well as the movement of these elements into soil and water systems.</p>	<p><b>IR</b></p>	<p><b>Geosciences, Geochemistry</b></p>	<p><b>Bachelors, Masters</b></p>