



**NATIONAL MARINE PROTECTED AREAS CENTER
INFORMATION EXCHANGE FOR MARINE EDUCATORS**

JANUARY 2005

This update is provided as a service by the National Marine Protected Areas Center to share information pertinent to the marine educator community. It is intended to encourage exchange of information and programs. We hope that it will also promote collaboration among the different educators addressing similar issues in their programs. Please share this email with your colleagues and constituents. If you request materials or respond to a request for information, please mention that you learned about it in the MPA Information Exchange.

The information included here has been compiled from many different sources, including SeaSpan, NSTA Express, edinfo at FREE, EE-NEWS@NAAEE, CREEC, Scuttlebutt, EEinGEORGIA, the Scout Report, and others. We have verified web addresses, but make no guarantee that they will remain active. The Department of Commerce/NOAA does not necessarily endorse or promote the views or facts presented on these sites.

To subscribe to this distribution list, send a blank message to requests@willamette.nos.noaa.gov with "subscribe infoexchange" in the subject field. Similarly, to remove yourself from the list, send the subject "unsubscribe infoexchange".

Contact the MPA Center's education coordinator directly at phyllis.dermer@noaa.gov, or by phone at (865) 932-5074, to discuss further enhancements or to contribute information for future issues.

Notable MPA Literature

Pay per nature view: Understanding tourism revenues for effective management plans

This report will be of interest for those looking at tourism as an economic development tool and finance mechanism for conservation. This report asks two main questions: What mechanisms can protected areas use to raise funds from tourism? and To what extent should protected areas raise funds from tourism? The report describes six survival essentials for protected areas, and uses these as a context for analysis of the role and potential of tourism in protected areas.

<http://www.leedsmet.ac.uk/lsif/the/documents/PayPerNatureView02.pdf>

Pay per nature view: Understanding tourism revenues for effective management plans. Font, X., Cochrane, J., and Tapper, R. (2004) Pay per nature view: Understanding tourism revenues for effective management plans, Leeds (UK): Leeds Metropolitan University

Main MPA Library URL:

http://www2.mpa.gov/mpa/mpaservices/virtual_library/virtual_library.lasso.

PROGRAM OF THE MONTH

Earth Exploration Toolbook

The Earth Exploration Toolbook is a collection of computer-based Earth science activities. Each activity, or chapter, introduces one or more data sets and an analysis tool that enables users to explore some aspect of the Earth system. Step-by-step instructions in each chapter walk users through a case study in which they access data and use analysis tools to explore issues or concepts in Earth system science. In the course of completing a chapter, users produce and analyze maps, graphs, images, or other data products.

The first ocean based chapter is “When is Dinner Served? Predicting the Spring Phytoplankton Bloom in the Gulf of Maine.” It uses real-time ocean observing buoy data from GoMOOS (Gulf of Maine Ocean Observing System) and satellite images of chlorophyll-a to enable students to predict the timing of the spring phytoplankton bloom in the Gulf of Maine.

Other chapters use GIS mapping, satellite images, GLOBE data, and other data resources to investigate seismic waves, the ozone layer, changes to a river delta, and wetlands. All chapters are reviewed by a panel of teachers for educational merit, reviewed by scientists to ensure scientific accuracy, and are tied to the National Science Education Standards.

The Earth Exploration Toolbook is funded by the National Science Foundation through the National Science Digital Library and is a collection within the Digital Library for Earth System Education.

<http://serc.carleton.edu/eet/index.html>

WEBSITE OF THE MONTH

Virtual Field Trips Database

The University of Texas Library hosts links to a collection of virtual field trips and guides throughout the United States and Canada. Developed as course components, the sites contain local geological or earth science information and include links to downloadable versions of published paper texts.

One selection takes you to the Carolina Coastal Science website, an inquiry-based science resource that explores science in coastal Carolina. *Coastal Explorations: Carolina Coastal Science* has been created based on the goals stated in the National Science Education Standards and is aligned with the North Carolina Science Curriculum Standards. While designed specifically for an environmental science component of an elementary, middle school, or upper secondary science curriculum, it may be used to explore social studies, geography, language, and media studies. Visit barrier islands, the Channel Islands, Hawaii, and more through the database.

<http://www.lib.utexas.edu/geo/onlineguides.html>

REQUESTS

Seeking Coral Pathology Specimens

NOAA's International Registry of Coral Pathology (IRCP) is soliciting accessions of fixed tissues, paraffin blocks, and microslides representative of pathology, normality, and abnormality in corals. Specimens are being archived into a repository with the goal of providing a training resource in coral histology and pathology. The repository will be made available to researchers, students, and managers for study and teaching purposes.

Coral.Registry@noaa.gov

<http://www.chbr.noaa.gov/InternationalRegistry.htm>

EE-Link Survey

EE-Link (a website of the North American Association for Environmental Education) is in the process of redesigning their website and they are requesting your input. A brief survey is posted on their website, and the results will guide the redesign.

<http://eelink.net/usersurvey.html>

GRANTS AND OPPORTUNITIES

Amgen Award for Science Teaching Excellence

The Amgen Award honors K-12 science teachers, in communities where Amgen operates, who significantly impact their students through exemplary science teaching and have achieved demonstrated results in student learning. The application deadline is January 31, 2005.

<http://www.amgen.com/community/teacherAward/index.html>

Cable Awards for Leaders in Learning

Cable's Leaders in Learning Awards honor U.S. policymakers, educators, community leaders and administrators who demonstrate vision, innovation, action, and transformation in K-12 education, in schools, and in other informal learning settings such as after-school programs. Applications and recommendations are due January 31, 2005.

<http://www.ciconline.org/leadersinlearningawards/default.html>

Canon National Parks Science Scholars Program

This scholarship program is a collaboration among Canon U.S.A., the American Association for the Advancement of Science, and the U.S. National Park Service. The program awards scholarships to doctorate students to conduct research critical to conserving the national parks of the Americas, including include Canada, the United States, Mexico, the countries of Central and South America, and the countries of the Caribbean. The deadline for application is May 2, 2005.

<http://nature.nps.gov/canonscholarships/>

Davidson Fellowships

The Davidson Institute for Talent Development offers scholarships to high achieving youth under the age of 18 in recognition of their outstanding achievements in the areas of science, technology, mathematics, music, literature and/or philosophy. Each submission must be an original piece of work recognized by experts in the field as significant, and it must have the potential to make a positive contribution to society.

<http://www.davidsonfellows.org>

EPA Water Quality Project Funding – Region 2

The Environmental Protection Agency (EPA) is soliciting proposals for water quality projects in New York, New Jersey, Puerto Rico, and the U.S. Virgin Islands. High priority areas include water and wastewater infrastructure, impacts of wet weather flows, pathogens, national pollutant discharge elimination system program strategies, and animal feeding operations. Outreach can be part of the project. The proposal deadline is February 10, 2005.

http://www.epa.gov/region02/rfp/2005/water04_104b3.htm#overview

Graduate Fellowship – GIS and Remote Sensing at Oregon State University

A The NOAA-sponsored two-year graduate fellowship in the application of geographic information science and remote sensing to ocean and coastal resources management will provide two outstanding students with diverse education, research and internship opportunities. The goal is to contribute to the diversification of the coastal management profession, which is vital to the future economic and cultural sustainability of marine resources and communities. Open to all, we especially hope to attract highly qualified individuals from minority and underrepresented groups. The deadline for application is January 15, 2005; the program will begin July 1, 2005 with an orientation and paid internship experience in ocean and coastal management in the Pacific Northwest.

http://www.coas.oregonstate.edu/mrm/MRM-GIS_fellowship.pdf

Urban Streams Restoration Grants for California

The Urban Streams Restoration program from the California Department of Water Resources provides grants for local projects that reduce flooding and erosion on urban streams, improve environmental values, and promote community stewardship. Past grants have funded a variety of activities including creek cleanups, eradication of exotic or invasive plants, re-vegetation efforts, and acquisition of parcels critical for flood management. The application deadline is January 25, 2005.

<http://www.watershedrestoration.water.ca.gov/urbanstreams/appcycle/index.cfm>

INTERNSHIPS AND TEMPORARY OPPORTUNITIES

Student Conservation Association – Conservation Internships

The Student Conservation Association (SCA) is a national nonprofit dedicated to changing lives through service to nature. From environmental education and historical interpretation to botany and fisheries management, SCA offers internships in over 50 disciplines and in all 50 states for individuals ages 18 and up. High school students, ages 15-19, can become a member of a summer outdoor adventure crew. Positions vary from 12 weeks to 12 months and include paid travel, a biweekly stipend, free housing, health insurance, and more.

realinternships@thesca.org

www.thesca.org

Summer School Aboard Icebreaker

The International Arctic Research Center at the University of Alaska Fairbanks in cooperation with Laval University, the Arctic and Antarctic Research Institute, and the Obukhov Institute of Atmospheric Physics, invite the participation of graduate students and early career scientists in the summer school "Climate Change in the Arctic Ocean," to be held September 6-28, 2005 aboard the Russian icebreaker *Kapitan Dranitsyn*

during its fourth scientific cruise to the Arctic Ocean. The application deadline is February 28, 2005.

http://denali.frontier.iarc.uaf.edu:8080/NABOS/summer_school/

CONFERENCES, WORKSHOPS, AND PROFESSIONAL DEVELOPMENT

Association for Environmental and Outdoor Education Conference - California

The Association for Environmental and Outdoor Education (AEOE) will hold its annual statewide conference, *California's People and Places*, April 15-17, 2005 in Petaluma, California to explore how California's diverse ecosystems shape its population and how its people shape the landscape. The conference will include over 60 workshops, keynote speakers, entertainment, and a job fair.

<http://www.aeoe.org/conference/spr05/>

Case Western Reserve University Professional Development – JASON Project

Three professional development opportunities in conjunction with the JASON Project will be available from Case Western Reserve University:

- Wetlands Habitats - March 22, 2005
- Compare the Chagrin River and Mississippi Flood Plains - April 21, 2005
- Wildlife Created and Manmade Wetlands Habitats in the National Park - May 16, 2005

Registration is required. For more information, call 216-368-5075.

Environmental Communication for Behavior Change - Online Short Course

This course, from February 7 - March 4, 2005, provides environmental professionals with a practical introduction to the strategies, methods, and tools of environmental communication that effectively lead to changes in behavior. The field-based skills gained through this course will benefit all practicing environmental professionals faced with the challenge of changing behaviors. The course is facilitated by the Duke Environmental Leadership Program at Duke University. The registration deadline is January 18, 2005.

<http://www.nicholas.duke.edu/del/shortcourses/courses/upcoming.html>

Field Ecology Course - Maryland

Montgomery College offers BI 208, Field Ecology, at its Rockville, Maryland campus. A combination of lecture, laboratory, and field exercises will be used to study a variety of ecosystems, with an emphasis on coral reefs and the Chesapeake Bay. The use of qualitative and quantitative field methods to investigate terrestrial and aquatic ecosystems will be emphasized. On-campus instruction will be combined with six or more days of field trip studies. Field studies may be conducted at biological field stations located in the Florida Keys, the Bahamas, the Chesapeake Bay, or other sites.

<http://www.mc.cc.md.us/Departments/biorv/courses.htm>

Fostering Sustainable Behavior Workshop – Massachusetts

Several Cape Cod organizations concerned with sustainability are hosting a workshop on January 24, 2005, in Hyannis, Massachusetts with respected world expert, Doug McKenzie-Mohr. The cornerstone of sustainability is behavior change. Sustainability requires individuals and businesses to act (e.g., reduce waste, increase water and energy efficiency and prevent pollution). To date, most programs to achieve these changes have relied upon disseminating information. A new approach, community-

based social marketing, has emerged as an effective alternative for promoting sustainable behavior.

http://www.coastaltraining.org/events/jan_feb_mar_05.htm

Free-Choice Learning and the Environment

"Free-Choice Learning and the Environment: A Learning Innovation Initiative" is being organized by the Institute for Learning Innovation. This national conference, to be held at the U.S. Fish & Wildlife Service's National Conservation Training Center on June 1-2, 2005, will gather free-choice environmental learning educators, researchers, environmental policy makers, and funders to develop frameworks for improving the practice, evaluation, and future research efforts of the free-choice learning environmental education community. The result will be an improved understanding of how to best utilize cutting edge learning research to improve lifelong learning practices and environmental programs in free-choice settings such as parks, refuges, museums, zoos and aquariums and on television and in print media. The registration deadline is March 15, 2005.

http://www.ilinet.org/freechoice_conference.htm

Island Species Conservation Course – St. Lucia

An island species conservation course, Island Species-Led Action (ISLA), August 29 – September 9, 2005 in St. Lucia, is offered by the International Training Centre of the Durrell Wildlife Conservation Trust, based in Jersey, UK Channel Islands. The course will provide a combination of theoretical and practically-based activities focused on developing understanding of the management of endangered terrestrial species on islands. Basing the course in St. Lucia will provide participants with first-hand experience of conservation initiatives to save species such as the St. Lucia parrot (*Amazona versicolor*) and the St. Lucia whiptail lizard (*Cnemidophorus vanzoi*) from extinction. Participants will also be encouraged to develop their research skills in the field helping them to better understand threatened species and their needs and threats.

www.durrellwildlife.org

League of Environmental Educators in Florida Annual Conference

This conference brings together environmental and science educators as well as art, music, and literature educators. This year's theme is "Earth Harmony, in Tune with Nature." The "three paths" of educational opportunities include teachers and interpreters; researchers and members of the scientific community; and creative artists. The registration deadline is March 15, 2005.

<http://leeflet.brinkster.net>

Marine Mammal Seminars - California

Cosponsored by the Monterey Bay National Marine Sanctuary and Friends of the Elephant Seal, the second annual Marine Mammal Weekend Seminars at Camp Ocean Pines in Cambria, California will join biologists in field observations of elephant seals, sea otters, sea lions, harbor seals, and other marine mammals. Lectures and written materials will be provided during daily conversations with renowned leaders in the field. On January 21-23, 2005 Dr. Burney LeBoeuf will focus on land based behaviors and reproduction of Elephant Seals. Join him for field observations of enormous male elephant seals battling for territory and females giving birth. Join Dr. Jim Estes and Dr. Terrie Williams on January 28-30, 2005 to observe and discuss sea otters and sea lions in California.

<http://www.campoceanpines.org/upcoming/>

Marine Studies Teacher Workshops

The University of Delaware Graduate College of Marine Studies offers a variety of professional development workshops for teachers. Upcoming January and February workshops include Invasive Species, Delaware and Chesapeake Watersheds, and Rookie Science workshops.

<http://www.ocean.udel.edu/public/teachercourses.html#course1>

State of the Bay Conference - California

The Santa Monica Bay Restoration Commission will hold its State of the Bay Conference on January 13, 2005 in Los Angeles, California. This one-day conference will examine progress made and challenges still ahead for the restoration of the Santa Monica Bay and its resources. Topics to be covered include stormwater management, habitat restoration, education and outreach, public health protection and science and technology. Hurry – the registration deadline is January 5, 2005. For more information, contact Stephanie Katsouleas at (213) 576-6641 or skatsouleas@waterboards.ca.gov, or visit the website.

<http://www.santamonicabay.org>

Teacher's Domain Online Courses

The Teacher's Domain courses are produced by WGBH Educational Foundation, Boston's PBS station, and developed by educators and advisors specializing in science teaching. These online professional development courses are designed to broaden knowledge of science content and teaching methodologies and integrate that technology into the classroom. Courses feature interactive resources that can be incorporated into lesson plans, videos of classroom practices, as well as online discussions, enabling teachers to communicate with their peers.

<http://www.teachersdomain.org/courses/>

Waves, Wetlands, and Watersheds Educator Workshops

Waves, Wetlands, and Watersheds is a classroom activity guide for teachers that addresses California's coastal and marine issues such as endangered species, marine debris, coastal geology, water use, and more. It is aligned to the California State Science Content Standards for grades 3 through 8, and includes Community Action lessons adaptable for all ages up to and beyond grade 12. The connection between inland areas and the ocean is emphasized throughout. Upcoming workshops on the activity guide are scheduled in February and March for northern and central California. Pre-registration is required.

afrankel@coastal.ca.gov

www.coastforyou.org

EDUCATIONAL RESOURCES

At Work in the Ocean

This CD-ROM contains material created during a series of live interactive Internet events and from education and outreach material developed during the 1999 and 2000 field seasons of the National Geographic Society's Sustainable Seas Expeditions. The three curriculum units on this CD feature clips, web chat questions and answers, labs, activities, and related resource materials. The units are monitoring a habitat, tools for exploring the ocean, and oceanography careers. The units have been mapped to

National Science Education Standards, California, Texas, and Florida science standards.

http://www.dlese.org/dds/catalog_NASA-ESERevProd374.htm

Do L.A.P.'s for Michigan

The Michigan Department of Natural Resources provides its Millennium Education Project – great state, great parks, great history – L.A.P.'s (Learn from the past, Appreciate the present, and Preserve our outdoor heritage). Michigan fourth grade teachers and students have fun as they learn and explore through these L.A.P.'s characters, Sandy Dunes, Forrest Trails, Greta and Grady Lakes and others. The website features a variety of resources, games, links, and a virtual tour of a different park each month.

<http://www.dnr.state.mi.us/edu/DNRIntroPages/DNRlaps.html>

Educator's Guide to Nonpoint Source Water Pollution

The Kentucky Waterways Alliance provides a downloadable manual with hands-on lesson plans and activities relating to Kentucky's water and nonpoint source pollution. Students will gain an appreciation of the environmental sensitivity of water quality, explore the relationships of hydrologic components within a watershed, understand how human activities can affect the watershed, and learn responsible water resource management. Most of the activities are interdisciplinary, covering such subjects as art, drama, economics, geography, health, history, language arts, literature, math, science, and social studies.

www.kywater.net/KWA/splas01.doc

Environment and Global Climate Change

The University of the Arctic offers an "Introduction to the Circumpolar World" module for students grades 9-12 addressing climate change and potential environmental changes in the Arctic.

http://www.uarctic.org/bcs/BCS100/bcs100_m6.pdf

Flying WILD

Flying WILD is a new initiative from the Council for Environmental Education that extends upon Project WILD by providing resources and guides for School Bird Festivals in conjunction with International Migratory Bird Day. The program allows students the opportunity to get involved in learning through researching, planning, and hosting a bird festival at their school. Flying WILD is sponsored by the National Fish and Wildlife Foundation and Phillips Petroleum Company.

http://www.projectwild.org/flying_wild/overview.htm

Historical Happenings at Fish & Wildlife

The U.S. Fish and Wildlife Service offers a monthly e-newsletter with notes on cultural resource management in the Fish & Wildlife Service. The newsletter contains news of note, training opportunities, and requests for information.

eugene_marino@fws.gov

Journey North Begins

Journey North offers a free 10-week geography project, a Mystery Class, starting January 31, 2005. Teachers and students in grade 4-12 classrooms are invited to participate, in which students try to find ten secret classes "hiding" around the globe.

Young geographers must use reasoning, graphing, and research skills to pinpoint exact locations of the mystery classes.

<http://www.learner.org/jnorth/tm/mclass/About.html>

Life on an Ocean Planet

Current Publishing Corporation offers a high school marine science program for students to discover, explore, and investigate the world of ocean and aquatic sciences. *Life on an Ocean Planet* has been developed in collaboration with COSEE (the Centers for Ocean Sciences Education Excellence), and correlated to the National Science Teachers Association's SciLinks Internet site. It balances its content with student-tested investigations and hands-on activities to ensure students achieve science understanding. The text uses an interdisciplinary approach to integrate the curriculum areas of reading, math, language, and social sciences into the marine science content.

<http://www.currentpublishingcorp.com/>

Mathematics Across the Curriculum

Mathematics Across the Curriculum features an "electronic bookshelf" of materials for teaching math through art, history, literature, & music, as well as science, engineering, and other disciplines traditionally associated with math. Topics include misleading averages, bar codes, data analysis, expert systems, information theory, and much more.

<http://www.math.dartmouth.edu/~matc/eBookshelf/index.html>

Millennium Coral Reefs Landsat Archive

NASA announces the availability of 1,490 Landsat 7 images of coral reefs in an Internet-based library for the Millennium Coral Reef Project. The collection was created in a partnership which includes NASA, international agencies, universities, and other organizations to provide natural resource managers a comprehensive world data resource on coral reefs and adjacent land areas. This archive contains standardized data that is tiled, zoomable, and downloadable via FTP. The archive is under construction and images are still being added; as of September, there were 1490 images collected, 55 with permission to distribute.

<http://seawifs.gsfc.nasa.gov/cgi/landsat.pl>

SCHOLARS Program from the National Climatic Data Center

The National Climatic Data Center (NCDC) hosted approximately 60 students for the unveiling of their educational CD and educational packets. The NCDC signature program, SCHOLARS (Serving Customers and Helping Others Learn through Applications Involving Remote Sensing), can also be viewed on the website. The students toured the museum, listened to presentations on both geostationary and polar orbiting satellites and experienced the Magic Planet. To request a packet, send an email to: ncdc-outreach@noaa.gov, or call 828-271-4800.

www.ncdc.noaa.gov/oa/edu.html

Sustainability Lesson Plans

The Center for a Sustainable Future website includes lessons on land use patterns, ozone and particulates, fossil fuels and global warming, usable water, along with other topics related to designing sustainable communities.

<http://csf.concord.org/esf/index.php?module=curriculum&type=unit&func=view&order=theme>

This Land Is Your Land Curriculum

This free, activity-based youth curriculum was developed by Michigan State University Extension. Though developed for grades 3-5, the lessons are easily adaptable to any grade level. *This Land Is Your Land* is a set of land use curriculum materials that was designed to help students develop into involved citizens who understand the importance and practice of wise land use. It was designed so that young people can contribute solutions to current land use issues as well as participate in making sound decisions now and in the future.

<http://web4.msue.msu.edu/msuewc/kent/yourland/>

UNEP Portal

The United Nations Environmental Programme Network provides a global portal to authoritative environmental information based on themes and regions. Some thematic portals include climate change, freshwater, and a geo-data portal with many marine data sets. Information includes announcements and news, initiatives, and resources.

<http://www.unep.net/>

Water Safety

The U.S. Army Corps of Engineers is the leading provider of outdoor recreation on all federally-managed public lands in the United States. With a recreation base that is primarily built around water, the Corps has a dedicated focus on water safety. The pages of the National Water Safety Program website let you view current water safety materials available through the Corps program, download *Safe Passage* program information, and more. The Water Safety Fun Book can be downloaded at

<http://www.lacoast.gov/education/kids/coloringbooks/watersafety/>. The National Water Safety Program homepage is at <http://watersafety.usace.army.mil/>.

INITIATIVES, JOURNALS, AND USEFUL INFORMATION

Google Scholar - Free Search for Online Academic Documents

The Internet search organization Google has released a new tool called "Google Scholar" that allows you to look up any author, publication, or technical topic and find all of the other articles or websites that cite that work. Google Scholar enables you to search specifically for scholarly literature, including peer-reviewed papers, theses, books, preprints, abstracts, and technical reports from all broad areas of research.

<http://scholar.google.com>

National Ocean Sciences Bowl

The National Ocean Sciences Bowl (NOSB) prepares the next generation of marine scientists, policy makers, teachers, explorers, researchers, technicians, environmental advocates, and informed citizens. The NOSB provides an educational forum for students to excel in math and science and receive national recognition for their diligence and talents. The competition generates student and teacher interest and excitement about science and the oceans. It fosters collegiality and teamwork, competition, imaginative thinking and factual recollection. It also allows students to work side by side with experts in a wide variety of settings. Regional competitions will be held during February 2005, and the national competition will be held in Biloxi, Mississippi, April 23-25, 2005. For more information, including links to a bowl near you, visit

<http://www.nosb.org/>