University of San Carlos
Josef Baumgartner Learning Resource Center

Pathfinder

Environmental Science

www.library.usc.edu.ph

August 2014

Introduction

A pathfinder is a guide to the resources in a particular subject area in the library. It is an instruction/research tool designed to encourage researchers to do a self-directed use of the library.

The Science and Technology Library provide pathfinders basically to support students and faculty in their search for recorded literature and resources available at the USC Library System and accessible on the Net.

Should you have comments, questions and suggestions on this pathfinder, please contact Science and Technology Library at 2300100 local 269 or email to cllanticse@usc.edu.ph

Key Term : Environmental Science

Scope : Environmental science is the study of the interaction of the living and non-living components of the environment with special emphasis on the impact of humans on these components. Environmental science is a very dynamic area of research and involves many different fields of study. In the sciences, for example, biologists study biodiversity, and ecologists study how plants and animals interact with their environment. Geologists study the formation, history, structure, and physical composition of the earth. Chemists study the composition of both living and non-living material, and the reactions controlling the distribution of material. Physicists contribute expertise on physical laws, such as thermodynamics, governing both biotic and abiotic components of the environment. engineers, mathematicians, and computer scientists are involved in important technical innovations as well as computer modeling. Biomedical expertise is required to assess health implications of environmental problems, such as pollution and disease.

Use For : Environmental Science

Broader Term

- Science

Narrower Term

- Communication in the environmental sciences
- Earth sciences
- Ecology
- Environmental management

<u>FOR BOOKS</u>

BROWSE the library shelves looking for books with these numbers

363.7

301.3105

628

910.72

363.73028553

333.72

577

333.7

372.357044

363.7003

628.078

For more headings on your subject, check the Library of Congress List of Subject Headings using these subjects and search the OPAC for availability of library materials:

Environmental sciences -- Philosophy

Environmental sciences – Social aspects

Environmental sciences -- Research

Environmental sciences – Statistical methods

Environmental sciences – Study and teaching

Environmental sociology

Environmental protection

Environmental ethics

Environmentalism

Human ecology

Social ecology

Ecology

Don't forget these books at the GENERAL REFERENCE STACK AREA:

Blanchfield, Deirdre S.[project ed. (2011). *Environmental encyclopedia*. 4th ed. Detroit : Cengage Learning. 363.7003/En89

Chatterjee, Sanjoy. *Encyclopaedia of environmental science*. (2006). New Delhi : Anmol Publication. 363.7003/C39

Collin, Robin Morris. (2010). *Encyclopedia of sustainability*. Santa Barbara, Calif. : Greenwood Press. 333.7203/C69

Lehr, Jay, & Lehr, Janet., eds. (2000). *Standard handbook of environmental science, health, and technology*. N.Y. : McGraw-Hill. 363.7/St24

Kirk-Othmer chemical technology and the environment. (2007). Hoboken, N.J. : John Wiley & Sons. 628.03/K63

McGraw-Hill concise encyclopedia of environmental science. (2005). New York : McGraw-Hill. 363.7003/M17

McGraw-Hill dictionary of environmental science. (2003). New York : McGraw-Hill. 628/M17

Porteous, Andrew. (2008). *Dictionary of environmental science and technology*. 4th ed. Chichester : Wiley. 628.03/P83

Wyman, Bruce C. & Stevenson, L. Harold, eds. (2001). *The Facts on File dictionary of environmental science*. New York, NY : Checkmark Books. 363.7003

FOR SUBJECT REFERENCES

Blanchfield, Deirdre S. ed. (2011). *Environmental encyclopedia*. 4th ed. Detroit : Cengage Learning. 363.7003/En89

Cunningham, William P. (2012). *Environmental science : a global concern*. 12th McGraw-Hill International edition. New York : McGraw-Hill. 363.7/C91

Cunningham, William P. (2013). *Principles of environmental science : inquiry & applications*. 7th McGraw-Hill International Edition. New York, NY : McGraw-Hill. 363.7/C91

Eathorne, Richard. Ed. (2014). *Annual editions : environment 13/14*. New York : McGraw-Hill. 301.3105/An78en

Ellis, Brian "Fox". (2011). *Learning from the land : teaching ecology through stories and activities*. 2nd ed. Santa Barbara, Calif. : Libraries Unlimited. 372.357044/El59

Enger, Eldon D. (2013). *Environmental science : a study of interrelationships*. 13th ed. New York : McGraw-Hill. 363.7/En32

Harris, Frances M. A .ed. (2011). *Global environmental issues*. 2nd ed. Chichester, UK: Wiley-Blackwell. 363.7/G51

Helsel, Dennis R. (2012*). Statistics for censored environmental data using Minitab and R.* 2nd ed. Hoboken, N.J. : Wiley. 363.73028553/H36

Miller, George Tyler. (2013). *Environmental science*. 14th International Edition. Australia : Brooks/Cole, Cengage Learning. 363.7/M61

Montello, Daniel R. (2013). *An introduction to scientific research methods in geography & environmental studies.* 2nd ed. Thousand Oaks, California : SAGE. 910.72/M76

Myers, Norman. (2014). *Environmental issues & solutions : a modular approach*. IE. Australia : Brooks/Cole Cengage Learning. 363.7/M99

Sarkar, Sahotra. (2012). *Environmental philosophy : from theory to practice*. Chichester, West Sussex : Wiley-Blackwell. 333.72/Sa24

Wainwright, John, & Mulligan, Mark, Dr., eds. (2013). *Environmental modelling : finding simplicity in complexity.* 2nd ed. Chichester, West Sussex : Wiley. 628/En89

Withgott, Jay. (2011). *Environment : the science behind the stories*. 4th International ed. Boston : Benjamin Cummings. 333.7/W77

Wright, Richard T. (2011). *Environmental science : toward a sustainable future*. 11th ed. San Francisco, Calif. : Benjamin Cummings. 363.7/W93

FOR PERIODICALS

Try the Online Databases via your ISMIS account to find articles on your subject:

- ACM Digital Library
- Cambridge Books Online (ebooks)
- CD Asia Online
- EBSCO HOST
- Gale Virtual Reference Library
- iG Publishing (e-Books)

- Journal of Chemical Education
- LEXIS NEXIS
- Philippine Journals Online
- Philippine Periodical Articles
- Proquest 5000
- ProQuest eLibrary Elementary
- SCIENCE DIRECT
- SCOPUS
- Springer Link (e-Journals)
- Web OPAC

Selected Internet Resources-The Environment

EnviroLink Network: the online environmental community
http://www.envirolink.org/
One of the largest worldwide environmental clearinghouses. Includes news, animal rights, the GreenMarketplace, and hosts environmental non-profits.

EnviroLink Library
http://library.envirolink.org/
Searchable by topic; links to organizations and publications.

National Council for Science and the Environment
http://www.cnie.org/
A non-regulatory environmental science and education agency. Includes listings of conferences, online environmental journals, State of the Environment reports, and local environmental information.

National Library for the Environment
http://www.cnie.org/nle/
Includes access to Congressional Research Service environmental reports. Choose Population & Environmental Linkages to find Environmental RouteNet (Cambridge Scientific Abstracts' gateway to bibliographic databases and web sites).

Virtual Library of Ecology and Biodiversity
http://conbio.net/vl/
Over 1000 environmental resource links.

Librarians' Index to the Internet: Environment Topics
http://lii.org/search/file/environ
Searchable topics arranged by category. Links to directories, databases, and subject-specific sites.

U.S. Environmental Protection Agency (EPA)
http://www.epa.gov/
- under publications, find the National Environmental Publications Internet Site (NEPIS) to search for and view over 7000 EPA publications. Zip code search for conditions in specific areas is available.

University of Georgia Environmental Safety Services Right To Know Program
http://www.esd.uga.edu/
Click on Environmental Safety Services, then MSDS to see links to sources of Material Safety Data Sheets and to sources of information sheets on pharmaceuticals and pesticides.

Virtual Library of Ecology and Biodiversity
http://conbio.net/vl/
Indexed links to other Web resources about endangered species, habitats, species information and news.

Pace Virtual Environmental Law Library
http://www.pace.edu/lawschool/env/vell6.html
Links to primary legal sources for US and international law. Special topics: Nigerian and Albanian environmental laws.

Google Web Directory - Environment
http://directory.google.com/Top/Science/Environment/

Yahoo! Subject Directory - Ecology
http://dir.yahoo.com/science/ecology/

Environment Sciences

Ecology WWW Page
http://pbil.univ-lyon1.fr/Ecology/Ecology-WWW.html
The Ecology WWW Place is an extensive database of ecology sites on the Internet. An excellent resource for teachers, students, and researchers.

EcoNet
http://www.igc.org/igc/econet/
EcoNet serves organizations and individuals working for environmental preservation and sustainability. Contains an environmental issue resource center with many informational links to a variety of ecology-related Web sites.

EE-Link
http://eelink.net/
EE-Link is a gopher and WWW site for environmental education. Lots of lesson plans and K-12 teacher resources. Topics include air and water quality, climate change, ecosystems, energy, plants, animal, toxins, and waste management. Teaching materials from various organizations are posted here, including audiovisual and software references. This site has it all for the K-12 classroom.

Envirolink Library
http://www.envirolink.org/library/index.html
The EnviroLink Library is a very comprehensive resource for environmental information on the Internet. This Web site is well organized, with information listed by subject and broad categories.

Illinois Natural History Survey
http://www.inhs.uiuc.edu/
The highlights of this site include centers for biodiversity, wildlife ecology, aquatic ecology, and economic entomology. This site contains good K-12 education resources for educators and their students.

Journey North
http://www.learner.org/jnorth/
Journey North is an interactive ecology web site that tracks the migrations of the following animals: Bald Eagle, Lesser Long-Nosed Bat, Caribou, Loggerhead Sea Turtle, Common Loon, Monarch Butterfly, Northern Oriole, Peregrine Falcon, American Robin, Humpback Whale, and Northern Right Whale.

South Carolina Department of Natural Resources
http://water.dnr.state.sc.us/
The SCDNR web site is an excellent resource for an ecology class. Learn all about a variety of topics ranging from wildlife management to endangered species.

Texas Environmental Center
http://www.tec.org/
This site contains Texas environmental information including pollution, water quality resources, documentaries, and more! The highlight of this web site is an Internet magazine featuring profiles and perspectives on student environmental endeavors. Teacher lesson plans on ecology topics are also found at this site.

The Butterfly Website
http://mgfx.com/butterfly/
Just about everything that you ever wanted to know about butterflies can be found here. Great graphics of butterflies. This is a good site to learn about the ecology of butterflies.

The GLOBE Program -
Global Learning and Observations to Benefit the Environment
http://www.globe.gov/
Global Learning and Observations to Benefit the Environment (GLOBE) is a worldwide network of students, teachers, and scientists working together to study and understand the global environment. Students conduct an array of measurements and observations at their schools and share their data via the Internet with other students and scientists around the world to detail an environmental picture of the globe. An excellent way for your students to contribute data to a unique ecology project on the Internet.

US Environmental Protection Agency
http://www.epa.gov/
This is the homepage for the US Environmental Protection Agency. An excellent ecology resource to learn about environmental policies and management.

Water Quality and Societies
http://www.ncsa.uiuc.edu:80/edu/RSE/RSEgreen/homepage.html
Societies is a great interdisciplinary unit that combines math and science for intermediate school age students. Excellent curricula and lesson plans that can be incorporated into a math or ecology middle school classroom.

WhaleNet
http://whale.wheelock.edu/
The WhaleNet website is dedicated to education while focusing on whales and marine research. "WhaleNet is a unique interdisciplinary, hands-on, collaborative telecomputing project to foster excitement and learning about the natural world in schools across the nation and around the globe." An excellent ecology resource for K-12 science classes. Check out "Saving Whales with DNA" and the

dataset in S.T.O.P. - "Satellite Tagging Observation Program." Good classroom lesson plans and curricular materials using datasets.

Amazing Environmental Organization Web Directory
http://www.webdirectory.com/
This site advertises itself as the "Earth's Biggest Environmental Search Engine." It gives you a choice of typing in your own search topic or choosing from the broad topic folders already listed. Example: Opening the animals folder gives you more folders to choose from eventually giving you information or contacts. Also included is a folder on education which contains many resources, including a listing of environmental education products, some of which are free. If you can think of a topic, you will probably find the information at this web site. The site is easy to navigate and could be used by both students and teachers.

Coral Forest
http://www.blacktop.com/coralforest/
Homepage for a "nonprofit organization dedicated to protecting coral reef ecosystems through education in action." Links include a map showing location of reefs throughout the world, beautiful pictures, and sample lesson plans.

USGS Science for a Changing World
http://marine.usgs.gov/fact-sheets/index.html
This site includes Fact Sheets on 28 Coastal and Marine Geology projects. The projects are very diverse. The information could be used in any 9-12 science classroom . This information would be good for demonstrating the relevance of science in everyone's life. Some fact sheets have to do with energy sources and economic impact of environmental disasters. Each fact sheet includes graphics and projects. There is nothing interactive here, but the information could be the basis for other student work.

Birds: Our Environmental Indicators
http://www.nceet.snre.umich.edu/Curriculum/toc.html
Ten complete step-by-step online activities for junior high students. Pre and post assessment, interest extensions, student labs, and additional ideas for projects. EE-link for environmental issues studying birds mainly in the Great Lake Region.

Water on the Web (WOW)
http://wow.nrri.umn.edu/
WOW provides high school and undergraduate students with an opportunity to learn science, mathematics, and technology while using near real-time and archived water quality data to monitor Minnesota lakes over the Internet.

The US Global Change Research Information Office - Global Change and Environmental Education Resources
http://www.gcrio.org/educ.html
This site gives educators and students (grades K-12) a chance to explore a wide variety of resources related to global climate change and other environmental education topics. This collection of resources is both multidisciplinary and international in scope making it the perfect tool to help analyze environmental issues on a large scale from various perspectives.

Monarch Watch
http://MonarchWatch.org/
Monarch Watch is an educational outreach program giving students, teachers, volunteers, and

researchers the chance to get involved with several ongoing research projects all dedicated to the study of the Monarch butterfly. Classrooms can choose to tag Monarchs, monitor larva, study Monarch size and mass, study Monarch flight patterns, or track Monarch migration. This site also provides students and educators with a multimedia gallery, reading gallery, and tips on how to start your own butterfly garden.

Global Rivers Environment Education Network
http://www.green.org/
This website is designed to provide students with a place to store their water monitoring data, track their water monitoring projects, and access educational resources needed to successfully implement a school-based water monitoring program. The Web site also allows others to view data posted for comparison.

Sea Turtle Survival League
http://www.cccturtle.org/
Track the migration path of different Sea Turtles using animated, interactive maps, adopt a turtle, download classroom activities, or contribute to discussion boards. The opportunities for both students and educators to get involved in real-time research projects centered around Sea Turtles is endless.

EPA's Explorer's Club
http://www.epa.gov/kids/
Learn more about different aspects of the environment by engaging in activities about air, water, waste & recycling, ecosystems, health & safety, and environmental issues affecting your neighborhood. In addition to the abundance of interactive resources, this EPA site offers elementary, middle, and high school students many opportunities to take action and become involved in different service learning projects.

Office of Environmental Education - North Carolina Department of Environment and Natural Resources
http://www.ee.enr.state.nc.us/
This Web site offers educators a variety of resources including information regarding environmental education field sites, support materials to facilitate hands-on learning in the classroom, information concerning professional development, elementary school resources, and middle school resources. The site also provides links to environmental education activities covering topics such as river basins and wetlands, topography, wetlands, biodiversity, ecology, groundwater, climate, soil, recycling, conservation, wildlife, water pollution, nature cycles, and airsheds. This site also contains a Web page devoted to links which help educators access environmental data in order to enrich student instruction. Examples include access links to Interactive Map Servers, NC Geographic Information Systems, and other inquiry-based learning activities that use environmental data.

EuroTurtle
http://www.ex.ac.uk/telematics/EuroTurtle/
Europe's first educational Web site for the conservation and biology of sea turtles offers students the chance to learn more about the anatomy of sea turtles, use satellite tracking to follow sea turtle migration, and to work as a conservationist at a virtual field station in the Mediterranean Sea. This site is also great for educators looking for printable resource materials such as outlines, diagrams, & identification keys to supplement a unit on sea turtles.

The Virtual Field Trip Site
http://www.field-guides.com/
This site is dedicated to providing free, high-quality field trips for the K-12 classroom. Choose from any of the pre-listed science field trips including a visit to Antarctica or the Rainforest or create your own.

Each trip also provides teachers with valuable resources such as corresponding lesson plans and study guides.

Population Connection
http://www.populationconnection.org/
This site provides educators with resources to teach students (grades K-12) about the growing threat of overpopulation. This site also offers the chance to learn how to take action and stabilize the world population at a level that can be sustained by Earth's resources. A great resource for real-time facts and data concerning population number on a national and worldwide scale.

Garbage
http://www.learner.org/exhibits/garbage/intro.html
How do we handle the disposal of solid waste, hazardous waste, or sewage? This Web site provides information on how the United States currently disposes of these types of waste and provides students with sustainable waste management options including ideas on waste reduction and recycling.

The Scorecard
http://www.scorecard.org/
This site allows students to generate a pollution report for their community based on Toxic Chemical Releases, Air Quality, Water Quality, Agriculture, and Environmental Justice. Using an interactive map, students just enter their zip code and receive a full scorecard indicating the environmental quality of their area.

Environmental News Network
http://www.enn.com/
What's making environmental news? To answer this question use this Web site to read the latest environmental headlines, test your environmental knowledge by taking interactive quizzes and polls, interact with others by searching for environmental legislation, write to the media or elected officials, or participate in an online forum.

Especially for Kids
http://response.restoration.noaa.gov/kids/kids.html
This site gives students (grades K-12) the opportunity to learn more about oil spills and hazardous chemical accidents. There are several links for project ideas, experiments, and demonstrations. In addition, links are provided to help students write reports and search other outside resources.

Students as Scientists - Pollution Prevention Through Education
http://www.uncw.edu/student_scientists/
Students as Scientists focuses on water quality issues related to North Carolina rivers. The site offers classroom students the opportunity to particpate in water quality monitoring. Students can compare their results to those of environmental scientists and to the results of other students in the state. This site also includes a map of the major NC river basins.

The ERP NC Hog Site
http://checc.sph.unc.edu/rooms/school/whole_hog/
Whole Hog is an online educational resource designed to help teachers and students explore the environmental, health, social, political and economic impacts of the North Carolina hog industry. The Whole Hog activities encourage critical thinking skills. The site is composed of five different areas including a *Teacher's Guide* room which contains information pertinent to lesson planning, a *Multimedia Resource* room which contains written materials, audiovisuals, etc, a *Let's Get Started* room which offers direct links to one of three lesson plans, a *Games, Puzzles, and*

Activities room which provides links to activities related to Whole Hog, and a *Stewardship* room which provides suggestions for how students can take environmental action steps related to the Whole Hog lessons..

Salmon Conflict Investigations
http://www.cyberlearn.com/online.htm
Students will develop essential critical thinking skills as they engage in a case study to try and find a solution that will help the salmon population recover while satisfying the needs of industry. Several links are available within the site to help students in their investigation.

Center for the Study of Carbon Dioxide and Global Change
http://www.co2science.org/
This site provides a wealth of factual reports, data and commentary on the scientific quest to determine the climatic and biological consequences of rising carbon dioxide levels in the atmosphere. The site publishes journal articles and editorials in addition to disseminating information concerning world temperatures, U.S. climate data, plant growth data, and carbon sequestration. In addition, this site provides online instructions for educators on how to conduct CO2 enrichment and depletion experiments at home or in the classroom.

US EPA Environmental Education Center
http://www.epa.gov/teachers/
This EPA (Environmnetal Protection Agency) site provides educators with links to curriculum resources, background information on different environmental topics, and other quality environmental information sites. In addition, the site provides links to programs and financial resources to help teachers and students become recognized for their hard work and good ideas. There are also links to several community service learning projects to help students apply what they learn in the classroom to real life. The site is an excellent resource to help point students toward internships and careers in the environmental science field.

REMEMBER

IF IN DOUBT asks for HELP…

Ms. Cristita L. Lanticse

Librarian

Science & Technology Library

Email: titalanticse@gmail.com; cllanticse@usc.edu.ph; clarlan@yahoo.com

For inquiries contact: 2300100 local 269 or 0917-631-5180