

Society for Human Ecology (SHE) XVI International Conference
“*Integrative Thinking for Complex Futures:
Creating Resilience in Human-Nature Systems*”

*Sept 10 - 13, 2008
Western Washington University
Bellingham, Washington, U.S.A.*

*Abstracts from paper symposia
Organized by program time & session,
with first-author & presenting-author email contacts
(use Adobe "SEARCH" function to find by author)*

Thursday - September 11

8:00 - 9:30 **Concurrent Sessions: Symposia, Roundtables, Contributed Papers**

Disasters and Resilience Communities

Scott Miles, Huxley College of the Environment, Western Washington University
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Resilience and the Politics of Place

Abstract

A resilient system is one that does not experience serious degradation in service when a disturbance occurs and, in the event of degradation or failure, recovers to a similar or better level of service in a reasonable amount of time. Critical services with respect to community resilience are those derived from and required for community capital –physical/technical, social/cultural, human/personal, economic, ecological, and political/organizational capital. If a community’s critical services and capital are not resilient in the face of a severe economic or natural disturbance, the result will likely be disaster. The most efficient means making a community resilient is to make its critical services and capital robust – minimize damage or loss probability or the consequences from damage or loss. If a community’s critical services and capital are not robust, efforts must be put into recovery. This talk will focus on developing a politics of style to foster robustness of critical services and community capital. Style is about having the capacity to create out of what one has at their disposal. Style is thinking about what's sufficient, more so than what is efficient. Style is also about creativity and diversity. Creativity is inspired by limits and can lead to diversity –many communities and people trying many solutions for resilience. Ultimately, a politics of style is a politics of place. To develop resilient communities, we need political and economic regimes that allow for place-specific solutions for meeting livelihood needs and disaster risk reduction.

Erica Crawford Boettcher, University of British Columbia
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Cross-scale Institutions and Adaptability of a Fraser River flood Management Regime

Abstract

The challenge of adapting to climate change is emerging in B.C. just as significant shifts in the relationships between First Nations and non-First Nations governments and institutions are taking place. These dynamics raise important questions about the capacity of existing environmental management regimes to adapt to an uncertain and changing set of conditions.

This study poses the question: how do cross-jurisdictional institutions influence adaptability of a flood management regime in the Fraser Valley? “Cross-jurisdictional institutions” are the formal and informal rules, norms and values used by individuals and groups

to mediate interactions between levels of government. I take a case study approach, looking at the City of Chilliwack and neighbouring Sto:lo First Nation communities. Jurisdiction over the many components of flood management is variably distributed between federal, provincial, municipal and First Nations governments.

Based on the developing literature on resilience and adaptability, a description of “ideal” characteristics for an adaptable flood management regime will be presented. The case study will be used to outline the cross-jurisdictional institutional arrangements affecting flood management in this area. The impacts of these arrangements for adaptability of the flood management regime will be discussed. (This study is being done in partial fulfillment of a Masters’ degree in Planning.)

Bishnu Pandey, University of British Columbia CANADA
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*Educating Communities for Earthquake Safe Technologies:
Experience from Asia-Pacific Countries*

Abstract

No technology can be help of society unless it is accepted by and penetrated to them. The continuous loss of lives of people in Asian countries in recent earthquakes implies that the current state of earthquake technologies has not reached to the communities those need them badly. Any initiative towards earthquake safety of communities requires understanding of their safety culture, their intelligence and ability to cope with disasters and integrating that with knowledge tools and technologies. This approach needs an effective dialogue between “experts” and “common people” which forms into translation and transfer of modern research outcomes and knowledge into non-technical language.

The paper discusses context of community education for earthquake safety where risk of building collapse and thereby loss of lives arise as a result of individuals’ decision and actions in constructing houses. Implementation experiences from demonstration of simple and cost-effective earthquake technologies, awareness to homeowners, training of technicians and masons are presented and lessons drawn are discussed. Attempts are also made to establish linkage between hazard context, socio-economic status and priority for earthquake risk reduction at individual and community level based on community survey on risk perception. Based on the survey results and lessons from pilot works, conclusions are drawn in respect to guiding elements in planning and implementing technological awareness on earthquake safety to communities.

Rajan Dhariwal, University of British Columbia CANADA
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Disaster Resilience of the Vancouver Health Care System to Pandemic Influenza

Abstract

In a health-related disaster such as a pandemic, efficient health care delivery is imperative to ensure a robust workforce. By fostering resiliency in this sector, disruption to the delivery of health care can be minimized. This study’s goal is to evaluate the resilience of the health care system to pandemic influenza by using Greater Vancouver as a case study. The methodological approach is structured around a decision tree analysis that computes conditional probabilities of events in an influenza outbreak. The branches of the tree will be partially populated through data procured from interviews with regional experts. Based on historical precedence, a pandemic influenza scenario has been created that should provide a background for a response to the interview questions. Although the interviews are the primary data source, further information has been accumulated through other regional documents such as the British Columbia Pandemic Influenza Preparedness plan, as well as from a comprehensive review of the existing literature. This process should provide an estimation of the likelihood of certain events occurring in a pandemic, including characteristics such as time, morbidity, and mortality. Additional anticipated outcomes will be an assessment of the role of infrastructure interdependencies to resilience, as well as the gaps in current mitigations and strategies. This approach is distinctive since prior research on health care has only focused on facilities instead of examining the *systems* perspective. This perspective allows for a consideration of the entire health care network in a region, including the relationships between each facility and the agencies that govern them.

Sustainability Curricula: Knowledge, Skills, and Experiential Learning

Will Focht, Oklahoma State University

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Conceptual Model for an Interdisciplinary Curriculum on Sustainability

Abstract

Interdisciplinary environmental science and studies degree programs in higher education vary widely in their curricular designs despite the age of the environmental field. Sustainability, being quite a bit younger, presents an even greater challenge in curricular design. This presentation introduces a conceptual framework for understanding sustainability and suggests core competencies that can prepare students for entry into sustainability professions. The framework situates sustainability squarely at the interface between human and natural systems by examining both human impacts on nature and the utility of natural capital for sustainable improvements to human quality of life. Core competencies will address interdisciplinary content, professional skills, and practical experiences. Applied sciences, policy, and social institutions play important roles in education aimed at achieving a more sustainable future.

Jean MacGregor, Evergreen State College

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Integrating Sustainability Across the Disciplines

Abstract

If sustainability perspectives and practices are to become part of college graduates' thinking, they must start appearing "across the curriculum" in ways that are meaningful for students. In the Puget Sound region, the Curriculum for the Bioregion initiative is engaging disciplinary groups of faculty in sustainability curriculum development for use in introductory or general education classes. These "faculty learning communities" are designing, sharing, and web-publishing activities that integrate sustainability student learning outcomes with disciplinary "big ideas." Ideally, "big ideas" are core concepts that not only matter to individual faculty in their disciplines, they are so important and compelling that our students will remember them years into the future. Currently, the Curriculum for the Bioregion initiative is working with faculty in the disciplines of biology, English composition, chemistry, sociology, and philosophy/religious studies to develop teaching-and-learning activities with this "big ideas" approach. This presentation will include the "big ideas" curriculum design strategy, adaptable with any faculty group. It will also share sustainability learning outcomes, examples of the teaching-and-learning activities already developed, student responses, and the challenges that have emerged. It will also reflect on the "faculty learning community" strategy as a generative way to support one another's new teaching moves.

Eric G. Strauss, Boston College

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Charles Lord, Urban Ecology Institute

Peter J. Auger, Boston College

Creating Urban Sustainability at a University through an Independent Not-for-profit Institute

Abstract

The core idea in urban ecology, *that environmental and social wellbeing are inextricably linked*, requires a thoroughly integrated approach to the development and implementation of meaningful undergraduate curriculum. The curricular elements include a broad sweep of seminars, content-based courses, capstone gatherings, research opportunities and internship experiences – all within a community-centered framework. This type of program is difficult to implement in a university setting that is organized into independent departments of traditional disciplines. This presentation will feature the efforts at Boston College to create novel curricula in a traditional setting.

In response to this challenge, a core team of faculty and social entrepreneurs at Boston College started the Environmental Studies Program at Boston College in 1996, followed in 1998 by the independent not-for-profit Urban Ecology Institute (UEI). Both the Environmental Studies Program and UEI were housed outside of any department and each was in different university reporting units. Through this collaboration, a novel series of courses, research internships and

field stations were developed, mostly through extramural funding. The undergraduate curricula were developed to support the urban forestry, behavioral ecology, secondary school field studies initiative and community wellness programs of UEI. As a result the students participating in this interdisciplinary Environmental Studies Minor had access to both the traditional research opportunities of the existing departments and also the community-based programs of UEI. The program is now one of the largest on campus and serves as a model for other more recent sustainability initiatives at Boston College.

Shirley Vincent, Oklahoma State University

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*A Survey of Interdisciplinary Environmental Program Leaders:
Can Sustainability Serve as a Guiding Framework for Core Competencies?*

Abstract

Interdisciplinary environmental programs have proliferated and flourished in higher educational institutions across the United States for four decades. Despite this long history and the large and growing number of programs, no consensus has emerged on a shared program identity or core principles. The lack of a common identity has led to persistent concerns about how well environmental programs are preparing graduates to meet complex environmental and sustainability challenges.

To address these concerns, the Council of Environmental Deans and Directors of the National Council for Science and the Environment recently launched a multi-phase curriculum study to determine if a consensus on core competencies for environmental program graduates can be achieved, and if so, to make recommendations for consideration by program leaders. This presentation will focus on the key findings of phase two of the curriculum study: a survey of 260 environmental program leaders representing 343 degree programs at 243 institutions of higher education. These findings include (1) information on program structure and curricular content, (2) influences and trends in program evolution, and (3) the results of a cluster analysis evaluation of program types based on importance ratings of 16 knowledge areas and 23 skill sets. The presentation concludes with a discussion of how the survey and phase one of the CEDD curriculum project together reveal the potential for sustainability to serve as a unifying framework for the elucidation of core competencies.

Structural Human Ecology

Richard York and Philip Mancus (presenting), University of Oregon

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Animals and Kings: A Materialist Foundation for MacroAnthrozoology

Abstract

We present an argument for the importance of making a link between the emerging field of anthrozoology and the materialist human ecology tradition. We discuss the value of philosophical materialism as a basis for anthrozoological research and the link this provides with human ecology. Building on this materialist foundation, we argue that the interaction between society and animals can best be understood through dialectical analyses and illustrate this case with a discussion of the dialectical process of domestication. We also review existing sociological research to show that although animals are often invisible in discussions, various analyses implicitly support the argument that animals are a key factor influencing the development of societies. Our arguments present a basis for understanding interactions between society and animals in a broad historical and geographical sense, pointing the way to a macro-anthrozoology.

Wayde Morse, Auburn University, and Bill McLaughlin, University of Idaho

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Social Ecological Structuration: Understanding the Processes of Change and Stability in Human Ecosystems

Abstract

Understanding the processes that link social and ecological systems is critical for identifying and building resilience within these interdependent systems. A theoretical model was developed as a

heuristic device to explain dynamic social and ecological process as they change over time. This model integrates adaptive cycles from Panarchy Theory with Structuration Theory from the social sciences to explain the processes driving social and ecological change and stability. Both social and ecological processes contain fast and slow variables that interact as recursive systems. Over time, these systems develop relatively stable structures that both enable and constrain future actions. In the lexicon of Structuration Theory, both systems exhibit qualities of structuration, or the dynamic process of catalyzing their own future context. As a process model, the variables to be included in the model are dependent on the research question. Case studies describing the processes of social and ecological change for vegetable production in Phnom Penh in Cambodia and reforestation incentives in Costa Rica are presented. Variables identified in the Human Ecosystem Model were used to guide the structural analysis of both studies while the theory of Hierarchical Patch Dynamics was used to express land use change.

Stig-Olof Holm, Umeå University SWEDEN

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Increased Ecoefficiency and Gross Rebound Effect: Evidence from USA and Six European Countries 1960-2002

Abstract

Despite increased efficiency in the use of natural resources, the use of these resources continues to increase in most societies. This paper examines the discrepancy between the potential decrease of use of natural resources, as an effect of increased efficiency and actual use. During the period 1960-2002, this difference was found to grow faster in the USA than the mean for six West European countries. Possible reasons for this difference between the two regions are analyzed. To reduce the anthropogenic flows of energy and material, and the consequent deleterious effects on the biosphere, it will become necessary to adapt consumption to degree of efficiency in the use of natural resources. Based on the comparison between the two regions, some economic aspects of this issue are discussed.

Social Marketing: Applied Research, Action Research and Systemic Change. An Interactive Symposium

Rebecca Cors, Applied Research Northwest, Bellingham

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Encouraging Pro-Environmental Behaviors and Lifestyles

Abstract

Covers descriptions of three efforts to encourage pro-environmental behavior highlight barriers and motivators for change, action research and applied methodologies, and group and systemic interventions. The first were a set of focus groups to learn about citizens' barriers and motivators for getting rain barrels that would be subsidized by the City of Bellingham. Second is an effort by the Wisconsin Department of Natural Resources to prepare staff to work more collaboratively with regulated business. Finally, there will be an introduction the Curriculum for the Bioregion, which was recently developed by the Washington Center for improving the Quality of Undergraduate Education.

John Korsmo, Western Washington University

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Promoting Prosperity to Address Poverty

Abstract

Descriptions of three separate efforts to address areas in which poverty affects children and families will be provided. Results emphasize the efficacy of engaging the communities being served in facilitating their own systemic interventions and change. We begin with an example of social marketing relating to drug use and violent activity among youth in Milwaukee, Wisconsin. We will also discuss the use of action research principals in supporting social and interpersonal change for youth in short-term residential facilities in Bellingham, Washington, supporting staff to engage in partnership with the youth being served. We will conclude with discussions of the use of a "Prosperity Action Team," a current action research effort that addresses poverty at the personal level within Whatcom County, Washington, through which we have created

“Community Navigator” positions where people who have been experiencing poverty themselves engage as support systems and navigators for others in poverty.

Atsuko Kuribayashi and Midori Aoyagi-Usui, NLI Research Institute, JAPAN
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Information about Climate Change that Leads to Attitude Change
Abstract

The growing severity of climate change is fostering a sense of urgency, especially among individuals in developed countries, to switch to low carbon lifestyles. In Japan, while a surprisingly large proportion of individuals express serious concern about climate change, few are actually compelled to take action.

Up to 2007, our research on attitudes and behaviors toward global warming emphasized the influence of demographic characteristics such as gender, generation, educational background, occupation, life stage, and level of environmental literacy.

However, in 2008, we began a new experimental approach using focus groups in Tokyo to discover which delivery methods and information content are effective in improving environmental literacy and changing people’s attitudes and behaviors toward global warming.

We found out that the key triggers of the attitudes change are 1) Similar demographic characteristics of the discussion group members, 2) Atmosphere of the discussion group that all of the members have common knowledge about climate change, 3) Two way communication (Q&A), 4) Contents and expression of the lecture that group members feel having somewhat relevancy to, 5) Trust in the lecturer, and 6) Friendliness of the lecturer.

This paper contains a part of our research results.

11:00 -12:30 Concurrent Sessions: Symposia, Roundtables, Contributed Papers

Pharmaceuticals in the Environment

Session abstract

We face a growing challenge as our society ages: safe and prudent disposal of unused medications. Older adults are major medication consumers. In 2003, outpatient prescription drug expenses totaled at least \$178 billion, or approximately 20% of total health expenses. Unused medications represent wasted health care dollars, and raise the risk of accidental poisonings, illegal diversion/abuse, and disposal problems. This year, an Associated Press investigation found pharmaceuticals in the drinking water supplies of 24 major metropolitan cities, serving 41 million Americans.

Pilot programs around the country are testing unused household medicine collection methods and working to establish a nationwide collection system. In this symposium, representative efforts will be shared and discussed:

- Preliminary findings and design of the first ever mail-back medicine return program in the U.S., funded in 2007 by USEPA and recently launched in Maine.
- Highlights from the largest pharmacy-based collection pilot in the U.S., Washington state’s “Pharmaceuticals from Households: A Return Mechanism” (PH:ARM) program.
- A review of Clark Co. coroner cases, examining categories and quantities of household medicines collected and disposed by coroners. Findings illustrate the potential impact of unused medications both on the environment and human health.
- Model legislation regarding state efforts for safe pharmaceutical disposal.

Ilene Ruhoy, Environmental Protection Agency and Touro University
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Discarded Drugs as Environmental Contaminants
Abstract

Active pharmaceutical ingredients (APIs) from medications can enter the environment as trace contaminants, at individual concentrations generally below a part per billion ($\mu\text{g/L}$). APIs enter the environment primarily via the discharge of raw and treated sewage. Residues of non-metabolized APIs from parenteral and enteral drugs are excreted in feces and urine, and topically

applied medications are washed from skin during bathing. These trace residues may pose risks for aquatic life and cause concern with regard to subsequent human exposure.

APIs also enter the environment from the disposal of unwanted medications directly to sewers and trash. The relative significance of this route compared with excretion and bathing is poorly understood and has been subject to much speculation. Two major aspects of uncertainty exist: the percentage of any particular API in the environment originating from disposal is unknown, and disposal undoubtedly occurs from a variety of dispersed sources. Sources of disposal, along with the types and quantities of APIs resulting from each source, are important to understand so that effective pollution prevention approaches can be designed and implemented.

Accumulation of leftover, unwanted drugs poses three major concerns: (i) APIs disposed to sewage or trash composes a diverse source of potential chemical stressors in the environment. (ii) Accumulated drugs represent increased potential for drug diversion, with its attendant risks of unintentional poisonings and abuse. (iii) Leftover drugs represent wasted healthcare resources and lost opportunities for medical treatment.

To address this emerging issue, it is important to define the processes, actions, and behaviors that control and drive the consumption, accumulation, and need for disposal of pharmaceuticals as well as understand the diverse locations where drugs are used and accumulate. This will allow for the identification of opportunities for pollution prevention and source reduction.

Len Kaye, University of Maine School of Social Work

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Implementation of the Safe Medicine Disposal for ME Prescription Mail-Back Program

Abstract

Older adults make up only 13% of the population, but fill one-third of all prescriptions making them susceptible to intentional or unintentional misuse, dependence, and addiction. Additionally, older adults have the lowest compliance rates of all age groups. The resulting accumulation of pharmaceuticals in the home is a worrisome trend throughout the country and is creating growing concerns from both environmental and personal health perspectives. The Safe Medicine Disposal for ME Program, funded through a grant from the United States Environmental Protection Agency's Aging Initiative, was established to provide older adults and their families with the country's first consumer-focused pharmaceutical mail-back program. The program, will distribute envelopes (n = 9,000) to older adults and caregivers in all 16 counties in Maine via a pharmacy network of chain and community-based pharmacies throughout the state. Program envelopes provide a means for community members to return their unused and unwanted medications for safe and proper disposal. Early findings suggest that in rural areas, the mail-back model may be one of the most effective solutions to unused drug accumulation. Data to be presented includes the type, classification, and amount of medications returned via the program; participant demographic profiles; and salient motivational factors for program participation. Procedural information will be provided for participants interested in replication efforts.

Dave Galvin, Hazardous Waste Program Manager, King County, Washington

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Unused Household Medicine Return: Lessons and Successes from Washington State

Abstract

Creating a safe, secure, easily available unused household medicine return program calls for behavior change, regulatory change, and product stewardship like what we now have for electronic waste, fluorescent lights, paints, and carpets.

Medicine return programs reduce opportunities for illegal drug diversion, abuse, addiction and poisonings without negatively affecting water quality or human health. They also demonstrate the viability of an ongoing manufacturer-funded take-back model.

Since 2006, the Washington PH:ARM (Pharmaceuticals from Households: A Return Mechanism) pilot project has safely collected and disposed of more than 10,000 pounds of unused household medicines at more than 30 clinical and retail pharmacies statewide. Several care facility locations will soon be added. This is the largest ongoing medicine return pilot project in the U.S.

The PH:ARM presentation will highlight:

- Design and operation of a safe, secure, easily available collection/disposal system.

- Support from law enforcement, elected officials, public health, health care, social service, environmental, retail and manufacturing sectors.
- Addressing drug enforcement, waste management, transportation, and other regulatory requirements.
- Responding to public interest in safer unused medicine disposal.
- Washington State's proposed medicine return legislation.
- Research into upstream waste reduction and alternative disposal methods.
- National efforts to create a manufacturer-funded unused medicine return program.

Kathy Sykes, Environmental Protection Agency
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Prudent Disposal of Unwanted Medications: Efforts to Fill Research Gaps
 Abstract

A major challenge we face as our society ages is the safe disposal of unused, unwanted or expired medications. Older adults are major consumers of medications. In a 2002 field survey, the U.S. Geological Survey detected very low concentrations of chemicals commonly found in prescriptions and over-the-counter medications in 80% of 139 streams. In 2008, an Associated Press investigation found pharmaceuticals were present in the drinking water supplies of 24 major metropolitan cities, serving 41 million Americans.

In 2007, the US EPA Aging Initiative funded a mail-back pilot in the state of Maine and a take back pilot at pharmacies located in a grocery store chain in St. Louis, MO region. Preliminary results of these demonstrations will be discussed and opportunities to reduce the incidence of leftover or unused medications.

Australia, Canada and the EU have enacted laws to address the problem of proper disposal of unused medications and personal care products. Two states that have enacted legislation to address the problem of safe disposal of pharmaceuticals and personal care products. In the U.S., Maine was the first state to enact legislation in 2003 while California passed legislation 2007. These model legislative approaches to address the disposal problem of pharmaceuticals in the environment will be examined.

Ecology of Wisdom: The Deep Long-Range Ecology Movement Revisited

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Deep Ecology and Its Critics
 Abstract

The name Deep Ecology has been applied without enough scrutiny to three different contents: to Arne Naess's particular ecosophy (called by him: Ecosophy T); to the social movement represented by the so-called Eight Points Platform; and to the particular philosophical contribution brought by Deep Ecology to the ecophilosophical reflection in general. These incorrect associations have caused multiple misunderstandings and have brought a considerable number of criticisms. However, the complexity of the thoughts of Arne Naess (the main figure in the movement) and the great variety of personal positions among those who supported (in many cases enthusiastically) the deep, long-range ecology movement explains that conceptually, Deep Ecology may bring an ambiguous message. In my paper I will claim that the shower of criticisms received by Deep Ecology, provoked a huge production of clarifying articles, which helped immensely to strengthen and complete Deep Ecology's philosophical frame.

In my paper I will address the main criticisms of Deep Ecology, and the responses and clarifications provided by Arne Naess and the rest of the key theorists in the movement.

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The Major Principles of The Deep, Long-Range Ecology Movement
 Abstract

This essay reviews the three great social movements of the twentieth century, the social justice movement, peace movement and ecology movement. Special emphasis is on the deep, long-range ecology movement including the platform principles of the movement, ecosophy, the importance

of nonviolent direct action and deep questioning. The essay concludes with questions concerning social responses to global warming and suggests bioregionalism as one response to global warming.

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Human Ecology, Communication Systems and Arne Naess

Abstract

From his earliest work on *Interpretation and Preciseness*, Arne Naess uses a deep, comprehensive approach to study language based communication. This approach unites many disciplines, exploring human language systems, within a larger constellation of natural world communication systems. These open ended, creative and dynamic systems are constantly adapting to the unique circumstances of different communities. Natural communication between and among species involve complex nonlinguistic arrays of many factors. Following Naess, we now study the ecology of communication and language using broad analytical and empirical methods. By studying these whole systems we appreciate the creative genius of place based knowledge traditions. We see how human ecology fits into these interwoven systems in the natural world. This knowledge is critical to understanding the crucial role of diversity and complexity to environmental integrity, cultural richness, and freedom. As Naess notes, this ecological context means that sometimes we can understand one another without translation, even when from different cultures using unfamiliar languages. Studying the ecology of communication contributes to nonviolent resolution of conflict and fosters awareness of the challenges to precise communication. It opens the way to better interspecies understanding.

Urban Pasts and Urban Futures for Human Ecology

Rafael Guzman Mejia, Universidad de Guadalajara and Maria Del Carmen Anaya Corona, Centro Universitario de los Altos MEXICO

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Puerto Vallarta: 26 Centuries of Evolution

Abstract

Puerto Vallarta: 26 Centuries of Evolution, is an anthropological and historical research across 2,600 years. It encompasses events of the native Vallarta people that occurred previous to the first European presence in the area; the first Spaniard incursion in 1525; the low pace human settlements beginning in 1801; a romantic epoch starting around 1918; a touristic promotion effort since 1961; one epoch of mega projects initiated in 1981 and, last, an epoch of exponential growth in human population and economy situated since 2001. Brief descriptions of each epoch and preliminary findings are included. The research, started in 2007, is located in Puerto Vallarta, Jalisco Mexico, and sponsored by the Universidad de Guadalajara.

Ian Douglas, Manchester University, UK

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From Grime to Glitter: Over 200 Years on the Canals of Manchester, England

Abstract

Canals were originally built in Manchester to bring goods into the city. In 1761 the Duke of Bridgewater commissioned the building of the canal bearing his name from his mines at Worsley to the city of Manchester. This was the first step in improving the local flow of goods and materials. Subsequently he built a longer arm of the canal on the southern side of the River Mersey to carry manufactured goods to the port of Liverpool and to bring cotton and other imports into Manchester warehouses. The growth of business led to a need for new links, especially across the Pennine hills to Leeds and southwards to London. The Rochdale Canal connecting the Bridgewater Canal to towns to the east of the city, began to be opened in 1804 and was completed in 1827. Manchester was thus connected to a national canal network linking all the major rivers of England, the Yorkshire Ouse, The Trent, the Thames and the Severn. Although the growth of the railway network that started with the Liverpool and Manchester railway in 1829 began to compete severely with the canals, they remained part of the industrial scene until the 1950s. Throughout the nineteenth century they became busier, supplying the coal

to new power stations and to coal yards from which it reached domestic consumers by horse – drawn cart. Further canal construction occurred at the end of the nineteenth century with the building of the Manchester Ship Canal and the development of Manchester and Salford Docks as a major sea port. This was instrumental in the development of one of the earliest industrial estates at Trafford Park. The industrial city of Manchester gained more rapid access to global markets and sources of raw material. The heydays of the Ship Canal and of the smaller local canals ended in the 1950s and by the 1970s they were almost derelict apart from recreational uses of the small canals and the sludge boats carrying sewage soils out to the Irish Sea and a handful of vessels carrying corn to the corn and starch mills near Eccles. However, during the 1980's a major effort was made to find new uses for the dock areas, to revive Trafford Park and make the docks and canals an asset for the urban community. Gradually waterside living became fashionable, and the grime of the nineteenth century began to be replaced by a new urban glitter, including the splendid architecture of the Lowry centre and the War Museum of the North. The latest addition is the Salford Media City which will house the northern operations of the BBC and a whole series of related activities. However, the glitter does not escape the legacies of the industrial past. Decades of waste carried into the canal turning basin between the Lowry and the War Museum would produce unpleasant odours from anoxic sediment on hot summer days, if there were not costly remedial releases of oxygen into the canal water at such times. On the small canals, exciting social experiments in mixed public and private housing are taking place in areas such as New Islington, with new canals being built to make the residential area more attractive. The changing human ecology of the built environment reflects the changing role of these canals over more than 200 years.

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Self-Sufficiency and Sustainable Development in an Urban Setting

Abstract

Departing from the United Nations (UN) 1983 statement of what constitutes "sustainable development," this paper argues that self-sufficiency is the common principle that must be pursued to the extent possible before the goals underlying the UN's vision could be realized. WE start with an articulation of five objectives whose achievement could assure sustainable development globally and locally, namely: 1) the well-being of the individual; 2) the well-being of society; 3) the well-being of the non-human species; 4) assuring inter-generation equity; and 5) minimizing disruption of the environmental processes.

The paper then defines self-sufficiency in terms of a set of fourteen spheres of human activities starting with energy and ending with governance. Following this exercise, we describe how self-sufficiency relates to each objective of sustainable development, and how it acts as the common thread principle that could help in the coordination and integration of what has to be done to accomplish those objectives individually as well as collectively. The necessary integration is presented as a demonstration of a human ecology approach or framework to the sustainable development directive. The papers concludes with an illustration of how the adopted framework is guiding the design and implementation of an urban renewal project in Tripoli, Libya. The application involves translating the five objectives of sustainable development into concrete guidelines and constraints affecting each sphere of activity with the goal of maximizing self-sufficiency for the new community.

Communities on Coasts: Tracking Socio-Ecological Resilience

Nancy Dammann, Columbia University

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Resiliency in an Unpredictable Landscape:

Community Based Resource Governance in the Peruvian Amazon

Abstract

Based on a twelve-year longitudinal study in the Peruvian Amazon, I explore the role of community-based resource governance (CBRG) in creating resiliency at the landscape level. Analysis of interviews and household survey data reveals that CBRG not only helps to meet daily needs but also creates an infrastructure with the flexibility and capacity to respond to household and community level crises.

Throughout the study period and across the nine communities studied, extractive activities provided the most stable and significant source of income. The analysis shows that the five study communities that actively engaged in CBRG showed a greater ability to meet their subsistence needs even in the face of short-term regional crises. In 1999 when high floods destroyed crops and fish production dropped precipitously, these five communities were able to rely on local fisheries to meet their basic nutritional needs. Further, flexibility within the local regulations has allowed residents suffering severe crises (such as life-threatening diseases or accidents) to gain access to resources necessary to cope with the emergency. As such, CBRG has served to fill voids traditionally met by the state.

Continued negative pressure by the national government (which views CBRG as illegal and counter to the region's economic development), general political instability, and the shift over the past decades toward increasing economic reliance on extractive activities call into question CBRG's future. Understanding its role and effects, however, has significant implications for landscape-level resiliency.

Warren Flint, Five E's Unlimited

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Two Years of Hurricanes: Dauphin Island's Resilience

Abstract

Hurricane Ivan hit the Gulf of Mexico Coast in 2004 and severely impacted a number of areas including Dauphin Island (DI), a barrier island off the coast of Alabama (USA). Significant physical, economic, social, and environmental destruction resulted. In 2005 Hurricane Katrina struck the Gulf Coast, impacting Texas to Florida. Again, DI experienced large loss of beachfront, homes, businesses, and general community disruption. Following successive disasters, DI leaders decided to reinvent their community in a sustainable way. A strategic planning effort was mounted that was initiated, driven, and completed by the community of more than 1,500 stakeholders. Five E's Unlimited of Seattle, WA provided leadership, technical expertise, and facilitation to DI in its actions to become more sustainable and resilient than it had been in the past. Major emphasis of this strategic examination was placed upon shifting their tax base from one dominated by expensive rental home income taxes to a more diverse small business community. In addition, the community conducted an intensive examination into its internal assets (environmental, cultural, historic, etc.) in order to reverse their significant rural economic leakage patterns. During this 12 month strategic planning effort, the Community Capitals Framework or Cornelia Flora was used to understand how communities function with regards to sustainable community economic development and guide consensus-building and decision-making toward an improved, more sustainable community with a resilient future. This presentation will show (1) how the community capitals (model) framework was used to identify the different kinds of assets that DI possessed and (2) illustrate through the "spiraling capital assets" model how the community was able to trace its points of decline and plot its strategic improvement milestones to reach a more sustainable and resilient future.

Meagan Krupa, University of Alaska

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The Urban Fishery: An Application of System Robustness

Abstract

This paper applies the conceptual framework of robustness, as proposed by Anderies et al in 2004, to a case study of a common pool resource – the Lower Ship Creek Fishery in Anchorage, Alaska. I apply the robustness framework rather than resilience theory to address the maintenance of this fishery because engineered systems, such as a hatchery fishery, operate independently of most variables within the system. There is a need to distinguish the socio-economic and ecological components of the system and study their interrelationships because of the unintended effects of engineered components. This is accomplished by exploring the interrelationship of socio-economic and ecological systems and then using Ostrom's design principles (1990) to define, assess, and suggest opportunities for increasing the robustness of an urban fishery.

Darcie Reynolds, University of Calgary CANADA

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Global Integration in Local Socio-natural Systems: A Case Study of Caye Culker

Abstract

This paper has been written based on the knowledge I acquired from the in-situ research I did on a small Belizean caye that is experiencing rapid social change as it incorporates tourism into its economic activities. Tourism has brought the world to this small isolated place and therefore has added a real impact, to the previously imagined impact, of globalization on the lives of the people who have historically lived on this caye. The paper has two main purposes. The first is to offer some alternatives or additions to the current methods of the social impact assessment field. The second is to describe one instance where there is a large gap between the desired outcomes that guide theories of Euro-centric biased development practices and the desired outcomes of the people of the cultures in developing places. The end proposition is that change occurs at many levels at once and that any plan for development must include many levels at once to be successful.

2:30 - 4:00

Concurrent Sessions: Symposia, Roundtables, Contributed Papers

Warfare Ecology: An Introduction and Dialogue on the Contribution of Human Ecology

Session overview

This session includes a brief presentation of the key ideas in the recently published September 2008 *BioScience* 58(8) paper, "Warfare Ecology" (Machlis and Hanson 2008), followed by two commentaries, author responses, and dialogue with the audience.

Gary Machlis, University of Idaho, gmachlis@uidaho.edu

Thor Hanson, Independent Ecologist, thor@rockisland.com

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A Renaissance of Natural History in Human Ecology: An Interactive Symposium

Session abstract

Natural history—"a practice of intentional, focused attentiveness and receptivity to the more-than-human world, guided by honesty and accuracy"—is one of the oldest continuous human traditions, until very recently a matter of survival for all people. This interactive symposium—four brief presentations, followed by substantial discussion between panelists and the audience—aims to recharge commitment to, and inspire imagination about, the practice of natural history in a variety of settings, including academia, nature centers, and field research. Symposium panelists will review what natural history is; how it relates to ecology, other sciences, and the humanities; how it relates to the process of research; and will also examine some exemplary practices of successful programs and organizations. Then, with the collaboration of audience members, we will share ideas on the successful practice of natural history, and confront its challenges.

Thomas L. Fleischner, Prescott College

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What is Natural History, and Why Does it Matter?

Abstract

Natural history—"a practice of intentional, focused attentiveness and receptivity to the more-than-human world"—is one of the oldest continuous human traditions, until very recently a matter of survival for all people. Simply put, there have never been people without natural history. But contemporary culture largely ignores this practice of attentiveness to Otherness. Indeed, there has never been a moment in the history of *Homo sapiens* when natural history was practiced so little. The disciplined, outward focus of natural history represents a crucial step toward an authentic understanding of human ecological adaptation, and an expanded sense of humanity and humility. Additionally, it serves as an essential foundation for ecological theory and conservation action.

John Anderson, College of the Atlantic

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Philosophical Issues: Is Natural History Discovery Really Science?

Abstract

From a central focus in what was to become Ecology, Natural History languished for much of the 20th century as a sort of "amateur sport" whose practitioners might be dismissed as mere "posey pickers". Increasing specialization within the life sciences, coupled with a greater emphasis on narrow hypothesis testing and the use of ever more expensive technology provided some valuable insights into particular cases, but left some field biologists with the concern that the organism was being lost in the rush to theoretical synthesis. I argue that Natural History forms an essential element of any science of Ecology, and we ignore its holistic approach to our peril. A close integration of Natural History and Human Ecology can provide valuable insights into species management, conservation, and land-use.

Joshua Tewksbury, University of Washington

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Practical Issues: The Relationship of Natural History to Primary Research

Abstract

The past 50 years has seen the steady loss of natural history content from higher education curricula and a dramatic decline in the number of academic and curatorial positions that demand deep natural history knowledge. At the core of this trend is a shift in the life sciences away from the organism. Natural history seeks answers to fundamental questions about organisms: who, what, where, how many, and how does it survive and reproduce? Answers to these questions have formed the foundation of ecology, evolutionary biology, and conservation biology, yet academic institutions, journals, and many academic societies place less and less value on basic natural history. With the rise of formalized falsification as a stated criterion for scientific enterprise, the descriptive work of the natural historian is often considered antiquated, uninformative, and unscientific, but it is not descriptive science that has gone out of vogue, it is the study of the organism itself. Who?, What?, Where?, How many? These same basic questions that are considered antiquated and unscientific when asked at the level of the organism are considered cutting edge science when asked at the level of the gene. We have moved inside the organism. Recognizing this trend provides some lessons for increasing the effectiveness and relevance of natural history. We need quantitative systems for gathering, archiving, and accessing natural history knowledge, we need consistent attention to the unknown, and we need to develop tools for teachers to use natural history to invoke the passion for discovery in the classroom.

Saul Weisberg, North Cascades Institute

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Taking Children of All Ages into the Woods: Why and How?

Abstract

The practice of natural history provides many values to human society—as a basis for informed conservation, primary research and theoretical advances, and for an expanded sense of humanity. All these benefits ultimately stem from initial direct, positive experiences of nature that lead to curiosity and caring. How can these direct experiences be promoted for individuals and groups? What are the characteristics of programs that encourage caring and curiosity? Examples of programs that successfully bring children and adults into direct contact with nature and foster compassion for the more-than-human world will be shared. Currently, some types of programs are thriving, while others are in decline. Reasons for these trends will be discussed.

Social Change and Resilience in Amenity Migration Communities I

Linda Kruger, USDA Forest Service, Kathrine A. Thompson, Steve Selin

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Amenity-influenced Migration

Abstract

People have long been attracted to places with high amenity values. Increasingly, retirees, entrepreneurs and others are moving into communities fortunate to have environmental and cultural resources and recreation opportunities. Often arriving first as tourists migrants are drawn to locations with highly valued natural and cultural amenities and opportunities for a range of experiences from tranquility and adventure. Resort real estate, full and fractional ownership arrangements (time shares), residence clubs, and a variety of other options provide an array of investment possibilities for primary and second homes and short-term residences.

Rapid in-migration has implications for communities and public land managers. For land managers, growth is likely to increase population density in proximity to public lands, increase pressure of riparian and other environmentally sensitive areas and increase the demand for recreation opportunities and facilities. The changing values within the neighboring community may change the issues and concerns residents have about forest management. Healthy retirees are looking for a variety of recreation and volunteer opportunities. Communities need to consider infrastructure, especially in health and transportation sectors.

As amenity migrants settle in their new community, the physical changes are readily apparent: new homes, new business, new roads, rising real estate values. But the changing relationships and values associated with amenity migration are less evident and may present challenges for community leaders and resource managers. This presentation examines amenity-related development within four categories: amenity-based migration, rural development, rural gentrification, and exurbanization and suggests that these approaches can be integrated to provide a more complete understanding of the issues and challenges that accompany amenity related growth.

Robert J. Lillieholm, University of Maine, Christopher S. Cronan, and Jill Tremblay

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Conservation Lands and Gateway Communities in Maine:

Status, Trends and Opportunities

Abstract

Maine's forests cover over 90% of the state, and have long supported the region's timber and tourism economies. Over the past 15 years, forest ownership has transitioned from forest industry control to a diverse set of financial, development, and conservation interests. With 95% of Maine's forests in private ownership, the state's increasingly fluid forest ownership pattern presents both challenges and opportunities for economic development and amenity migration in Maine's struggling gateway communities. This paper describes recent changes in Maine's forest land ownership, with special emphasis on public and privately-protected conservation lands. We examine these lands from biological, physical, social and economic perspectives, and identify the opportunities and challenges that private conservation efforts present to the region.

Annabel Kirschner, Washington State University, and Ellen Donoghue, USDA Forest Service

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Socioeconomic Transitions and Community Well-being in the Pacific Northwest

Abstract

With a decline in the importance of the natural resource economic base of rural communities in the West, increasing attention has been given to how communities fare in periods of transition and what role do natural amenities play in creating new sources of economic opportunity. Some scholars have questioned the effects of tourism and amenity development on the well-being of rural communities. This research uses a unique dataset developed by social scientists at the U.S. Forest Service PNW Research Station to study socioeconomic change in 1,314 communities in northern California, western Oregon, and western Washington. The dataset contains socioeconomic data from the 1990 and 2000 Censuses, a socioeconomic well-being index composed of six variables, measures of manufacturing-based employment and employment

related to the amenity development, measures of proximity to federal forest lands and distance of communities to the nearest major service center. We examine the statistical relationships of these variables and others, including percent change in Hispanic population, and population age 65 years and older, to better understand the effects of socioeconomic change on community well-being.

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Forest Management Policy, Amenity Migration, and Community Well-being in the American West: Reflections from the Northwest Forest Plan

Abstract

This paper examines the relation between public land management policy, amenity migration, and socioeconomic well-being using the case of the Northwest Forest Plan – a forest management policy that caused 11.6 million acres of federal land in the U.S. Pacific Northwest to be reallocated from commodity production to biodiversity services. Our analysis focuses on three propositions implicit in much of the amenity migration literature in the United States: land management policies that reduce commodity production and/or increase environmental protection (1) improve the natural amenity values of public lands; (2) increase amenity migration to communities near public lands; and (3) stimulate economic development and increase socioeconomic well-being in these communities. Our findings indicate that all three propositions are problematic and demonstrate the importance of community-scale analysis for understanding the relation between land management policies, amenity migration, and community well-being. We discuss the implications of our findings for public land management and rural community development.

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High Amenity Exurbs: Thoughts from the Puget Sound

Abstract

Research related to amenity migration has yielded significant insights on issues related to rural transformation, socioeconomic change, and shifting environmental values. Yet, its application in natural resources fields has been relatively confined to rural (non-metropolitan) communities rich in natural amenities that attract second and seasonal home owners, e-commuters, and retirees. I argue the need for broadening our application of the amenity migration concept. Specifically, I suggest that we consider metropolitan regions proximate to high-amenity areas and the emergence of high-amenity exurbs in the metropolitan fringes. Focusing on the Puget Sound, I explore data on population trends, school enrollment, cost of living, and new housing starts to show that the fastest rates of exurban growth occurred in communities situated along major transportation corridors within 30 miles of the national forest. Many of these communities advertise their natural amenities to attract new residents. While this study is still in exploratory stages, my goal is to broaden our understanding of amenity migration to consider metropolitan areas in general and to begin to unravel data at the sub-county level to understand how natural amenities may play a role in residence decisions for exurban communities and implications for resource management.

Shades of Green: Implications of Human Diversity for Environmental Education and Advocacy

Session abstract:

This session will address research on the importance of considering human diversity when crafting environmental messages and designing behavioral interventions to increase sustainability. Individual papers will address gender differences in participation in nature and its association with environmentally responsible behavior, the effects of environmental message framing on different cultural/socioeconomic groups, and differences in environmental concern and motivations in parents vs. non-parents.

Britain A. Scott, Christina M. Manning, and Elise L. Amel, University of St. Thomas
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Dangerous Boys and Daring Girls: Participating in Nature vs. Protecting it Abstract

Since the 1980s, research on gender differences in environmental attitudes and behavior has consistently revealed that women report stronger environmental attitudes and more pro-environmental behavior than men do. This finding was replicated in our sample of more than 300 adults at the Twin Cities Living Green Expo and the Minnesota State Fair. Inspired by ecopsychological theory that suggests green attitudes and behaviors should be predicted by ecological connectedness, we also measured participants' Environmental Identity (EID; Clayton, 2003) and their Participation in Nature (PIN; Scott, Amel, & Manning, 2008). Nature participation included both common recreational activities (e.g., hiking, camping) and less common ancestral earth living/survival skills (e.g., friction fire making, foraging). Men and women did not differ in EID or interest in recreational nature activities, but men reported more involvement and interest in earth living/survival skills than women did. Consistent with ecopsychological theory, PIN was a significant predictor of environmental attitudes and behaviors-- but for women only. Men's PIN was unrelated to their environmental attitudes and behaviors. Results suggest an important opportunity to understand the gender discrepancy and develop strategies to encourage men to make connections, implicit or explicit, between their interest in wilderness experiences and their everyday environmental behavior.

Christina M. Manning, Elise L. Amel, Britain A. Scott, and Jacob W. Forsman,
University of St. Thomas
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No Frame Fits All: Environmental Message Framing Effects Across Diverse Audiences Abstract

A critical feature of any environmental communication is how the message is framed, yet few studies have investigated the effects of environmental message framing across different audiences. We studied framing effects in three diverse samples: a primarily Caucasian, middle-class, environmentally savvy sample at a "Living Green Expo," a demographically similar but less environmentally minded sample at an urban street fair, and a more racially diverse and economically less advantaged sample at several street fairs in communities of color. Participants were asked to indicate their agreement with drilling in the Alaska National Wildlife Refuge (versus National Petroleum Reserve - Alaska), their willingness to donate to an organization fighting mercury contamination of the oceans (versus contamination of the seafood we eat), and the extent to which they could help in cutting carbon emissions 80% by the year 2050 (versus 2% per year until 2050). Our results indicate that framing effects can vary dramatically depending on the audience.

Elise L. Amel, Britain A. Scott, and Christina M. Manning, University of St. Thomas
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Many Paths Lead to Green: Differences Between Parents' and Non-parents' Environmental Motivations Abstract

Few studies have examined how social roles are related to environmental attitudes and behaviors. Inherent in the parenting role is a responsibility to others and to the future. We tested our hypothesis that parents would differ from non-parents in their environmental concerns, values,

motivations, and behaviors, by surveying samples from two consecutive sustainability fairs (2007 and 2008) in St. Paul, MN. Parents and non-parents did not differ in their beliefs about environmental problems, their self-reported environmental behavior, or the perceived benefits of a greener lifestyle; however, parents and non-parents differed in their environmental concerns and motivations. Egoistic concerns (as opposed to altruistic or biospheric concerns; Schultz, 2001) dominated in both groups, but the specific types of egoistic concerns differed between groups. When asked what factors most influence their environmental decision making, parents reported thinking most about “my health or the health of my family” while non-parents reported thinking most about “the kind of person I want to be.” Across other items, parents consistently placed the highest value on health and safety, while non-parents emphasized personal happiness and self-actualization. We believe these results have implications for strategic messaging and other sustainability interventions.

Jacob W. Forsman, Elise L. Amel, Christie M. Manning, and Britain A. Scott,
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Getting Hooked: Finding Effective Frames for Religious and Residence-related Worldviews
Abstract

Previous research has shown that once people develop their own worldviews, information that contradicts those views has limited chance of being accepted. It is therefore important to understand what types of people have what types of views. Once these worldviews are understood, messages can be developed that increase the potential to relay a controversial message, evoking a lasting impression by fitting rather than opposing the worldview. 744 surveys were collected at three events held during 2008 in St. Paul, Minnesota: the Living Green Expo, the Cinco De Mayo street festival, and the Grand Old Day street festival. We examined the influence of religion and residential setting (urban, suburban, and rural) on multiple issues, such as political concerns (e.g., immigration), environmental issues (e.g., the threat of Global Warming), individual readiness to make sustainable changes, and the perceived social acceptability of performing sustainable actions. Significant differences among the major religious groups (e.g., Protestant Christian, Roman Catholic, and no religion) and among the residential settings provide ideas for possible group-specific messages about the environment. These more focused messages may allow for view-opposing information to be received and actively processed by those belonging to groups that historically have been less engaged in pro-environmental activity.

Resource Dependency and Socio-ecological Resilience: Forest and Biodiversity Cases

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Historic Livelihoods, Disturbance Regimes and Biodiversity Conservation in Bhutan
Abstract

Traditional agriculture and forest-based livelihoods are widely assumed to be incompatible with biodiversity conservation. Bhutan, a global biodiversity hotspot in the eastern Himalayas, has formerly protected over 38% of its land area parks, there is a nation-wide ban against shifting cultivation, and there is growing pressure to alter traditional non-wood forest product and extensive livestock grazing practices. Traditional resource-based livelihood activities are widespread in Bhutan, including areas now designated as parks. The indigenous Monpas, who have lived for millennia in what is now Jigme Singye Wangchuck National Park (JSWNP), developed and managed complex plant communities and successional stage mosaics in conjunction with their shifting cultivation practices. Monpas shifting cultivation has now ceased, declining from 28% in one core area of the park in 1989 to just 6% in 2005. Recent studies in this same area found evidence of muntjac, sambar, tigers, and leopards in fallowed shifting cultivation fields and communally grazed woodlands and that these ungulates and carnivores are more common in disturbed sites than in adjacent closed forest. This suggests that the rich biological diversity in JSWNP and other Bhutanese protected areas may not only be compatible with, but dependent upon anthropogenic disturbances associated with shifting cultivation and other traditional land uses. Relationships between biological diversity and anthropogenic

disturbances, specifically shifting cultivation, forest product collecting, and extensive livestock grazing, warrant empirical investigation. The challenge in Bhutan and elsewhere is to understand and maintain historic disturbance regimes, viable livelihoods and biological diversity in an age of rapid and profound social, economic and environmental change.

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Community Attitudes and Management Objectives in the Buxa Tiger Reserve, India

Abstract

In developing nations of the tropics, especially in locations with a high incidence of rural poverty, local communities are often highly dependent on natural resources for mere subsistence. When protected areas are declared in these locations, they place a higher priority on the biological needs of wild species rather than livelihood concerns of the people. This raises predictable issues of social justice and trade off between the larger goal of ecological security and public acceptance of the preservationist philosophy. India's Project Tiger program is a prime example of this problem as it struggles to reconcile the economic aspirations of its rural population with global conservation goals. This managerial dilemma compels a critical evaluation of the social, economic and cultural determinants of resource use behavior in such communities.

I selected Buxa Tiger Reserve in West Bengal state as a case study and focused on four settlements located at various distances from the reserve boundary with differing histories of resource use practices. I documented inter and intra-community variation in the perception of individuals on prevailing management practices. It is relevant that this protected area is gradually phasing out timber harvest, cattle grazing and the removal of firewood and introducing alternative income-generating practices including agri-based micro-business and wildlife tourism with the goal of expanding high quality habitat for the tiger.

My field investigations were aimed at understanding the moral position taken on varied resource use practices that are becoming illegal and prone to punitive action. Drawing upon Ajzen and Fishbein's Theory of Reasoned Action, and building on a broad literature survey of similar investigations in other developing nations as well as a preliminary survey of local resource use practices. I developed a Likert-scale type questionnaire that evaluated local understanding of resource status and of factors contributing to its degradation. My data, collected from 87 randomly selected households demonstrated the variation of these perceptions across age, ethnicity and education levels within the households in the survey and documented how income poverty constrained resource use choices despite widespread awareness of its negative ecological consequences.

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Smallholders' Forest Use and Coppice Regeneration in Central Kenya

Abstract

In Kenya, the new Forest Act came into effect in 2007 that institutionalised participatory forest management by community forest associations (CFAs) of users. Although it is too early to assess the impact of this institutional change on the local people, its potentially negative influence is of grave concern, as forests play a significant role in energy and food security of the rural livelihood. The local people using the forest reserve under consideration, located in Nyeri District, have not yet organised themselves into CFAs, and the authorities argue that participatory forest management is unrealistic because the already degraded resources do not give economic incentives for participation, even suggesting that a total ban on fuelwood collection would be inevitable, possibly in collaboration with NGOs. However, this view is in contradiction to the fact that the forest reserve still has significant resources, including coppice shoots of indigenous trees for fuelwood and charcoal, and the entire argument can be detrimental to the resource users' interest. The potentially sustainable practice of coppice shoot harvest among the local people should be properly examined first of all, instead of a total ban on forest use. The paper discusses these issues based on participant observation of resource collection, measurements of harvested resources, and a sample survey of coppice regeneration and use, with a view to exploring the potential for communal management of forest use.

Mekbeb Tessema, Utah State University, Dale Blahna, USDA Forest Service, Presenting: Robert Lilieholm, University of Maine, and Linda Kruger, USDA Forest Service
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Forest Resource Access, Community Dependence, and Vulnerability in Southeast and South-Central Alaska

Abstract

Assessing different types of forest dependency and vulnerability of forest-based communities is crucial in forest management and planning. We studied characteristics of forest-based communities around the Tongass and Chugach National Forests in Southeast and South-central Alaska. Rural communities in proximity to Alaska's two national forests tend to be dependent on forest resources in many ways. This includes: (1) an instrumental dependency represented by economic, subsistence, and/or recreational use; (2) cultural-spiritual uses; and/or (3) ecological linkages where the environment is a main source of resources essential for survival (e.g., potable water and clean air). In our study, we used forest use permit data and the 2000 U.S. Census to measure the level and types of forest uses focusing on instrumental dependency. Based on our findings, there is a high forest-use-permit-to-population ratio in small and rural communities, indicating that more forest uses may be an element of forest dependency that has not been investigated in the literature. An assessment of these communities' socioeconomic profile indicates that there is weaker community capacity (lower education levels, lower median income, and less-diverse employment) than found in larger communities, and hence these communities may be more vulnerable to potential changes in policies and management practices that limit access to forest resources. As a result, land managers need to give special consideration to small and rural communities' way-of-life before making decisions on forest management and access to resources.

4:15 - 5:45

Concurrent Sessions: Symposia, Roundtables, Contributed Papers

Resilient Roads to Management: Processes and Challenges

Session abstract

This session approaches management in broad terms, including resilience as a process and as an outcome of management initiatives. Resilient processes leading to management can be shown through ecological tools, such as models and concepts. Resilient outcomes are strategies to sustainability, such as adaptive management, co-management, among others. Examples of resilient processes or outcomes, or both, can come from different ecosystems and regions of the world. In this session, we welcome studies approaching both process and outcomes of resilience, whenever this is a natural consequence of traditional practices or the result of initiatives by governments, NGO's or joint enterprises.

Alpina Begossi and Renato Silvano, Fisheries and Food Institute (FIFO), UNICAMP & UFRGS, BRAZIL alpinab@uol.com.br

Ecology and Ethno-ecology of Dusky Grouper in SE Brazil

Abstract

Garoupa (dusky grouper, *Epinephelus marginatus*) is an important catch for several artisanal small-scale fisheries along the Brazilian coast. It is a sedentary, monandric, and late maturing protogynous species, which makes it vulnerable to overharvesting even though it is mainly caught through hook and line or spear fishing through free diving. Lack of information on the ecology and biology of this species in Brazil is astonishing. Much of the information found in the literature concerns Mediterranean dusky groupers. Studies compiling local knowledge (ethnoecology) about fish species complement biological data, and have been fundamental for effective fisheries management. In this study, our objectives are to obtain data about garoupa through fish catches and analysis of stomach contents and gonad maturation (macroscopic analyses), along with interviews from fishermen from six small-scales communities from the southern (Pântano do Sul, Florianópolis, Santa Catarina State) to the northern Brazilian coast (Porto Sauípe, Bahia State). We conclude that precautionary approaches and 'data-less' management approaches are needed in the coast of Brazil. Research on this species and on the potential of aquaculture for its cultivation, are urgent, due to the apparent vulnerability and decrease of garoupa along the coast of Brazil

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Social-Ecological Systems Analysis (SES) for Global Coasts

Abstract

At the SHE 2008 conference, the discussions at the Eco-Summit in Beijing (May 2007), at the SHE conference in Rio de Janeiro (October 2007), at the IGBP conference in Cape Town and the DGH Human Ecology Conference in Sommerhausen/Germany (May 2008), will be synthesized. Past and possible future transformations of different coastal social-ecological systems (SES) and their key drivers will be assessed and compared.

While case studies were very much the main focus earlier, synthesis and analysis will be emphasized. Different ways of linking natural and social science knowledge and data will be explored, such as innovative approaches to SES analysis, participatory modeling and the construction of scenarios. Steps towards synthesis work allow for better systematizing and differentiating SES analysis in coastal areas.

Epistemological aspects of SES analysis, particularly in relation to coastal and marine research and integrated coastal management (ICM), will be presented to identify interdisciplinary approaches and frameworks. Some suggestions on how to develop SES as a framework for interdisciplinary social-ecological research and synthesis will be discussed.

It will be argued that the development of interdisciplinary methods for coastal and marine research may become a main focus in the further development of approaches to SES analysis. While a large number of methods and tools from the social as well as the natural sciences can be used in interdisciplinary coastal and marine research, methods to integrate and synthesize knowledge from different disciplines and from sources “beyond the disciplines” are still in their infancy. SES analysis may have the future potential to upgrade ICM and to incorporate it into an interdisciplinary social-ecological research framework.

Priscila Lopes, Alpina Begossi and Renato Silvano, Fisheries and Food Institute (FIFO),
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How Resilient Are Brazilian Fisheries Management Strategies?: Extractive Reserves and Sustainable Development Reserves in the Amazon and on the Coast

Abstract

Co-management initiatives may work as mechanisms to build socio-ecological resilience, meaning the capacity of the system to absorb shocks without being undermined in its social and ecological aspects. In Brazil, co-managed reserves have been widely created, especially through governmental initiatives, in the Amazon and on the coast. This study presents Brazilian case studies of two categories of reserves regarding fisheries co-management: Extractive Reserves and Sustainable Development Reserves. We considered ecological resilience through reserve area size and ecological integrity, and social resilience, through economic diversification and origin of the demand for the reserve creation, in the analysis of resilience. Amazonian reserves have wider areas, apparently better ecological integrity and people depend on a broader range of natural resources compared to those on the coast. However, dwellers of coastal reserves can rely on external sources of income, such as ecotourism and jobs outside the reserves, decreasing the pressure and dependency on natural resources. In both regions, there are examples of reserves created through a top-down initiative and from local demands. Regardless some shortcomings (top-down initiatives, insufficient area and dependency on a few resources) faced by reserves on both regions, co-management regimes in these areas can add to socio-ecological resilience, by building trust between managers and local people and by considering local social and ecological peculiarities.

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Using the Resilience Lens to Assess Conservation Efforts: The Case of a Maritime Extractive Reserve in Brazil

Abstract

This paper examines the establishment and management of the Arraial do Cabo Marine Extractive Reserve in Brazil and whether such Reserve has helped building resilience into the fisheries system or contributed to conservation efforts. The Reserve area is used for fisheries, tourism, a port and a chemical industry. We borrow insights from the Resilience Theory to investigate the history of the fisheries social-ecological system. Field research (2005-2007) included interviews and participant observation. From the Reserve establishment in 1997 to 2002, the co-management arrangement involved only the Federal Environmental Agency and the traditional population, especially fishers. Since 2002, a major change in the legislation at the national level required the development of a co-management board involving all major stakeholders. Although expected to be more inclusive/participative, this board has not been crafted yet due to numerous stakeholder conflicts and lack of resources/preparedness of many groups, including government. We concluded that initially the Reserve contributed to build resilience into the fisheries system as it (i) minimized negative environmental impacts of industrial fisheries; (ii) favored fishing community self-organization; and (iii) favored local and scientific knowledge mobilization for planning as well as created a space for revising the management plan (learning and adaptation). On the other hand, the exclusion of stakeholders other than fishers in the initial co-management arrangement triggered/enhanced several stakeholder conflicts. In fact, since 2002 the Reserve system has lost much of its resilience and is far from attaining its purpose of conserving biodiversity while promoting traditional fishing livelihoods.

Relations with Wildness in Nature

John Fraser and Jessica Sickler, Wildlife Conservation Society

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Anticipated Utility of Zoos for Developing Moral Concern

Abstract

This paper presents results of a three-year mixed-methods research project investigating the perceived value of zoos and aquariums to the American public. While zoos have been variously characterized as venues that entertain, teach environmental science, and violate the rights of animals, the results from this project reflect that the public characterize zoos differently. This study demonstrates that the public value zoo visits for promoting children's moral development. In qualitative studies, parents described qualities facilitated by zoo-going that related to this value, including personal responsibility to others, capacity to value all forms of life, empathy, and connection with the family's faith-based values. National quantitative studies validated these findings by demonstrating that moral development was a core attribute of zoos. While it is an infrequently heard characterization in the conservation field, it provides insights into unique potential for the zoo experience. When examined in light of the zoo conservation mission, these findings may offer new opportunities to engage audiences in empathy development and pro-environmental decision-making. These value connections could move the mission forward more than is possible with the dominant pedagogy of zoos as a science learning environment.

Susan Clayton, College of Wooster, John Fraser, Wildlife Conservation Society,
and Claire Burgess, College of Wooster

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Defining Wild Animals: Visitor Conversations in Response to Zoo Exhibits

Abstract

Zoos attract visitors who are seeking a pleasant social outing, but the animals are an integral part of that social experience. Previous research (Clayton, Fraser, & Saunders, 2008) shows that many zoo visitors use their visit to attempt to connect to the animal. Considering the zoo not only as a place for individuals to relate to animals, but as a place for people to relate to each other, how does viewing animals facilitate social bonding, and in what way does this bonding construct a particular view of the animal and of nature? The present study examined how the social aspect of

the zoo visit incorporates and constructs the animals that are viewed. Over 800 groups of visitors were observed outside 15 different exhibits at two different zoos. Results show that the animal provides a strong stimulus for social interaction, which often includes the transfer of information, and which is more likely to be positive than negative. The use of “he” rather than “it” to discuss most animals suggests that the animals are granted personhood by the observers. Implications for the impact of the zoo and for the perceived relationship between humans and animals are discussed.

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*The Effects of Wilderness Immersion Experiences on Foster Children from Urban Settings:
A Focus on Integration*

Abstract

The effects of intensive immersion in a wilderness setting on at-risk foster youth have been observed to be positive after a short immersive experience. The children often reach a state of self-awareness not easily obtained in an urban life-style. The literal and metaphorical relevance of overcoming the challenges of “living in the woods” can be meaningful to children who experience challenge in living their daily lives. However, these children often return to dysfunctional family systems, which lack healthy relationships with humans and nature. As a result, these children face the challenge of integrating the positive emotional and physical effects of the wilderness experience. An important question follows: How do we begin to address the problem of integration after immersion in a wilderness setting? How can we support the foster child’s process of integrating growth given their challenges in daily living? This paper will take up these questions and, drawing on the experiences of urban foster children in a wilderness immersion program, will offer suggestions for overcoming the challenge of integration.

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Wild Animals in Captivity? A Critique of Nussbaum's Capabilities Approach

Abstract

Based on her “Capabilities Approach,” Martha Nussbaum offers a compelling philosophical argument for justice for animals. In her argument, Nussbaum finds ethical significance in the idea of flourishing. She holds that all animals – domestic and wild – possess certain capabilities, which they have a need and a right to exercise. Limiting such capabilities, according to Nussbaum, limits their capacity for flourishing, and is therefore an injustice. Surprisingly, however, Nussbaum argues that wild animals in captivity (e.g., in a zoo) can flourish. And therein lies a mistake in Nussbaum’s argument. How can a wild animal flourish in captivity when it is not provided its fundamental capability? Wild animals, by the very definition of the term wild, are creatures that have not been tamed by humans. They have retained their instinctual ways and as such have specific capabilities defined by wildness: autonomy centered in their capacity to live free lives. Thus, captive wild animals are prevented from exercising their fundamental capability of wildness, and as such cannot be recipients of justice within Nussbaum’s Capabilities Approach.

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Discussant - Prepared comments by the session organizer

Increasingly, people encounter wildness, not by wandering in the woods and tromping around creeks, but by wandering through zoo exhibits and watching animal planet. Our notion of people’s relations with wildness might be changing. Many people no longer have direct experience with wildness. Instead they have experiences with vestiges of wildness. Zoos provide one venue for children to experience animals. As Fraser and Sickler found, parents hope that zoos will help their children develop a sense of compassion, care, and justice for others. Moreover, Clayton, Fraser, and Burgess found that zoos serve to encourage social interaction between people. Yet, parents recognize the limitations of zoos: zoos pale in comparison to their own unmitigated childhood experiences in nature. If a central goal of parents in taking their children to zoos is to teach them moral concern for animals and nature, then the moral question of keeping animals in captivity needs to be a part of this dialogue. This was Ruckert’s point: that keeping

wild animals captive, even if they have never experienced wildness, deprives them of their fundamental capability—their wildness—and it is an issue of justice. As zoos move forward with a conservation mission, they have an incredible opportunity to engage the public in this discussion and move toward a more coherent and consistent conservation ethic. There is also an issue of fidelity. Zoos are simulated environments that lack what is essential to wildness – unmediated and unstructured experience, freedom, fear, awe. Yet we still recognize the importance of children having direct experiences in nature. Reichert discussed the benefits of wilderness experiences for urban foster youth, and the challenge in integrating these experiences back into their everyday urban lives. Thus, as people’s relations with wildness are increasingly limited and diminished, for our psychological and physical well-being and flourishing we need wildness in our everyday lives.

Ethics and Justice

Catherine Gross, Australian National University AUSTRALIA

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Justice as a Human Ecological Issue

Abstract

Is justice important in understanding the human ecology of resource-use conflict? With rapidly expanding human populations and declining natural resources the frequency and size of social conflicts caused by competing interests is inevitably increasing. Types of conflict range from small-scale clashes over drinking water to large-scale conflicts within and between nations intent on securing such natural resources as oil and water. Disagreements over perceived property rights and institutional governance mechanisms underpin these disputes. Yet contextual issues and stakeholder perspectives are frequently overlooked by government agencies seeking short-term solutions. Where communities perceive that their needs or interests have been disregarded their response is frequently a call for justice—often in the form of protests and the initiation of legal proceedings. This paper explores people's perceptions of the justice outcomes of an irrigation water social conflict. Findings include stakeholder perspectives of fairness and justice in relation to the conflict, and distinctions between responses to different types of justice (distributive, procedural and interactive). The paper concludes by proposing that an understanding of justice perspectives is an essential component of human ecological studies that investigate competing demands over natural resources.

James Loucky, Western Washington University

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Social Well-Being Through Ecocultural Principles

Abstract

The viability of small communities and integrated methods of food production have never been more central to the health of the environment and of humanity, as evidence mounts of the devastating environmental implications of burgeoning urban populations supported by massive agribusiness. Sustainability is most effectively engaged by reaffirming the distinctive productive strategies and associated social relations that have ensured long-term human viability for centuries, if not millennia. Fundamentally, sustainability efforts are grounded in social justice insofar as they strengthen the social as well as economic capabilities of people. In light of growing inequalities and the systematic undermining of rural communities, this pairing is critical.

Drawing on evidence from Latin America and elsewhere, this paper suggests how we may build on principles of creative knowledge and use of local resources, diversified productivity, and participatory planning and operations to promote greater autonomy in the providing the material bases for a good standard of living. Greater equity and capacity in turn enable better stewardship of human and natural resources. Key dilemmas relate to how to identify principles and best practices that promote community wellbeing, and how to reaffirm human and social capital by emulating small communities, including (and especially) in contemporary urban and industrialized settings. Shifting societies’ direction also requires addressing expected criticisms of the imperative of reframing issues and changing the metrics.

J.D. Wulforth, University of Idaho, Isabel Gutiérrez-Montes, Centro Agronómico Tropical de Investigación y Enseñanza, COSTA RICA, and Julia D. Parker, University of Idaho
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Distributive Justice and the Future of Sugarcane in Central America

Abstract

Much of the world appears to have awoken to the need to act on global climate change impacts. Witness the surge in analyses, speculation, and policy debate about how to constrain developed country behaviors in an effort to neutralize carbon impacts while developing countries aspire to the amenities that remain the fruits of the industrial-environmental crisis. Some biofuel alternatives, heralded in contrast to petroleum, offer options based on agricultural feedstocks. However, the rush to develop biofuel markets has suffered a familiar shortcoming in human ecology considerations: assessment of distributive justice. In this context, our analysis describes the complex opportunities related to sugarcane production in two Central American countries – Costa Rica and Guatemala. As one of the lowest input-cost crops in the world, sugarcane has a high energy contribution potential per hectare for global production. Yet sugarcane only grows in sub-tropical regions, making land-use change in Central America vulnerable to a maldistribution of benefits and impacts. In the case of Central American sugarcane producers, opportunities to produce bioethanol are not equal with respect to the scale of economic investment and efficiency. This analysis examines opportunities and tradeoffs related to procedural justice for emerging environmental regulation and agricultural policies.

Mohamed Ahmed

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Humanity and the Environment in the Qur'an

Abstract

The Qur'an addresses the human condition in a comprehensive manner, covering spiritual, social, political, economic, and environmental themes. The presentation is decidedly non-anthropomorphic and its scope is similar to the human ecology methodology although much broader and non-linear. The Qur'an describes the universe in great detail. We learn that we are not the only sentient beings, and not necessarily the most superior. It reveals the presence of planets and extraterrestrial life forms. And it declares that the species we encounter in our daily existence are nations unto themselves. The Qur'an asserts that humans have a propensity to do harm through unchecked growth, expansion and violence dating back to the first incident of fratricide. It contemplates a grim end state but leaves the door open for a graceful conclusion for those who choose to seek mitigation against an otherwise inevitable personal and collective decline. The Qur'an prescribes an integrated system of measures for minimizing harm. The required measures encompass five areas deriving from a most uncompromising form of monotheism: 1) Self-discipline; 2) Minimizing economic power; 3) Decentralization of political power; 4) Conflict resolution; and 5) Constraining the collateral damages of war.

Quoting directly from Arabic text, this paper starts with illustrations of the Qur'an's portrayal of the universe and humanity's place in it. It then focuses on the five categories of mitigation, describing each in some detail. It also illustrates how these measures constitute and are integrated into a system of codes of conduct for individuals, groups and nations. The paper concludes with a discussion of the Quranic text as a model of the broadest application of a human ecology methodology.

8:00 - 9:30

Concurrent Sessions: Symposia, Roundtables, Contributed Papers

New Directions in Interdisciplinary and International Education I

Troy Abel, Huxley College, Western Washington University

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Participatory Ecological Monitoring: Service-learning and Study Abroad in Costa Rica

Abstract

This program includes three courses for 10 credits that will combine readings and a team-based project with a field-based service learning experience. The course themes are environmental peace and globalization, conservation science and policy, and international environmental research experience. One course combines readings and a team-based project with a field-based service learning experience. The theme of this course will be an exploration of environmental science and conservation policy interactions in Costa Rica, with a particular emphasis on ecological monitoring, eco-tourism, sustainability, and what that means for the region. In a second course, student field work is grounded in the growing body of work on community-based environmental monitoring combining the development of scientific indicators of ecological integrity and volunteer participation in natural resources monitoring. Student participants will be guided in the generation and testing of hypotheses about biogeography and indicators of environmental quality across an ecological gradient including pristine, intermediate, and degraded forest conditions. The third course is an introduction to practical interrelations between environment, peace and security. Throughout the study abroad experience students will examine (a) the field of peace studies; (b) negative and positive peace; (c) structural peace and civil order; and (d) social justice. Topics include: the roles and missions of the University for Peace, the role of the environment in relation to national and regional stability, and environmental conflicts in fragile states.

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Assessment of Environmental Studies and Science Curricula at U.S. Jesuit Colleges Universities

Abstract

In order to assess curricular environmental offerings at Jesuit Colleges and Universities, all 28 Jesuit higher education institutions in the U.S. were surveyed. Out of 28 institutions, 6 did not have any sort of environmental studies or environmental science program. Seven schools offered minors, but not majors, in environmental studies, and 12 offered majors. Only 4 institutions offered programs of study in both environmental science and environmental studies. Only 11 programs required a course in mathematics; and 19 required a capstone course or project. In the light of pressing environmental concerns and in light of Jesuit Christian values of stewardship and service, this information is critical in understanding if Jesuit schools are ahead of the curve or behind the times in comparison with other institutions of higher learning.

Keith Moore, Virginia Technological University

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Collaborative Sustainable Agriculture Research in Developing Countries

Abstract

The Sustainable Agriculture and Natural Resource Management (SANREM) Collaborative Research Support Program (CRSP) is one of nine programs designed in the context of Title XII of the Foreign Assistance Act to mobilize US university support for the overall US development assistance effort. The SANREM CRSP stems from a 1991 recommendation of the National Research Council to employ integrated, multidisciplinary research to simultaneously address livelihood and environmental protection in developing countries. The US Agency for International Development (USAID) funds and Virginia Tech manages this program for US and developing country scientists to conduct applied research and education which creates knowledge

and tools to solve agricultural and natural resource problems that not only improve farmer livelihoods, but also protect the environment and essential natural resources.

The SANREM CRSP has worked in over 17 countries on long-term research efforts to understand relationships in a landscape setting and develop technologies and policies by combining agricultural, ecological, and social sciences. All SANREM activities link sustainable natural resource management with the economic concerns of local populations and the promotion of good governance. Currently, SANREM activities are: teaching farmers in developing countries how to reduce risk associated with climate change; developing new farming systems to increase production and improve the livelihoods of people who rely on marginal agricultural lands in the Andes; identifying forest management policies that increase income and ensure long-term sustainability of forest resources; developing business models that improve the livelihoods of poor African farmers, preserve biodiversity, and create ecotourism opportunities; and building public-private partnerships to improve livelihoods and protect water and other natural resources. In the past year eighty-one US and developing country students have been supported in long-term degree training programs. Each of their thesis and dissertation research projects is integral to the applied SANREM research addressing host country objectives. The majority of students are developing country nationals.

Social Change and Resilience in Amenity Migration Communities II

Susan Wilmot, Utah State University, and Mark Brunson

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Us vs. Them: Integrating Holiday Homeowners into the Rural Rocky Mountain West

Abstract

Rural communities across the Rocky Mountain West are facing a series of concurrent, novel changes, including rising second home development, seasonal population growth, and escalating tourism and recreation demands. Attitudinal, migration, and participatory studies have become increasingly useful tools for community leaders working to understand these impacts by highlighting areas of agreement and disagreement among seasonal and permanent residents, suggesting opportunities for improved inclusivity and efficacy of land use planning activities and other public participatory processes, and by facilitating an acceptable future for all residents of the community. We evaluated the role that individual attitudes, out-migration, and public involvement play in shaping community response to amenity growth-related change in two Rocky Mountain areas: Bear Lake Valley in Utah and Idaho and Star Valley in Wyoming. A mail survey of 1,500 seasonal and permanent property owners and 58 one-on-one interviews were conducted. Qualitative and quantitative results are provided and implications for the management of rural Western communities facing amenity growth-related change, in particular second home development, are discussed.

Kofi Akamani, University of Idaho, Chuck Harris, University of Idaho, Dale Blahna, USDA Forest Service

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Capital, Capabilities, and Resilience: A Framework for Understanding and Assessing Change in Amenity Migration Communities

Abstract

Since the beginning of scientific forestry in the United States in the late 1800s, the search for federal land policies that advance sustainable resource management – ones that enhance both ecosystem health and the well-being of rural resource-dependent communities – has been ongoing. Based on the assumptions of the balance of nature paradigm, past policies on the development of timber-based communities focused on community stability – that is, the stabilization of employment in the timber industry through the constant supply of timber. Following the recognition of the complexity of social, ecological and economic systems in recent times, policies have shifted emphasis towards the promotion of community capacity and community resiliency in the face of uncertainties. This shift was evident in the results of three large-scale ecosystem assessment projects undertaken in the Pacific Northwest in the mid-1990s. Building on these ecosystem assessments, research on community capacity and community resiliency in recent decades has largely focused on the community as the unit of analysis. But

little has been done to assess the role of intra-community actors and processes that influence the resiliency of rural communities. Also, the conceptual relationship between the concepts of community capacity and community resiliency has yet to be clearly established, creating some confusion in the existing literature. In response to these criticisms, this study presents a framework for understanding processes of social-ecological change in communities undergoing transition from commodity-based economies to amenity-based ones. The framework emphasizes the conversion of community capitals to differentiated capabilities among households and groups, as well as its implications for resiliency outcomes. Resiliency is treated as a framework for understanding the sustainability of amenity communities. The range of resiliency outcomes comprises coping, adaptability, transformability, and maladaptation. This presentation is part of a larger study that seeks to inform policies fostering the resilience of amenity communities and the well-being of their residents in the face of changing socio-economic, cultural and ecological conditions.

Scott Hoffman, Utah State University, Presenting: Dale Blahna, USDA Forest Service, Linda Kruger, USDA Forest Service, and John Allen, Utah State University
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Application of Resiliency Theory and Adaptive Cycles as a Framework for Understanding Change in Amenity-transition Communities in the Pacific Northwest
Abstract

Many rural, natural resource-dependent communities have experienced significant social and economic changes due to downturns in their commodity-oriented industries. Some of these communities with access to varying forms of natural capital have experienced an upsurge in activities such as recreation, tourism, second home growth, and retirement in-migration. If managed properly, amenity-oriented development has potential to reverse economic decline, and may ultimately generate economic diversification, local growth and an improved quality of life for residents. These benefits, however, depend on a community's adaptive capacity. This study investigated a method for graphically displaying the historical changes that amenity-transition communities go through by using adaptive cycles from resiliency theory. We investigated three amenity transition communities in the Pacific Northwest: McCall, ID, Leavenworth, WA, and Prineville, OR. Based on historical records, census data and key informant interviews, the historical changes occurring in these communities were depicted using stages of the adaptive cycle: exploitation, conservation, release, and reorganization. The results will be reviewed with a discussion of the ways resiliency theory and adaptive cycles can be used by community and agency officials to identify potential community-based indicators of adaptive capacity, sources of vulnerability and resiliency, and opportunities to build adaptive capacity.

Chuck Harris, University of Idaho, Presenting: Kofi Akamani, University of Idaho, Dale Blahna, USDA Forest Service
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Amenity Communities as Dynamic Socio-ecological Systems: Future Directions for Theory and Applications
Abstract

What are key theoretical linkages between community capacity, amenity community development and the ongoing evolution of the U.S. Forest Service as an institution? We are developing a conceptual framework of resource management that integrates several social-ecological systems theories, including panarchy, patch dynamics, structuration, and adaptive governance, and we are applying that framework to a more comprehensive and useful conceptualization of change in amenity communities. The paper briefly discusses these theories, then explains our model, and finally applies it at a diversity of scales to key issues of resource management change in a time of significant socio-economic and ecological change in amenity communities.

Issues and Advances in Human Ecology Theory

Craig Macmillan and Rob MacAuslan, Washington State University

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The State of Acceptance of Complex Systems Theory in the Social Sciences

Abstract

In the realm of mathematics and the natural sciences the last thirty years has seen the rise of a methodology capable of dealing with the uncertainty and complexity inherent in natural systems. In this article we outline the characteristics of complex systems and highlight their applicability to the social sciences. We then discuss a rudimentary statistical analysis that was performed to assess the acceptance and use of Complex Systems Theory in Sociology compared with other social sciences. The results of this analysis show that Complex Systems Theory does not have a significant following in Sociology. We conclude with a discussion of why there may be reluctance in the social sciences to accepting this methodology despite the inadequacies of current statistical techniques employed and the robustness of Complex Systems Theory.

11:00 -12:30

Concurrent Sessions: Symposia, Roundtables, Contributed Papers

New Directions in Interdisciplinary and International Education II

Robert Newman, University of Utah

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Building an Effective, Project-based, Interdisciplinary Graduate Program in Environmental Studies

Abstract

In 2003, we piloted a new interdisciplinary MA program in Environmental Humanities that was covered in a feature article in the Chronicle of Higher Education. After four years of success, we now have endowed the program at \$3.9 million, admit stellar graduate students from around the country, have added excellent core faculty in History, Communication, and English as well as annual visiting scholars Terry Tempest Williams, Subhankar Banerjee, Wade Davis, Jack Turner, and David Abram, all of whom teach while in residence. We also present an annual lecture in Environmental Humanities that has featured Williams, Davis, W. S. Merwin, Elizabeth Kolbert, and Jane Goodall.

This session will discuss how this program might serve as an innovative, inclusive, and sustainable model for other campuses.

The Environmental Humanities program seeks long-term influence on how we think about our relationship and our responsibility to life on our planet. We attempt to bring the critical and creative thinking and communications skills fundamental to a Humanities education to bear on issues of environmental degradation and their consequences in human suffering and economic hardship, species and language extinction as well as in ethical, health, and public policy concerns. We emphasize interdisciplinary and integrated thinking and learning through examination of historical depth and social and cultural implications so that our students learn to look beyond piecemeal approaches to coping with environmental problems.

We believe that the preservation of biodiversity and the thoughtful consideration of long-term conservation require fundamental shifts in cultural attitudes and practices. Our goal is to promote better management of our interaction with natural systems and enhanced recognition of the interwoven nature of life on earth. As the first such graduate program in the country, we intend it as a national and international model for a truly inclusive way to educate that has practical influence on some of the most important issues of our time.

The educational mission foremost in this new program is a healing vision of home. An Environmental Humanities perspective seeks to understand an ecological community as encompassing both humans and the natural world, and emphasizes that a study of rhetorical, literary, philosophical, and historical traditions is crucial for understanding and furthering environmental values.

Vicky Newman, University of Utah

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Repetition - The Owens Valley and The Great Basin

Abstract

The Honors Forum is designed to support the University's mission to foster social responsibility through its unique pedagogical and community focus and its intensive engaged learning structure. Each forum brings together students, scholars and community members for an intense three-day encounter on a designated topic that explores new meanings of the American West. Our next forum will concentrate on water and the meaning of the West. Participants will approach this topic through an interdisciplinary perspective: looking to science, politics, poetry, history, economics and the fine arts as sources to understand definitions and representations of the West and its landscape; identifying disciplinary intersections; and working together to design collaborative practices between students and communities.

The forum will focus on critical thinking, collaborative research, and on the importance of perspectives and experiences of diverse community members. Prior to the forum, we plan to engage focus groups from the community to help define and refine the issues surrounding water and the West. These diverse groups will bring their issues and questions together to shape some of the initial discussion and research for the forum that follows. This kind of engaged learning provides students a way to use their intellect and talent to better understand their community and to become more active and informed citizens.

The Honors Forum series at Fort Douglas will address the complex issues that are particular to the American West, recognizing how these issues are national and global as well as regional. However, the series also recognizes the importance of place and context. The American West represents a particularly potent region, because of its mythological positioning in the history of our country and because of the issues unique to its people, climate, and landscape. Community and region will become a framework for exploration and invention in the Honors Forums.

In order to focus the Forum successfully, we will examine the case of the Owens Valley in California and the increasingly intense issue of the Great Basin and the Colorado River Compact. This presentation looks at how we intend to work with students so we all get to know water in the Great Basin.

Stephen Boyden and Catherine Gross, Australian National University AUSTRALIA

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Looking Back to Look Forward: A Framework for a Comprehensive Human Ecology

Abstract

This paper introduces the concept of biohistory and explains why a biohistorical approach is important to the ecological future of human society.

Biohistory is an approach to the study of human situations against a background of what actually happened in the history of life and of humankind. Biohistory recognises the evolutionary development of humankind's most distinctive biological attribute, the human capacity for culture. As soon as human culture came into existence it began, through its influence on people's behaviour, to have impacts not only on humans themselves, but also on other living systems. Human culture evolved as a new kind of force in the biosphere. Biohistory pays special attention to the role of human culture as an influence on the health of humans and of the ecosystems of which they are a part. A biohistorical understanding (which we call biounderstanding) leads to the conclusion that the best hope for the future is a transition to a society that is in tune with, and sensitive to, the processes of life. We call this a biosensitive society.

We argue that biohistory is an important approach academically and should be a bona fide subject at the core of every primary and secondary school curriculum.

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Interdisciplinarity and Knowledge Organization - Prospects for Human Ecology in Academia?

Abstract

Human ecology is after half a century still an embryonic academic subject, characterised by a vague and contested knowledge core and lack of successful research programs. There are many reasons for this problematic condition, including epistemic diversity, institutional structures and knowledge politics in academia at large as well as cognitive limitations of individual researchers

and values in the knowledge culture of human ecology. Further, human ecology as a broad interdisciplinary field nowadays has to compete with disciplinary based strong environmental research programs within the social sciences like environmental politics, environmental sociology and environmental economy as well as several mature environmental natural sciences. Given these conditions, what are the prospects for human ecology in academia? This paper will contribute to this discussion by analysis of a single case, human ecology in the local context of the University of Gothenburg in Sweden. This may illuminate more general characteristics that can be used for informed strategic decisions for future paths of development.

Cultural Dimensions of Climate Change I

Overview for Sessions I, II, and III

Up to now, climate change has been considered mostly from the perspective of the natural sciences. Human beings and societies also enter into the discussion, however, both as contributors to causal factors and as subjects of the probable stark consequences of changed climatic conditions. The human and the social sciences have an important part to play in addressing the phenomena of climate change since we urgently need to determine how to decrease the power of anthropogenic climate change drivers (mitigation) and how to prepare for those impacts that are now becoming inevitable (adaptation).

The basic assumption underpinning this symposium is that all personal and societal change happens within frameworks of interpretation, valuation and choice by subjects who see themselves as actual or potential agents. As such, the symposium seeks to explore the cultural dimensions of individual and social factors that may lead to mitigation to and adaptation to climate change. Reflection on schemas of interpretation and valuation that enable or constrain our capacities for action gain a particularly important role when we consider our ethical responsibilities toward present and future generations of fellow human and non-human inhabitants of this planet.

Thomas Heyd, University of Victoria CANADA
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Introducing Cultural Dimensions of Climate Change Abstract

The growing body of literature on adaptation to climatic and environmental change addresses a wide range factors that facilitate and prevent adaptation. The importance of information, governance, financial resources, planning frameworks, technology, and social capital has been discussed widely. However, the role of culture in mediating the nature, efficacy and sustainability of adaptation has only recently become a topic of discussion (see Strauss and Orlove 2003, Burroughs 2005, Fagan 2000). I propose that it is crucial to consider the issue of adaptation within the context of the broad cultural patterns that influence human responses to changes in the “natural” environment, particularly changes that are large in magnitude and rapid in their onset and evolution.

I start from the assumption that both individual and societal responses to the types of environmental changes that are likely to be associated with climate change, are embedded in an ensemble of cultural patterns of which we are not necessarily aware, encompassing belief systems, values, practices and habits, as well as technology and information. I discuss some cases of cultural response to rapid landscape change, drawn from historical ecology, which illustrate an idea of responsibility for interventions in the natural environment, based on awareness of the transformative power of natural phenomena.

In these examples cultural patterns emphasising human “embeddedness” in the natural world are associated with adaptive behaviours, which reduce vulnerability to environmental change by acknowledging the dynamic nature of the natural environment and encouraging the development of appropriate social systems. I draw the conclusion that it may be of key importance to consider the manner in which the separateness from nature, which to a large extent has characterised “Western” ways of thinking, may be a source of maladaptive behavioural patterns. I conclude that a shift in cultural patterns, which takes into account our embeddedness in natural processes, may contribute to the lowering of vulnerabilities to the potentially severe and rapid environmental changes that are expected to be associated with climate change.

Burroughs, W.J., 2005. *Climate Change in Prehistory*. Cambridge University Press.

Fagan, B., 2000. *The Little Ice Age*. Basic Books

Strauss, S. and Orlove, B.S. (eds.), 2003. *Weather, culture, climate*. London: Berg.

Robin Attfield, Cardiff University UK

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Global Warming, Equity and Future Generations

Abstract

The phenomenon of global warming, the anthropogenic theory of its genesis and some of the implications of that theory are introduced as a case-study of a global environmental problem involving issues of equity between peoples, generations and species. We should favour the proportioning of emission quotas to population, if the charges of anthropocentrism and of discrimination against future generations can be avoided. It is argued that these charges can be replied to satisfactorily, if emissions totals are set low enough for the likely needs of other species and other generations. There should also be limits to the inter-state trading of quotas to ensure that all countries retain enough of their quotas to satisfy basic needs. The anthropogenic theory might instead be held to favour tying emissions quotas to aggregate historical emissions of the last two centuries. But intergenerational equity requires a sustainable international regime, based on universal principles rather than history.

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Climate Change and Moral Outrage

Abstract

We sometimes take a particular course of action because we think that doing so is morally right. One obstacle to seeing personal action on climate change as morally right has to do with the thought that an individual's actions can make no difference when it comes to our planet's climate. We don't see ourselves as moral agents in the relevant sense. When we choose to do something for moral reasons, usually we do so because we can see the consequences of that action clearly. Seeing the global consequences following on from our local actions is not easy – perhaps it's not possible. This paper is an attempt to get around consequentialist excuses for inaction without giving up on consequentialism. It argues that we can (and maybe we should) see our lives of high-energy consumption as a kind of moral outrage, even if our effects are inconsequential. Seeing our lives in this way focuses the moral demand for personal action on climate change.

Cognition, Choice and Ecological Action

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The Application of Integrative Complexity Theory to the Study of Natural Resource Issues

Abstract

The range afforded by attitudinal domains within natural resource issues offers an appropriate opportunity to investigate the underlying structure of an attitude and its content manifestations. However, beyond what people think (e.g., attitudes toward a natural resource issue), it is equally important to understand how people think about the issues. In order to study how people think about a natural resource issue and its management, we employed the use of integrative complexity. The measurement of integrative complexity was developed by cognitive psychologists and is based on two criteria: 1) The number of dimensions that people view related to an issue, and 2) how they integrate those dimensions. Integrative complexity analyzes the structure of thought an individual has about an issue, not its content. We measured the integrative complexity of perceptions regarding wildfire and its management. Homeowners in two Minnesota counties were asked to describe, in an essay, their position on this issue using a mail-back questionnaire. We examined how integrative complexity was related to attitudinal dimensions (direction and extremity) toward wildfire and the acceptability of management actions. We found that integrative complexity was related to attitude extremity, but not attitude direction. Implications of this research lie in the further understanding of nature of the public's attitudes toward a natural resource issue, and how they are in turn influenced by integrative complexity.

Stacia Dreyer, Western Washington University

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Conceptions and Values Regarding Low Impact Environmental Principles: How Environmental Education Students Generalize Across Different Settings

Abstract

This study asked how students in field based experiential and/or environmental education courses conceptualize their environmental impacts across three contrasting settings: wilderness, high-use auto-access campgrounds (i.e., state parks), and at home. Conceptions and values of low impact behaviors were characterized by four aspects: likelihood, difficulty, effectiveness and acceptability. Questionnaires were handed out to students assessing these four aspects of three general low-impact behaviors. Low-impact behaviors were chosen from guidelines advocated by Leave No Trace Center for Outdoor Ethics. Likelihood of an action was expected to vary according to the other factors. Results from this study will be discussed.

Jennifer Kelly, Michigan State University

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Environmental Service-Learning: Does It Have An Effect on Environmental Citizenship?

Abstract

The intent of this study was to explore experiential education as one method that may foster environmental citizenship. Of the various ways this may be accomplished I chose to investigate the impact of an environmental service-learning course, Global Conservation Science & Policy Interfaces, at the University of Wisconsin-Green Bay. I drew on Stern et al.'s Value-Belief-Norm Theory in order to explain how this type of educational experience may be a conduit for engaging a participatory citizenry. Qualitative methodology was used to measure the variables. In that, 13 interviews were conducted and content analysis was carried out on 17 student journals. The findings suggest that this environmental service-learning experience does indeed have an effect on environmental citizenship. The implications of this study indicate the need for further research into experiential education as a means to encourage environmental citizenship.

Use of Various Ecological Systems and Populations to Validate the Importance of Developing Emotional Intelligence to Reach Emotional Maturity

Jed Diamond, MenAlive

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Gender, Depression and the Healing Power of Walking in Nature

Abstract

It has been widely accepted in the psychological literature that women experience depression at twice the rate of men, even though the suicide rate for men is 3 to 15 times higher than it is for women. A number of clinical researchers believe that men are under-diagnosed and under-treated because the typical symptoms used in assessing depression are gender biased. In this talk I will present findings from recent clinical research on gender and depression showing that both depressed and non-depressed men exhibit different symptoms than depressed and non-depressed women. A new scale (Diamond Male Depression Scale) will be offered that shows promise in better recognizing depression and suicide risk in males.

In preventing and treating depression, we must return to our ecological roots as hunter-gatherers. Dr. Paul Shepard, author of *The Tender Carnivore and the Sacred Game*, reminds us "Our home is the Earth, our time is the Pleistocene Ice Ages, the past is the formula for our being." I will present findings from 43 years of clinical practice showing that walking in a natural ecosystem can restore the mental balance that many men have lost in our modern culture.

Bjorn Ratjen, Integrated Communication CANADA

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Personal Change Across Borders:

Issues When Men Change Themselves Across Different Cultures and Languages

Abstract

What are the issues when men face their truths in different cultures, continents and by speaking different languages? What are the short, medium and long-term effects of these encounters upon the men, the systems with which they interact, and with nature, if any? The New Warrior

Training Adventure is an experiential men's initiatory weekend. Dr. Björn Ratjen went to different New Warrior Training Adventures in North America and Europe with these questions of how men experience these systems and activities coming from different cultures and speaking different languages. He was able to observe and experience the effects for himself and added several in depth interviews to find the answers. He will share his preliminary findings from this data, which are particularly relevant for anyone who is interested in how the interaction of cultures and language impact systematic interactions in cross cultural personal development issues.

Edward Read Barton, Michigan State University

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Men's Peer Mutual Support Groups as an Ecological System

Abstract

Men participate in men's peer mutual support groups for various types of social support. The support group is an ecological system. This paper will look at the impact of the support group system on the individual member and secondarily how that impact has secondary impacts upon his participation in his family.

Adaptation and Resilience Across Scales in Sustainable Building

Session abstract

Over the last decade, a maturing of concern and interest in global environmental issues, coinciding with the success of the LEED™ Green Building Rating System and label, have led to the 'mainstreaming' of sustainable building design and construction practice in North America. Sustainable design is not only about attaining higher levels of environmental performance; it is also about developing capacity for adaptation and resilience to climate change related economic fluctuations, while valuing and responding to socio-cultural expectations of comfort and responsibility. This paper session provides a forum for exploring the notions of adaptation and resilience in sustainable building at several interlinked and relevant scales: at the level of the individual occupant, the design and construction team, the community planning arena, and broader society. A common theme throughout is the understanding that we need to start thinking in terms of longer time frames and scales that go beyond building environmental performance, to more deeply incorporate social and economic aspects of sustainable design. Consideration of these frames and scales, from design assessment through to operation of the building, and outward into the community, better enables buildings and their inhabitants to co-evolve towards mutually sustainable goals.

Sylvia Coleman, University of British Columbia CANADA

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Creating Resilience in the Evolution of Green Building: Managing Cultural Expectations

Abstract

In part due to the mainstreaming of green, and the transformative success of the LEED™ Green Building Rating System and label, the adoption of green building in North America has been rising, increasingly so over the past few years. However, the LEED Systems are tailored for market transformation at the level of industry, such that the marketing power of its label is accordingly valued more highly by industry than by the average consumer. The ability of such an industry tool to transform consumer, or occupant awareness of sustainability therefore remains one step removed. For the co-evolution of the green building market and sociocultural expectations of comfort, greater individual and community involvement is required; expectations of both occupant life, and green building features and benefits need to be explored and managed in specific ways. Integrating findings from social and consumer psychology, it is argued that explicit commitments by occupant-tenants, and future review "feedback loops" are important not only for energy efficiency and conservation, but also for enhanced occupant and community involvement. It is further argued that these processes can lead to an increased awareness of sustainability at a broader, sociocultural level.

Stefan Storey, University of British Columbia CANADA

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Lifecycle Costing for CIRS:

Evaluating the Long-term Economic Resilience of a Sustainable University Building

Abstract

Creating resilient economic models for sustainable buildings presents unique challenges. Even though sustainable buildings have lower operational costs, mainly due to lower utility consumption, the economic modeling of many developers focuses solely on the initial cost of building. Attempts to lower this ‘first cost’ barrier has often resulted in ‘value engineering out’ sustainable design features, leading to buildings with poorly integrated, non-configurable interior systems that compromise the comfort of occupants. The Center for Interactive Sustainability (CIRS) at UBC offers new approaches that benefit both building developers and occupants. CIRS, currently in the design phase, is predicted to be one of the highest performing commercial buildings in North America. We show that by considering total cost of ownership instead of first cost, CIRS is more cost effective over a 50year building lifespan than benchmark LEED standards. This is achieved because CIRS, as an adaptable building, has significantly lower capital renewal costs. Furthermore, CIRS has economic resilience embedded into its operational cost. We show that by being net carbon zero and energy efficient, the building is ‘future proofed’ and resilient when exposed to fluctuations in energy cost and carbon taxes. We conclude that by integrating adaptable and resilient systems, CIRS can render the first cost barrier obsolete and offer an economic model that is robust over long-time scales.

Meg O'Shea, University of British Columbia CANADA

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Thoughts on the Agency, Responsibility, and Autonomy of Green Building Inhabitants

Abstract

Green building designs increasingly rely on active inhabitant engagement with environmental controls to concurrently achieve optimum building conditions and inhabitant satisfaction. Potentially this shift can produce a more humane building environment that is co-adaptive with the needs and desires of building inhabitants, and relies on inhabitant agency. A person’s senses of autonomy (the perceived ability to influence or impact the environment) and responsibility (the perception that engagement is necessary and constructive) to the local environment in part construct his or her capacity for agency in interactions with building systems. Autonomy and responsibility interact and overlap in a matrix-like relationship that ranges from high responsibility and high autonomy (strongly empowered; influential) to low responsibility and low autonomy (apathetic; disempowered). Some theorists insist that agency can only be expressed in relationships that allow for creativity and improvisation. Thus both the technical and socio-cultural environments of the workspace affect inhabitant capacity for agency by the degree to which improvisational acts are permitted or encouraged. The freedom of inhabitants to express their agency and improvise solutions depends largely on their senses of autonomy and responsibility; these points will be examined in the context of new green building design.

Zosia B. Brown, University of British Columbia CANADA

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Human Adaptive Capacity in Sustainable Buildings: Facilitation, Uptake, and Evaluation

Abstract

An emergent theme in green building research is the integration of adaptation within energy efficient design. Adaptation can be defined both in terms of how buildings can be designed to increase their adaptive potential (*i.e.* to climate change, to future uses and prolonged life) as well as how to design spaces that foster occupant adaptive behaviour. Both are critical to ensuring that buildings are sustainable, providing healthy social and biophysical environments into the future. Research to date has focussed on the former, emphasizing design strategies for adaptation such as anticipating future weather and climate, design for modification and disassembly, and materials reclamation and recycling. The emphasis of this paper is on the latter, human dimensions of building adaptive capacity, considering personal, spatial, organization and social adaptive capacity. What building forms, services, and contexts best foster occupant adaptive behaviour? How is adaptive capacity communicated, learned and applied in practice? What are the implications for comfort and productivity? We describe a research project currently under way in

Vancouver, B.C. which examines occupant comfort, awareness, and engagement with adaptive opportunities available to them. A web-based survey has been designed to capture occupant responses compared to an expert baseline across six different office buildings.

Clark Wilson, US EPA

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Growing a Sustainable Street

Abstract

National efforts such as LEED for Neighborhood Design will soon be rewarding communities that carefully consider ecologically-responsible street design. Moreover, increasingly stringent state and regional stormwater regulations are requiring communities to look at the innovative landscaping solutions for how their public land such as streets can address the quality and quantity of polluted stormwater runoff. Planners, designers and engineers meanwhile are consistently examining (and arguing!) as to how the right-of-way can equitably divided between various users. This attention is warranted and long-overdue since streets present a particularly rich area for positive social, environmental, and economic benefits because they are ubiquitous, multifunctional, and typically in public ownership. In particular, our ideal urban street needs to accommodate, within a finite amount of urban space, the maximum in transportation choices possible, provide the attractive address for new, higher-density infill development, and be a vital marketplace. All the while, they should also create a walkable, cool environment; provide identity and memorability; and absorb the pollutants created by the vehicles and adjacent uses. No longer can street landscaping be thought of as merely as an aesthetic “frill” that may or may warrant care and maintenance.

1:00 – 3:30 **Early start concurrent session**

Explorations and Innovations in Sustainable Business Development

Jim Wise, Washington State University & US Department of Energy

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Applications of Neuromarketing to the Social Marketing of Sustainability

No abstract available

Sheila Newsom, Washington State University

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New Challenges and Directions in the Social Marketing of Sustainability

No abstract available

Ray Lam, Boise Paper

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Launching a Byproducts Synergy Group in the Mid-Columbia

No abstract available

Bill Pogue, Barracuda Coffee Company

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How to Become the Most Sustainable Coffee Shop in the Tri-Cities

No abstract available

Davis Taylor, College of the Atlantic and Chad R. Miller, University of Southern Mississippi

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Local Food and Business Cluster Development: Charting New Terrain

Abstract

The local food movement, drawing advocates from small-scale farmer and producers, natural scientists, nutritionists, community activists, and consumers, makes conspicuous claims to reduce the number of miles that food travels from producers to consumers, improve local and global environmental conditions, revalue whole and less-processed foods, revitalize agriculture (especially small, family-run farms), improve human health, and invigorate neighborhoods, small towns, and rural places. This paper examines the community economic development claims of the

local food movement through the lens of the business cluster concept. According to the business cluster literature, clusters are almost exclusively export-oriented, positioning local food clusters as anomalous. In particular, we use the characteristics and functioning of the Mississippi catfish cluster (MCC; like most clusters, export-oriented) and the Maine organic cluster (MOC; dominated by production for local consumption) to suggest general distinctions between local and non-local food clusters. We find that the MCC has successfully raised incomes and employment in its relevant region, but is currently beset by loss of market share due to strong competition from foreign producers, and a commodity-type market structure. The MOC, on the other hand, does not produce such apparent income and employment changes, but its characteristics suggest that it is more likely to be economically resilient, diversify community economic bases through the attraction of food-aware consumers, and foster the creation of social capital. We outline a research agenda suggested by these findings and hypotheses.

Jay Friedlander, College of the Atlantic
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Creating a Socially Responsible Company
Abstract

Business has tremendous societal ramifications. Unfortunately financial success is often coupled with significant social and environmental costs.

These trade-offs are particularly poignant in the \$148 Billion fast food industry. According to *Fast Food Nation*, a quarter of adults eat fast food daily. Because of our appetite for this food, more is spent on fast food than on higher education, computers or new cars. Remarkably, more is spent on fast food than movies, books, magazines, newspapers, videos and recorded music combined. The industry has transformed our landscape, grown our waistlines, reduced earning power, supported industrial farming and created a franchise system that has become so successful that today you can go from birth to death only patronizing franchise businesses.

What if you approached the fast food industry from a different vantage point? What if you considered social and environmental costs in addition to profits? How would you restructure operations? Would customers come? This session explores answers to those questions through a case study of O'Naturals, the first natural and organic fast food chain in the U.S. Founded in 1998, it is at the forefront of the changes happening in this critical industry

1:30 - 3:30 Concurrent Sessions: Symposia, Roundtables, Contributed Papers

New Directions in Interdisciplinary and International Education III

Mark D. Beatham, SUNY College of Plattsburgh
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A Truly Green Anti-Pedagogical Education
No abstract available

Wolfgang Serbser, German Society for Human Ecology (DGH) GERMANY
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*The Bologna Process in Germany:
Recent Changes in Higher Education, Recent Changes for Human Ecology?*
Abstract

The Bologna Process has completely changed the German landscape in higher education. Partly seen as a mere destruction of the German tradition of Humboldt's ideal of university education it becomes more and more a chance for new directions in higher education. It seems to be even a chance for new concepts in study programs of human ecology. The paper discusses recent concepts in human ecology programs from European countries compared with prospects in Germany. In addition the paper discusses some aspects of the college tradition of liberal arts in relation to human ecology. Finally recent strategies to initiate human ecology programs in German higher education will be discussed.

Rob Dyball, Australian National University AUSTRALIA

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The Ecology of the Digital Native:

Promises and Limitations of New Avenues for International Collaboration and Partnerships

Abstract

The term 'Digital Native' has been coined in reference to those born into an era of the computer, internet, mobile phone, and electronic games. People for whom these technologies have been a ubiquitous aspect of everyday life are now entering institutions of higher education. The challenge for the institutions is to accommodate the expectations and approaches to learning that characterise these individuals, in a pedagogically sound fashion.

This paper discusses some of those challenges, but also some of the opportunities, that the information age presents for courses concerned with human-environment interactions. It explores some of the potential for forging larger learning partnerships than has been possible in the past, with a particular focus on international collaboration. It also reports on some initiatives that have started to use aspects of the new technologies for international collaboration, with mixed results. These suggest some avenues for future development, as well as lessons to be learnt.

Tobias Knoch, University of Heidelberg GERMANY

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e-Human Ecology: A New Direction of Cyberspace and Virtual Global Studies

Abstract

Today advances in information technology are the basis of modern societies and internalised into live as fundamentally as basic commodities. Beyond, the creation of global cyber or virtual societies has led to entire new aspects of what should now be called e-life. The path to a virtualised world is accelerating in an enormous manner and classical society is rapidly shifting into an e-society. This has implications for all aspects of life and its holistic understanding and its perception by human ecology. New questions therefore arise and need to be addressed by human ecology ranging from classical questions as e.g. resource sharing and the tragedy of the commons in cyber space, to the relational and transformation aspects of archaic fundamentals of humans as e.g. deep psychology based religious aspects or perception of reality into e-life. Consequently, the classical human ecology will also transform to e-human ecology.

Despite the increased transformation of societies to cyber or virtual e-societies this phenomenon has been rarely investigated and understood due to lacking higher education and research in respect to human ecology. E.g. the huge amounts of money on the order of billions invested currently in the implementation of so called basic grid infrastructures for computing power, data storage and application sharing. The European Union estimates that such technologies will reach a market volume of several billion euros world wide by 2010. To build these infrastructures e.g. two e-social influences have to be overcome: i) the sharing attitude and socialization of the individual, i.e. the micro-sociality, and ii) the organization culture of the embedding institutions, i.e. the macro-sociality. However, the implications from e-human ecology, are neither established nor even investigated, thus they could contribute to this transformation to e-society.

Consequently, curricula need to be set-up in e-human ecology and elsewhere to address these questions beyond analysis and understanding of the developmental path of mankind so far. The arising future and its recursive influence on society have to be addressed in the present by reflecting on these future aspects to be able to link e-reality and e-society with reality and society.

Cultural Dimensions of Climate Change II

Marcel Cano, Universitat de Barcelona SPAIN

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Cosmovision, Culture, and Climate Change

Abstract

Certain specific cultural features characteristic of the cosmovision of the Western world impede us in achieving a real change towards *a culture of sustainability*. It is much less realised, however, that these concepts are not only characteristic of Western thought --both in a historic and cultural context--, but enclosed in the very depth of our Western way of life. This kind of

analysis should not be considered as ideological, perhaps reminiscent of a Marxist way of speaking. The cultural features made reference to above represent the essential ground of the sense and meaning of the Western way of acting and being. In fact, all this is produced in such a way, and has such a depth of reach, that it is not possible to give a new direction to our culture without a parallel transformation of the political and economic systems. The situation in which we find ourselves with regard to climate change constitutes a paradigmatic example of the matters at issue.

Nowadays, in spite of the undeniable evidence for the reality of climate change, we are not able to act and promote the appropriated answers. In order to generate a deep change towards a really sustainable way of life we need a “clothespin revolution”: a situation such that the interests of the powerful agree with the interests of the general population, and are articulated into coordinated forces both from above and below. So, our fundamental challenge consists in thinking how it is possible to push for a coordination of the forces in motion in such a way that it a shift can be made to address the inertia process generated by our present, inappropriate, cosmovision. To summarize, in order to generate the complexity of the cultural change needed in society requires us to think about the ways in which thinking and action must be changed in a deep way.

Rosalind L. Hunter-Anderson, University of New Mexico
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Cultural Responses to Late Holocene Climatic Oscillations in the Tropical Western Pacific: A New Interpretation of the Prehistoric Latte Period of Guam, Mariana Islands, Micronesia
Abstract

Guam has been occupied since at least 1500 B.C.E. but interior settlement took place much later, beginning c. 400 C.E., with greatest site densities during the Latte Period (c. 800-1700 C.E.). In the Manenggon Hills region of southern Guam, a local settlement sequence has been outlined by archaeological surveys and excavations. Radiocarbon dates from 51 of the 85 sites found in a 1,350-acre parcel comprising 1% of Guam’s land area indicate a steady increase in the number of sites utilized between c. 1100 and 1400 C.E., followed by near-abandonment of the area in the 1500s C.E. While various explanations for this pattern of growth and decline are possible, the close correspondence between Latte Period settlement expansion and subsequent contraction and the late Holocene climatic oscillation, that from the Medieval Warm Period (750-1250 C.E.) and the Little Ice Age (1350-1800 C.E.), motivates a model of cultural organizational changes driven by climate-related declines in agricultural productivity. Archaeological evidence is adduced in support of this interpretation, and implications of this study for understanding past and present cultural variability in small tropical islands are drawn.

Kathleen Halvorsen, Andrew Kozich, Joseph Dammal, and Stuart Kramer, Michigan
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Climate Change-Related Beliefs and Support for Renewable Fuels
Abstract

Climate change is arguably the greatest policy problem of the current day and age. A growing body of work has assessed U.S. public beliefs and attitudes regarding climate change. However, little work has assessed the degree of accuracy of these beliefs or how they link to specific climate change mitigation strategies, such as paying more for a biofuel or driving a more energy-efficient car. We present on the results of a study that examined these relationships using a randomized mail survey of 1500 upper Midwestern U.S. residents. We found that accurate knowledge, concern about climate change, environmental orientation, and political beliefs were among the factors playing important roles in support for personal changes regarding energy usage and purchase. Implications for communication about climate change causes and mitigation are discussed.

Reuven Sussman, Brandon Lum, Michelle Gay, Edward Chan, and Robert Gifford,
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*Childhood Residential Zone, Individualism-Collectivism, and Sustainability Choices in a
Commons Dilemma Microworld*

Abstract

The earth's atmosphere is a shared commons that, like other commons, may be over-exploited if harvesters behave overly competitively. Cultural background and home municipality may have some relationship to competitive and cooperative behavior. Research suggests that urban dwellers are more competitive, less cooperative, less trusting, and less helpful than rural residents and that collectivism may (or may not) be related to cooperation. We used a commons dilemma microworld simulation to investigate whether cooperation is related to individualism-collectivism or the size of the municipality in which one is raised. Participants ($N = 120$) who were raised in smaller communities and further from downtown displayed more cooperative behavior. Collectivism and individualism, whether classified by home country or by Singelis' (1995) measure, did not predict cooperative behavior. The findings seem consistent with Milgram's notion that sensory overload contributes to reduced cooperative behavior in cities.

Adrian Parr, University of Cincinnati
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On Population Vulnerability

Abstract

As the world's climate continues to change we will see an increase in extreme weather events. One of the most debilitating effects of extreme weather events, such as floods and hurricanes, is the way in which socially established ways of life are disrupted as family and community networks are broken or severely undermined. In the wake of disaster gender roles are often redefined or even amplified and other social values such as a sense of belonging and history suddenly take on a critical function for the sustainability of recovery efforts. In this paper I suggest that although it is important in the immediate aftermath of a disaster valuable time is not lost weighing up the pros and cons of different ways to provide relief, whereby assistance would simply turn into an exercise in cultural relativism, it is also important that all those involved in the relief effort don't take a one size fits all approach. Whilst there may not be one overriding definition of what we might commonly describe as 'population vulnerability' in the aftermath of a disaster, there is a shared sense of how such vulnerability works and it is to this collective nature of the problem that we need to initially focus our attention.

Conservation Psychology Roundtable

Session abstract

A group of invited leaders connected to the field of Conservation Psychology (CP) met in November 2007 to discuss future steps for this evolving field. By the conclusion of the three-day meeting, nine action items were identified. In this roundtable discussion, we will highlight the action items and provide participants with updates on the progress that has been made in these areas. One of the projects that will be discussed is the recent social network analysis of the conservation psychology listserv. This project was undertaken in order to better understand who is using the listserv and how they are connected to various professional entities that have goals that complement CP. The data that were collected in May 2008 through an on-line survey provide insights about the current strengths and gaps in the network as currently represented through its listserv members. This information will contribute to other efforts aimed toward developing a business plan, outlining areas for further research and funding, and connecting members in the network. All are welcome to join this ongoing discussion about the future of this field.

The Human Ecosystem Model: Introduction and Applications Interactive Workshop

Gary Machlis and Jo Ellen Force, University of Idaho
Wayde Morse, Auburn University
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This session (90-120 minutes) would provide an introduction to the Human Ecosystem Model (Machlis et al, forthcoming, Yale University Press) and its applications.

Cultural Dimensions of Climate Change III

Martin Schönfeld, University of South Florida
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Field, Being and Climate Change

Abstract

Climate change is an emerging reality. I want to explore the ontological ramifications of this new reality. Global warming, it appears, has made the formerly so ineffable phenomenon "climate" tangible. In science, climate is perhaps the first genuine "whole" that is investigated as such, and climatology may well be the first great interdisciplinary venture that approaches its subject in holistic and explicitly anti-reductionist terms. In the first part of this paper, I wish to clarify the meaning of concepts such as parts, sums, and wholes in light of climate change. I argue that climate is more than the sum of its parts in that it happens to result from parts working together as a whole. I contend that a holistic notion of climate needs to appeal to dynamics -- "whole" is meaningful in the context of potential, work, and energy. In the second part of the paper, I'd like to explore some rational consequences. I argue that the ontology of climate discloses it as a field. I contend that climate change, while bad news all around, is nonetheless a rational and cultural cornucopia; it opens up new vistas of thought and promises to trigger a long overdue philosophical paradigm change. I conclude with a vision of this paradigm change for metaphysics and comparative thought.

Human Ecology of Water Management

Stanley Asah, David N. Bengston, and Kenneth Brooks
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*Ignoring Ecological Resilience, Building Human Nature Fragility:
Hydro-Politics in the Lake Chad Basin*

Abstract

Lake Chad, in West-Central Africa, has a history of hydrologic variability and was once the fourth largest lake in the continent. Today, the lake is about 20% of its former volume and its basin has seen significant techno-hydrologic interventions, primarily for agricultural development. The Lake Chad Basin Commission, comprised of basin member states, Cameroon, Chad, Central African Republic, Niger, Nigeria and the Sudan, is charged with management of the basin's water resources. Using the concept of resilience as it applies to both ecological and human-environment systems, we illustrate how a particular way of human environment interactions engenders the very changes that it seeks to counter within the Lake Chad basin. From a hydro-political perspective, we use discourse analysis to demonstrate how certain ways of knowing environmental change interact with other forms of power to produce among-state disparities in the claims and uses of the basin's scarce water resources. This analysis suggests that: disharmony between humans and nature enhances social-ecological fragility, and disparities in the claims and uses of the basin's water heightens potential for conflict among basin member states. Looking into the future, we discuss the social-ecological and security implications of current techno-hydrologic adaptive strategies within the basin.

Andy Bach, Huxley College of the Environment, Western Washington University

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Dam Removal for Ecosystem Restoration and Treaty Obligations: The Elwha River, USA
Abstract

The Elwha Dams (31 and 62 m high) were privately constructed nearly 100 years ago solely as hydroelectric dams. After more than ten years of planning, the removal of two dams on the Elwha River is scheduled to begin in 2012. With \$182 million of federal funds committed, the Elwha River Restoration Project is the largest dam removal and river restoration project ever attempted. When the dams are removed, 10 anadromous fish stocks (with a pre-dam population estimated at 400,000) are expected to return to 110 km of river from which they've been excluded for a century. While dam removal is typically viewed through the lens of ecosystem restoration, in the case of the Elwha River there is deep cultural connection of the first nation peoples, the S'Klallam Tribe, to the river, as cited in the 1992 Elwha River Restoration Act (PL102-495). When dam owners applied for relicensing in 1968, the Lower Elwha S'Klallam Tribe exerted 1855 Treaty Rights "...of taking fish at usual and accustomed grounds..." which eventually lead to the Elwha River Restoration Act and the planned removal of the dams. Since the watershed has been protected in Olympic National Park, this case provides a study site for testing hypotheses related to river restoration under ideal conditions.

Saturday - September 13

8:30 - 10:00

Concurrent Sessions: Symposia, Roundtables, Contributed Papers

Community Food Security and Revaluing Agriculture: Towards a Resilient Culture of Food

Gigi Berardi-Allaway, Huxley College of the Environment, Western Washington University

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Fair Trade Olive Oil and Community Resiliency in the Mediterranean
Abstract

The purpose of this research is to examine one organizational structure – an intra-regional free trade olive oil cooperative -- that may add to community resiliency as part of achieving sustainable agroenvironmental practices and acceptable farm incomes in the Mediterranean region. Since the mid 20th century, the European Common Agricultural Policy has set rules for minimum prices and granted export subsidies to assist marketing outside the EU, which has had the effect of neutralizing the comparative advantage of its nonEuropean Mediterranean neighbors. Nevertheless, devices and tools such as cooperatives, controlled appellation, traceability, and labeling of products by origin can possibly reestablish such advantage and authority. This paper discusses principles for success for cooperatives, in particular, many of which involve promoting uncomplicated design or organization and low-risk technologies for farmers. Perhaps the greatest challenges to leadership in such multi-stakeholder (in this case, Farsa and Troinata villages in Kefalonia, together with other "mezzogiorno" regions in Palestine, Jordan, Tunisia, Italy, and Spain) settings has to do with rules for management and decision making, investment in common action projects and programs, and sustaining high-quality supply. Also included is a discussion of evaluative criteria (environmental, economic, societal, and institutional) that aim to re-value food systems that rely on multiple, redundant, independent regional food supply chains. Such efforts support an emerging geopolitical dynamic, which allows for the reassertion of comparative advantage in Mediterranean villages, while assuring an acceptable domestic supply, thus furthering community resilience.

John Tuxill, Fairhaven College, Western Washington University

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*Natural Disasters and Small Farmer Responses in Yucatan, Mexico:
Implications for Crop Biodiversity and Rural Food Security*

Abstract

The immediate economic and environmental aftereffects of drought, hurricanes, floods and other extreme climatic events are chronicled intensively by media sources, but surprisingly little in-depth investigation has been made of how natural disasters affect the ecology of small farm landscapes, and how agrarian households cope with such events. This is particularly true of regions of Latin America, Africa, and Asia dominated by extremely diverse agroecological landscapes. I present a case study of the ecological and economic effects of a category III hurricane that struck central Yucatan state, Mexico, in September 2002. A major land use in this region is small-scale swidden maize farming by Mayan households on communal *ejido* lands. Central Yucatan farmers faced three principal effects from the hurricane: 1) a major reduction in their harvest of maize, beans, and other crops, which normally constitute a significant part of household food security; 2) reductions and sometimes outright losses of seed supplies necessary for replanting crops in the subsequent agricultural cycle; and 3) changes in the ecology of the tropical dry forest ecosystem where farmers establish their fields. All of these hurricane-related effects extended well into the subsequent agricultural cycle almost a year later. Immediate post-hurricane interventions by the Yucatan state government were unable to resolve most of the ecological and economic issues that Mayan communities faced in attempting to restore the bases of their agricultural production, such as obtaining sufficient seed supplies for replanting. Instead, most farm households relied on traditional social coping mechanisms to address the economic and agro-ecological challenges they faced in the year following the hurricane. This case study from Yucatan identifies ways that government and non-governmental relief programs in general might better integrate their efforts to help communities recover from extreme climatic events while also supporting diverse household agriculture over the longer term.

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The Resilient Yucatec Maya Agrosystem

Abstract

The Yucatec Maya of the Yucatan Peninsula, southeast Mexico, have preserved a system of agriculture that dates back to ancient Maya civilization. It has modernized and changed with the times, but keeps essential features at least 3,000 years old. Thus it has certainly shown its resilience—though the Classic Maya “Collapse” in the 9th-10th centuries proved it had limits. It is currently outperforming alternatives in most of the Yucatan Peninsula, while changing to incorporate new ideas that fit with its basic commitment to shifting agriculture based on maize as staple and over 100 minor crops. Considerable research over the last 60 years has shown the reasons for its resilience, which boil down to superb understanding of the harsh Yucatan environment and use of an enormous range of resources and techniques that allow fine-tuning in particular situations while remaining flexible overall. Knowledge is substituted for capital. More important is the use of ritual and ceremony to involve people collectively in the enterprise. This is clearly the key to the overall resilience of the system. This way of dealing with the natural world has broad implications for our resource-short and warming planet.

Conservation Psychology: Ecological Experience

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An Integrated Systems Approach to Eco-psychology

Abstract

The purpose of this paper is to create a comprehensive approach to study of the individual psyche. The focus of the paper is how the individual's integration with family, culture, society, national and global perspectives impacts the world and how the world impacts the self. from a psychological perspective.

Lisa Jobson, RMIT, AUSTRALIA

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Living the Material Animism of an Indiginee Consciousness

Abstract

How can a modern encultured mind identify itself and cultivate respectful living etiquette with the needs of the more-than-human communities? What would it take to penetrate the modern psyche to see our humanness as part of ecosystems, whilst realizing with caring action how nature supports our lives? This is something that indigenous people have naturally embodied for thousands of years.

This presenter is researching community education approaches that may activate such poetic order of living systems. She is exploring approaches to inspire material animist sensibilities within the context of modernity. Married to this is her question of how humans can become effectual with these sensitivities, as a catalyst for cultivating a way of life that acts in accord with the needs and autonomies of all earth species and bio-life.

The need to examine what is already being done by various ecologically minded organizations, communities and individuals is central to this presenter's research. There are questions to be asked. Are our present ways of knowing and activities appropriate and effective to this end? This research is in its initial stages and is exploring what central themes may be the coordinates for a new approach and praxis. This researcher seeks and invites response and reflection as part of her methodology.

Daoud Neil Miller and Theresa Coble, Stephen F. Austin State University

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Connections of Caring: How We Come to Care for Those Resources We Care About

Abstract

The communications field of resource interpretation strives to facilitate relationships of care through the provision of opportunities to visitors and stakeholders to form intellectual and emotional connections with the meanings and significance in site resources. Through opportunities for connections to resource meanings, people come to *care about* natural, cultural, and historical resources and, over time, to *care for* those (and other) resources in their lives. The field of conservation psychology seeks to better understand the processes by which people come to care about the natural world and engage in conservation behaviors. This presentation will introduce a model that integrates resource interpretation and conservation psychology frameworks and contributes toward efforts to place the concept of care at the center of multidisciplinary research efforts. Further, to better understand how an ethic of caring contributes to the stewardship of natural resources, preliminary results from an ongoing study involving volunteer interpreters in a Puget Sound beach naturalist program will be outlined.

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Emotional Responses to Nature Video Clips: Implications for Environmental Organizations Using Media-based Methods to Encourage Responsible Environmental Behavior

Abstract

This experiment examined the relationship between the intensity of emotional responses to encouraging and discouraging videos and written text concerning efforts to protect and restore the quality of the natural world, a future intention to act in an environmentally responsible manner, and a measure of curiosity about environmental issues. With a sample of 232 college students, the experiment was a between-subjects design with four different experimental manipulations designed to induce an emotional response: encouraging video and text, encouraging text-only, discouraging video and text, and discouraging text-only. Results of the experiment indicate a relationship between the intensity of emotional responses in all groups along an expected domain of valence (e.g., negative emotional response to discouraging videos), a future intention to act responsibly and a measure of curiosity about environmental issues. A greater future intention to act environmentally responsible was also associated with environmental beliefs and a measure of individual outdoor recreational behavior. A multiple regression analysis revealed a significant interaction effect between environmental beliefs, negative emotional responses, a future intention to act in an environmentally responsible manner, and a measure of curiosity about environmental issues for individuals that were primed with discouraging videos and text. Findings are discussed

in terms of their significance for environmental organizations trying to solicit membership and donations, encourage environmentally responsible behavior, and inform individuals about global climate change issues.

Literature, Myth and Theatre in Human Ecology

Ingrid Lindstrom, College of the Atlantic

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An Introductory Exploration of Literary Darwinism

Abstract

The blossoming theory of human nature known as “literary Darwinism” has been pigeonholed as everything from “textual selection” (Whitfield 2006) to “biopoetics” (Fromm 2006). Between the sciences and the humanities, a method of explaining human development and behavior in a comprehensive social, biological and literary manner has been long sought. Having reviewed several introductory texts, I find both literary theorists and biologists, under the umbrella of literary Darwinism, acknowledge that “patterns of meaning” tend to dispel pseudoscience, and the scientific method allows for a wider spectrum for the interpretation of human nature.

Dina Hartzell, Marylhurst University

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Violations and Restorations of Myth and Place

Abstract

If colonization is a phenomenon that is oppressive of beings, and thus a violence against them, it is also a phenomenon that can ignore or silence the broader connective conversations upon which the ecological balance of a place is dependent. Story and myth may be used as living reminders of the collectivity and the connectivity of being, and they may also be used as a potent tool for their destruction. Human action is initiated--given the possibility of “taking place”--through the story, conscious or unconscious, that suggests it. When human stories foster destructive colonizing actions by disregarding and overwhelming existing ecologies of story, it is not only cultures that are violated and suppressed, but also the collective voices of place. Like Echo in Ovid’s myth, once vibrant, connected places are forced to express only the “final,” dissociated words of their colonizers, their own expression thwarted and ravaged. Restoration of ecological and cultural balance may require that humans become more sensitive to--and participatory in--identities of place and their collectivities of voice and story.

10:30 -12:00

Concurrent Sessions: Symposia, Roundtables, Contributed Papers

Ecology in Thought and Action

Richard Borden, College of the Atlantic

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Personal Ecology: Exploring the Body Boundary

Abstract

Most definitions of human ecology emphasize “the relationships between humans and their environment”. But human-environmental interactions are enormously complex. They extend beyond commonplace conceptions of individual or organismal-level interactions with our surroundings. Through the human senses, environmental awareness reaches much further than the envelope of our skin; and a substantial portion of human life processes occur without any awareness at all. The inner environment of the human body, moreover, contains a vast microbial ecology of its own. A count of all cells in the human body suggests the vast majority, by a factor of ten, are microbes - making the ecology of the human microbiome as diverse as our external ecology. Taken together, these scientific findings call forth an expanded conception of human ecology and a new perspective on the meaning of being human. Through the aid of several avant-garde, experimental films (e.g. Sam Taylor-Woods Still Life, and Ray and Charles Eames Powers of Ten) this presentation invites an expanded exploration of the psychological dimensions of ‘personal ecology’.

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Insight - Outlook: Minding a Story to Hold the World
Abstract

As a way of knowing early science valued deconstruction in preference to integration. Ecology seeks pattern and values integration of systems. Human ecology requires the inclusion of human experience to be valid. Spiritual tendencies and emotional attachment must be included in any model of knowledge which purports to reflect the ecology of human being. Physical expression of emotion lasts 90 seconds. Any ongoing sense of emotion, like concern or connection among people, requires cognitive support, a story which links one experience, one feeling to another, a narrative which creates an internal ecology of relationship among emotions. The story we tell ourselves can only be subjective, derived from our unique cultural soup and our particular physiology.

One particular emotional or spiritual insight, the experience of union with all life, can produce a recognition of our individual place in the greater natural ecology. A human ecology must seek the contemporary stories which ground these transformative experiences in a sustainable world myth. This myth will be steeped in human subjectivity and celebrate the projection of human experience into the natural world.

Jennie Sparkes, Parks Canada CANADA
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Fostering Ecological Consciousness
Abstract

To date we have experienced the information economy era, the technology economy era and currently we are emerging into a new era. This new mega trend is “human consciousness” (Megatrends 2010). In the context of this mega trend, “consciousness” is the capacity for quiet, detached observation. It is spiritual in nature and influences what people are attracted to, how they spend their money, and the type of place they want to be part of. This presentation further explores what human consciousness is and how it evolves (Wilber, 1998) and the implication this has to our relationships with nature. Integral theory and learning are suggested as the required tools for protected area managers to facilitate the growth of human consciousness and a shift in our collective worldviews towards compassionately stewarding all life around us. Also presented are ‘consciousness themes’ that are emerging within this mega trend and what these trends mean if managers of protected areas wish to meaningfully engage visitors to their areas.

William Throop, Green Mountain College
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*Ecological Humility and Effective Leadership:
Attitudes towards Action under Conditions of Uncertainty*
Abstract

On a popular conception of leadership, a strong leader has a clear vision, an optimism about achieving this vision, a deep self-confidence, and an ability to move people toward the vision. This conception is in tension with a key environmental virtue - humility. On larger temporal and spatial scales, we have quite limited understanding and control of ecological processes. These limitations are compounded by planet scale changes like global warming. Such leadership in environmental affairs is both dangerous and morally suspect, since the communities of non-humans affected by our actions cannot consent to follow a leader.

I analyze the structure of the conflict between this image of the strong leader and ecological humility and explore the dynamics of the conflict in debates stimulated by Shellenberger and Nordhaus’s “The Death of Environmentalism” and Al Gore’s An Inconvenient Truth. I sketch an alternative conception of environmental leadership that honors our limitations, elevates trust over optimism, and accords with our role as “plain members of the biotic community.” This conception is not yet another leadership theory, but rather an approach to epistemic uncertainty in environmental issues that is capable of moving diverse groups of people.

Regulation and Socio-Ecological System Response

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Evaluating Alternative Growth and Land Policy Futures for a Rapidly Growing Community in Northwest Montana

Abstract

Nine alternative growth and land use policy futures are simulated for Flathead County, Montana for the period 2000-2024. Alternative futures consist of high, moderate, and low growth scenarios, and baseline (current), moderately restrictive, and highly restrictive land use policies. Increases in employment are estimated using the IMPLAN regional economic model and translated into land use requirements based on a multiple-attribute scoring procedure that assesses the suitability of developable parcels for different land uses. Additional jobs, housing units, and commercial-industrial-institutional units needed to support future growth increase substantially, particularly with the moderate and high growth scenarios. Total land needed to support future growth scenarios exceeds the amount of land available for development under the baseline policy and the moderate and high growth scenarios. There are no land shortages with any of the growth rates for the moderately and highly restrictive land use policies. Moderate and high growth scenarios can be sustained through 2024 in Flathead County by implementing a moderately restrictive land use policy. It does not appear necessary to implement a highly restrictive land use policy to sustain the moderate and high growth scenarios.

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Multiple Methods Toward Understanding: A Triangulated Approach to OHV Research

Abstract

Between 1976 and 2004, the number of OHV users increased from 5 million to 36 million. This growing popularity of off-highway-vehicle (OHV) use in the United States has led to increasing impacts to natural resource conditions and conflicts with other user groups. Without research that creates a better understanding between federal land managers and OHV users, it is likely that conflict will continue concerning issues of quality land stewardship, environmental impacts, and influence on other visitors. To further understand this specific user group, a triangulated approach of mail surveys, telephone surveys, and focus group interviews was employed. Using OHV dealer mailing lists of individuals who either purchased an OHV or parts, researchers sent out a survey to 600 randomly selected OHV users. Next, out of 300 randomly selected names of OHV users, a total of 62 telephone surveys were completed. Finally, four semi-structured focus group sessions were conducted involving 18 OHV users. The focus group sessions lasted 90 minutes and were recorded and transcribed for later analysis. Through the application of this multiple-method approach, we were able to gain a deeper insight into the thinking of OHV users, and a more clear understanding of appropriate management approaches for working with this group.
