

THE BIOGEOGRAPHER

Newsletter of the Biogeography Specialty Group of the Association of American Geographers
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President's Column Of Biomes and Empires

For my final president's column I thought to elaborate on two concerns that occurred to me while teaching biogeography, but which might also have implications for how biogeographers position their research relative to biophysical or social scientists.

Most of us teach "biomes" in physical geography and biogeography. These are handy conceptualizations of the ecological subdivisions of the Earth's land surface. It is possible to teach about them in such a way that the climatic, historical, and ecological processes involved can be illustrated. Educationally, this shifts the goal from description of patterns to the elucidation of processes. Unfortunately, many of the introductory textbooks do biomes in such a static and descriptive manner that the processes are hidden. This can make biomes appear to represent an old-fashioned concept, not lending itself to hypothesis testing and prediction.

How ironic that one of the frontiers in climate change research is developing the capacity to predict the future location and composition of biomes. Results would provide much data to evaluate hypothetical limits on species ranges and how biological systems assemble under novel environmental conditions. Research is being done by looking at historical analogs, by designing experiments of increased temperature or carbon dioxide, and by tracking dispersal and reproduction at species distribution margins. This also appears to be a case where our texts have not kept up. Perhaps past and future changes in distributions could become a larger part of our teaching as research results become available. The biogeographers participating in that research could be cited as examples.

Another place I see biomes referred to, although usually with the term "ecoregions", is in biodiversity conservation. This is another example of where advancing research is very different from most textbook overviews. Many analyses are being carried out on the biodiversity value and conservation status of particular ecoregions. At least in my study area, the boundaries used appear to be based on outdated information or arbitrary decisions. There is room here for interesting interactions among researchers, teachers, and conservation practitioners. Research methods include the testing of priority setting

algorithms for conservation planning, the modeling of predicted species distributions, and the assimilation of land use/land cover change techniques into biogeographical research.

The original biome descriptions and mapping were done by explorers several centuries ago. Often these explorers were working in the service of European countries interested in documenting useful natural resources that could be taken back to Europe or put into production in their colonies. To put it bluntly, the start of biogeography was as a tool of imperialism.

Plants and animals were moved around the world, changing landscapes (and economies) in profound ways. Some of these legacies have been researched, but much more could be studied and clarified. There is a burgeoning current literature on invasive species and susceptible habitats that could be utilized to address landscape and/or historical concerns in innovative ways. Research approaches might test models used in landscape ecology or probe the practical insights originating in restoration ecology. Some of the social implications could be evaluated using approaches from the environmental historians and the political ecologists. The topic could nourish a suite of advanced undergraduate and graduate seminars.

These two concerns also serve to illustrate that both teaching and researching biogeography provide for multiple synergies. One informs the other. Both connect to other disciplines and to historical traditions that inform but do not constrain the future of biogeography as the study of the changing distributions of plants and animals.

Kenneth R. Young

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Election

BSG Board Members: **Vote Now!**

Current **BSG members** may vote for **2 board members** and **1 president** by sending an e-mail with your choices to bsg-election@willamette.edu ([click here to vote](#)) **before February 26th**. Identifying information will be removed from the e-mail before I tally votes, so the process is anonymous. Only current BSG members are eligible to vote (our tech people will check the e-mail addresses for each electronic vote against the AAG list of BSG members to insure fairness). If you are unable to vote via e-mail, please send your votes to me by regular mail.

Dr. Karen Arabas
Associate Professor of Geography
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Board (5 Candidates, Vote for 2)

Paul A. Knapp (Ph.D. University of Georgia, M.A. University of Arizona, B.A. University of Colorado) is a Professor of Geography at Georgia State University. His research interests focus on Quaternary landscape ecology and paleoclimatology studies in the intermountain West. He has published recently in *Quaternary Research*, *Global Change Biology*, and *Geophysical Research Letters*. Paul teaches classes

in biogeography, synoptic climatology, environmental conservation, and dendrochronology, and serves as a major professor for several graduate students.

Charles W. Lafon (Ph.D., M.S. University of Tennessee, Knoxville , B.A. Emory & Henry College) is in his third year as Assistant Professor at Texas A&M University. His primary research interests are vegetation succession and disturbance, and spatial and temporal patterns of biodiversity. Specifically, he has studied (or is currently investigating) forest succession on abandoned farmland in East Tennessee, the role of major ice storms as agents of forest disturbance in the Southern Appalachian Mountains and the Adirondack Mountains, and fire history and successional status of yellow pine stands in the Central Appalachians. The Central Appalachians pine study is funded by the Joint Fire Science Program of the National Interagency Fire Center. Charles teaches courses in Earth Systems Science, Spatial and Temporal Dynamics of Vegetation, Global Climatic Regions, and Field Geography. He has published in *Physical Geography*, *Oikos*, and *Climate Research*.

Michael Pisaric (Ph.D. Queen's University – Kingston, M.Sc. McMaster University, B.Sc Brock University) is an Assistant Professor in the Department of Geography and Environmental Studies at Carleton University, Ottawa. Mike also held a postdoctoral research fellowship at Montana State University (Bozeman). As a graduate student, Michael was the winner of both the BSG student paper and grant competitions (2000). Mike is highly committed to teaching and fostering interest in Geography at the undergraduate level. He teaches courses in Introductory Physical Geography, Biophysical Resources and Biogeography. His research interests cross various temporal and spatial scales in the areas of climate change and paleoecology. Techniques used to carry out his research include, fossil pollen, stomata and charcoal preserved in lake sediments and dendrochronology. Current research sites include the Yukon Territory, northern and southern British Columbia and Ontario. He has published papers in *Canadian Journal of Botany*, *Arctic, Antarctic and Alpine Research*, *The Holocene*, *Quaternary Science Reviews*, *Climatic Change* and *Journal of Paleolimnology*.

Lesley S. Rigg (Ph.D. University of Melbourne, Australia, M.A. University of Colorado, B.A. York University) is currently an Assistant Professor at Northern Illinois University where she's been since 1998. Current research interests include the disturbance and regeneration dynamics of rare conifers in the South Pacific (New Caledonia), the dynamics of sugar maple (and other species) in the deciduous/boreal forest ecotone, Ontario, Canada, and the management of oak/hickory woodlots in northern Illinois. Graduate students have worked on fire as a management tool in oak/hickory woodlots, sugar maple seedling demography and genetics in the deciduous/boreal ecotone, modeling the environmental response of sugar maple, and tree-ring fire and climate reconstruction in Lake Superior Provincial Park. Lesley's teaching load includes courses such as Introduction to Physical Geography, Forest Ecology and Management, and Quantitative Methods. She has published in *Biotropica*, *Applied journal of Ecology*, *Australian Journal of Ecology*, *Physical Geography*, *South African Journal of Science* among others.

Joy Wolf (Ph.D. University of Colorado, M.A. and B.S. Northern Arizona University) is an Assistant Professor of Geography at University of Wisconsin - Parkside. Her research interests are in vegetation dynamics and disturbance ecology. Her research includes using dendrochronology to determine spatial patterns and fire history in mixed conifer forests in Grand Canyon National Park, conducting forest structure research in a riparian woodlands in central Arizona, investigating exotic invasion and its impact on native plant communities and soil biogeochemistry processes in relation to anthropogenic changes in montane grasslands in Rocky Mountain National Park, and establishing vegetation and soil patterns in oak openings and the fire history using oak trees in southeastern Wisconsin. She teaches courses in biogeography, soils, landscape ecology, landform geography, field methods, conservation geography and physical geography. Her students' individual research projects include a study of age structure of a maple woodland near a golf course, a soil analysis along a rural/urban gradient, a study of density and spatial patterns of a rare native plant in a tallgrass prairie, and population dynamics of pine barrens. She is a

judge for local High School science fairs, and assists with the regional Geography Bowl and Science Bowl. She has published papers in *Physical Geography*, *European Journal of Soil Biology*, *The Wisconsin Geographer*, and has a paper accepted for 2003 publication in the *Annals of the Association of American Geographers*, and a paper in press in *Landscape Ecology*, as well as recent submissions to *American Midland Naturalist*, and *Journal of Biogeography*.

President (4 running, vote for 1)

John Kupfer (Ph.D., M.A., University of Iowa, B.A. Valparaiso University) is currently an Associate Professor in the Dept. of Geography and Regional Development at the University of Arizona and a member of the UA's Global Change, Latin American Studies, Remote Sensing and Spatial Analysis, and Arid Lands Resource Sciences interdisciplinary programs. He is a biogeographer and landscape ecologist whose research projects focus on the relationship between ecosystem patterns across a landscape and ecological dynamics (especially succession and vegetation dynamics) in a range of environments, including Midwestern forest preserves, bottomland hardwood forests, montane ecosystems in the Southeast and Southwest, and tropical agroecosystems in Belize. His refereed research papers have appeared in a range of geography and ecology journals including *Progress in Physical Geography*, *The Professional Geographer*, *Physical Geography*, *Landscape Ecology*, *Remote Sensing of Environment*, *Plant Ecology*, *Oikos* (in press) and *Journal of Vegetation Science*. John served on the BSG's Executive Board from 1998-2000 and coordinated the Henry C. Cowles Award for best publication, James J. Parsons Distinguished Career Award, and Student Research Grants competition. He has been a judge for both the BSG's Student Research Grants and Student Paper Competition Awards and served on the SED/AAG Steering Committee and as the Tennessee SED/AAG State Representative while he was at the University of Memphis. He is committed to biogeographic education at all levels, won the University of Memphis Distinguished Teaching Award in 1998, and is a current nominee for the University of Arizona Provost's General Education Teaching Award.

Kam-biu Liu (Ph.D., Toronto, 1982). Liu is the James J. Parsons Professor of Geography in the Department of Geography and Anthropology, Louisiana State University. He has taught at LSU since 1984. Liu's primary research interests are in Quaternary paleoecology, vegetation and climate change, and paleotempestology. His refereed research papers have appeared in journals like *Nature*, *Science*, *Ecological Monographs*, *Journal of Biogeography*, *Review of Palaeobotany and Palynology*, *Quaternary Research*, *Quaternary Science Reviews*, *Annals of AAG*, *Professional Geographer*, *Geographical Analysis*, *Physical Geography*, *Geology*, *American Antiquity*, *Climatic Change*, *Journal of Climate*, and *Diversity and Distributions*. Recent and current research projects include: paleo-records of monsoon climate changes in the Tibetan Plateau; pollen studies of Andean and Tibetan ice cores; Quaternary histories of the Amazon rain forest, the temperate forests of China, and the boreal forest of Canada; and reconstruction of Holocene hurricane/typhoon activities in the U.S. and China. He has been the PI of numerous research grants from NSF, NOAA, National Geographic Society, and the Bermuda Biological Station for Research. At LSU, Liu teaches courses in Biogeography, Quaternary Paleocology, Tropical and Subtropical Biogeography, Physical Geography, and graduate seminars on topics like Cultural Palynology, and Paleoecological Perspectives in Global Environmental Change. Liu has attended every AAG annual meeting since 1979. He served as a member of the BSG Board of Directors (1991-93) and helped to launch the BSG student research grant program. He was a judge in BSG student paper competitions at several AAG meetings. He was a member of the U.S. National Committee for the International Union for Quaternary Research (USNC/INQUA) (1988-1996), and was the editor of *Geoscience and Man* (1988-93).

Kimberly E. Medley (Ph.D., M.A., Michigan State University, B.S. Kent State University). After a one-year postdoctoral appointment in landscape ecology at the Institute of Ecosystem Studies, she began an academic career at Miami University (in Ohio), where she is now an Associate Professor of Geography.

Under the Worldwide Women-in-Development Fellowship program (1997-1998), she gained training in gender analysis, participatory methods, and environmental planning at USAID-Madagascar. She now works with undergraduate and graduate students on studies that examine human versus environmental influences on the composition and structure of forests, the patterns and processes of landscape change, and gender relations with resource ecology. She is especially enjoying her annual study abroad program to Kenya and a 2-year project sponsored by the National Geographic Society on Mt. Kasigau. Look for her papers in *Economic Botany*, *Conservation Biology*, *Landscape Ecology*, *The Professional Geographer*, *Environmental Conservation*, *Physical Geography*, and in March 2003, the *Annals*. She is grateful for the professional support provided by The Biogeography Specialty group and will hope to carry on that tradition for new and continuing members.

Susy Ziegler (Ph.D., M.S. University of Wisconsin-Madison, A.B. Dartmouth College) is an Assistant Professor of Geography at the University of Minnesota. She teaches Biogeography of the Global Garden, Plant and Animal Geography, and graduate seminars in physical geography. Her research focuses on the structure, dynamics, and disturbance regimes of forests in the Upper Midwest and the northeastern United States. Susy has published articles in *Canadian Journal of Forest Research*, *Global Ecology and Biogeography*, and *American Midland Naturalist*. She is a co-author of the Biogeography chapter in the forthcoming book *Geography in America at the Dawn of the 21st Century*. As a member of the BSG Board, Susy has coordinated the graduate student research grant competition for the past two years. She serves on the AAG Research Grants Committee (2002-05).

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News

Inaugural Meeting of the International Biogeographical Society

Nearly 200 biogeographers from thirteen countries attended the inaugural meeting of the International Biogeography Society held at the Oasis resort in Mesquite, Nevada last January 4-8. The conference format consisted of five symposia: Dynamics of Species Diversity, Phylogeography and Diversification, Paleobiogeography, Biogeography of the Sea, and Biogeography Theory and Conservation Practice, each of which featured five invited speakers. Poster sessions complimented the symposia and featured research by BSG members **Franco Biondi**, **Kim Diver**, **Todd Fagin**, **David Goldblum**, **Bruce Hoagland**, **Joy Mast**, **Jonathan Price**, **Lesley Rigg**, **Mark Welford**, and **Joy Wolf**, as well as 90 other posters on an astonishing array of topics. A field trip to the Virgin River Valley and the ghost town of Gold Butte rounded out the meeting.



Robert Whittaker (Oxford Univ. School of Geography and the Environment) presented the opening symposium paper.

The IBS meeting was quite possibly the best conference I have ever attended. Imagine most



Mirrored ceilings made monitoring poster sessions a cinch.

*Second row, left to right are posters by BSG members
Joy*

Wolf, David Goldblum, Joy Mast, and Leslie Rigg.

The IBS founders and current board are strongly committed to making the IBS a truly interdisciplinary and truly international forum, the goals of which are: 1) to foster collaboration and progress in biogeographic research, 2) to raise biogeography's profile in the scientific community and among the lay public, and 3) to promote biogeography education and training. Geographers have much to contribute to the IBS, and much to gain by participating in it. Currently, the BSG is the largest single organization dedicated to biogeography, and the two organizations should compliment each other well.

of the people presenting the most biogeographically relevant papers and posters from any given year's AAG, ESA, and GSA meetings. Now, imagine them all together at the same resort, socializing and sharing ideas, and you have some sense of what the IBS meeting was like. What I took away from the meeting, most of all, is a sense that biogeography as an interdisciplinary enterprise is not only healthy, but has matured to the point that it is poised on the cusp of Big Things (I'll have more on this in the next issue of the newsletter).



Bruce Hoagland keeping a close eye on Todd Fagin as he discusses his poster.



The next meeting is being planned for 2005, most likely in the Washington, DC area (after that, it will move overseas). You can support the IBS by becoming a member ([click here for details](#)). The cost is \$40/year (\$30/students), and your membership fees will help the organization take root and grow.

To help promote the IBS, **Blackwell Publishing is offering IBS members online access to the *Journal of Biogeography, Global Ecology and Biogeography and Diversity and Distributions* for just \$30.** A personal subscription costs \$280, so this is quite a bargain ([click here for the order form](#)--you must sign up for a BSG

Thirty biogeographers from ten countries, a botanist, a geologist, a soil scientist, and the Mojave desert made for a fantastic field trip.

Duane Griffin
Bucknell University

Dear President Bush...

Last fall, twelve biogeographers and ecologists sent the following letter to President Bush and members of Congress.

As fire researchers and ecologists, we are writing to you concerning the scientific basis for efforts to reduce risks from the kinds of forest fires that have attracted so much media and political attention in the western United States this year. As we elaborate below, responding effectively to this fire situation requires thoughtfulness and care. The fires are traceable to differing factors in different regions and forest types. Some have burned in forests where fire exclusion and land use have created unnatural accumulations of fuels while others have burned in a relatively natural manner. The most debated response to alleviating destructive fires in the future – mechanically thinning trees – has had limited study, and that has been conducted primarily in dry forest types. Thinning of overstory trees, like building new roads, can often exacerbate the situation and damage forest health. Whatever restoration measures are undertaken, preventing the re-emergence of fire problems will require a commitment to manage with fire rather than simply trying to exclude it in the future.

No single cause can explain the variety and number of fires occurring this year in western forests. In some drier forest types, such as the semi-arid ponderosa pine ecosystems, fire exclusion aided by grazing and logging has produced accumulations of highly flammable fuel well outside historical norms. However, in many western forests, including parts of the Siskiyou (mountains of the Biscuit fire), Sierra Nevada, Cascades, and Central Rockies, much of the undergrowth is primarily the product of succession from past logging and other disturbance, rather than fire exclusion alone. In other settings, like southwestern chaparral and the lodgepole pine forests of the Rockies, succession naturally produces highly flammable communities, and periodic crown killing fires are inevitable and ecologically desirable. Drought conditions such as those seen across much of the West this year can produce extensive fires even in areas where fuel loads are “normal.” In all of these areas, increased human activity and habitation on fire-prone landscapes have greatly increased the chances of ignitions and the threats to people and their property when wildfires do occur.

We have no simple, proven prescription for meeting this challenge throughout the West. In semi-arid ponderosa pine forests effective restoration may result from cutting smaller-diameter trees in overly dense stands. However the benefits can only be realized and maintained in the long term through an aggressive post-restoration prescribed fire program that removes surface fuels. The value of thinning to address fire risks in other forest ecosystems is still poorly understood. Although a few empirically based studies have shown a systematic reduction in fire intensity subsequent to some actual thinning, others have documented increases in fire intensity and severity. Models and theories have been advanced to explain these results, but reliable data remain scarce.

In some areas the use of prescribed fire without any “thinning” would be the best restoration method. Indeed, many forests in the West do not require any treatment. These are forests that for thousands of

membership first).

More information on the IBS can be found on their web page at www.biogeography.org.

years have burned at long intervals and only under drought conditions, and have been altered only minimally by 20th century fire suppression. These forests are still "healthy" and thinning would only disturb them, not "restore" them. In short, the variation among our forested landscapes is much too great for one treatment to be appropriate everywhere.

Where thinning is used for restoration purposes in dry forest types, removal of smaller diameter material is most likely to have a net remedial effect. Brush and small trees, along with fine dead fuels lying atop the forest floor, constitute the most rapidly ignited component of dry forests (young forest stands regenerating after timber harvest often burn with the greatest intensity in western wildfires). They most surely post-date management-induced alteration of dry forest fire regimes. And their removal is not so likely to increase future fire intensity, for example from increased insulation and/or the drying effects of wind.

In contrast, removal of more mature trees can increase fire intensity and severity, either immediately post-logging or after some years. These trees provide "insurance" because they often survive surface fires and can speed post-fire recovery. Even if they are diseased, dying or dead, large and old trees and snags are important to many wildlife species and ecosystem functions. Building or re-opening roads to facilitate thinning will also heighten fire risks, since roads correlate with increased numbers of human-started fires. Removing more than small trees and constructing roads will also make collateral damage to forest ecosystems more likely (e.g., through effects on water quality, fish populations, and the spread of invasive species). Therefore, where done, this kind of thinning needs particularly careful planning and implementation. The results require faithful monitoring and analysis before any effort to extrapolate the practice to other segments of the forest landscape.

Forests are dynamic biological systems and their management requires integration of approaches over time and space. Thus, whatever remediation or restoration is undertaken in dry forests, close attention must be paid to the future management of the treated forests. Because of the inevitability of fire in these systems, the goal of restoration has to be landscapes in which we can better control the fires we do not want and promote the ones we do. However, without a thoughtful post-treatment prescribed fire management program, the forests will likely return to its current highly flammable state within a decade or two, losing – among other things – the public investment made in treating it

The location of management treatments is similarly important. Strategic placement of management activities such as thinning and burning within landscapes is critical to accomplishing the most benefit with minimal ecological impact. As an important example, protecting buildings, power lines, and water supplies will be most effectively accomplished by reducing fuels near them.

In summary, fire threats in western forests arise from many causes, and solutions will require a suite of treatments adjusted on a site-by-site basis. Enough experience exists to suggest areas such as the semi-arid ponderosa pine forests where we can, now, undertake corrective action. However, neither the magnitude of the problem nor our understanding of treatment impacts would justify proceeding in panic or without thorough environmental reviews. Moreover, whatever treatments we undertake must include provisions for long-term maintenance, integration of fire, and robust monitoring.

Many communities throughout the West are ready and eager to play a role in sustaining and where necessary actively restoring forests that surround them. Rather than closing the public out of the process, as has been proposed, we believe the public should be engaged more meaningfully in land management decisions. Therefore, we must express our opposition to current legislative and administrative efforts to curtail sharply the public's involvement in the decision-making process on our public lands. While some appeals are frivolous, many are not. Our concern is that if citizens are denied their legitimate right to protest poorly conceived forest projects, then the issue will become more polarized, and we will have

more sit-ins and other acts of civil disobedience. A “healthy forests” initiative will be truly effective only if it enhances public participation, which neither the Bush Administration’s plan (August 2002) nor Congressman Scott McInnis’s legislation (H.R.5319) would do.

Signed by Dr. Jerry Franklin (University of Washington), Dr. William H. Romme (Colorado State University), Dr. William L. Baker (University of Wyoming), Dr. Lisa Floyd-Hanna (Prescott College), Dr. Jack Herring (Prescott College), Dr. Lee E. Freleich (University of Minnesota), Dr. Robert H. Gardner (University of Maryland), Dr. Dennis Knight (University of Wyoming), Dr. Richard A. Minnich (University of California-Riverside), Dr. David A. Mladenof (University of Wisconsin), Dr. Thomas Vale (University of Wisconsin), and Dr. Tom Veblen (University of Colorado)

Contribute to the Biogeography Image Exchange!

Lori Daniels has extended the deadline for contributions to the Biogeography Image Exchange. You are invited to contribute images depicting all aspects of biogeography to be used for undergraduate teaching in the classroom and on-line. Images may depict plants, animals, abiotic-biotic interactions, human impacts, research techniques etc. – as long as they relate to biogeography research and learning.

[Instructions and submission forms are available on-line.](#) Contributions should be sent to Lori Daniels at the University of British Columbia by March 31, 2003. Include a self-addressed, stamped envelope to receive a free copy of the final CD! This invitation is extended to all biogeographers – please forward it to colleagues who may not receive this newsletter!

Thanks, Lori
Lori D. Daniels

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New Biogeographers.

Nina Hewitt and **Stepan Wood** welcomed **Sara Hewitt Wood** to planet Earth on May 15, 2002 (she's closing in on the successful completion of her first orbit!).

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AAG

Biogeographers in New Orleans

BSG Business Meeting

The Biogeography Specialty Group business meeting is scheduled for **7:30 pm, Wed. March 5, 2003 in**

Cabildo B (Second Floor). We will present this year's awards, announce election results, hear reports from members of the Board of Directors, propose paper and poster session topics for next year's AAG meeting, and discuss other BSG-related business. **Please plan to attend!**

BSG Sponsored Paper Sessions

For details on specific sessions, go to the AAG's [2003 Annual Meeting Program](#) web page, select "Specialty Group" in the search criteria, and search for "biogeography."

Advances in Dendrochronology (five sessions)

Biocomplexity and Geographers...

Biogeography and Political Ecology: Possibilities for Engagement (2 Sessions)

Conservation

Environmental and Ecological History (2 Sessions)

Hotspots and Ecoregions: Different Places, Different Views

Late-Pleistocene and Holocene Climates of the Western United States: A Plethora of Proxies

Paleorecords of Vegetation, Fire, and Climate in North and South America and the Caribbean

Recent Landscape Ecological and Biogeographical Studies in Arctic and Alpine Environments

Terrestrial Carbon

The Fire Session

The Paleoecology of Human Agency in Middle America

Field Trips!

Peter Yaukey (University of New Orleans) and **Igor Ignatov** (Texas A&M) have organized: **Ecological Communities of Southeast Louisiana: Plants & Birds.** Friday, March 7, 7:00 am – 5:00 pm; Trip Capacity: 30; Cost: \$100.00

This trip will visit various locales around Lake Pontchartrain, exploring a representative series of ecological communities. Included in this itinerary are sites representing bottomland hardwoods, pine flatwoods, baldcypress-dominated swamps, and other lowland ecological communities. At each site, the life histories and ecological relationships of the flora and avifauna will be described by the pair of trip leaders, who have active research programs on the plants and birds of this region. Bird species present will be representative of winter bird communities of the Gulf Coast, and include a variety of wading birds, raptors, and songbirds. Other species of mammals and reptiles, such as nutria and alligators, are likely to be observed. Participants should bring water, hiking boots, long pants and insect repellent.

Gay Gomez (McNeese State University) is leading two trips:

Southwest Louisiana Chenier Plain: Wetlands, Wildlife & People

6:00 pm on Friday, February 28 – 11:00 am on Monday, March 3; Trip capacity: 15; Cost: \$350.00 per person.

Louisiana's Chenier Plain is a broad expanse of marsh crossed by narrow, tree-covered ridges called "cheniers." The cheniers harbor a rural population that remains closely tied to the land and its wildlife resources. Trip participants will visit four cheniers, three marshland refuges, two Gulf beaches, and a Cajun restaurant and dancehall. We will explore chenier plain formation, local culture and history, flora and fauna, wetland and wildlife management, and coastal land loss. Wildlife viewing opportunities abound; binoculars and cameras are highly recommended. Bring comfortable walking shoes (rubber

boots are not needed), long-sleeved shirts and long pants, hat, insect repellent, sunscreen, and raingear. The trip includes accommodation in Lake Charles, continental breakfast, book and handouts, van transportation, and guiding. There will be stops for lunch and dinner, but the cost of meals is not included in the trip fee.

Barataria Wetlands of Jean Lafitte National Park: A Walk in the Swamp

Saturday, March 8; 7:30 am – 12:30 pm; Trip Capacity: 21; Cost: \$35 per person.

This half-day trip features the wetlands of Jean Lafitte National Historical Park's Barataria Preserve, where participants will walk a boardwalk trail (two miles, round trip) that descends gradually through a bayou-side forest and cypress-tupelo swamp to the edge of one of the world's largest floating freshwater marshes. Topics we will cover include local flora and fauna, past and present land uses, evidence of human alteration of the landscape, coastal land loss and restoration, and the establishment of the national park. We will also visit the park's visitor center, where we will enjoy a morning snack amid the palmettos. Binoculars and cameras are highly recommended. Participants should wear comfortable walking shoes (rubber boots are not needed), long-sleeved shirt and long pants, and should bring a hat, insect repellent, sunscreen, and raingear.

Go to www.aag.org/AnnualMeetings/field_trip_descriptions.pdf for details and a list of other field trips. Registration forms are available at www.aag.org/annualmeetings/fieldtripformnew.pdf.

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Biogeography-related amusements in New Orleans

Despite being an urban area of well over a million people, New Orleans is relatively confined by surrounding wetlands and therefore lacks the extensive urban "sprawl" characteristic of many other large cities. It is relatively easy to get out of the city and into more "natural" habitats. The city and its surroundings are also topographically interesting: much of the city is below sea level, with the waters kept at bay by a levee system. The water surface in the city's drainage canals is often visibly higher than the lawn surfaces of adjacent residential yards. New Orleans sits on a large alluvial deposit that is almost entirely covered by wetlands. The highest areas are found on fluvially deposited "ridges" of sediment, such as natural levees. Lake Pontchartrain, to the north of the city, is roughly 25 miles across from north to south. The widest stretch is crossed by the Causeway Bridge, reportedly the longest bridge on earth; on a hazy day, land will not be visible from the middle of the bridge in any direction, even though the water in the lake is only 17 feet deep! This is surely one of the oddest topographic experiences found anywhere on our continent.

The variety of "natural" settings accessible for exploration by the visitor to New Orleans is dependent largely upon the type of transportation available, and how far you're willing to travel. For the city-bound visitor reliant upon public transportation, a trip up the St. Charles street car from downtown to Audubon Park affords a view of a large numbers of old manicured live oaks festooned with moss- both arching over the street car route and in the park itself. Birdwatchers may find a variety of species of waders in the bayou of the park, and freeloading in its Audubon Zoo (notable in its own right, and worth a visit). The park and its zoo are also a good place to see common wintering urban landbirds such as yellow-rumped and orange-crowned warblers, ruby-crowned kinglets, and others. The zoo has plenty of freeloading wood ducks, and various waders including white ibises and black-crowned night herons (try the Louisiana Swamp exhibit for the latter). It is also a good place to look for bronzed cowbirds (which have an odd disjunct population in New Orleans) and Eurasian collared-doves, a recently arrived exotic whose North American population is exploding.

For the visitor with access to an automobile, and a half day to spare, a trip to the Bayou Sauvage National Wildlife Refuge in eastern New Orleans is worthwhile. Take I-10 east from downtown (reach it by driving north on Canal Street). Perhaps ten miles out of downtown you will see an exit marked swamp tours; you can take the tour here (I have no personal experience on which to remark, however). Afterward, you can cross I-10 and walk the paved bike trail northward for 15 minutes across marshland to the Pontchartrain Lakefront. On this walk, birders should watch for red-shouldered hawk and northern harrier, American coot, gadwall, and other ducks. Various wintering landbirds will be present in the scrubby growth by the lake levee, and sedge wrens and swamp sparrows lurk in the marsh. For an alternate view of the refuge, just west of here detour south off I-10 onto I-510, and then east on Chef Menteur Highway, which in several miles reaches the refuge boundary. Just across the refuge boundary is a parking area and restroom. A new boardwalk here traverses swamp forest with an understory of palmetto, and leads to an overview of the marsh.

Another, perhaps even preferable, alternative for a visitor with an auto and a half day to spare would be to visit Jean Lafitte National Historical Park and Preserve, roughly thirty minutes across the River from downtown. Cross the main bridge over the River downtown, and follow the West Bank Expressway over the high rise Harvey Canal bridge; shortly afterwards, exit on Barataria Boulevard. Follow this south (crossing under the expressway); over several miles it turns and twists and becomes Highway 45, which enters the Park when it crosses the hurricane protection levee in the forest south of town. A short ways down this road is the park visitor center, with interesting displays. However, the best site to visit will be passed on the right before this: the Bayou Coquille Trail. This long boardwalk (give yourself at least one hour to walk it out and back) traverses a cross section of ecological communities, from levee hardwoods with live oak to baldcypress-tupelo swamp to open "flotant" marsh, the weird wetland found here that is composed of a dense floating mat of vegetation that appears dry to the casual eye. Alligators should be seen on warm days at this time of year, as might cottonmouths and other snakes. Various bird species abound, including winter and year round residents.

Another half-day trip by car for those interested in controversy and the mystique of rare and endangered species would involve visiting the site of recent sightings of the ivory-billed woodpecker. The unconfirmed sightings by a turkey hunting LSU student stimulated massive efforts (unsuccessful thus far) to relocate these dramatic, and otherwise believed to be extinct, woodpeckers. Take I-10 east across Lake Pontchartrain, and past the I-12 interchange a few miles to the Honey Island Swamp exit. Stay east of the interstate after exiting, and jog north a fraction of a mile to the road into the swamp (an abandoned highway). This is a State Refuge, so if you run into a warden you may be asked to show a Louisiana Wildlife and Fisheries stamp- you can purchase one at the Wal-Mart at Exit 244 on your way there. These bottomland forests are more floristically diverse than are those south of the lake. Once into the forest, the first left hand turn off the abandoned highway, followed to its end, brings you near to the sighting location. While up north of the lake, you may wish to visit Big Branch National Wildlife Refuge, a half hour west of here (consult a map) in the tiny community of Lacombe. The refuge offers hiking opportunities through pine flatwoods, and a colony of endangered red-cockaded woodpeckers (at the trail head on Boy Scout Road- these birds may be hard to see even if you watch the nest trees, since they wander widely).

For those with a full day to spare, and a vehicle, consider a day trip to Grand Isle on the Gulf Coast. This is two hours from New Orleans; follow I-10 west, exit south onto I-310, and thence westward on Highway 90 and south on Highway 1. Watch your speed in Golden Meadow, notorious for its speed trap. You can also access the Gulf a short distance before Grande Isle, at Port Fourchon (the road will be evident on your right as you traverse the expansive coastal marshes). These areas are not particularly scenic, but let you explore the Gulf Coast beaches and marshlands, and a coastal live oak forest (protected by a Nature Conservancy property on the island, down residential roads on the left shortly before reaching the Sureway supermarket). Even further afield, the Kisatchie National Forest in central

Louisiana offers wonderful pine woodlands (and numerous red-cockaded woodpeckers).

Peter Yaukey
University of New Orleans

Invitation: Post BSG-Business Meeting Social

As I do each year - I want to encourage those of you attending the Annual AAG Meeting to attend the Biogeography Specialty Group business meeting: 7:30 pm, Wed. March 5, 2003, Cabildo B - Second Floor. Despite the dry-sounding name, this is where the BGS gets together, discusses the financial health of the BSG, announces election results, presents awards to students and faculty members, and plans for the future. It is much, much more than a 'business meeting'. I particularly encourage students to attend - this is where your voice can and will be heard.

Now - in the past few years I have worked to provide a chance for professional socializing and networking (drinking...) after the Business Meeting. This year, as Chair at UCLA, I have to host our departmental get together on Wed night. SO, I am inviting all of you who would like to drop by after the business meeting to mingle with the UCLA geographers (biogeographers and others) at a very cool bar in a former 1850's brothel! (Sporting House Cafe, 916 Lafayette Street; 3 blks from conference). It is a no host bar though I am afraid. Please consider dropping by after the BSG meeting and pass along the info on the party this to any former UCLA students you might know (even non-biogeographers!).

See you in New Orleans!

Glen MacDonald

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Recent BSG Member Publications.

Julio L. Betancourt, Henri D. Grissino-Mayer, Matthew W. Salzer, and Thomas W. Swetnam, 2002. A test of "annual resolution" in stalagmites using tree rings. *Quaternary Research* 58(2): 197-199.

Griffin, D. 2002. How much of North America is Still Wild? *Papers and Proceedings of the Applied Geography Conferences* 25: 129-137.

Grissino-Mayer, Henri D. 2002. Dendrochronology. *McGraw-Hill Encyclopedia of Science and Technology*, 9th edition, New York City, New York: 352-256.

Grissino-Mayer, Henri D., Paul R. Sheppard, and Malcolm K. Cleaveland, 2002. Mastering the rings: Dating the 'Messiah' Stradivari violin. *Strad* 113: 408-415.

Hewitt, N.H. & Kellman, M.K. 2002a. Tree seed dispersal among forest fragments: I conifer plantations as seed traps. *Journal of Biogeography*. 29:337-349.

Hewitt, N.H. & Kellman, M.K. 2002b. Tree seed dispersal among forest fragments: II. dispersal abilities and biogeographical controls. *Journal of Biogeography*. 29:351-363.

Knapp, Paul A., Henri D. Grissino-Mayer, and Peter T. Soulé, 2002. Climatic regionalization and the spatio-temporal occurrence of extreme single-year drought events (1500-1998) in the interior Pacific Northwest, USA. *Quaternary Research* 58(3): 226-233.

McDonald, J. N. & G. E. Lammers. 2002. "Bison antiquus from Kenora, Ontario, and Notes of the Evolution of North American Holocene Bison," pp. 83-97 in Robert J. Emry, editor, *Cenozoic Mammals of Land and Sea: Tributes to the Career of Clayton E. Ray*. *Smithsonian Contributions to Paleobiology* 93. [Previously listed as "in press."]

Orvis, Kenneth H. and Henri D. Grissino-Mayer, 2002. Standardizing the reporting of abrasive papers used to surface tree-ring samples. *Tree-Ring Research* 58(1/2): 47-50.

Price, Jonathan P. and David A. Clague. 2002. How old is the Hawaiian biota? *Geology and Phylogeny suggest recent divergence*. *Proceedings of the Royal Society of London, Series B Biological Sciences* 269: 2429-2435.

Starr, Michael J. and Jessica N. Mefford. *The Effects of Roads on Perennial Shrubs in the Mojave Desert*. *Papers and Proceedings of the Applied Geography Conferences* 25: 85-92..

Ziegler, Susy Svatek. 2002. Disturbance regimes of hemlock-dominated old-growth forests in northern New York, U.S.A. *Canadian Journal of Forest Research* 32: 2106-2115.

J.N. McDonald is a partner in the McDonald and Woodward Publishing company (Blacksburg, Virginia), which has recently released two biogeographically related books: J. Reese Voshell. *A Guide to Common Freshwater Invertebrates of North America* and Hazel R. Delcourt, *Forests in Peril: Tracking Deciduous Trees from Ice-Age Refuges into the Greenhouse World*.

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Research Notes

Ross Meentemeyer, Sonoma State University, was awarded \$810,000 from the National Science Foundation's Division of Environmental Biology to study the spread of Sudden Oak Death, an alarming disease that is killing thousands of native oak trees in the Coast Ranges of California. The multidisciplinary grant is allowing geographers and biologists at Sonoma State University and UC Davis to collaboratively study the critical factors in the environment and host species that contribute to the spread of the disease causing pathogen, *Phytophthora ramorum*. The researchers are using GIS and remote sensing technologies in combination with fieldwork and DNA analysis to characterize spatial patterns of disease factors including the genetic resistance of host species; plant community structure; weather variability, and human activities. These data will be used to model changes in disease distribution and predict future habitat loss from disease. This research will also help develop management strategies for susceptible forests and test regulations designed to prevent long distance spread of the pathogen, a threat that could drastically alter woodlands and forests in California and elsewhere in the USA.

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Field Notes

Jonathan Price, currently a postdoctoral fellow at the Smithsonian Institution, has the right idea. This winter, he is conducting fieldwork in Hawaii and the Marquesas and Society Islands. In Hawaii, he's been working with conservation managers on Maui and Oahu hoping to research the relationship between phylogeny, regional biogeography and community ecology. Jonathan writes that "Hawaii is one of few places we can tie these disparate areas together. The clock is running however; unprecedented invasion of non-native organisms is unravelling community structure and dooming many evolutionary curiosities to extinction." He's pursuing similar questions in the Society and Marquesas Islands: "these two archipelagos have climates, geologic histories, and biological origins very similar to Hawaii, effectively constituting replicates."

Michael Starr (Southern Illinois University Edwardsville) writes: In the early 1990's, I began a research project in the western Mojave Desert in California. My initial goal was to assess the effects of various types of human use impacts (e.g., ORV's, grazing, trash dumping, roads) on the desert lands surrounding a number of cities by comparing these areas to less disturbed, relatively undeveloped sites. I was able to show that such human use of lands adjacent to development resulted in changes to both perennial shrub richness and ground squirrel abundance, depending on the type and the degree of impact. Since that time, I have continued to monitor most of these sites at regular intervals, most recently in the Summer of 2001.

On this occasion, I ran a 5 week field course ("Field Survey Methods in Biogeography") for the Department of Geography at Southern Illinois University Edwardsville. I took 12 undergraduate students and one graduate assistant to the Mojave Desert, where we spent 3 weeks collecting data at many of my original study sites. (This research and the associated equipment was partially subsidized by a number of grants from SIUE.) While much of the research was designed to continue the work I had begun previously, many of the students conducted their own individual field surveys as well. In the end, this field course resulted in four senior projects, two student presentations at the AAG meetings in Los Angeles and one co-authored paper. In addition, one of these students received a graduate assistantship and is continuing this work at Southwest Texas State University.

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Internet Resources

Online Activism

<http://www.savebiogems.org/takeaction.asp>

The Natural Resources Defense Council makes it easy to send emails to your representative and senators via this web site. After filling in your name and address, you can send a copy of NRDC's message, or erase it and pen your own.

Four Darwin Texts Online

<http://www.literature.org/authors/darwin-charles/>

Full text versions of *The Voyage of the Beagle*, *The Origin of Species*, *The Origin of Species - 6th Edition*, and *The Descent of Man*.

The following links and descriptions (with some editing) are taken or adapted from The NSDL Scout Report, Copyright Internet Scout Project 1994-2002. <http://scout.cs.wisc.edu/>

Animal Info: Information on Rare, Threatened, and Endangered Mammals

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

This site provides a database of information on rare, threatened, and endangered mammals from around the world, searchable by species name (common or scientific) or browsing a list of common names grouped by category (e.g., monkeys). Once found, a species' page will contain a general profile (often including links to pictures), status and trends (such as distribution and IUCN category), relevant biological and ecological data, references, and interesting facts. Users may also find the extensive page of links useful.

Conservation International: Biodiversity Hotspots

<http://www.biodiversityhotspots.org/xp/Hotspots>

This Web site from Conservation International's (CI) Center for Applied Biodiversity Science explains how biodiversity hotspots are designated and offers visitors a look at efforts to protect "these biologically rich areas around the world under significant threat of destruction." The highlight of this site is the interactive map; clicking on a red dot will bring up a detailed description of that particular hotspot, along with downloadable area maps, a glossary, and other resources.

The Algodones Dunes, California

<http://www.biologicaldiversity.org/swcbd/Programs/deserts/algodones/slide1.html>

The Center for Biological Diversity blends "conservation biology with litigation, policy advocacy, and an innovative strategic vision" in efforts to protect endangered species and wild places, focusing on the western US. This Web site contains a slide show of images from the Algodones Dunes, California's largest dune system. The fourteen slides show images of the area's natural history and environmental threats, such as effects from off-road vehicles. Each slide is accompanied by a brief description. While not overly informative, this Web site offers visitors a quick overview look at this unique natural area. [RS]

The Thylacine Museum: A Natural History of the Thylacinidae

<http://www.naturalworlds.org/thylacine/index.htm>

This Web site is offered through C. Campbell's Natural Worlds, a "completely nonprofit, education online series which exists as a means of providing detailed information on a variety of topics within the natural history field." The Thylacine Museum, not surprisingly, is devoted to the now extinct thylacine (also known as the Tasmanian tiger). The site includes "information covering virtually all aspects of this very unique Australian marsupial." Users can browse dozens of pages of detailed articles about these animals. Topics covered include thylacine behavior, fossil record, skull data, and much more. The site also offers photos and movie clips of captive thylacines from the first part of the 20th century.

The State of the Nation's Ecosystems

<http://www.heinzctr.org/ecosystems/>

This Web site is provided by the H. John Heinz III Center for Science, Economics and the Environment - "a nonprofit institution dedicated to improving the scientific and economic foundation for environmental policy." The State of the Nation's Ecosystems is a comprehensive report prepared by "experts from businesses, environmental organizations, universities, and federal, state, and local government agencies," intended for "decision makers, opinion leaders, and

informed citizens who seek an authoritative, comprehensive, and succinct overview of what the nation most needs to know about the changing state of its ecosystems." This well-presented report offers information from research in many fields, and is organized into chapters covering coasts and oceans, farmlands, forests, fresh waters, grasslands and shrublands, and urban and suburban areas in the US. The entire report may be searched by keyword, and each chapter may be downloaded. This Web site offers a fantastically comprehensive source for a "scientifically sound and nonpartisan" characterization of US ecosystems, and is careful to highlight existing gaps in the data.

Florida Museum of Natural History Zooarchaeology Comparative Databases

<http://www.flmnh.ufl.edu/databases/zooarch/intro.htm>

The Florida Museum of Natural History offers a number of Web-accessible databases, including this group of databases for the museum's zooarchaeology collection. The physical collection contains "skeletons of vertebrates and exoskeletons of mollusks and crustaceans and their associated data." Information is accessible through individual databases for birds, bivalves, crustaceans, fishes, gastropods, mammals, and reptiles and amphibians. The databases may be searched by taxonomic, geographic, or catalog number query. The collection primarily contains specimens excavated from areas in southeastern US, West Indies, Caribbean, and northwestern South America. It is intended for use "in a comparative way to identify the fragmentary remains from archaeological data" as well as to "estimate size, age, and season of death of animals recovered from archaeological contexts." Researchers are encouraged to offer suggestions for improving the databases.

Coral Reef Information System: Discover NOAA's Data

<http://coris.noaa.gov/data/welcome.html>

Part of the National Oceanic and Atmospheric Administration's Coral Reef Information System (CoRIS), this Web site is "designed to be a single point of access to NOAA coral reef information and data products, especially those derived from NOAA's Coral Reef Initiative Program." With Discover NOAA's Data, users can access information by a text search of metadata records, or by a spatial search using an Arc IMS application. The two approaches share many of the same data sets. With the text search, users may search NOAA coral reef information by title, author, keyword, etc. The map program includes "over 19,000 aerial photos, 400 preview navigational charts, tide stations, paleoclimatological studies, photo mosaics, coral reef monitoring, bleaching reports, and more." The site provides numerous help features for both search methods.

The Mammal Species of the World

<http://nsmnhgoph.si.edu/msw/>

The Department of Systematic Biology at the Smithsonian National Museum of Natural History offers this Web site for The Mammal Species of the World (MSW) -- a database of mammalian taxonomy containing the names over 4,000 currently recognized mammal species. This database is intended for use as a "convenient on-line reference for identifying or verifying recognized scientific names and for taxonomic research." The database may be searched using a number of different fields, including scientific and common names, original publication citation, type species or locality, and distribution. In addition to serving as an online reference, MSW can be "adapted as an authority file for collections management activities of mammal collections.

Wildlife Conservation Society: In the Wild

<http://wcs.org/humanfootprint>

In the Wild is a Web feature of the Wildlife Conservation Society, a nonprofit organization working to conserve "wildlife and wild places by working on all fronts through its international conservation programs, living institutions, and pioneering environmental education programs." This Web site presents a new, comprehensive map of the human footprint, or "patterns of human influence across the land's surface." Recently published in *Bioscience*, the study reveals that human beings "directly influence more than three quarters of the earth's landmass," a finding that should serve as a "wake-up call" for making a concerted effort to find sustainable ways to use our natural resources. While this Web site may appeal more to those who take an academic interest in conservation issues, it also provide the casual visitor with a sound introduction to these global problems.

National Environmental Data Index

<http://www.nedi.gov/>

The National Environmental Data Index is maintained by the National Atmospheric and Oceanic Administration Environmental Information Service. The service provides a full text search of information from twelve governmental agencies including the US Department of Agriculture, Department of Energy, Department of Interior, Environmental Protection Agency, and NASA. Users can choose to search from all or individual agencies, by type of information, and by several specific subjects. Results display the agency and initial hits found within each; you can then display all results including links to the specific information.

New GCMD Data Sets

<http://gcmd.gsfc.nasa.gov/Resources/whatsnew.html>

NASA's Global Change Master Directory Dataset Web site (last mentioned in the May 2, 1997 Scout Report) offers a free monthly list of earth science data sets. The site provides a search feature for the thousands of data sets listed.

Center for International Earth Science Information Network

<http://www.ciesin.org/data.html>

Columbia University offers the Center for International Earth Science Information Network (last mentioned in the February 16, 2001 Scout Report), which specializes in online data and information management, spatial data integration and training, and interdisciplinary research related to human interactions in the environment. Their Data and Information page contains links to data, data applications, online tools, and information involving climate change, environmental health, land use, and more. The site contains an eclectic accumulation of GIS and environmental information that some researchers may find very interesting.

Predicting Invasions of Nonindigenous Plants and Plant Pests

<http://www.nap.edu/books/0309082641/html/>

This Web site contains the free book *Predicting Invasions of Nonindigenous Plants and Plant Pests* provided by the National Academies Press. Compiled by the US Board on Life Sciences and the Board on Agriculture and Natural Resources, this 194-page book explores the difficulties in predicting the immigration and impact of exotic species. Researchers active in this field may find this free resource of

use.

Sahara Wildlife

<http://www.pbs.org/sahara/wildlife/wildlife.htm>

This site forms part of a larger companion Web site for Sahara, a two-hour documentary from PBS. Visitors can access a collection of fantastic images and information on Saharan animals. Well-designed and easy to use, the site provides interesting background information about each animal, as well as a number of photos, range maps, and narrated video clips from the documentary- "innovative and intriguing shots that tell the story of the Sahara through the eyes of its own creatures."

Worldometers

<http://www.osearth.com/resources/worldometers/>

Visitors to this Web site can keep tabs on the state of the planet with Worldometers -- automatic counters tallying real-time changes in a number of global indicators. Worldometers is presented by o.s.EARTH, Inc., a nonprofit research and education organization that provides "experiential, simulation-based learning and training about world resources and issues." Visitors may view counters in the following areas: Population, Energy, Food Supply, Health, Education, Environment, and Economy and Government. The Web site is simply presented, and while visitors will have to look elsewhere for a discussion of the issues presented, the counters themselves paint a rather vivid picture of global concerns.

Evaluation of Airborne Image Data for Mapping Riparian Vegetation Within the Grand Canyon

<http://geopubs.wr.usgs.gov/open-file/of02-470/>

A US Geological Survey Open-File Report has recently been released entitled "Evaluation of Airborne Image Data for Mapping Riparian Vegetation Within the Grand Canyon." The 65-page document explains how the study "examined various types of remote-sensing data that have been acquired during a 12-month period over a portion of the Colorado River corridor to determine the type of data and conditions for data acquisition that provide the optimum classification results for mapping riparian vegetation." Because remote sensing is still in its early stages of development, new ways to produce more effective images are continuously and feverishly being sought. This study gives researchers and professionals good insight into how remote sensing can best be utilized for riparian and hopefully other similar vegetative areas.

Fieldwork/Travel Health Resources

International Society for Mountain Medicine

http://www.ismmed.org/np_altitude_tutorial.htm

Outdoor Action Guide to Hypothermia and Cold Weather Injuries

<http://www.princeton.edu/~oa/safety/hypocold.shtml>

Dehydration and Heat Stroke

http://www.umm.edu/non_trauma/dehyrat.htm

Health and Medical Advice for International Travel

<http://www.comeunity.com/adoption/health/travel/index.html>

Health Information for Travelers to Tropical South America

<http://www.cdc.gov/travel/tropsam.htm>

Food and Water Precautions and Travelers' Diarrhea Prevention

<http://www.cdc.gov/travel/foodwatr.htm>

Natural History of Hawaii

1. Hawaii's Living Treasures
<http://library.thinkquest.org/J002491/>
2. The Silent Invasion
<http://www.hear.org/intro/index.html>
3. USGS National Wildlife Health Center: Hawaii Field Station
<http://www.nwhc.usgs.gov/hfs/hfs.html>
4. The Harold L. Lyon Arboretum
<http://www.hawaii.edu/lyonarboratum/>
5. The Hawaii Natural Area Reserves System
<http://www.dofaw.net/nars/>
6. N. Robert Wagstaff: Naturalist Painter
<http://www.wagstaffdesign.com/index.html>
7. Haleakala National Park
<http://www.terrageria.com/parks/np.haleakala.all.html>
8. ScienceDaily Magazine: Arizona Biologists Help Restore Mauna Kea Silversword
<http://www.sciencedaily.com/releases/1998/03/980310080030.htm>

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Editor's Note

You might have noticed that the newsletter has grown quite a bit in the last year or so. Its production schedule (such as it is) is still somewhat haphazard and subject to the vagaries of my time availability and the timing of the AAG meetings. This issue is especially early (and rushed).

As usual, I thank those of you who submitted materials for this issue. I'll put in a plea to **send material** for the fall issue of *The Biogeographer*. In addition to the usual news and notes items, guest columns, articles, book reviews, maps, and anything else you think might be of interest to the BSG membership are also welcome. Don't be shy.

Finally, I can't resist throwing in a book promotion. If you haven't already read Tim Flannery's *The Eternal Frontier: An Ecological History of North America and Its Peoples* (2002: Grove Press), by all means pick up a copy. I'm about halfway through and have found it to be well written, mostly accurate, and a joy to read. A copy of his *The Future Eaters: An Ecological History of the Australian Lands and People* (also from Grove) is waiting. Together, they might form the backbone of an interesting comparative biogeography course.

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