Securing a Future for Yourself and the Planet:

Online Graduate Degrees in the Environment

by Kat Godfrey

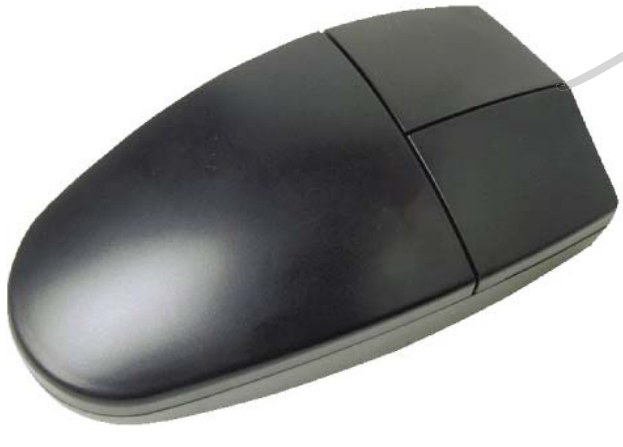
These days it seems there are attempts to make every aspect of life greener—from every line of business to every chosen lifestyle—and institutions of higher education all over the United States are doing their best to keep up with a burgeoning demand for environmental professionals.

This environmental awakening and its ensuing transformation of priorities has been so far-reaching that those searching for graduate programs in the environment vary widely from mid-career professionals needing to acquaint themselves with environmental management and ethics, to recent undergraduates resolving to be part of the solution, to environmental professionals just trying to keep up in this fast-evolving field.

With so much of this audience occupied with careers, family and countless other commitments, the demand for environmental programs offered through distance education has mushroomed, as have college and university attempts to meet this very critical need. Web-based education specifically offers a more convenient and efficient way to earn college credit, allowing students to continue to work and travel while participating in classes by posting responses to online discussion boards every few days.

Since online courses are in particular demand, institutions are finding that in a field so directly concerned with the physical world, it can prove a real challenge to supply programs online that have the same emphasis on applied knowledge as typical graduate coursework. Online degrees, while good for those professionals who already have experience, may not be the best bet for undergraduates.

Many aspiring environmental professionals "find they need experience to get a paying job working for the environment, but the kind of experience they'll need depends on what they are trying to do," says Cindy Kang, Associate Director of Green Corps, an organization dedicated to giving future environmental leaders the training necessary for success. Real leadership needs to be demonstrated, especially for aspiring advocates who must practice their skills on the ground, says Jesse Littlewood, Green Corps' Recruitment Director. If we are to make real progress in saving the planet, "the right people who make the right decisions have to get out there and communicate their ideas with the public."



By requiring students to take on community projects, company management plans, internships, and strategically-oriented theses and research papers, however, many institutions are finding valuable ways to provide a practical component to the virtual classroom. Multiple universities will be posting their alumni's final projects on the worldwide web starting this year.

While online education offers convenience and often a better price tag than its on-campus counterpart, it requires discipline, motivation, and strong writing skills as students are graded in large part on the quality and frequency of their participation in web-facilitated discussions. "Some students may also miss the personal connections fostered in the traditional classroom setting," says Michael McGuire at the University of Denver, suggesting that such learners take their courses on-campus, made available in the evenings. Familiar with the stunning campus, Richard Hill, architect and alum of the University of Denver's online environmental programs, is one such student who missed the atmosphere afforded by this "mini-Princeton."

Combining on-campus with online coursework—a requirement at many institutions—helps students feel connected to the university and develop a sense of community with faculty and fellow students. Another asset that may be missed in online education is exposure to issues local to the university, although this is often offset by "exposure to the experiences of students around the country and even the world," notes Paula Demos, of the Environmental Policy and Management and Geographic Information Systems programs at the University of Denver. Enrolling in a single online course at first is a good way to try out distance education before diving into a degree program.

Online degrees are widely accepted as equivalent to those earned traditionally and transcripts rarely specify how degrees are earned. Employers focus instead on where you earned your degree, as the same faculty member typically teaches both the online and on-campus versions of a course. Many professors actually find teaching online helpful as they incorporate technology into their classrooms and because online enrollees are often professionals, allowing professors to learn quite a bit from their own students.

While only a few graduate programs in the environmental field have been made available for distance learners, they vary significantly in content, format, and requirements.

Offering a Master of Environmental Policy and Management with numerous possible concentrations as well a number of certificates, the University of Denver's online program for graduates combines the study of environmental science and technology with policy, practical applications, and ethics.

Denver's Master's degree is particularly flexible as it does not have heavy science requirements and can be completed at in as little as a year and a half or as many as five years, rather than the typical two, allowing working adults to take whole semesters off. Online classes typically register about fifteen students and are conducted through asynchronous communication (meaning you can participate at any time of the day or night), allowing students to meet class participation requirements at their own convenience.

The University of Denver's Environmental Policy and Management Program, online since 1996, recruits its instructors from the field in order to ensure that students are trained in the latest practices and is currently considering adding sustainability and alternative energy to the curriculum. Many of its students come from corporate, government and non-profit careers in the US, Africa, Asia – even Antarctica—and find that learning from each other about environmental affairs in far-off places has been an invaluable component to their online education.

If exposure to students from around the world or expertise in sustainability appeals to you, the United Nations University's Global Virtual University (GVU) offers both with an online Master in Global Environment and Development Studies with possible concentrations in Development Management

Online Grad Programs (from page 7)

and Environmental Information Management, as well as stand-alone courses offered by partner universities, many of which are in the developing world.

The UNU-GVU Consortium on Education for Sustainable Development was established to provide "e-learning for a sustainable future" and help meet the diverse objectives of the UN Millennium Development Goals and the UN Decade of Education for Sustainable Development (2005-2015). This two-year Master's program is designed to help students understand and formulate solutions for complex issues involving the environment, development and decision-making processes by working closely with their professors through a "learner-centered pedagogy."

For those professionals looking for an intensive, multifaceted program, the prestigious Nicholas School of the Environment and Earth Sciences at Duke University offers a Master of Environmental Management (MEM) with several concentrations in addition to a Master of Forestry and Certificates in Geospatial Analysis as well as Energy and Environment. Combining online with traditional learning since 2004, the two-year program teaches through written and electronic formats, web conferencing, case studies, five weeklong intensive on-campus sessions, and even a workshop in Washington, DC where students learn from prominent leaders in the private, public and not-for-profit sectors.

Another renowned program is the Master of Science in Environmental Sciences and Policy available through Johns Hopkins University. With a few onsite course requirements, the program can be completed in one and a half to three years, and emphasizes case studies and student projects.

If you are looking for a leader in distance education, the University of Maryland's University College has been providing distance learning since Word War II and now provides its Master of Science in Environmental Management program entirely online. It offers entirely asynchronous online classes, supplying its worldwide student population with flexibility and a proven web-based course management system available only through the University.

Pennsylvania State University has been a pioneer in distance education since 1892, once utilizing radio and postal systems, and now uses multiple technologies to offer more than fifty distance education programs to learners from all seven continents through its online "World Campus". Its Master of Geographic Information Systems helps fulfill the GIS Certification Institute's achievement points requirement for certification as a geographic information systems professional and allows you to earn a post-baccalaureate Certificate in GIS—also offered as a standalone option online. World Campus programs are also supported by a full range of student services that one often misses in distance education, such as library access, assessment, and access to advisors.

If you are considering a degree in Natural Resources, the Virginia Polytechnic Institute and State University's College of Natural Resources is a good place to start. Ranked among the best in the country, the College of Natural Resources is nationally recognized in the areas of forestry, forest products, fisheries and wildlife sciences, and geography and offers a Master's and a Certificate in Resource Management. Having transformed its twenty-five-year-old correspondence course training program into an entirely web-based program, these degrees are supported by the US

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Online Resources

Helpful web tools for finding online programs in the environment are generally incomplete, but are developing quickly. One such tool is the new and growing Natural Resources Distance Learning Consortium Portal, which provides detailed information on current certificate and degree programs in natural resources management that are available through web-based course delivery (nrdlc.iddl.vt.edu).

To search for online graduate programs in the environmental field more generally, try www.distance.gradschools.com.

While other good search engines for programs in environmental studies do not yet distinguish between distance learning and on-campus options, they can prove very helpful as you decide what works best for you. A few worth trying include:

- The Directory of Environmental Programs at ncseonline.org/dep, where you can search over 275 programs listed by subject, school, location or degree.

- Brown University's Environmental Programs List, at envstudies.brown.edu/dept/espgm.htm, includes environmental programs in the U.S., Canada, Australia, the UK, and other countries.

- The Sustainability Degree Programs tool, at www.ulsf.org/resources_sust_degrees.htm, is made available by the Association of University Leaders for a Sustainable Future. The directory contains interdisciplinary degree programs in which sustainability or sustainable development topics and issues are a major theme.

Some top online graduate programs in the environmental field include:

Arizona State University - East (www.etmonline.asu.edu/degreePrograms/master.cfm):
- Master of Science in Technology degree with a concentration in Environmental Technology Management

Duke University (www.nicholas.duke.edu/programs/continuing.html):
- Master of Environmental Management
- Master of Forestry
- Certificate in Energy and Environment
- Certificate in Geospatial Analysis

Green Mountain College (www.greenmtn.edu/graduate_studies/ms_es/):
- Master of Science in Environmental Studies

Johns Hopkins University (www.advanced.jhu.edu/academic/environmental/accelerated):
- Master of Science in Environmental Sciences and Policy program

Penn State World Campus (www.worldcampus.psu.edu/index.shtml):
- Master of Geographic Information Systems
- Certificate in Geographic Information Systems

Prescott College (www.prescott.edu/academics/map/areas.html#es):
- Master of Arts in Environmental Studies

Rochester Institute of Technology (www.rit.edu/~625www/online/95.php3):
- Master of Science in Environmental, Health and Safety Management

Southern Methodist University (www.engr.smu.edu/academic/distance.html):
- Master of Science in Environmental Engineering
- Master of Science in Environmental Science

United Nations University's Global Virtual University (www.gvu.unu.edu):
- Master of Global Environment and Development Studies

University of Denver (www.universitycollege.du.edu/program/academic/oncampus/epm):
- Master of Environmental Policy and Management
- University of Idaho (www.cnrhome.uidaho.edu):
- Master of Natural Resources
- Certificate in Restoration Ecology
- Certificate in Fire Ecology, Management, and Technology

University of Maryland/University College (www.umuc.edu/grad/envm.shtml):
- Master of Science in Environmental Management

University of Montana (wmdep.wilderness.net/default.htm):
- Wilderness Management Distance Education Program

University of Newcastle (www.newcastle.edu.au/program/11361):
- Master of Environmental and Business Management

University of Tennessee at Martin (www.utm.edu/departments/caas/msaom):
- Master of Science in Agricultural Operations Management

Virginia Polytechnic Institute and State University (www.cnr.vt.edu):
- Master of Natural Resources
- Certificate of Graduate Study in Natural Resources

Online Grad Programs

Forest Service and the Department of the Interior's Bureau of Land Management, giving them an edge in the field of public land management.

Determined to provide online courses that are equivalent to their on-site counterparts, Gary Evans, Director of the Natural Resources Distance Learning Consortium (an initiative of Virginia Tech), noted the difficulty involved with translating natural resources courses in particular into the distance learning formats that are required to meet growing demands of working professionals.

According to a study published by the Renewable Natural Resources Foundation, an estimated 20,000 professionals will have retired from federal positions in natural resources between 2000 and 2007.

To meet this need, a small but growing group of natural resources colleges are working together to provide the broadest possible spectrum of online courses in natural resources through the Natural Resources Distance Learning Consortium. By enrolling at any Consortium member's university, a student can take about half of their courses from any other consortium university's online courses. To date this Consortium includes Virginia Tech, the University of Idaho, Northern Arizona University, the University of Montana, Stephen F. Austin University, and Penn State.
Recognizing the need for experiential education, the Consortium is also developing the concept of a three-credit "hybrid education module," including an online introductory module, a module of field activities, and an online follow-up module centered around field reports and conclusions.

The University of Idaho also offers a well-rounded non-thesis Master of Natural Resources online as well as Certificates in Restoration Ecology and Fire Ecology, Management, and Technology.

For Wilderness Management, a distance education program offered by the University of Montana and the Arthur Carhart National Wilderness Training Center can be taken online or by correspondence and requires no wilderness management experience. For those in the field of agriculture, the University of Tennessee's growing distance education programs now include the Martin campus' Master of Science in Agricultural Operations Management, offered completely by distance delivery.

Graduate degrees in the environmental field train students to be more than data-gatherers, preparing them to be managers, consultants, scientists, liaisons and more. Still, programs differ in what they teach and prepare students for, so the most important thing to consider is what you want to go on to do. If you are interested in environmental advocacy for instance, you should look for a program that allows you cultivate your leadership skills though community initiatives. Meanwhile, local positions in assessment and planning may require more scientific, regional expertise.

Some important questions to ask yourself when considering an online graduate program include:

- What kind of degree or coursework is sufficient for your current or desired position?
- How much time and motivation do you have?
- Who is the program designed for? (Early and mid-career professionals, teachers, government employees, business people, recent graduates with particular degrees, leaders of non-profit groups, etc.)
- Are there any on-campus or in-the-field sessions or projects required?
- Does the program have experiential requisites?
- How much is tuition and would your organization sponsor you?
- Do online students have access to all the resources available to on-campus students?
- Are courses offered in an asynchronous format or will you need to participate in discussions at specified times?
- Are instructors supported by experts in online education?
- What have the programs' graduates gone on to do?

Dozens of choices are available; students simply need to match themselves with the best program for their particular situation and future plans.

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Biology & Ecology

and water quality measurement, laboratory efforts will be directed at molecular (e.g. PCR) and microbiological studies. Please note in your resume, previous research experience, any taxonomic expertise you might have, potential dates of availability, references, and contact information (phone and e-mail - be sure to include alternative phone and e-mail, if you will be away from campus after the end of the semester). Send resume to npavlovic@usgs.gov. Close Date: Until Filled.

Associate Position - Crayfish Ecology. A research associate position is available immediately in the Department of Biological Sciences at Florida Atlantic University working in the labs of Nathan Dorn and John Volin. The associate will be responsible for leading the field and data management component of an ongoing study on crayfish ecology in the Florida Everglades. 60-70% of time will be spent planning the field schedule, leading a sampling crew, flying in helicopters, operating/maintaining an airboat, and conducting experiments. 30-40% of time will be spent in the lab and on the computer working on data management, analysis, and writing. Applicants should have a MS/MA or higher in ecology, fisheries, or a related discipline. Applicants must be able to work with minimal supervision and be comfortable working in a sometimes harsh environment. Experience in aquatic ecology, working with GIS/GPS, and managing/analyzing large datasets are desirable. Applicants must be willing to commit to the position for a minimum of one year. Starting salary from 30-34K (plus benefits) depending upon qualifications. Applications should contain a cover letter, CV/resume, and contact information for three references. Please email application materials to Dr. Nathan Dorn, ndorn1@fau.edu, Department of Biological Sciences, Florida Atlantic University, Davie, FL 33314, USA. Close Date: Until Filled.

Field Research Assistants - Four (4) needed for continuation of long-term studies of bird responses to fire and fuels management and riparian bird community dynamics in the mountains of central Nevada. Primary duties include daily morning surveys (point counts) and vegetation sampling at survey locations. Great opportunity to explore these little-known, spectacular mountain ranges (Shoshone, Toiyabe, Toquima, and Monitor). Duration approximately 5 weeks (29 May through 30 June) with few days off, but some afternoons free. Research assistants will work independently and in small teams (two- three), with field vehicle provided. Camping at primitive field sites will be the norm, with occasional access to small-town motels or Forest Service housing with hot shower and basic kitchen facilities. Applicants must have demonstrable experience and proficiency in identification of western birds by sight and sound; preference given for bachelor's or advanced degree in biology, ecology, or related field. Applicants must be in good physical condition, able to work independently in rugged and remote locations, and willing to work long hours as necessary. Applicants also must possess good organizational skills, including ability to collect and maintain accurate hard-copy data records, and a valid driver's license with a good driving record and off-road and 4WD experience. Sense of humor and patience required; personal 4WD vehicle a plus (field use will be compensated). Compensation approximately $3000, but negotiable and dependent on experience. Send cover letter and resume or CV (with names, telephone numbers, and email addresses of three references) to Erica Fleishman (fleishman@nceas.ucsb.edu), National Center for Ecological Analysis and Synthesis, Santa Barbara, CA AND to David Dobkin (dobkin@hderi.org), High Desert Ecological Research Institute, Bend, OR. Close Date: Until Filled.

Coordinator - The Department of Biology invites applications for Laboratory Coordinator, a 12-month appointment. A minimum of a M.S. in biology is required. This person will serve as coordinator for biology core and advanced labs for majors and non-majors, focusing primarily on ecological, organismal and evolutionary biology during the fall and spring semesters and summer session. This job involves purchase, preparation, and setup of laboratory materials along with some instruction, primarily in laboratories. Preference will be given to individuals with experience coordinating and/or teaching introductory biology labs. The successful applicant will supervise undergraduate students and teaching assistants and work closely with other biology faculty in curricular and pedagogical initiatives and their implementation. Collaborative research with other faculty is possible. Submit cover letter, curriculum vitae, names of three persons from whom recommendations may be requested, and statement of teaching philosophy as part of an electronic application. Close Date: Until Filled.

Post-Doctoral Researcher - I have two openings in my lab at the University of Nevada, Reno: a post-doctoral researcher (PhD required) and a research technician position. The main project for both positions is to conduct restoration trials with native species in former agricultural lands. This project is part of a large, multi-disciplinary, multi-investigator project at UNR and the Desert Research Institute (DRI). This work is ongoing, and the ideal start date for both positions is as soon as possible. Post-Doctoral Position: I am looking for a plant population biologist interested in genetic issues in restoration. In addition to the primary restoration experiments, I am looking for someone to take part in ongoing projects in my lab, and develop new experiments and proposals based on our mutual interests. My research includes work on the population biology of native and invasive Great Basin species, rapid evolution of adaptive traits, and basic questions involving plant-herbivore interactions. The applicant could have interests in ecological genetics (in field and common garden settings) or molecular lab techniques, though a motivated individual with a variety of interests in plant ecology would also fit in well. Postdoc salary is 35k-40k + benefits, for 18 months, with possibilities for extension. Tecnician Postion: This position will have many of the same elements described above, and will work closely with the post-doc. A PhD is not required. Technician salary is 25k-30k, + benefits, for 18 months. Please send a CV, short email summarizing your background, current research interests, preferred start date, and email address of three professional references to Elizabeth Legere (leger@cabnr.unr.edu). Close Date: Until Filled.

Riparian Ecologist/Community Ecologist - Post-Doctoral Research Associate, Department of Forest Science, Oregon State University. Starting Date: May 1, 2007. Responsibilities: Compile, summarize, and interpret research on riparian ecology and forest management strategies conducted in the Cooperative Forest Ecosystem Research (CFER) program (35%). Evaluate CFER research in context of published literature on riparian ecology and management strategies (20%), and write synthesis paper outlining knowledge gaps and research needs for understanding effects of contemporary riparian forest management practices in western Oregon (20%). Analyze landscape management scenarios developed by the Landscape Scenario Analysis Project (LSAP) and assess the potential effects of these scenarios on riparian and aquatic food webs (15%). Cooperate with other CFER researchers to facilitate related research activities (10%). Funding currently available for 18 months. Required Qualifications: Ph.D. in Ecology or related discipline. GIS and statistical analysis skills. Demonstrated experience and expertise in riparian ecology and management. Ability to work independently, utilize library resources, and communicate results in form of professional presentations and publications. Experience conducting research in team-oriented, interdisciplinary academic setting. Experience with designing, developing and maintaining large relational databases. Desirable Qualification: Familiarity with ecological conditions and silvicultural practices in forests of the Pacific Northwest. Demonstrated commitment to promoting and enhancing diversity. Experience in MS SQL Database server and MS Access. Experience in relational probabilistic models. Employment Conditions: Full-time, fixed term 12-month faculty position. Re-appointment is at the discretion of the Dean. Full-time annual salary is $35k–$45k depending on experience and qualifications. Medical, dental, and life insurance available; staff tuition privileges for employee or a dependent at an Oregon University System school (restrictions apply), annual leave, and sick leave. For More Information: Contact David Hibbs, Department of Forest Science, 321 Richardson Hall, Oregon State University, Corvallis, Oregon, 97331-5752; phone: 541-737-6077; email: david.hibbs@orst.edu. To Apply: Go to http://jobs.oregonstate.edu and electronically submit a letter of application with statement of interest, vitae (resume), examples of your publications if available, unofficial copies of transcripts, and two letters of references. Close Date: Until Filled.

Ecology Positions - I have two positions open in my lab at the University of Nevada, Reno, to work on the ecological consequences of potential water right transfers for agriculture and surrounding ecosystems in Nevada's Walker River Basin. 1. Post-Doctoral Research Associate: Dynamic ecosystem modeling of riparian plant community responses to land use change. 2. Research Associate / Spatial Analyst: Spatial modeling and risk assessment analysis. These positions are part of a large, multi-disciplinary, multi-investigator project involving UNR and the Desert Research Institute. The post-doctoral research associate will develop or adapt an ecological modeling approach to forecast plant community responses to changing water allocations and agricultural practices. There will be opportunity to develop a research project addressing the broader implications of changing land and water use practices for dynamics of plant communities and riparian landscapes, particularly with regard to invasive and weedy plant species. The spatial analyst will apply spatial modeling and remote sensing methods to scale measures of evapotranspiration, soil erosivity, salinization potential, soil temperature and ANPP from experimental field plots to the greater Walker River Basin. Applicants for the post-doctoral position must have obtained a Ph.D. within the past 5 years in a relevant scientific discipline, and should have prior experience in ecological simulation modeling, preferably with an ecophysiological or ecosystems emphasis. Salary range is $38k -$42k DOE, + health and retirement benefits. Applicants for the spatial analyst position will preferably have an M.S. degree (B.S. minimum) in a relevant field (ecology, geography, natural resources, environmental science, etc.), with a GIS or remote sensing emphasis. Strong knowledge of ArcGIS software and statistics is required. GIS programming skills, geostatistical skills, and remote sensing are highly desirable. Salary range is $32k - $36k DOE, + benefits. Both positions are