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Career Choices: Working toward a Better Environment.

Revised.

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Secondary Education; Resource Materials

## ABSTRACT

This brief guide to environmental careers first provides a history of this job market and then in two sections (covering six pages), describes specific jobs and steps to planning a career. The first section describes each job in each of the major categories of careers in the environmental field: (1) Environmental Equipment Operation (attendants and support personnel operators, incinerator plant attendant, wildlife attendant, wastewater treatment plant operator, sanitary landfill equipment operator, solid waste systems manager); (2) Environmental Technology (environmental inspector, nuclear technician, mechanical tester); (3) Environmental Technology and Education (teacher, environmental engineer, noise control specialist, physician, psychologist, sanitarian/environmentalist, toxicologist, urban planner, soil conservationist); and '(4) Environmental Science and Research (aquatic biologist, entomologist, physiologist, agronomist, epidemiologist, geologist, meteorologist, oceanographer, sociologist, writer, lawyer). The second section provides suggestions for finding out about job information and employment opportunities. Appended is a state-by-state listing of postsecondary schools and colleges offering environmental science programs, along with names and addresses of organizations which will provide (free or at cost) career information. (SH)

United States Environmental Protection Ageilcy

Office of Public Affairs Washington D.C. 20460

Revised January 1977

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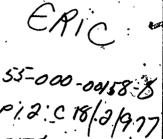
U S DEPARTMENT OF HEALTH. EDUCATION & WELFARE NATIONAL INSTITUTE DF EDUCATION

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Working toward a better environment







## ₩.

# an exciting and essential career.

The horizon for environmental careers is vast and expanding.

The restoration and protection of our environment will require an enormous range of specialists, from wildlife attendants to sanitary engineers, from operators of pollution control equipment to soil conservationists.

The demand for various kinds of technicians, educators and researchers in this field, for example, is expected to reach 1.5 million in the next year or two.

Employment opportunities in the environmental field are opening up not only in State and Federal governments but at the city and county level, in private industry, and in research institutions and laboratories.

What brought about this dramatic new job market?

Historically we can look back to the 1960s as the decade when the United States and other countries saw public concern over pollution undergo a transformation. The publication of Rachael Carson's "Silent Spring," a series of pollution episodes including major oil spills, and heightened awareness of the dangers to public health from pollution all contributed to the rise of an environmental movement.

Congress responded to the change with a series of strong new laws to cope with pollution. Among them were the Clean Air Amendments of 1970, the Federal Water Pollution Control Act of 1972, the Noise Pollution Control Act, and Environmental Pesticides' Control Act of 1972.

An important step also was taken in 1970 with the creation of the Environmental Protection Agency (EPA) to centralize Federal antipollution efforts, until then dispersed among 15 departments and agencies. EPA not only implements and enforces these new laws but also deals with environmental problems such as solid wastes, drinking water quality, and environmental radiation. The Agency operates through 10 regional offices, laboratories, and at its headquarters in Washington, D. C.

The science of pollution control is progressing. The first nationwide auto emission controls were installed on 1968 cars. Since then, as auto makers developed systems to meet the increas-

ingly stiffer standards required by law, emission controls have become more sophisticated and efficient. But the complex new controls created new problems and the search for the best control method still goes on. Indeed, many people believe that the ultimate solution is to develop clean engines rather than elaborate add-on emission control systems.

There has also been marked technological progress in controlling pollution from large plants. Stack scrubbers, for instance, have been developed in recent years that show great promise of enabling electric generating stations to burn high-sulfur coal without jeopardizing clean air standards.

As a result of these and other developments, employment in what is broadly called "pollution management" is rapidly expanding through public and private expenditures. The President's Council on Environmental Quality has estimated that combined spending on pollution control will total about \$275 billion in the decade ending in 1981. This means millions of new jobs associated with the national commitment to a cleaner, healthier environment.

Pollution problems do not stop at the United States border. Reports to the United Nations Conference on the Human Environment in Stockholm in 1972 showed that the problem is global. Even developing nations have environmental troubles with creeping soil salinity and erosion, with man-made filth diseases, with water shortages, and with raw new cities. They need environmental managers just as urgently as the technologically rich countries.

So the need for men and women to dedicate their lives to helping make the world a healthier and cleaner place has never been more urgent. Your contribution will be a welcome one, whether it's in volunteer work or as a career employee.

Where do you want to start? Some of the best opportunities are close w, in local and State government levels and in industry. Local government bodies employ people in air pollution monitoring and enforcement, city planning, milk and food protection, sanitation, waste collection and disposal, and similar fields.

Industry is increasingly investing in pollution technology to meet the requirements of Federal laws. The private outlay for such controls including maintenance and operating costs for air and water pollution radiation, solid waste, and land reclamation will total approximately \$210 billion in the decade ending in 1981. Men and women will be needed to install, service and monitor such equipment. Company laboratories will need technicians. Air and water cleaning equipment, as well as systems to reclaim and recycle useful materials from industrial waste also are expanding fields for job opportunities.

The career choices are open to a diversity of talents. You can work in an office or outdoors, in a city or a national park, in this country or abroad.

Whatever, task you choose in the environment, your service will be essential to help preserve and enhance the quality of life.

- You can help clean up air that is corrupted by smog and filth.
- You can help save the streams, lakes and ocean waters that are burdened with contamination.
- You can aid in the conservation of wildlife and of natural resources that are part of our national heritage.
- You can help insure that our water is fit to drink.
- You can help solve the problem of the choking traffic of our inner cities and make them a decent place to live.
- You can help insure that pesticides and other toxic substances are controlled and safely used so that they minimize unnecessary risk to all forms of life.
- You can work for the reduction of soaring, noise levels, which are both annoying and dangerous.
- You can grapple with the problem of litter and the mountains of solid-waste that clutter the land.
- You can work for the safe, efficient development of nuclear energy.
- You can devise ways to reclaim and that has been wasted thoughtlessly, and you can help to plan better land use.

In these and other ways, you amake part in the restoration and processor of a good environment.

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choosing a

Before you choose a career in the environment, consider a few questions. What do you enjoy doing? What are you good at? How much education do you plan to get? How much can you spend on training? When you've narrowed your goals a bit you can start to investigate the many different jobs that deal with the improvement of the environment. This booklet is intended to provide information on some opportunities you might want to explore; it is by no means a complete roster of all the opportunities available in the environmental field.

Occupations concerned with environmental protection can be broken down into four categories. Within each of these broad classifications there is a countless variety of specificactivities that might appeal to you. Here are some brief descriptions of a few jobs related to environmental management:

## careers in environmental equipment operation

## Attendants and Support Personnel Operators

This division provides the muscle behind environmental programs. Within it are the blue-collar "doers", who operate, maintain, and sometimes assemble machinery and equipment. As with all other employment, differences in salary and training requirements are based on job responsibilities. This vital occupational category provides many jobs. New programs resulting from recent legislation will increase opportunities to work at such jobs and chances for advancement will become greater for those with relevant experience. Some examples of positions in this category are:

Incinerator Plant Attendant—Responsible for waste disposal in such a way as to minimize air pollution dangers. Operates the incinerator under the supervision of a foreman. Provides direction and assistance for unloading solid-waste trucks. Fixes and maintains machinery. Collects fees for incinerator services. Requirements: Some high-school education and on the job training.

Contact 1. Director, Department of Public Works (or)

2. Personnel Office, Your City Government (or)

3. Local Sanitary District

Wildlife Attendant—Under supervision, works in the operation of fish hatcheries, refuge parks, and animal conservation areas Cares for breeding wildlife, keeps records on animal development, and counts and inspects fish, birds, or animals in their natural habitats. Requirements, Some high-school education and on-the-job training.

Contact: 1C Local U.S. Forest Service Office

2. Bureau of Sports Fisheries and Wildlife

Wastewater Treatment Plant Operator—Performs functions that concern the effective recycling of water and the removal and disposition of solid wastes Operates specialized water pollution control equipment and takes readings, recordings, and samplings of waste water. Requirements Some high-school education, and on-the-job training.

Contact. 1. Director, Department of Public Works (or)

2. Personnel, Office, Your City Government

3. Local Sanitary District

Sanitary Landfill Equipment Operator—Operates a gasoline or diesel-powered tractor, power shovels or other heavy equipment for the construction and maintenance of a sanitary landfill. Services motorized equipment Requirements: Some high-school education and on-the-job training.

Contact: 1. Director, Department of Public Works (or)

2. Personnel Office, Your City Government

Solid Waste Systems Manager—Supervises solid-waste collection, processing, and disposal systems. Positions are available with local government and private operations. Requirements. One or two years of technical or vocational school training.

Contact 1 Director, Department of Public Works (or)

Personnel Office, Your City.
 Government

Other occupations in the equipment operation classification include refuse collector, resource developer, power-plant operator, recycling operator, sewer systems foreman, water-treatment-plant operator or foreman.

## careers in the use of environmental technology

Environmental Technicians

Environmental Inspectors and Monitors
Environmental Testers

Men and women in this area test theories and turn environmental ideas into actual programs and projects. They monitor, inspect, and analyze the work of the planners and researchers. Some career opportunities are

Environmental Inspector—Determine the environmental purity of air, smoke, water, and waste by using a variety of mechanical and chemical tests. Analyzes data and reports to an appropriate monitoring agency, which is responsible for seeing to it that environmental standards are met. May gather evidence against establishments accused of violating environmental standards. Requirements Two or three years of technical school or college.

Contact 1. State Air Pollution Control Agency

2. City or County Air Pollution Control Agency

3 City or County Health Department

Nuclear Technician—Tests nuclear waste disposal methods. Writes reports and assists in the development of machines and equipment. Monitors nuclear power plant facilities and work areas to detect radiation contamination. Frequently uses complex laboratory equipment. Requirements: At least two or three years of technical school or college.

Contact: 1: Nuclear Power Plants.

2. State Environmental Agency,
Departments of Health

3. Local Power Authority

Mechanical Tester—Is concerned with air and choise pollution caused by engines. Tests fuels and lubricants in engines and analyzes engine exhausts and any resulting air pollution. Often uses microscopes and precision weighing and measuring instruments. Requirements: Two or three years of technical school or cellege.

Other occupations in environmental technology implementation include: food and drug inspector, health monitor, public health enforcement officers, biological technician, physical science technician, resource conservation technician, laboratory technicians, stack samplers, industrial hygiene technicians, horticultural technician, land-use technician, environmental analyst.

## careers in environmental technology and education

Environmental Educators
Environmental Engineers
Environmental Health Services
Environmental Planners
Natural-resource Managers

This group is concerned with transmitting and applying knowledge, techniques, and findings developed by scientists and researchers. The majority of workers in this group have college educations or advanced fechnical training Fields in this classification include

Teacher—Depending on professional preparation. Instructs citizens of all ages in environmental problems and the role of citizenship in applying possible solutions. Fills the essential role of creating environmental awareness and providing the inspiration and insights necessary to clean up our world. Can teach on the junior and senior high-school or college level in the physical sciences or the humanities Requirements: Four or five years of college for secondary-school teacher, five to seven years for college instructor.

Environmental Engineer—Specializes in applying engineering principles, methods, and practices to environmental problems, with the object of improving and protecting living conditions. Seeks to limit the degradation of natural resources, such as air and water, and to manipulate man's environment in order to improve health, social and economic conditions. Some environmental engineers apply engineering principles to the maintenance of systems that support life in alien environments in space or in the subterranean seas. Requirements: Four or more years of college.

Noise Control Specialist — Makes assessments of noise sources and researches effects of noise on the environment and on human health. Develops standards for allowable noise levels. Carries out enforcement activities. Works in planning, design, construction, and installation of products and facilities in order to achieve required noise levels. Requirements: Iwo to seven years of study Study in fields related to engineering, architecture, health, urban planning, law, etc.

Physiciah—Diagnoses and treats individuals who are ill or injured Since all aspects of the ecosystem ultimately affect health and safety,

the medical doctor has a large role to play in environmental management. The physician is not only concerned with communicable diseases and injuries, but also safety and the effects on health of environmental pollutants. This work may involve the management of pollutants as well as critical research. Requirements Eight years of study including college, medical school, and an internship.

Psychologist — Studies effects of environment on human and animal behavior. There are many subspecializations of psychologists, but some of the problems they study include physiological and psychological effects of crowding; natural behaviors of animals, attitudes related to resource consumption and overpopulation; effects of architectural/environmental design on human interaction, and the design and evaluation of environmental programs dealing with human behavior. Requirements: Five to seven years of study including college and graduate school.

Sanitarian/Environmentalist — Plans, develops, and executes environmental health programs: Organizes and conducts training programs in environmental health practices for schools and other groups. Determines and sets health and sanitation standards and enforces regulations concerned with food processing and serving, collection and disposal, plumbing, vector control, recreational areas, hospitals and other institutions, noise, ventilation, air pollution, radiation, and other areas. Confers with govern-, ment, community, industrial, civil defense, and private organizations to interpret and promote environmental health programs. Collaborates with other health personnel in epidemiological investigations and control. Advises civic and other officials in the development of environmental health laws and regulations. Requirements: Four years of college.

Toxicologist—Detects and analyzes poisonous substances in environmental areas Requirements Five to seven years of college and graduate school.

Urban Planner — Attempts to relieve and prevent urban problems through the effective use of land and the promotion of a more functional and appealing appearance. Estimates a city's long-range needs bearing on a wide variety of problems and services. Requirements. Six years of study including college and graduate school.

Soil Conservation ist—Deals with the productivity and general management of soil use and conservation. Determines the capabilities of particular soils for growing different crops, studies land drainage, inspects watershed land,

ERIC Full Text Provided by ERIC

prevents soil deterioration. Requirements Four years of college.

Other occupations in the area of technology and education include aeronautical engineer, agricultural engineer, chemical engineer, combustion engineer, electrical engineer, civil engineer, geological engineer, hydraulic engineer, industrial engineer, mechanical engineer, mining engineer, nuclear engineer, field health officer, park ranger, architect, landscape architect, fish and game warden, firester, range manager, watershed manager, wildlife manager

## in environmental science and research

Physical Scientists

Social and Behavioral Scientists

These careers require a great deal of education and training Most are in a particular field of science. Life scientists (biologists, botanists, agronomists, etc.) generally do basic research into the components, structure and processes of our environment. Social and behavioral scientists reconomists sociologists, etc.) are concerned with all facets of human society and its institutions. Members of this division are

Aquatic Biologis Studies the interaction of plants and animals living in water. Seeks methods to achieve or maintain the balance of the aquatic environment. Requirements Five to seven years of study including college and graduate school.

Entomologist—Investigates the relationship between insects and other forms of life. Often specializes in research involving insects that carry disease or spoil food products. Requirements Five to seven years of college including graduate school.

Physiologist— probes into the structure and function of an all organs, tissues, and cells. Studies the effects of life processes as they relate to environmental problems. Requirements: Five to seven years of college including graduate school.

Agronomist—(Crop Scientist, Soil Scientist)—
Studies the broad area of applied science of field crops and soils, especially the interrelationships of grop production and soil management, including environmental implications. Crop scientists are concerned with genetics, breeding, and physiology. Soil scientists study chemistry, fertility, microbiology, classification,

mineralogy, and management. Requirements. Five to eight years of college including graduate school.

Epidemiologist—Seeks to control diseases within human populations. Studies the delicate environmental balance between disease carriers and their natural predators. Requirements Ten years of study including college and medical school.

Geologist—Studies the structure, composition, and history of the earth's crust. The work of the geologist has a direct impact on the understanding and utilization of many aspects of the environment. Often explores for vital energy sources such as oil and natural gas. Requirements. Four to seven years of college and graduate school.

Meteorologist—Investigates changes in the earth's atmosphere. There are several subspecializations within this profession, one of which is weather forecasting. Requirements Four years of college and at least one year of graduate school.

Oceanographer—Examines the ocean, its contents and movements, and pursues ways to better utilize and preserve it. Requirements Five to seven years of college including graduate school.

Sociologist—Investigates human interactions and the many groups that people form. Studies the ways in which individuals are affected by the organizations to which they belong and the environment in which they live Requirements. Five to seven years of college including graduate school-

Writer—Informs citizens about environmental problems and their possible solutions. Requirements Four to five years of college.

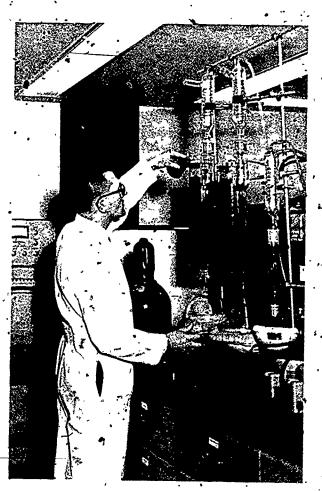
Lawyer—Specializes in interpretation of environmental protection laws that have been adopted in the last few years. Requirements: Seven years of college including law school.

Other occupations in the area of science and research include biochemist, biophysicist, biostatistician, cytologist (study of cells), geneticist (study of heredity), microbiologist, bacteriologist, pathologist, animal ecologist, animal hus bandry, pharmacologist, zoologist, agriculturalist, botanist, forest ecologist, horticulturalist, astronomer, chemist, assayer, geophysicist, hydrographer, metallurgist, mineralogist, physicist, seismologist, soil scientist, anthropologist, economist, geographer, mathematician, statistician.



## planning your





Hopefully the short descriptions supplied here will help you get a better idea of what you can do in environmental management. A good source for further information on general and specific subjects is your school guidance counselor. Many guidance departments keep files of job-opportunities and a reference library to assist you.

a career in the environment. Write for information to local, State, and Federal agencies and EPA Regional Offices (addresses are often in the phone book) and to special-interest national organizations. Watch your newspaper for articles reporting current local efforts to deal with environmental problems. From these stories you can get ideas about probable future job needs in your community, and you can learn the names of people in charge of operations. Most of these people would be happy to talk to you about environmental careers.

In case you plan to continue your education after high school, there are many vocational institutes and community colleges that have training progams directly concerned with environmental work. Universities, and colleges throughout the country are continually adding courses in environmental fields. Many have specialized major-course programs in particular areas. A list of some of these schools can be found in the appendix of this publication. You can also consult the school nearest you for further information.

There are several environmental protection occupations in the Equipment Operation and Support Group which are often available for immediate entry with little or no previous training. It is important to note that these jobs can be interim steps to supervisory positions in local government or they can be temporary positions pursued on a part-time or short-term basis. For those attending a vocational school, junior college, or university and studying in an environmental curriculum, these jobs can often be pursued for course credit with the approval of your dean or counselor. Such positions have

become increasingly helpful to environmental planners, scientists, and engineers in providing first-hand experience in the blue-collar jobs which are the basis of environmental protection.

For the most part, jobs in these areas are in local government systems under the public works department and are secured by contacting the city or county government personnel office or through the respective civil service offices. Consult the telephone directory under the city government listings or public works department.

Another approach is to confact State and local employment security offices which are located in most communities. These offices keep listings of job openings in both the public and private sectors with referral and counseling services free of charge. Larger cities often have "job banks" and other community-service offices which also do job referrals and placement service for those seeking employment. Job banks are usually a municipal service and can be contacted through your city hall.

office for information on jobs for veterans both in the public and private sectors.

Many State and local pollution control agencies conduct training programs on a regular basis for new-entry personnel who are beginning careers, in environmental protection. Information regarding training may be obtained by contacting the appropriate State pollution control agency listed under "State" in the telephone directory. These training programs usually offer on-the-job training for new employees and upgrade training for presently-employed persons.

As you can see, there is much to do in the environmental protection field. Your dedication and skills are needed to save our environment. You can pursue a career that is both satisfying and beneficial—a career that contributes directly and in a meaningful way to the betterment of the earth. There could be no more important commitment.



## **EPA Programs**

EPA carries out many research projects, and funds others in private and public institutions all over the country. EPA helps to meet increasing manpower needs by offering direct training programs in Cincinnati, Ohio; Ada, Oklahoma; Athens, Georgia; Corvallis, Oregon; and Edison, New Jersey. The Agen, cy's Institute for Air Pollution Training at Research Triangle Park, North Carolina, offers technical courses, seminars and workshops on air pollution control. This program has been so successful that it is now offered in Austin, Texas; Boston, Massachusetts; Chicago, Illinois, Cincinnati, Ohio, Denver, Colorado, Kansas City, Missouri, New York, New York: San Francisco, California; and Seattle, Washington. EPA also provides grants and fellowships to universities for the training of future experts in environmental-related fields.



## appendix

## colleges & universities

This is a compilation of post-high schools and colleges offering environmental science programs. The information is from a variety of sources and is incomplete in significant detail for some schools.

The listing is alphabetical according to state, then by school The line under each school shows (1) the type of degree or degrees offered in the environmental program, (2) the department or departments in which courses are available, (3) in parenthesis the type of environmental program, and (4) the number of courses offered. A dash (—) indicates that data were unavailable

The codes used are

Degree Awarded
A—Associate Degree,
B—Bachelor Degree
M—Masters Degree
D—Doctorate Degree

## Environmental Program

A-Air Quality
W-Water Quality
E-Environmental General Science
H-Health
S-Sanitation

## Department C E—Civil Engineering Ch E—Chemical H—Public Health Env Eng—Environmental Engineer Apl Sci—Applied Science

Using these codes the training offered at California Polytechnic State University, San Luis Obispo, California (M; Env Eng; (A, W) 13) reads as follows "Master of Science degree from the Department of Environmental Engineering, specializing in either air or water pollution control, with 13 courses available on air quality.

Career Information (A-104)
Office of Education and Manpower
Planning
U.S. Environmental Protection
Agency
Weshington, D.C. 20460

## ALABAMA

Auburn University Auburn 36830 M, Ch E, C E, (E) 3

Tuskegee Institute
Tuskegee Institute 36088
-, -, .W) -

University of Alabama
University 35486
BMD; CE CheE (A,W) 6

### **ALASKA**

University of Alaska Fairbanks 99701 M D. Env 對 Eng. (E) 1

## ARIZONA

Arizona State University Tempe 85281 B M D, C E, (-) 4

University of Arizona
Tucson 85721
BMD, CE, Eng Mech, (W) 4

## ARKANSAS

University of Arkansas f Fayetteville 72701 M. – (W,H) 2

## CALIFORNIA

California Institute of Technology Pasadena '91109' B M D, Env Eng. (E) 8

California Polytechnic State University San Luis Obispo 93401 M: Env Eng. (A,W) 13

California State University
California State at Chico
Chico 95926
B; CE EnvSci (E) –

'Calif State U at Long Beach Long Beach 90801 B M, C E, (A,W) 5

California State University Sacramento 95819 B M; C E, M E; (E) –

Calif State U at San Jose San Jose 95114 B. C E; (W) 7

El Camino Jr College Torrance 90506 A. - (E) 2

Sacramento State College Sacramento, 95819 BM: CE, M.E. (E) - •

Sonoma State College .
Rohnert Park 94928
B; Apl Sci (E) —
Stanford University
Stanford 94305,
M D; M E, C E, (W) —

University of California

U C—Berkeley Campus

Berkeley 94720

B M D, C E, Ch E, M E, (H,W,E)

U C—Davis Campus
Davis 95616
B M D. Ch E. C E. (W.E) 9

U C—Irvine Campus Irvine 92664 B M D. C.E. Env Eng. (E) —

U C—Los Angeles Campus Los Angeles 90024 M D. Eng. (H.E) 7

U C—Riverside Campus Riverside 92502 B. Env Sci. (A.E) 3

University of San Diego San Diego 92110 -; - (E) -

University of Southern California Los Angeles 90007 M. Eng (A) 8

## COLORADO:

Adams State College Alamosa 81101 B. Sci. (E) 12

Colorado State University
Fort Collins 80521
B M D Apl Sci. C E. (H,W) 5

Community College of Denver Denver 80203 A. -. (E) 6

University of Cotorado.
\*Boulder + 80302 \*
B M D C, Env E (W) 2

University of Denver
Denver 80210
M D, M Sci, Env E, (E) 1

## CONNECTICUT

University of Connecticut, Storrs 06268 -, -; (W,E) -

University of New Haven , N. Haven 06516 : B, Env Sci, (E) 3

Yale University ~ New Haven 06520 M; H, (A,H,E) 8~

## DELAWARE

University of Delaware Newark 19711 B M D, C E, Ch E; (A,W) 8

## DISTRICT OF COLUMBIA

Georgetown University
Washington, D.C. 20006
-: '-, (E) -

George Washington University Washington, D.C. 20006 B.M.D.C.E., M.E.; (E) 17

Washington, D C 20001 M, -, (A,W) 5

## **FLORIDA**

Florida Technological University Orlando 32816 B, C E, Eng. Sci. (E) 4

<sup>\*</sup>This compilation was prepared for EPA under a contract with the Air Pollution Control Association. Corrections or additions may be addressed to.

Rollins College Winter Park 32789 B; AphSci (A,W;E,H,S) -St. Johns River Junior College Palatka 32077 A. Env Sci (E) 3 Santa Fe Community College Gainesville •32601 A. Eng. (E) 5 University of Florida Gainesville 32601 B M ,D, Env E (A,H,S,W,E) 13 University of Miami 🧃 Coral Gables 33124 -. -, (HE) GEORGIA . **Emory University** Atlanta 30322 B. Sci., Math. (E) 1 Georgia Institute of Technology Atlanta 30314. M D Ch E, (A,H S,W E) 7 University of Georgia Athens ,30601' -, Ařgi Eng. (E) 2 HAWÁII -University of Hawall Honolulu 96822 BMD; CE EnvH (S,W,E,H)-IDAHO College of Idaho Caldwell\_83605 B, ApISci (E) -University of Idaho Moscow 83843 BMD, ApISci Ch (W,E) -ILLINOIS Bradley University Peoria 61606 B M. Env Sci, (H.E) -

-,,C E, (E) 1 De Paul University Chicago 60604 B. Ch. (E) 5, Governors State University Park Forest

Illinois Institute of Technology Chicago 60616 B M D, Env Eng. (W,E)39 Northwestern University

Evanston .60201\* B M D, Env Eng. (H,W,E) 6

Southern Illinois University at Carbondale Carbondale 62901 B<sub>M</sub>, Env Eng. (E) 6 University of Illinois

Urbana 61801 BMD, CE, (E) 5

Chicago Circle Campus B M D, Env Sci, (E) 7 Urbana-Champaign Čampus M D; C E, (E) 10

INDIANA

Ball State University Mundue 47306 BM; — (W,E) 5 **Butler University** Indianapolis 46208 B; Apl Sci (E) -Indiana State University Terre Haute 47809 B; H (H) -Indiana University Bloomington 47401

–, +, (E)ͺ**–** 

Indiana Vocational Technical College Gary 46409 A; ApISci (A,W,E) 10 Purdue University West Lafayette 47907 M D, Č E, Env. (A,H,W,E) 13 Rose-Hulman Institute of Technology Terre Haute 47803

B, C E, Ch E, M E, (H,A) 1 University of Notre Dame Notre Dame 46556 B M D, C E (W) 5

LOWA

Jowa State University -Ames 50010 B M, C E, (E)-2 > University of lowa lowa City 52240

B M D, Env Eng. (E) 1

KANSAS'

Kansas State University Manhattan 66502 MD, CE, ME, (E) 2 University of Kansas Lawrence 66045 B; ApiSci (È) -, MD, CE-(W)

KENTUCKY

Morehead State University Morehead 40351 B. ApISci (E), 10 University of Kentucky Lexington 40506 B M D, Ch E, (A,W) 10 Westèrn Kentucky University.

Bowling Green 1.421

A, B; Eng; (E) 6

LOUISIANA

Louisiana State University -Baton Rouge 70803 -, Eng. (E,A,W) 2 Louisiana Tech University Ruston\* 71270 B, C E; (W) 1\_ McNeese State University

Lake Charles 70601 B M; Apl Sci (E) 27

Tulane University of Louisiana New Orleans 70118 - M D. C E, (A.E) 2

University of Maine at Orono ·Orono \ 04473 M; Eng. (W) 1

MARYLAND

Charles County Community College .La Plata 20646 M: Eng. (S,E) 1 Johns Hopkins University

Baltimore 21218 M D, Env Eng, H, (A,W,E,H) 5

University of Maryland College Park 20742 B M D, OE, Ch E, (A) 11

**MASSACHUSETTS** 

Berkshire Community College Pittsfield 01201 A, AplSci (E) 20 Bristol Community College

Fall River 02720 A; H-Env Eng (A,W,E,H,S) 16

Harvard University Cambridge 02138 M D, H, (A,H,W,E) 7.

Lowell Technological Institute \_ Lowell \_ 01854 M; Env Sci. (E) 2

 Massachusetts Institute 6f Technology Cambridge 02139 BMD; Ch E M E Api Sci (A,W,E,H,S) -

Northeastern University Boston' 02115 M D, C E. (W,E) 8 Tufts University Medford 02155 M; CE ApISci (W,E) ~

University of Massachusetts Amherst 01002 M, C& E, C E, (A,W,E) 5

Wentworth Institute Boston 02115 A, C E, (E) 3

MICHIGAN

Ferris State College Big Rapids 49307 A B, H, (S, H) 3.

Genesee Community College Flint 48503 A, Sci; (A.E) 4

Grand Valley State College Aliendale 49401 B; Qh H ApiSci (A,W,E,H) -

Michigan Technological University Houghton 49931 BM, CE ApISci (A,W,E) 20

University of Detroit Detroit 48221 B, Ch E; (E) 2

University of Michigan Ann Arbor 48104 M D. Env H. (A,H,W,S,E) 13

Universitý of Michtgan-Deárborn Dearboin 48128 B; Apl Sci (A,W,E,H,S) -

Wayne State Universify Detroit 48201 BMD; ChÉ,H (A,W,E,H)-Wayne State University

School of Medicine -Detroit 48226 M; Occupational & Env. H

MINNESOTA

Bemidji State College Bemidji 56601 A B M, Ch Bio, (H,E) 1 Mankato State College Mankato 56001 ABM; Ch EnvSci (W.E) University of Minnesota Minneapolis 55455 BMD, EnvEng H ME (A,W,E,H:S) ~

MISSISSIPPI

Mississippi State University Starkville 39762 - - (W) -

**MISSOURI** 

St, Louis University St. Louis 63103 -, Env Sci, (E) 3 University of Missouri-Rolla Campus Rolla 65401 M D; C E; (W,E) 3 Washington University, St. Louis 63130 B M 10, C E, (E) .7

MONTANA

Montana College of Mineral Science Butte 59701 B M, Env Eng; (E) 7 Montana State University Bozeman 59715 BMD, CE ChE ÉnvEng ApISci (H,W,E) -

**NEBRASKA** 

University of Nebraska - Lincoln Lincoln 68508 B M D; Ch E Apl Sci (W,E,H) -

NEW HAMPSHIRE

Dartmouth College Hanover 03755 B M D; Eng; (E) 3 (

New England College Henniker 03242 B; Env Eng Apl Sci (E) -University of New Hampshire , Durham 03824 B; Apl Sci (E) -



**NEW JERSEY** 

Middlesex Community Collége , Edison 08817 , A; Ch (A,W,E,H,S) 14

Newark College of Engineering Newark 07102 B M, C, Env Eng; (E) 14

Princeton University Princeton 08540 +: Env Sci; (E) --

Rutgers University— Cook College New Brunswick 08903 B M D, Env Sci. (A,W,E) 8

Stockton State College Pomona 08240 B; Apl Sci (A,W,E) 15

NEW\_MEXICO . ...

New Mexico Institute of Mining & Tech.
Socorto 87801
B, Env.Eng. (W.E) 1

New Mexico State University
Las Cruces 88003
BMD; CE (W) 14

University of New Mexico Albuquerque 87106 B M, Eng. (E) 10

## **NEW YORK**

Alfred University
Alfred 14802
-, Env. (E) -

City University of New York— City College New York 10031 M. C E. (A,E) 8

Clarkson College of Technology Potsdam 13676 ... B M D; C E, Env Eng; (E) 5

Columbia University—School of General Studies New York 10027 -, -: (H.E) -

Copper Union New York 10003 M. D; Eng; (E) 9

Long Island. University. C.W. Post College P.O. Greenvale 11548 B; ApISci (W.E) -

Cornell University .

Ithaca 14850
M D, C E, (W,E) 8

Manhattan College Riverdale 10471 M; Env Eng: (E,W) 4

New York University New York 10003 M D; Ch E, C E, Meteor, (A,H,W)

Paul Smith's College Paul Smith 12970 A; Api Sci (E) –

12

Rennsselaer Polytechnic Institute Troy 12181 B M D; Bio Env. (S) 6

State University of New York Binghamton 13901 BMD; Ch ApiSci (E) -

State University of New York – Plattsburgh, Institute for Man And Environment Plattsburgh 12901

B; Apl Sci (A,W,E,H.S) – State University of New York-Stony Brook 11794 M D; Apl Sci (E) –

State University of New York
College of Environmental
Science and Forestry
Syracuse 13210
MD, CE ChE H EnvEng
ApiSci (E) —

S U N Y—Hudson Valley Community College Troy 12180 A, Eng. (E) 2

State University College Potsdam 13676 B Mt C E, Ch E, (E) 3

Sullivan County Community College S. Fallsburg 12779 \* A: Nat Sci; (A,W) 4

Syracuse University – L C. Smith College of Environmental. Engineering

Syracuse 13210

B M; Env Eng (A,W) 20

Union University
Schenectady 12308
BM; ME (E) 3

University of Rochester Rochester 14627 B; Ch E, (E) 1

## NORTH CAROLINA

Duke University

Durham 27706

M D; Eng; (E) 8

Durham Technical Institute

Durham 27703

A; -; (E) 3

East Carolina University

Greenville 27834
B, Env H; (H,E) 3

Fayetteville Technical Institute
Fayetteville . 28303 '
A; Env Eng; (E) 3

North Caroliña State University Raleigh 27607 M D; Grad; (A,W.E) 11

University of N C. at Chapel Hill Chapel Hill 27514 M D; Env Sci, (A,H,W,E) 16

## NORTH DAKOTA

North Dakota State University Fargo 58102 -, -, (H.E) -: University of North Dakota • Grand Forks 58201 BM; CE, (W,S) 13

### оню

Bowling Green State University Bowling Green 43403 -, Env Sci. (E) -

Cleveland State University
Cleveland 44115
-. Env Sci. (E) 6

The Ohio State University
Columbus 43210
ABMD; CE ChE H
EnvEng AplSci (A,W,E,H,S) -

University of Cincinnati Cincinnati 45221 B M D. C E, Env. (A H.W.E) 21

The University of Dayton
Dayton 45469
BM, CE Enveng (W.S) 20
University of Toledo
Toledo 43606
D. Ch E. (E,W) 1

## **OKLAHOMA**

Oklahoma State University
Stillwater 74074

-, C E; (H.W) 1
University of Oklahoma
Norman 73069
M D; C E, Env Sci. (H,S,W.E) 5

University of Tulsa Tulsa 74104 D, Ch E, (E) 1

## OREGON

Oregon State University
Corvallis 97331
M D; Eng. (H,W,E) 8
Oregon Technical Institute
Klamath Falls 97601
A; Env H; (H,A) 7
Portland State University
Portland 97207
B M; Apl Sci. (E) 6

## **PENNSYLVANIA**

Allegheny College
Meadville 16335
B; AplSci (W,E) 8
Carnegie-Mellon University
Pittsburgh 15213
B M D; Ch E; C E, M E; (E) 4
Cedar Crest College
Allentows 18104
-; Env Sci; (E) Drexel University
Philadelphia 10104

Philadelphia 19104 M B, Env Scr. (A,S,W,E) 13 Mercyhurst College Erie 16501

-; Env; (E) -

Pennsylvania State University— Berks Campus Reading 19610 A. Eng: (A) 4 University Park 16802

BM; AplSci Ch (A,W,E) – Temple University Philadelphia 19122 –. –. (A,H,E) –

Thomas Jefferson University Philadelphia 19107 -, -, \(\mathcal{e}(\mathcal{E}) - \)

University of Pennsylvania Philadelphia 19174 BMD; CE (W) 41.

University of Pittsburgh
Pittsburgh 15261
MD; CE ChE H (A,W,E,H) Villanova University

Villanova University Villanova 19085-B, Ch E, (E) 2

## PUERTO RICO

University of Puerto, Rico—Rio Piedras Campus Rio Piedras 00931 -;'-. (H.E) –

## RHODE ISLAND

University of Rhode Island Kingston 02881 -: -, (W,E) -

## SOUTH CAROLINA

Clemson University
Clemson 29631
B.M.D. Env E. (W.E) 7

## SOUTH DAKOTA

Northern State College Aberdeen 57401 B; Apl Sci (E) -

South Dakota School of Mines and Tech Rapid City 57701 B. Env E. C E. (E) 2 South Dakota State Unive

South Dakota State University
Brookings 57006
-: -: (W.E) -

University of South Dakota Vermillion 57069 -; -; (E) -

## TENNESSEE

East Tennesse State University
Johnson City 37601
-; -. (E) -

State Technical Institute at Memphis Memphis 38134 A; EE (W) -

University of Tennessee at Knoxville Knoxville 37916 M D, Ch E, C E, (E,H) 10

Vauderbilt University
 Nashville 37240
 B M D: Env Eng: (A,W,E) 12





## TEXAS.

Lamar University
Beaumont 77710
B M D Env Sci. (E) 4
North Texas State University
Denton: 76203
- - (W) -

Rice 'University Houston 77001 . -, -, (W.E) 2,

Sam Houston State University Huntsville 77340 B, Ch ApiSci (A.W,E) 6

Southern Methodist University Dallas 75222 B M. C E. Env Eng. (E) 4 Texas A & M University

College Station 77840 B M D C E Ch E. Env Eng. (H.H) 3

University of Houston at Clear Lake City
Houston 77058

B M; Api Sci (E) -University of Texas at Austin

Austin 78712 B M D, C E, (A,H S,W,E) 11

University of Texas at El Paso El Paso 79968 M D, C E. (E) 9

### **UTAH**

University of Utah A Salt Lake City 84112 M D; Ch E, (E,A,W) 4

Utah State University
Logan 84321
-; -; (W) -

## VERMONT

Lyndon State College Lyndonville 05851 B, AplSci (E) 41

Norwich University Northfield 05663 B; Eng; (E) 6

· University of Virginia

## VIRGINIA

Charlottesville\_ 22903

B M D. C E, M E; (E) 4

Virginia Polytechnic Institute

Blacksburg 24071

B M D; C\*E; (W,E) 7

Wythevine Community College Wytheville 24382-A, Eng; (E) 4

## WASHINGTON

Central Washington State College • • Ellensburg 98926 BM; ApISci (E) 4

Hexiey College of Environmental Studies (Division of Western Washington State College) Bellingham 98225 BM; Ch ApISci (A,W,E,H,S) 64 University of Washington.
Seattle 98195
BMD; CE, H (A,W,E,H,S) Washington State University

Washington State University Pullman 99163 M D; C E; (E,A,W) 10

## WEST VIRGINIA

West Virginia College of Graduate Studies Charleston 25304 M; Env Eng Apl Sci (A,W,E) – West Virginia University Morgantown 26506

## -: -: (A,S,W,E) -

Marquette University Milwaukee 53233 B M D; M E, Ch E, C E; (W,E) 1

Milwaukee Area Technical College Milwaukee 53202 -. Env H, (H) -

Northland College Ashland 54806 ♥ B; ApIScir(E) - \*>

University of Wisconsin — Green Bay Campus Green Bay 54302 BM, – (A,W,E,H,S) 248

Madison Campus Madison 53706 -; -, (A,W) -

Milwaukee Campus Milwaukee 53201 B M D; Eng; (E) 20

University of Wisconsin Stevens Point Campus Stevens Point 54481 BM; AplSci (W,E) –

## WYOMING

University of Wyoming Laramie 82070 B M D; C E; (E) 4

## CANADA ONTARIO

University of Toronto
Toronto 181
B M D; Env E, (S,E,A) –
University of Western Ontario
London 72
M D; Eng; (E) 10
Coniversity of Windsor
Windsor
M D; Ch E; (E) 5

## QUEBEC

Sir George Williams University
Montreal
-; Env E; (E) -

## government agencies in environmental management

Atomic Energy Commission Division of Environmental Protection Washington, D.C. 20545

Department of Agriculture
Forest Service
Soil Conservation Service
Agricultural Rosearch Service
Washington, D.C. 20250

Citizens' Advisory Committee on Environmental Quality 1700 Pennsylvania Avenue, N.W. Washington, D.C. 20006

United States Civil Service Commission Washington, D.C. 20415

Department of Commerce
Economic Development Administration
Maritime Administration
National Oceanic and Atmospheric Administration
Sea Grant Program
Ocean and Charting Service
Marine Fisheries Service
Oceanic Technology Center
Atmospheric Technology Center
Environmental Satellite Center
Weather Service
Geophysical Monitoring Service
Environmental Research Laboratories
Washington, D.C. 20230

Council on Environmental Quality, Executive Office of the President 722 Jackson Place, N.W. Washington, D.C. 20006

Department of Defense Army Corps of Engineers The Pentagon Washington, DC. 20310 Naval Oceanographic Office Washington, D.C. 20390

Environmental Protection Agency
Air Pollution Control Office
Pesticides Office
Radiation Office
Solid Wastes Management Office
Water Quality Office
Office of Education and Manpower
Planning
Washington, D.C. 20460

Department of Health, Education, and Welfare
Food and Drug Administration
Washington, D.C. 20201

Office of Education, Environmental Education Center
Washington, DC. 20202



Request, "25 Technical Careers You
Can Learn in 2 Years or Less."

National Institute of Environmental
Health Services
Research Tuangle Park, North Carolina 27709

## Department of Housing and Urban Development

Office of Urban Technology and Research

Urban Management Assistance, Administration

Urban Transportation Administration Washington, D.C. 20410

Department of the Interior
Office of Minerals and Solid Fuels
Office of Oil and Gas
Office of Saline Water
Office of Coal Research
Office of Water Resources Research
Fish and Wildlife Service
National Park Service
Bureau of Mines
Geological Survey
Bureau of Land Management
Bureau of Outdoor Recreation
Bureau of Reclamation
Washington, D.C. 20240

## Department of Labor

Manpower Administration
Bureau of Labor Statistics
Washington, D.C. 20210
Request. leaflets on environmental
careers (be specific) from the 1650
series.

National Science Foundation
Division of Environmental Sciences
Division of Undergraduate Education
in Science

Office of Economic and Manpower Studies

Program of Interdisciplinary Research Relevant to the Problems of Our Society Washington, D.C. 20550

ACTION (Peace Corps) 806 Connecticut Avenue, N.W. Washington, D.C. 20525

Smithsonian Institution
Office of Oceanography and Limnology

Office of Ecology Smithsonian Institution Press Washington, D.C. 20560

Department of Transportation
United States Coast Guard
Federal Aviation Administration
Federal Highway Administration
Office of High Speed Ground Transportation
Urban Mass Transportation Administration
Washington, D.C. 20590

Water Resources Council 1025 Vermont Avenue, N.W. Washington, D.C. 20005

## sources of career information

The following organizations have pamphlets and other material relating to specific environmental fields available upon request For the most part, the materials are free when limited to single copies. Larger volumes usually require a nominal fee.

## Agriculture

American Society of Agricultural Engineers 2950 Niles Road St. Joseph, Michigan, 49085, Request "Did You Ever Wish You Could Change the World?", "Agricultural Engineering and You", Agricultural Engineering The Profession with a Future," all free

## Anthropology

American Anthropological Association 1703 New Hampshire Avenue, N.W. Washington, D.C. 20009 Request: "What Is Anthropology?", free, "On Becoming an Anthropologist," \$.25.

## Architecture

The American Institute of Architects' 1735 New York Avenue. N.W., Washington, D.C. 20006
Request general career information, free

American Society of Landscape Architects, Inc. 1750 Old Meadow Road McLean, Virginia 22101 Request: "Landscape Architecture: A Professional Career in Land Planning", list of accredited schools in Tandscape architecture, free.

Career Discovery Program
Harvard University Graduate
School of Design
Cambridge, Massachusetts 02138

## Conservation Education

Conservation Education Association Box 450 Madison, Wisconsin 53701 Request. general career information, free

## Ecology

Ecological Society of America c/o Dr. J. Frank McCormick, Secretary University of North Carolina Chapel Hill, North Carolina 27514 Request vocational guidance booklet, free.

## Environmental Biology-

American Institute of Biological Sciences
1401 Wilson Boulevard
Arlington, Virginia 22209
Request general career information,
free

Environmental Health Technician National Sanitation Foundation NSF Building

Attn Educational Division
Ann Arbor, Michigan 48105
Request, "Manpower Information on Environmental Technicians, free.

## Environmental Jourdalism

## **Environmental Sanitation**

National Environmental Health
Association
1600 Pennsylvania
Denver, Colorado 80203
Request: "The Environmentalist",
free.

## Fisheries Management

American Fisheries Society
1319 18th Street, N.W.
Washington, D.C. 20036
Reduest. 'Fisheries as a Profession,'
free.

Marine Technology Society 1730 M Street, N.W. Washington, D.C. 20036 Request Career Kit

## Forestry

American Forest Institute 1619 Massachusetts Avenue, N.W. Washington, D.C. 20036 Request "Careers in Forestry," "Should You Be a Forester" fist of schools, free.

Society of American Foresters 1010 16th Street, N.W. Washington, D.C. 20036 Request: "Ask Any Forester", list of approved schools, free

## Geography

Association of American Geographers 1/10 16th Street, N.W. Washington, D.C. 20009 Request: "Geography as a Professional Career," free.

## Geology

American Geological Institute
2201 M. Street, N.W.
Washington, D.C. 20037
Request: "Manpower Supply & Demand in Earth Science, 1967-1974": "Direction of Geoscience Departments", and sample copies of the magazine Geotimes, all free.



## Geophysics

American Geophysical Union
1707 L Street, N.W
Washington, D.C 20037
Request "Geophysics The Earth in
Space. Prepared Especially for
High School Students, Science
Teachers, and Vocational Guidance Counselors," free.

## Health-Related Professions

American Public Health Association 1015 18th Street, N W Washington, D.C. 20036 Request list of publications, free.

### Medicine

American Medical Association 535 North Dearborn Street Chicago, Illinois 60610 Request "Horizons Unlimited, \$50

## Meteorology

American Meteorological Society - 45 Beacon Street
Boston, Massachusetts 02108
Request "The Challenge of Meteorology," illustrated, 16-page booklet, "College and Universities in the United States and Canada Having Degree Programs in Meteorology, 1970 list, "Education and Career References for Students and Teachers, 1970 list, all free.

## **Outdoor Recreation and Parks**

National Recreation and Park Association 1601 N Kent Street Arlington Virginia 22209 Request Where the Action Is, free

## **Public Works**

American Public Works Association 1313 East 60th Street Chicago Illinois 60637 Request Career Opportunities in Public Works free

## Resource Management

The Gonservation Foundation 1717 Massachusetts Avenue, N W Washington, D C 20036 Request information on academia.

## Range Management

American Society of Range Management 2120 South Birch Street Denver, Colorado 80222 Request general career information, free.

### Socialog

American Sociological Association 1722 N Street, N.W. Washington, D.C. 20036 Request "Career in Sociology," free.

## Soil Conservation

Soil Conservation Society of America 7515 N.E. Ankeny Road Ankeny, Iowa 50021 Request "Careers in Conservation," free, "Conservation Careers," 33page collection of reprints, \$1.50.

American Society of Agronomy 677 South Segoe Road Madison, Wisconsin 53711 Request: "Careers in Agronomy, Crop Science, Soil Science," free.

## Statistics: Mathematics

American Statistical Association 806 15th Street, N.W. Washington, D.C. 20005 Request Careers in Statistics, free

## Urban Planning

American institute of Planners 1776 Massachusetts Avenue, N W Washington, D C 2003 Request "The Challenge of Urban Planning, free

Urban Coalition
2100 M Street, N W
Washington, D C 20006
Request general career information, free

## Water Pollution

Water Pollution Control Federation 3900 Wisconsin Avenue, N W Washington, D C 20016 Request Careers in Water Pollution Control, free

## Wildlife Management

The Wildlife Society
3900 Wisconsin Avenue, N W
Washington, D C 20016
Request general career information,
free.

## Wildlife Conservation .

The Nature Conservancy
1800 North Kent Street /
Arlington, Virginia 22209
Request general career information,
free

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