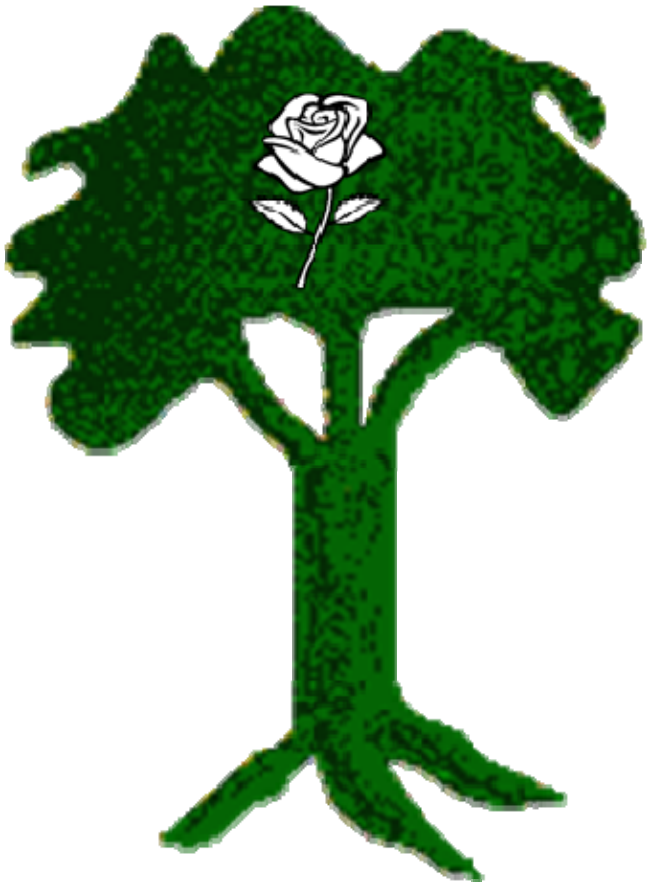

THE NINETEETH INTERNATIONAL INTERDISCIPLINARY CONFERENCE ON THE ENVIRONMENT

June 14-17, 2013▫
Hilton Portland and Executive Tower Hotel
▫Portland, Oregon, USA

Conference Schedule

Friday June 14

Field trip to Columbia River Gorge, 1:00 pm – 6:00 pm

As a way to get to know your colleagues before the conference begins, we've arranged a half day field trip on Friday June 14th from 1:00 pm to 6:00 pm, which will take us out of Portland along the scenic Columbia River Gorge, where we can make various stops along the way to walk and learn about the surrounding environment. Included will be a guided tour of the fish ladders at the Bonneville Dam. Check the following URLs for information about some of the stops we plan to make along the way:
Crown Point: http://columbiariverimages.com/Regions/Places/vista_house.html
Multnomah falls: http://www.oregon.com/attractions/multnomah_falls
Bonneville dam: http://www.nwp.usace.army.mil/Locations/ColumbiaRiver/Bonneville.aspx
The total cost of the trip per person is $49.00**.** Hope you'll join us!

Registration and Welcoming Reception, 7:00 pm – 9:00 pm, Room: Alexanders

Saturday June 15

Registration, 8:00 am - 9:00 am, Ballroom Foyer South

Breakfast Keynote, 8:00 – 9:30, Grand Ballroom II

Keynote by Phillip Thompson, PhD – Professor and Chair, Civil and Environmental Engineering and Director of the Center for Environmental Justice and Sustainability, Seattle University. Professor Thompson's address is from 8:40 – 9:25 am.

9:30 – 10:45 am, Water Resource Issues, Forum Suite

Moderator: Michael Reiter

Ahjond S. Garmestani Adaptive Management of Urban Watersheds

Dan Calvert Social Learning and Collaborations: knowledge is power!

Steven A. Kolmes and Russell A. Butkus Water Quality Standards: a Scientific and Theological-Ethical Analysis

9:30 – 10:45 am, Economics and the Environment, Council Suite

Moderator/Discussant: Kevin Hickey

Eric Asempah Creating Shared Value for Sustainable Development in Survival Economies

Adam Mayer The Effect of the Great Recession on Concern for Climate Change: A 35 Country Study

Demetri Kantarelis Environmental Models Used by Economists

10:50 – 12:05 pm, Business and the Environment, Forum Suite

Moderator: Eric Fitch

Darryl G. Waldron Going Green to Create Shareholder Value: An Article of Faith or the Way It Is?

Tina Richardson Trust us: Everything's Under Control

Mohan Rao Evaluating the Impact of the Triple Bottom Line

10:50 – 12:05 pm, Environmental Change and Management, Council Suite

Moderator/Discussant: Mia Kuha

Mala Galtima Assessment of Environmental Changes in the Fufore Area of Adamawa State, Nigeria

Linus Nyiwul Exploiting Traditional Enforcement & Certification to Improve Environmental Performance

Michael Reiter Doing Justice: The Role of Ethics in Integrated Ecosystem Management and the Implementation of the Integrated Assessment and Ecosystem Management Protocol

12:05- 1:05 Lunch, Galleria North

1:05 – 2:20 Sustainable Tourism and Community-Based Management, Forum Suite

Moderator: Greg Cronin

Barbara M. Clabots Women and Community-Based Management of Marine Protected Areas

in Siquijor, Philippines

Carmela Otarra Is it More Fun in the Philippines? : The Challenges to Sustainable Tourism Development in the Philippines

Naohiro Fujiwara, Yo Nishihara, Masayuki Goto, Brenda Bushnell A Survey for Sustainable Development of Tourism in Nepal

1:05 – 2:20 Climate Change and the Future, Council Suite

Moderator/Discussant: Kimberly Reiter

Eric J. Fitch Ignoble Lies: the influence of transnational corporations and their allies on Climate Change Policy

Tara O'Connor Shelley It's Mostly in Your Head': Environmental Risk Exposure, Risk Perception, Political Ideology and Support for Climate Policy

Godfrey Roberts Ten Billion in 2050: Biosocial Responses

Coffee and a Keynote, 2:25 – 3:25 pm, Ballroom Foyer South, with Jon Oster, Executive Director, Environmental Justice Oregon, OPAL (Organizing People, Activating Leaders)

Jon has worked on environmental justice issues since arriving in Portland in 2000 to attend Lewis and Clark Law School. While a law student, Jon worked as an organizer under Jeri Sundvall-Williams for the N/NE Portland community-based Environmental Justice Action Group, where he met OPAL co-founder Kevin Odell. Jon worked as a civil rights and employment discrimination attorney for five years before leaving private practice to help build OPAL, becoming Co-Director in January 2010, and Executive Director in January 2012. Jon continues to practice law, advocating on behalf of disenfranchised communities and developing state environmental justice law and policy, and is currently an Adjunct Professor at both Lewis and Clark Law School and Willamette University College of Law, specializing in Environmental Justice, Sustainability and Civil Rights Law and Policy.

3:30-4:30 pm, Roundtable Environmental Exposures & Human Health, Council Suite

Moderators: Kevin Hickey and Demetri Kantarelis

3:30-4:30 pm, Environmental Sustainability and Civic Engagement, Forum Suite Panel Discussion: Ramona Ilea, Brent Johnson, and Stephanie Stokamer

4:40-6:10 pm, Beyond the Academy: Transdisciplinary Approaches, Council Suite

Moderator and Discussant: Eric Asempah

Robin Aspman-O'Callaghan An Examination of the Environmental Worldviews and Ecological Attitudes of Business Instructors

Greg Cronin Integrating Transdisciplinary Research with Boyer's Model of Scholarship: using transdisciplinary scholarship to address the wicked problem of rebuilding Haiti

Fred Early Beyond Compliance: In Search of a Better Way

Craig C. Downer The Horse and Burro as Positively Contributing Returned Natives in North America

4:40 – 5:50 pm, Environment and Identity, Forum Suite

Moderator: Shane Epting

Madison Jackson Gender and Environmental Identity: A Look Into the Socialization of Engendered Connections to Nature and Its Effects on Environmental Activism through the Development of Environmental Identity

David Utsler Identity and Nature: Environmental Psychology and Environmental Hermeneutics in Dialogue

Megan Dunn An Empirical Measurement of Human Well-being to Determine an Environmental Policy Impact

6:00-8:00 pm Dinner on your own

8:00-9:00 pm Business Meeting, Council Suite

Sunday June 16

Breakfast, 8:00 – 9:30, Galleria North

9:30 – 10:30 am, Topics in Environmental Philosophy, Council Suite
Moderator/Discussant: David Utsler

Christy Reynolds Freaks of Nature: Toward an Ecology of Disability

Christopher C. Kirby Philosophical Naturalism as an Environmental Meta-ethic

9:30 – 10:30 am, Issues in Agriculture, Forum Suite
Moderator/Discussant: Brenda Bushell

Amani Ishemo Small Scale Farming and Occupational Diversity in Jamaica

Muneera D.F. Alkahtani Heat Damage as a Post-Harvest Physiological Diseases of Wheat and Its Impact on Flour Production

10:40-11:50 am, Panel Presentation: Social and Ecological Implications of Abundant Deer Populations in Central Texas, **Peter Beck, Janelle Sylvester, and Kristina Schenck, Forum Suite**

Kristina Schenck White-tailed Deer, People and Policy in Northwest Austin

Janelle Sylvester Impact of White-Tailed Deer Browsing on Plant Species Composition in the Central Texas Hill Country Preserves

Peter Beck Alternatives for Managing Deer Populations in Central Texas

10:50- 11:50 am, Roundtable Discussion: Transitional Phases in the Roles of Women in Developing Economies: From Reproductive to Productive Activities to Entrepreneurship.
Chair: Eleanor Kelly, with Brenda Bushell, Genius G. C., and Amani Ishemo,

Factors Contributing to the Success of Women's Businesses in Urban and Rural Nepal,
Rei Horie, Yuri Kyoda, Keiko Takahashi, Eleanor Kelly

12:00-1:00 pm, Lunch, Galleria North

1:00 – 2:15 pm, Sustainability and Policy, Council Suite

Moderator/Discussant: Michael Reiter

Dipl.-Geogr. André Wueste Renewable Energy Villages and Regions in Germany.

Osinibi, Olusegun Michael Evaluating the Impact of Poor Waste Disposal Management on Environmental Sustainability and Human Rights in Nigeria

Shane Epting The Systematic Incongruence between Sustainability and Globalization: Can Participatory Planning and Budgeting Improve their Compatibility?

2:15-2:45 pm, Coffee Break and Poster Presentation, Ballroom Foyer South

2:45 – 4:00 pm, Environmental Controversies, Forum Suite

Moderator/Discussant: Brenda Ross

Eric J. Fitch The "Green Pope": Pope Benedict XVI's Environmental Legacy and the Traditionalist Backlash

Mai Kuha Deniers, Believers, and Warmists: Framing Climate Science as Superstition or Conspiracy

Yingna Huan Ecological Civilization in China Calls for Interdisciplinary Environmental Attention

3:50 – 4:50 New Directions in Education, Council Suite

Moderator/Discussant: Kimberly Reiter

Peter Beck Does Experiential Student Learning Lead to Sustainable Lifestyles Outside the Classroom?

Brenda Ross Environmental Chemistry and Social Justice: A New Course

4:55- 6:10 pm, Focusing on Solutions, Council Suite
Moderator/Discussant: Peter Beck

K. M. Lin Applying the Time-Varying Bowen Ratio to Calculate the Atmospheric Stability in Air Quality Models

Augustine Avwunudiogba Effects of Forest Conversion to Pasture on Soil Physical and Hydrologic Properties, and Erosion in a Slash and Burn Agroecosystem, Sierra Madre Oriental, Eastern Mexico

Farhan Al-Juaidi Flood mitigation in arid environment using integrated approach-example from Riyadh city

Anyanwu, Chukwudi U Microbial Surfactants and Their Application for Environmental Sustainability

6:11 – 8:00 pm, Dinner on your own

ABSTRACTS OF PRESENTATIONS

Adaptive management of urban watersheds

Ahjond S. Garmestani*, William D. Shuster and Olivia Odom Green
U.S. Environmental Protection Agency, * Garmestani.Ahjond@epa.gov

Consent decree settlements for violations of the Clean Water Act (1972) increasingly include provisions for redress of combined sewer overflow activity through hybrid approaches that incorporate the best of both gray (high-rate treatment plants, storage tunnels, etc.) and green infrastructure (e.g., rain gardens). Adaptive management is an environmental management strategy that uses an iterative process of decision-making to reduce the uncertainty in environmental management via system monitoring. A central tenet of adaptive management is that management involves a learning process that can help regulated communities achieve environmental quality objectives. We are using an adaptive management approach to guide a green infrastructure retrofit of a neighborhood in the Slavic Village Development Corporation area (Cleveland, Ohio). We are in the process of gathering hydrologic and ecosystem services data on two neighborhood blocks (control and treatment). We will then use this data as a basis for collaboration with area citizens on a plan to use green infrastructure to contain stormflows on the treatment block. Monitoring data will provide researchers with feedback on the impact of green infrastructure implementation and suggest where improvements can be made.

Social learning and collaborations: Knowledge is power!

Dan Calvert, Oregon State University
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Social learning is recognized as a critical component of resilience thinking and is underpinned by several key concepts: Soft systems thinking, looped learning and critical reflection. Oregon has a variety of collaborative watershed partnerships utilizing social learning to facilitate ecological and economic uplift in rural communities. This presentation examines the role of social learning as it relates to decision making about land use management strategies by private landowners. A set of case studies were performed through a series of semi-structured interviews (N=80) with private landowners and watershed council staffs in the Upper Willamette River basin. Results indicate that: (1) among private landowners the source, type and delivery of information plays a critical role in willingness to adopt new land management practices; and (2) iterative learning between private landowner and watershed council staffs is driving adaptive co-management leading to more robust, resilient social and ecological systems. Information dissemination by non-governmental collaborative watershed partnerships can be a powerful tool to make inroads with individuals from rural, traditionally conservative natural resource dependent communities. The reality is that in watersheds with large areas in private ownership ecological and social change are inextricably connected; restoration and management approaches should reflect this. The watershed council model is an important policy mechanism that while time and resource intensive can generate tangible results that might not be achieved by other means. I will discuss lessons learned and implications for future water resource management strategies.

Water Quality Standards: a Scientific and Theological-Ethical Analysis

Steven A. Kolmes*1,3 and Russell A. Butkus1,2,3

In 1999, the Oregon Department of Environmental Quality (ODEQ) established a Technical Advisory Committee of scientists and a Policy Advisory Committee of stakeholders to recommend new surface water contaminant standards to the State Environmental Quality Commission (EQC). The EQC would then propose new standards to the US Environmental Protection Agency (EPA), to adopt new water quality standards for toxic substances in Oregon surface waters. For many toxic substances, the most significant human exposure is via eating contaminated fish. Tribal populations have fish consumption rates much greater than those of the general population, which places Tribal people at much greater risk from water contaminants. This presentation focuses on the process of establishing fish consumption rates for vulnerable populations, the dietary surveys used to establish these consumption rates, and the relationship between human health and fish consumption. We will provide an in-depth scientific critique of the EPA methodology, the ODEQ process for employing the EPA methodology for establishing fish consumption rates (and hence permissible toxin levels). The presentation will also provide a theological-ethical analysis for at-risk human communities (especially Tribal peoples). Utilizing the principles of the modern Catholic human rights tradition, the presentation will argue for rights-based criteria for establishing the best protective standards for fish consumption. Ethical

implications of modeling assumptions including acceptable risk levels and fish consumption rates are given special attention.

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3 presenting author

Creating Shared Value for Sustainable Development in Survival Economies

Eric Asempah, York University
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Corporate injustice and resource exploitation especially in poorer economic regions of the world has led to aggravated social and environmental consequences, which communities in these demography have to grapple with unendingly. Weakening labor, social and environmental policies in the survival economies continue to be the main inlet through which corporations slid into to exploit the vulnerability of these societies. Corporations have attempted to merit their social license to operate through Corporate Social Responsibility initiatives; however, this approach has been found to be counterproductive in many ways, as they do not correctly address the core needs and challenges of communities. This paper seek to explore some of the situational positioning of corporations and their approach to meeting society needs and address some of the weaknesses which hinder the creation of shared value for sustainable development and how corporations can develop strategies to address these problems and create shared value for mutual economic, social and environmental success.

The Effect of the Great Recession on Concern for Climate Change: A 35 Country Study

Adam Mayer, Department of Sociology, Colorado State University
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Very limited research has examined the effects of economic downturns on public views about climate change. Brulle et. al. (2012), Shum (2012) and Scruggs and Benegal (2012) compare aggregate trends in climate change opinion with aggregate trends in unemployment, among other factors. Each study finds that as unemployment increases, public concern about climate change declines. Kahn and Kotchen (2010) use Google search data to demonstrate a negative relationship between recessions and public concern about climate change. However, inferences about individual's subjective viewpoints cannot be inferred from studies conducted in the aggregate. To date, environmental social scientists have not examined the relationship between recessions and climate change at the individual level

To address this gap this paper uses an international survey of roughly 36,000 respondents in 35 countries in Europe and Central Asia. I employ ordinal logistic regression with a dependent variable measuring climate change concern. Independent variables are used that capture a respondent's subjective experiences with the great recession. Finally, I

include socio-demographic control variables and country level fixed effects. Results indicate a positive relationship between deleterious experiences with the great recession and climate change concern. That is, negative experiences as a result of the great recession, such as cutbacks in the consumption of staple goods, increase concern about climate change. There are also substantively important country-level effects.

Environmental Models Used by Economists

Demetri Kantarelis
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Economists rely on abstract models to isolate and sort out complicated causal relationships. With models economists can test, at least logically, different scenarios, evaluate the effects of alternative policy options, or reassess the integrity of the underlying arguments. In this paper I describe some economic models that deal with various legal rules, abatement costs, environmental damages due to emissions and hazards, sustainability, and environmental games. The models offer guidance for cost minimization, optimal legal rule setting, pollution permits, perverse incentives, emission taxes and environmental treaties between nations.

Going Green to Create Shareholder Value: An Article of Faith or the Way It Is?

Sara Hansen and Darryl G. Waldron*, Trinity University
*dwaldron@trinity.edu

Companies that actively manage environmental risks-and take advantage of associated opportunities-increasingly seem to outperform those who don't in the stock market. That could be a very good thing, both for shareholders and the planet (Krosinsky, 2011).

Put otherwise, embracing a "green" strategy is offered above as an avenue leading to the creation of shareholder value and, as such, it builds on a stream of academic research extending over the past decade or so that has grown into a mantra of sorts for some and marching orders for many others, including various private sector corporate leaders (Hillman and Keim, 2001).

The largest ongoing "green analysis" is Newsweek's Green Rankings initiative, an annual study of the world's 1000 greenest companies conducted in association with Trucost and Sustainalytics, two highly regarded environmental research companies. Companies are selected for inclusion in the Green Rankings based on the size of their environmental footprint, a measure that accounts for (1) a company's greenhouse gas emissions, water consumption and the use of various other natural resources; (2) environmental management, including systems, processes, policies, programs, and both operating and strategic initiatives of an environmental nature and (3) environmental disclosure, which focuses on environmental accounting, reporting, transparency, and reconciliation. Underlying data are derived from both primary and secondary sources and are vetted for

reliability. A broader discussion of this methodology is embedded in the review of the research design and analysis undertaken here.

Trust us: Everything's under control

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Environmentally influential multinational corporations and industry organizations want the general public to believe that they are concerned citizens, aware of the environmental challenges the production of their goods create, and that they are doing something to address those challenges: something positive. To get that message across, these corporations and organizations engage in multi-million dollar integrated marketing campaigns that include advertising, public relations and advertorial journalism. These campaigns are targeted at a general audience, one that is presented with images such as Monsanto's rugged, hard working American farmer. This process—known as greenwashing—is largely effective. The question is why. This paper will examine three image campaigns: two corporations and one industry organization. It will also explore how these organizations have dealt with the backlash to these campaigns and how they continue to move forward. The paper will explore a number of issues surrounding these campaigns to develop a deeper understanding of how they are successful. There will be a thorough examination of the campaigns themselves, specifically the messages, the intended audience and the backlash and the organization's response. The success of these campaigns will also be addressed. The organizations that will be examined are Monsanto, Shell Oil and the American Coalition for Clean Coal Energy.

Evaluating the Impact of Triple Bottom Line

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The term "Triple Bottom Line" (or 3BL) began appearing since 1997. It focuses corporations not just on profits, but also on people and the planet. It is about sustainability, corporate responsibility and ethics. According to a poll conducted by Harris, with a sample of over 2000 respondents in September 2000, fully 95% of respondents agreed with the statement: "U.S. corporations should have more than one purpose. They also owe something to their workers and the communities in which they operate, and they should sometimes sacrifice some profit for the sake of making things better for their workers and communities." By contrast, only four percent agreed that, "U.S. corporations should have only one purpose—to make the most profit for their shareholders—and their pursuit of that goal will be best for America in the long run." 3BL took off. Now a Google search on "triple bottom line" will result in over 1,640,000 hits. Well-known companies like Clorox, GE, Timberland, and Toyota are embracing the idea. Some Business schools are integrating 3BL into their curricula. There are new ways to measure organizational performance. Sustainable Balanced Scorecard (SBSC) and Organizational Sustainable Performance Index

(OSPI) are worth noting. There is also a serious controversy about 3BL. Some say that the term is misleading, impractical and just a fad. In this paper we will look at different aspects of 3BL, and more importantly its impact on people, planet and profits.

Assessment of Environmental Changes in the Fufore Area of Adamawa State, Nigeria

Aliyu M. Ba, *Mala Galtima and Abdullahi L. Tukur., Department of Geography, Modibbo Adama University of Technology, Yola, Nigeria,*Corresponding author, mgaltima@yahoo.co.uk

In Nigeria, since the last three decades, there has been a tremendous stress on the environment with serious consequences. The objective in this study was to assess the rate and the causes of environment changes (land use/cover) in the Fufore area of Adamawa State, through the application of Remote Sensing and GIS techniques. The images of Landsat MSS 1972, TM 1987, ETM 1999 and Nigeria SAT-1 2012 were analyzed to derive information on environmental changes between 1972 and 2012. This was complemented by a set of questionnaires administered to elicit the community perceptions of the causes and the effects of land cover changes. The results of the analysis revealed that the size of the forest cover in the area reduced fro 1,504.45 sq/km in 1972 to 1,038sq/km in 1987, and further declined to 898.98 sq/km in 1999 and dropped to 371.55sq/km by 2012. On the other hand, the housing and agricultural land uses expanded from 11.23sq/km and 108.76sq/km respectively between 1972 and 1999 to 66.41sq/km and 2,554.82sq/km respectively by 2012. A probabilistic model of Logit type estimated the future-outlook of land cover changes in the area at the rate of 98.45sq/km per annum. The people's perceptions show that the preferential exploitation of certain tree species as fuel wood, over-cultivation and population growth, were seen as the major causes of deforestation in the locality. The most serious environmental consequences being experienced as a result of the changes include loss of agricultural out-put due to soil erosion and flooding, and decrease in vegetal resources. The study recommends that the state and local government authorities should address, among other issues, the over reliance on fuel-wood as the principal source of domestic energy supply through the provision of affordable alternative sources.

Exploiting Traditional Enforcement & Certification to Improve Environmental Performance

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Our paper studies optimal regulation when a regulator can exploit two endogenous levers: traditional enforcement and certification. The key result is that a regulatory scheme that allows the regulator to exploit overcompliance certification as well as traditional enforcement can achieve substantively greater environmental performance: some firms now have clear incentives to overcomply, and the remaining firms improve environmental performance through more stringent optimal standards.

Doing Justice: The Role of Ethics in Integrated Ecosystem Management and the Implementation of the Integrated Assessment and Ecosystem Management Protocol

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Successful Integrated Ecosystem Management (IEM) depends critically on the identification and relative importance of societal goals for an ecosystem. These goals allow for the application of the recently developed Integrated Assessment and Ecosystem Management Protocol (IAEMP) in which Combined Ecological/Societal Systems Modeling (CESSM) can be used as part of a process to forecast potential impacts of alternate management scenarios. An option for integrating ethics into the protocol entails the identification of first order principles that could be integrated into the CESSM, but this reflects a deontological form of ethics that almost inescapably invites the question of the moral status of non-human nature as a whole or in parts. While some might suggest the irrelevance of this question, this is not a minor consideration in a management process that stresses broad-based stakeholder involvement and attentiveness to social contexts. An alternative teleological form of ethics could be utilized where notions about well-being would guide the incorporation of specific aims (understood as first order factors) into CESSM. This invites similar questions about how well-being might be understood and to whom or what well-being might be directed, bringing its own particular difficulties regarding definitions, meanings, and applications.

We offer instead a "first order process:" a restorative justice framework that addresses potential societal conflicts as part of IEM but before CESSM is performed. The aim of this restorative process would be to foster social solidarity and cooperativeness, create a context within which expressions of varied environmental values could be offered and a consensus for action reached, and offer practical guidance for adjustments to actions such as the CESSM before their use in specific social and ecological contexts. In other words, rather than incorporating an ethics into CESSM, we argue that CESSM should be incorporated into a larger ethical framework, mirroring other scientifically based endeavors such as medical practice, etc. As a result, a focus on justice becomes a part of the Integrated Assessment and Ecosystem Management Protocol itself (IAEMP), within which CESSM is performed. An approach to justice (in this case, restorative justice) is suggested precisely because of the conflicts that can be expected in a stakeholder-based form of environmental management. Given the prevalence of systemic social harms (in the form of various kinds of systematic injustice), and/or environmental harms that may well relate to social experience at specific sites, designing a process that assumes the presence of such harms is valid. A restorative justice approach can also be elaborated in terms of social healthfulness, where the notion of health is broadly considered.

Women and Community-Based Management of Marine Protected Areas in Siquijor, Philippines

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This case study focuses on the gender dimensions of the management of community-based Marine Protected Areas (CB-MPAs) in Siquijor, Philippines. The objective of this study is to understand the current state of women's involvement and the dynamics between women and CB-MPAs in Siquijor, Philippines in order to advise policies for MPA management. The role of gender and women is missing from the literature on MPA management. A mixed-methods qualitative approach was used, including document analysis, participant observation, key informant interviews, and focus group discussions. Results indicate that women played a significant role in MPA site selection and management, especially the enforcement of MPA policies and livelihood generation. The development of female leaders in MPA management was due to local factors and not due to official policies. The implications for MPA management are that 1) changing gender roles and responsibilities has social equity outcomes, 2) gender-progressive individuals support women's empowerment more than gender policies, and 3) local context can override gender-mainstreaming policies.

Is it More Fun in the Philippines? : The Challenges to Sustainable Tourism Development in the Philippines

Carmela Otarra, Tourism, Monash University
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According to the Department of Tourism, the main obstacle of the Philippines in attracting tourists is the lack of market awareness. Using the available literature on tourism in the country for the past decade and various statistics, the country's position in Butler's (1980) Tourism Area Life Cycle (TALC) model is determined. Literature has shown that various negative environmental and socio-cultural impacts have already been observed in some areas in the country, especially in coastal areas. Meanwhile, the available data on increasing visitor arrivals, presence of a tourist season and many independent travellers, economic contribution of tourism, and established marketing efforts imply that the country is still in the early stages of Butler's TALC. As such, the country faces challenges of adverse natural and socio-cultural impacts, protecting nature-based attractions, and declining local ownership. Recommendations, particularly government-facilitated, to develop a sustainable tourism industry are given to avoid pitfalls that have befallen mature destinations. These include educating local stakeholders, supporting local businesses, establishing quality control mechanisms (e.g. codes of conducts and eco-labels) to protect natural resources.

A Survey for Sustainable Development of Tourism in Nepal

Naohiro FUJIWARA, Yo NISHIHARA and Masayuki GOTO, Waseda University, Tokyo, Japan,
Brenda BUSHELL, University of the Sacred Heart, Tokyo, Japan, brenda@u-sacred-heart.ac.jp

In recent years, the tourism industry is developing rapidly with political stabilization and government policy in Nepal. However, the rapid progress of tourism development and increase of tourists may destroy important tourist resources, such as rich nature, various culture, and species of wild animals. Sustainable development in the tourist industry is therefore, very important to protect these resources. In this research, we clarify the issues of tourism development in Nepal through a field survey with respect to the consciousness of local residents, regarding the development of the tourist business in their communities. The purpose of this research is to highlight the problems of tourism development through the analysis of the survey. In order to achieve this purpose, it is necessary to investigate influences of sustainable tourism development not only from an economical viewpoint, but from social and environmental viewpoints. As the point of view of this research, we designed the questions regarding the sectors of economic, social and environmental issues, with the aim of identifying the differences of consciousness of local people between Kathmandu and the communities surrounding Chitwan National Park, one of the well-known tourist destinations in Nepal. We analyze regional characteristics between Kathmandu and Chitwan and the relevance between the three sectors of economy, society and environment. Additionally, we investigate the awareness of local residents regarding the influences of various factors on tourism development in the long-term, as well as polices and efforts that they think local communities should make in the future. From the stratified analysis and principal component analysis, we reveal there is a difference in the awareness of local residents caused by the differences of regional characteristics and tourism resources. Based on the results, we consider the situation of tourism development and the future problems in the tourist industry in Nepal.

Ignoble Lies: the influence of transnational corporations and their allies on Climate Change Policy

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Marietta College, Fitche@marietta.edu

Plato wrote about “noble lies”; myths, tales or fabrications told by the elites to maintain or promote social order or a specific agenda. Hitler wrote about the “Big Lie” and then proceeded with his minions to promote lies that fooled a vast public into a level of acceptance that led to the Holocaust. In the modern world, the Big Lie is used by both governmental and non-governmental entities to promote their agendas and give cover to their allies. In the United States and Australia, fossil fuel mining interests and coal in particular have engaged in campaigns to discredit climate change science and to delay or even prevent legislation and/or implementation of policies to regulate and reduce the emission of greenhouse gases. This paper will examine the different strategies and success/failure of interested private sector parties and their minions in and outside of to facilitate climate change science denial.

It's Mostly in Your Head': Environmental Risk Exposure, Risk Perception, Political Ideology and Support for Climate Policy

Adam Mayer1 , Tara O'Connor Shelley1, Ted Chiricos2 and Marc Gertz2
Presenter: Tara O'Connor Shelley, tara.shelley@colostate.edu

Drawing from O'Connor, Bord and Fisher's (1999) Risk Perception Theory, this paper examines if support for climate change policy varies when taking into account risk exposure, risk perception, risk acceptance, political ideology and other socio-demographics. We utilize data from a national survey conducted in 2002 to examine if dimensions of risk (exposure, perception, and acceptance) influence respondent willingness to endorse pollution controls on power plants even if such controls would raise energy prices. Our results indicate that political ideology, some but not all perceptions of environmental risk, and respondent demographics influence support for climate change policy; however, exposure to most environmental risks has negligible influence on support for environmental policy.

Ten Billion in 2050: Biosocial Responses

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The world population at 7.1 Billion is expected to grow to between 9.5 and 10.0 billion by the year 2050. Almost all of the approximately 3 billion humans added to the population of the world will be in the poorest countries. This population increase in poor countries will place an enormous stress on a whole range of resources including water, energy, soil, land and food. The challenge for the international community is to establish major strategies to address these problems. Further increase in food production with biotechnology, especially genetic modification of food should be a high priority in the next decade. The pursuit of this option would undoubtedly be affected by environmental challenges like global warming and food production in a warmer world. Scientists should also intensify their efforts to develop new energy options. Over the next few decades we need to invest in research on hydrogen energy and nuclear fusion. The enhanced quality of life from increased food production and cheap energy could lead to declines in birth rates. The challenge would be to make this happen in the next few decades.

Biologist Garrett Hardin known for "tragedy of the commons" and "lifeboat ethics" would have supported the position that like China, high birth rate countries should establish policies and programs to rapidly reduce their birth rates. Biologist and environmentalist Barry Commoner has taken the position that since resources were taken away by the colonizers, poor countries could not invest in development programs that could have lowered birth rates. Commoner has taken the position that affluent nations have an obligation to help poor countries.

This study will examine population increase by 2050 in the poorest countries, the possible responses and if affluent nations have a moral obligation to invest in the development of poor countries.

Roundtable Session: Environmental Exposures and Human Health

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Without a doubt, exposure to environmental indoor and outdoor pollution may affect our health.
- What are the links between ecosystem and human health? 1
- How can we safeguard human health and ecosystems from environmental pollutants?
- What are the latest research findings?
- What tools and technologies we currently use?
- What constitutes clean air and water?
- How do we deal with pesticides, chemicals and toxins?
- How do we estimate risk?
- Can we identify trends in human exposure, health status and human disease? For, example
"how innovation in governance and urban planning can contribute to strengthening ecosystem
services in urban landscapes"? 2

1. Eco-Health Relationship Browser <http://www.epa.gov/research/healthscience/browser/index.html>
2. Urban Planet
<http://www.urbanplanetatlas.org/upa/index.html>
,2, Yuntae Choi1

Panel: Environmental Sustainability and Civic Engagement

Presenters: Ramona Ilea (ramona75@gmail.com), Brent Johnson (bjohn@pacificu.edu), and Stephanie Stokamer (stok@pacificu.edu)

In this panel discussion, Pacific University's Center for Civic Engagement Director and professors from two different disciplines – Philosophy and English – will describe different civic engagement assignments and strategies used at Pacific University to promote environmental sustainability. Civic engagement assignments – not to be confused with traditional service learning ones – can help students understand the relationship between theory and practice and see new connections between the readings done in class and the "real" world. These projects also help students develop leadership, organizational, problem solving, and communication skills.

In this panel discussion, Stephanie Stokamer will describe how Pacific University has implemented a civic engagement requirement for all undergraduate students, an approach that

raises both new challenges and opportunities. She will explain how professors in various disciplines have devised a variety of assignments that fulfill this requirement and how these projects have addressed a range of environmental issues.

Brent Johnson will show how civic engagement can help students better understand the definitions and purposes of a liberal arts education and be involved in sustainability efforts. He will describe a civic engagement project that he uses in his first year humanities seminar class that requires students to connect environmental issues, personal transformations and social change.

Ramona Ilea will show how her students have addressed environmental issues through civic engagement projects, such as starting a bike sharing program in the three residence halls, doing advocacy for non-human animals, opposing the sale of bottled water, and installing clothes lines in the residence halls.

The strategies and assignments described by the speakers discussed are malleable enough to make them easy to adapt to different types of classes and institutions.

Learning Objectives:

- Better understand how the humanities can contribute to environmental sustainability efforts with civic engagement assignments.
- See how civic engagement can help students develop their interest in environmental issues and social change, put their knowledge into practice, and make a difference to the public domain.
- See some concrete examples of what professors, especially those in the humanities, can do in their classes to get their students involved in environmental advocacy projects.

An Examination of the Environmental Worldviews and Ecological Attitudes of Business Instructors

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The topic of sustainability is now being added to many schools of business curricula. However the environmental component of sustainability is not well understood by many in business. Previous studies have shown that business individuals score lower on measurements for environmental ethics and worldview than most other groups measured. Business instructors often reflect the views of those in business. If business instructors share a lower concern for the environmental component of sustainability, they will be ill equipped to accurately portray the concerns which are the foundation of sustainability. Accreditators, administrators, and curriculum designers are some of the groups that need to address this potential gap in knowledge and skills. One way to do this is to determine where business instructors score on measurements for worldview and environmental ethics. This study will determine (a) business instructors' worldview using the New Ecological Paradigm, and (b) business instructors' environmental ethical perspective using

the Ecocentric and Anthropocentric Attitudes Toward the Environment tool. Information gathered from this population will be analyzed and used to determine what steps may be necessary to adjust business instructors' perspectives of sustainability. This information can then be used to help develop consistent standards for those teaching the topic of sustainability.

Integrating Transdisciplinary Research with Boyer's Model of Scholarship: Using transdisciplinary scholarship to address the wicked problem of rebuilding Haiti

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Transdisciplinarity has been defined in different ways, but it is generally considered a holistic research strategy that crosses many disciplinary boundaries. Over two decades ago, Earnest Boyer promoted a broader definition of "scholarship" to enhance the traditional view of scientific research. Boyer's model of scholarship recognized traditional research as the "scholarship of discovery", and added the important scholarly activities of application, integration, engagement, teaching, and translation. The merger of transdisciplinary research with Boyer's model of scholarship can be called 'transdisciplinary scholarship'.

A transdisciplinary scholarly approach is being used to address the wicked problem of creating a sustainable society in Haiti. In 2010, Haiti endured an earthquake that killed 2.5% of the population and leveled the capital city, Hurricane Tomas, a cholera epidemic, and political unrest. These hardships were added to the chronic conditions of the highest levels of poverty and environmental degradation in the western hemisphere. Research studies to measure ecosystem health, soil processes, or community structure-function relationships (i.e., scholarship of discovery) were a low priority in Haiti because the science of ecology had long-established that vegetation is important for ecosystem health. What was more immediately important were other forms of scholarship, such as applying ecological knowledge to getting vegetation established on the bare earth and engaging the community to make the project sustainable.

The project was transdisciplinary because it relied heavily on knowledge and feedback from the local community. Academic fields involved include ecology, public health, agriculture, music, economics, forestry, history, anthropology, social sciences, and engineering. These early efforts demonstrate the value of the current effort to change the STEM disciplines to STEAM (Science, Technology, Engineering, Art, and Math).

Beyond Compliance: In Search of a Better Way

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The Federal Government says that when manufacturing is in compliance with the US Environmental Protection Agency's (EPA) regulations it is protecting the environment, but is it really? Learn how responsible manufacturing in the US can go beyond compliance to

protect the environment for future generations. EPA regulations by their nature have to apply to a diverse mix of businesses. Often it is left up to those being regulated to interpret and figure out how to apply those regulations to their business and its byproducts. There have been a lot of advancements in EPA regulations over the last sixty five years and one company in the Mid West says it has not been enough. There is a regulatory and technological gap between what Washington says must be done to protect the planet and what has to be done to really protect the environment. Gary Vermeer coined a phrase; "In search of a better way" and that extends to environmental stewardship by leading community projects around electronics recycling, household hazardous waste collection, cardboard and metal recycling which have removed millions of tons of reusable waste from the environment. Implementing technological advancements in electro static high solids metal coating has pushed the limits of paint chemistry to new levels. Installing counter flow rinse water in state of the art multi stage washing and pretreatment minimizes water consumption in metal cleaning beyond what was thought to be possible. Advancements in pulse welding have reduced metal fumes by 50% improving employee safety and environmental air quality beyond compliance. Simply meeting EPA regulatory compliance can not be the way we protect the environment. True environmental protection comes when like minded people come together and share advancements and push them further with applications that go way beyond mere compliance.

The Horse and Burro as Positively Contributing Returned Natives in North America

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Since the passage of the Wild Free-Roaming Horses and Burros Act in 1971, considerable debate has raged as to whether the horse and burro should be considered as returned native species that contribute positively in North America. The assertions that these species do not belong here contradict substantial evidence found in an ample fossil record and derived from meticulous genetic analyses. These also contradict evaluations of the ecological niche and mutual symbioses of post-gastric digesting, semi-nomadic equids. In this paper, I present both paleontological and ecological proofs that support wild horses and burros as benign species that restore the original fauna in certain extensive North American ecosystems. I conclude with a recommendation for a new approach to wild horse and burro conservation that involves Reserve Design. Its aim is to establish naturally self-stabilizing equine populations that are allowed to harmoniously adapt over many generations to the bounded ecosystems they inhabit. These areas count on sufficiently sized and appropriate year-round habitat to support population levels that are genetically viable in the long-term. Here I cite the published recommendations of the IUCN Species Survival Commission Equid Specialist Group for viable population levels and describe the basic components for a successful wild equine Reserve Design. Based on my research, I finally reveal regions in North America where this strategy is most feasible, based on both biological and social factors.

Ecological Civilization in China Calls for Interdisciplinary Environmental Attentions

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Yi Shen, Vice Director of Shenzhen Municipal Development and Reform Commission
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After the 18th Chinese Communist Party (CCP) National Congress convened in November, 2012, studies of the differences between the old and the new presentations of ecological civilization were made. This paper stresses the great significance and function of an amalgamated development of economy, politics, society, culture, as well as ecological civilization, in pushing to realize the general layout of "One of Five" in China. Based on the above study, why and how scholars and researchers should make interdisciplinary efforts to help construct the amalgamated development of ecological civilization with the other four fields is discussed. Finally, the measures that the government should take to facilitate and ensure the general layout of "One of Five" in China to be successfully implemented are also discussed

Gender and Environmental Identity: A Look Into the Socialization of Engendered Connections to Nature and Its Effects on Environmental Activism through the Development of Environmental Identity

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To fully understand the connection between environmental identity and gender, we must look into history of these subjects. Women and men have shifted their gender identities, and in turn their environmental identities, in relation to the gender roles of the society standing around them. Women have emphasized their environmental identity by means of intrinsic values in nature and taking on the maternal nurturer gender role. Men's gender roles have developed in society as a protector and dominator, appreciating tangible aspects of nature; consecutively relaying this into their environmental character. These differences have defined environmental femininity and masculinity through social placement and connections to the environment. Through discussing gender socialization's affects on environmental agendas and activism participation, we can look into one of the many components that make up the multi-dimensional environmental self.

Identity and Nature: Environmental Psychology and Environmental Hermeneutics in Dialogue

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How is it that we as human beings understand ourselves? How do we form our individual identity? What I propose here is that identity is not merely some internal gesture. Self-understanding is not a matter merely of an internal "I" that is discovered and unfolded, entirely unchanging and without reference to external realities. In this paper, I will discuss how identity is formed and grasped in relation to environments—what I have called "environmental identity." I will do this with particular reference to philosophical hermeneutics in dialogue with environmental psychology. I will draw from the "hermeneutics of the self" in the thought of Paul Ricoeur. Ricoeur has argued that selfhood is constituted, not directly through the cogito, but indirectly mediated through numerous external factors as one "passes through" the other to return to the self. Reflecting on Ricoeur's work in terms of human relationships to environments, I will argue that the self is interpreted and understood through these relationships. Then expanding these insights in dialogue with environmental psychology I will further make the case that how we relate to environments is crucial for a healthy self. My conclusion is that environmental identity is an important component of personal identity and how it is formed is relevant to environmental problems and challenges faced today both locally and globally.

An Empirical Measurement of Human Well-being to Determine an Environmental Policy Impact

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This research project will answer the question: Did a buyback policy instrument impact the human well-being of fishing communities in Washington State? The study will calculate and compare a composite index of human well-being using social indicators before and after a policy implementation over a 20 year period of time for select fishing communities as compared to non-fishing communities. Economic indicators are insufficient for measuring human well-being as there are multiple elements of well-being, including health, education and social interactions as well as relative importance of each element. A buyback program is an economic policy to purchase fishing permits or vessels to restrict the allowable fishing of threatened fish species. This policy protects the fish population, but it is unclear if the policy has impacted the well-being of the human population.

Freaks of Nature: Toward an Ecology of Disability

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Environmental studies (and environmental philosophy in particular) has been significantly enriched by ecofeminism, environmental Marxism, and other variants of social ecology that work to identify and critique shared structures of oppression responsible for ecological crisis and social inequality. I hope to expand on such efforts by exploring the relationship between the domination of nature and ableism, or, discrimination against the disabled. My paper will thus sketch a theoretical framework that brings together these two sets of

issues, and will hinge on an intersectional analysis of social constructions of the categories "disability" and "nature." Drawing on critiques of the medical model of disability and Foucault's writings on the medicalization of the human subject, I argue that "disability" is a historically contingent category, constituted by a network of biopolitical practices. Such practices work to articulate norms that constitute the "human" on both an individual and a species level, thus "othering" the medicalized disabled subject by figuring her as a deviation from the "properly" human. I then think this "othering" of disabled persons in relation to traditional, dualistic conceptions of (human) culture and (nonhuman) nature, and argue that "disability," insofar as it conceived as a deviation from the human, is figured as doubly unnatural. Within this biopolitical framework, the disabled subject is discursively excluded from nature figured as "pure" and/or "wild" (due to her dependence on assistive technology and the association of her disability with overpopulation and/or human-made toxins) and from human nature (insofar as her condition does not adhere to norms that differentiate the human from other species). I conclude that if we are to address and transform the anthropocentrism that underlies traditional nature-culture dualisms, we must at the same time address the rigidly normative humanism that underlies the dualistic categories of "disability" and "ability."

Philosophical Naturalism as an Environmental Meta-ethic

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This paper will be an exposition on the philosophical movement known as naturalism. Because naturalism is such a broad church, my focus will be limited to five theses of continuity, which I believe are necessary and sufficient to calling any philosophy naturalistic. These theses are:

1. Noetic Continuity (no rift between intelligence and the intelligibility of nature)
2. Ontological Continuity (commitment to mobility of being through process)
3. Theoretical Continuity (science seen as fallible and progressive)
4. Semantic Continuity (language and meaning continuous with biosocial processes)
5. Axiological Continuity (no sharp division between facts and values).

I contend that when taken together these views represent a robust meta-ethic, which underwrites prominent environmental theories such as Aldo Leopold's land ethic, Arne Naess's deep ecology and E.O. Wilson's biophilia. Uniting those theories under philosophical naturalism provides a strong platform from which more systematic research into environmentally friendly normative theory and applied ethics can be achieved.

Small Scale Farming and Occupational Diversity in Jamaica

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The relationship between small-scale farming and occupational diversity is complex-mutual

supportive at times and contradictory at others. The findings of this research support this position by establishing that occupational diversity has the potential to enhance farming livelihood resilience. However, it is emphasized that when viewed within the context of the influence of capital in the farming process and the fragile environment, it becomes clear that diversification of labor is essential to the viability of small farming in Jamaica.

Heat Damage as a Post-Harvest Physiological Diseases of Wheat and Its Impact on Flour Production

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The objective of current studies focused on the heat damage as one of grains post-harvest physiological disease. Cereals grains especially wheat may be exposed to various conditions during storage, which may lead to the existence of many physiological diseases affecting the quality of the grain. Heat damage is the most important factors that directly affect the chemical composition and quality of produced flour. The tested sample was divided into two parts, one was identical to the thermal damage from high temperatures and lack of ventilation and lack of recycling and the other in separate silos not subjected to any heat damage with the stability of the other factors. The rheological characteristics were measured using Farinograph while, α amylase enzyme activity was estimated by using falling number. The protein evaluated through protein content, wet gluten percentage and gluten index. It is concluded that heat damage is one of physiological disease that may accompany the grain as a result of poor storage. The heat damage effect may be extended to physiological, rheological characteristics of flour as well as increase the secondary causes of corruption such as the breeding of insects and the high level of microbial contamination load and mycotoxins. The former injuring considered the main goal of this study.

Panel Title : Social and Ecological Implications of Abundant Deer Populations in Central Texas

Largely due to the widespread eradication of predators, deer populations have risen dramatically in Central Texas, causing both an increased impact on native vegetation as well as increased human- wildlife conflicts. This panel will present the results of field research on the social and ecological impacts of deer populations as well as efforts to manage deer populations.

Impact of White-Tailed Deer Browsing on Plant Species Composition in the Central Texas Hill Country Preserves

Janelle Sylvester

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Overpopulation of white-tailed deer (Odocoileus virginianus) has had an adverse effect on plant species diversity in the Texas Hill Country woodland preserves. Previous studies have shown that browsing by white-tailed deer has impacted forest vegetation development and composition (Rossell et al. 2007). This study assessed plant abundance and composition inside and outside of a deer exclosure located in the Balcones Canyonlands Preserve system. Plant abundance had been significantly reduced outside of the exclosure, but diversity showed no difference inside or outside of the exclosure. Forbs, which are herbaceous flowering plants, had been most impacted by browsing and were greatly reduced outside of the exclosure when compared to woody species. This may also indicate a significant regeneration period for forbs after browsing in a forest ecosystem.

Impacts of White-tailed Deer on Soil Compaction at Wild Basin Wilderness Preserve in Austin Texas

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White-tail deer (Odocileus virginianus) are overpopulated in Central Texas and the population has expanded rapidly in the area in recent decades. The population is the dominant ungulate species in the Texas Hill Country, and there are a number of ecological and social impacts that have accrued as a result. Furthermore, the amount of deer traffic has increased in already fragmented habitat. More deer traffic can cause soil compaction, which can lead to soil erosion. This study measures the impact of deer on soil compaction at Wild Basin Wilderness Preserve using soil samples collected from deer trails within the preserve. Results indicate that soil compaction occurs on trails that are located on a slope.

Alternatives for Managing Deer Populations in Central Texas

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The urban and semi-urban regions of Central Texas house one of the highest densities of White-tailed deer in the United States. Although many residents enjoy living with the deer, their abundance causes numerous problems including destruction of gardens, auto accidents and destruction of native vegetation. However, managing the populations is complicated by uncertainty over the effectiveness of different management alternatives as well as widely diverging attitudes towards deer of area residents. This paper assesses the different deer management strategies available to wildlife authorities including culling, sport hunting, contraception, relocation and passive strategies such as feeding bans and promoting deer-resistant vegetation. Results indicate that although culling is the most effective both in terms of cost and in reducing deer populations, it is also the most

politically divisive, further complicating management decisions for wildlife managers and state and local governments.

Transitional Phases in the Roles of Women in Developing Economies: From Reproductive to Productive Activities to Entrepreneurship

Penny Seymoure * Carthage College, Kenosha, WI., USA, Brenda Bushell University of the Sacred Heart, Tokyo, Japan, Genius G. C., Bridgeport University, Bridgeport, CT., USA, Amani Ishemo, University of Technology, Jamaica
Akewak Yadeta, UNESCO Institute for Water Education, Delft, Netherlands, Chair: Eleanor Kelly, Rikkyo University, Tokyo, Japan

Reed (1997) has used the concept of productive versus reproductive activities to demonstrate gender divisions of labor that are found in some rainforest cultures in South America. Productive activities, which maintain the household on a daily basis, are typically generated by males within the community and usually within the family. On the other hand, reproductive activities serve to maintain the family and assure the continuation of the family over generations. In these cultures many of women's labor activities are embedded in the natural environment and their activities have traditionally been characterized as reproductive.

However, in many traditional cultures, for a variety of reasons, women are becoming more engaged in productive activities normally reserved for men. In some cases women need to supplement the family income or they may need to support a family without a male head. In other cases, women may desire to achieve independence and/or personal empowerment brought about by engaging in or establishing skill-based commercial activities, thus moving into the realm of entrepreneurial activity.

This roundtable will discuss the changing role of traditional women's activities in cultures in Nepal, Jamaica and Ethiopia. Framed in traditionally ascribed roles and institutionalized concepts, we will establish how women are making these transitions, and the challenges they encounter in each phase. Evidence is captured through narratives of the lived experiences of a sampling of women and through statistical data. We will encourage attendees to join in the discussion and offer their insights.

* Unfortunately Dr. Penny Seymoure will be unable to join due to a medical emergency

Renewable energy villages and regions in Germany

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In Germany, many communities take energy production into their own hands. In this context a very successful and sustainable opportunity to convert the energy supply from fossil fuels to

biomass of a small town or village by involving the residents in planning, funding and implementation is the “bioenergy village" concept. Meanwhile there are about 130 established bioenergy villages in Germany.

In the context of the ongoing interdisciplinary research project “Sustainable use of bioenergy”, we analyze the success factors for the establishment of decentralized, communal renewable energy projects like bioenergy villages, by conducting qualitative interviews, with the goal of applying these factors in own action research.

The interviews were accomplished with initiators in 25 bioenergy villages in Germany. This study focuses the question how to convince people to participate in a communal renewable energy projects and the changes of individual and social well-being during the process of planning a bioenergy village.

Furthermore, a transdisciplinary action research project will realize the development of three counties of Lower Saxony to integrative bioenergy regions by supporting sustainable bioenergy projects in cooperation with all local participants. In moderated “planning-workshops” the scientists team is discussing the opportunities of a sustainable usage of renewable energies in this counties with all important stakeholders, e.g. the county administration, farmers, local politicians. The stakeholders are formulating own goals, developing new projects and discussing the way to realize these ideas, supported by the scientists with specific information.

Furthermore, interviews with the stakeholders in this regions will focus on success factors and problems of the action research procedure itself to enable the transfer of the positive aspects of the procedural know how to other regions in Germany and worldwide.

Evaluating the impact of poor waste disposal management on environmental sustainability and human rights in Nigeria

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The rapid increase in rural-urban migration and the uncontrolled expansion of Nigerian cities has led to a concomitant rise in the generation of domestic and industrial waste. The absence of a wholesome policy on waste disposal and lack of proper waste management systems has thus foisted a dire situation raising strong concerns about environmental sustainability in Nigeria. The situation is compounded by the actions of the general populace majority of who live in abject poverty, are uneducated and thereby indulge in indiscriminate dumping of waste by the roadside, in drainages and the waterways. These cause flooding in the cities and pollute the marine habitat. The notable absence of public toilets in Nigerian cities and dysfunctional toilets in public buildings has led to improper disposal of human waste causing extensive air pollution amongst other things.

The government's token response to waste management has been marked by inadequate or unenforced environmental laws, deficiency of integrated waste management strategies, the absence of guiding principles on sustainable waste and resource management and

notably the dearth of modern waste disposal technology. This paper examines the human rights perspective and argues that government's lackadaisical attitude to proper waste management is a violation of citizens' fundamental right to dignity of human person and the right to a safe and clean environment. It also negates the Millennium Development Goals target of a sustainable environment.

The paper maintains that to avoid a gruesome pandemic caused by improper waste disposal, the government in conjunction with the private sector need to enforce environmental protection laws, develop capabilities in modern disposal methods such as recycling, engineered landfill, incineration and composting as well as consistently educate of the general public on proper waste disposal.

The Systematic Incongruence between Sustainability and Globalization: Can Participatory Planning and Budgeting Improve their Compatibility?

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Today's city governments face two unprecedented challenges. They must safeguard the citizenry's ability to negotiate their city's identity, and they must implement sustainability into built environments. The first challenge addresses dimensions of globalization supplanting a city's identity conditions. The second challenge also affects the identity of a city. It shows how urban planners can embed environmental responsibility in a city's identity with policies supporting sustainable infrastructure, a requirement for long-term flourishing. City leaders confronting these challenges will partly define what it means to be human in the twenty-first century, considering that most people now live in cities.

The specific problem that I am focusing on does not debate that the exploitive effects of globalization are harmful and the aims of sustainability are good. The focus rests on the notion that the seriousness of justice issues eclipses the source of exploitation and oppression.[1] In turn, we cannot see the systematic functioning of globalization making it ethically troublesome. One way of looking at the problem shows the exacerbation of justice issues due to a conceptual incongruence between globalization and sustainability, made evident through their functioning as systems.

In the following paper, I closely examine sustainability and globalization, looking for ways to make them congruent. Ultimately, I argue that the possibility for congruency between them exists, showing how participatory approaches to urban planning and budgeting should be part of the solution.

The "Green Pope": Pope Benedict XVI's environmental legacy and the traditionalist backlash

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One of the great and pleasant surprises of the reign of Pope Benedict XVI in the Catholic Church was his sincere and enlightened dedication to the protection of the natural environment as God's creation and gift to humankind. Pope Benedict was first and foremost throughout his career a scholar/theologian. A progressive in his youth, experiences let him to take a more conservative turn later in life, but his dedication to the human duty to protect and steward the environment was not seen as a conservative or a progressive issue, but a human issue of faith and morals. Considering the pontificate of Benedict lasted less than seven years, his pronouncements and writings on the environment were numerous. This paper will examine the key thoughts and pronouncements of Pope Benedict XVI on the natural environment and some of the reasons why and how the concepts met resistance in some parts of the world/church.

Deniers, Believers, and Warmists: Framing climate science as superstition or conspiracy

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Climate change is surely unique as a phenomenon that has been the subject of extensive and rigorous scientific study, and yet is fairly frequently represented as a matter of belief. This representation of climate change manifests in a particularly interesting way in terms used to label two groups of unequal size: people in the mainstream, who accept the scientific consensus on anthropogenic climate change, and people who do not.

This paper aims to trace the origins of "(global) warmist", as well as "believer" and "denier", as applied to climate change. In the case of "warmist", it is particularly striking what a tiny group of writers, starting in 1999, strove relentlessly to gain visibility for this expression. Eventually, a few people in the mainstream began to use the term as well, occasionally even applying to themselves. The nomination of "warmist" for the American Dialect Society's Word of the Year vote for 2009 indicates that it had reached a certain prominence at that point. During roughly the same period, the frequency of the terms "global warming believer", "climate (change) believer", "global warming denier", and "climate (change) denier" in print news media increased as well.

Flood Mitigation in Arid Environment Using Integrated Approach-example from Riyadh City

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The state-of-the-art technique was applied using Liadar Mobile Mapping System (Lynx Mobile Mapper, Optech's mobile terrestrial lidar system) to generate contour lines for the actual elevation of the highways in northern part of Riyadh city. The Unicom Lynx Mobile Mapper is typically configured with two Lidar sensors. The Lynx integrates a GPS system to

accurately track the survey vehicle's path as it travels through the survey area. Quickly capturing accurate 3D spatial data is especially helpful in flood risk management and flood-related applications because it provides information on the performance of existing asset management, and helps to develop surface water/drainage flood modeling research. The vector output was then used in part of the flood modeling tools to assess overland flows during a high rainfall event. To do so, the geographic Information Systems (GIS), the remote sensing data processing systems (HEC GeoHMS, HEC GeoRAS) and the Watershed Modeling System (WMS, EMRL) software packages were used to process data, prepare input, and post-process the output of the HEC models. These data, in conjunction with hydrological and meteorological data, dictates the most appropriate model to be used to identify flood risk areas.

Microbial surfactants and their application for environmental sustainability

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Surfactants are surface active agents which contain hydrophobic and hydrophilic moieties that reduce surface tension and interfacial tension between two immiscible phases. They are widely used for various purposes in industry, but were mainly chemically synthesized. Microbial surfactants (biosurfactants), which are synthesized by a variety of microorganisms, including bacteria and fungi, have surface active properties comparable to chemical surfactants. Increasing public awareness of environmental pollution and environmental sustainability influences the search and development of technologies that help in cleanup of organic and inorganic contaminants such as hydrocarbons and metals. An alternative and eco-friendly method of remediation technology of environments contaminated with these pollutants is the use of biosurfactants. The diversity and characteristics of biosurfactants make them an attractive group of compounds for potential use in a wide variety of industrial and biotechnological applications. With the advantage of biodegradability, non-toxicity, production on renewable resources and functionality under extreme conditions, biosurfactants have been gaining prominence over chemically-synthesized surfactants and their applications are becoming wider. However, conflicting reports exist concerning the efficacy and the economics of biosurfactant production and application. This paper provides an overview of advances in the applications of biosurfactants in pollution remediation processes for better exploitation in environmental sustainability challenges.

Applying the Time-Varying Bowen Ratio to Calculate the Atmospheric Stability in Air Quality Models

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Atmospheric stability is a significant meteorological parameter in many air quality models. In the past, the method of calculating stability usually involved the Pasquill stability classification

method, such as ISC3 model. In the recent times, stability is estimated by surface-energy-balance methods in air quality models, like AERMOD, CALPUFF, and the other photochemical models.

Bowen ratio is defined as the ratio of sensible heat flux and latent heat flux in the surface environment, and its rational decision will change the value of sensible heat flux and subsequently modify the results of contaminant's simulation. Therefore, instead of setting Bowen ratio as a constant by recent air quality models, this research applies the theory of thermodynamics to deduce the estimated Bowen ratio formula that could find the time-varying Bowen ratio from time-varying weather information in Taiwan.

In order to discuss the applicability of the theory-based method to calculate the Bowen ratio, this study used the Priestly-Taylor and Penman-Monteith equations to verify the latent heat flux and to calculate the Bowen ratio in different land types. Finally, the verified theory Bowen ratio replaced the default value and calculated the stability in the air quality model.

Effects of Forest Conversion to Pasture on Soil Physical and Hydrologic Properties, and Erosion in a Slash and Burn Agroecosystem, Sierra Madre Oriental, Eastern Mexico

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This study investigated the impact of forest conversion to pasture for cattle grazing on some soil physical and hydrologic properties, and erosion in a slash and burn agroecosystem. Top soil samples (0-10 cm) were collected from three classes of pasture: lightly grazed, moderately grazed, and highly grazed pasture, and adjacent forest plots located on comparable positions on the soil catena. The samples were used to determine texture (% sand, silt and clay), bulk density (gm cm3), total porosity (%), organic matter (%), aggregate stability (%), and water holding capacity (%) in the laboratory. Some soil properties including unconfined soil compressive strength (gm cm2), shearing strength (kg cm2), and infiltration rates (mm h-1) were measured directly in the field for the pasture and forest plots. Bounded runoff plots (3m2) were installed on the sampled pasture and forest plots to monitor soil erosion (tons ha-1 y-1) over two wet seasons.

There was no statistical difference in texture of topsoil in pasture plots compared to forest plots. An increase in soil bulk density and a reduction of total porosity values were observed in the pasture plots depending on grazing intensity. There were no clear trends in the level of organic matter under pasture plots but level was lower than that of forest plot by 33.5%. On the average the rate of soil erosion was higher in pasture plots (0.97 tons ha-1 y-1) compared to forest plots (0.07 tons ha-1 y-1). The rate of soil erosion varied according to grazing intensity. Although the conversion of forest to pasture seems to have led to a degradation of some soil properties and an increase in soil erosion, the overall impact on the agroecosystem in the study site may be limited because of the small proportion of the total land area that is devoted to pasture.

Does experiential student learning lead to sustainable lifestyles outside the classroom?

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Experiential learning is increasingly being promoted as a means of enhancing student learning. Although the applied focus of sustainability courses seems ideal for this type of education, limited research exists demonstrating that experiential learning actually increases understanding or leads to more sustainable behavior in students' everyday lives. To address this issue, I have incorporated a project in my introductory environmental course in which students are required to live more sustainably, rather than just studying it. Based on the Lifestyle Project (Kirk and Thomas, 2003), students spend one month reducing their resource use in electricity, transportation, food, water and waste. Qualitative results from reflective journal entries relate that students seem to learn more about the realities of sustainable living than they would from traditional assignments. To examine quantitatively if the project effectively increased student learning, for the past three years, classes have been tested on sustainability knowledge and practices before and after participating in the project. Post-test results had significantly higher scores, indicating that experiential learning seems to be an effective method of translating sustainability knowledge into practice.

Environmental Chemistry and Social Justice: A New Course

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This interdisciplinary course is designed to support student interest in understanding the impact of human activity on the environment, understanding and working toward social justice, and understanding both national and international environmental and social justice issues (environmental justice). The curriculum focuses on the intersection of environmental chemistry and social justice by examining the disparate ways in which members of different groups, both nationally and internationally, experience acute and/or chronic negative effects from living in degraded and contaminated environments. Students learn about the specific ways that human activity can lead to the accumulation, depletion, and alteration of chemicals in the environment, and the effects of altered chemical levels on both the environment and the people who live in the environment. The course includes a set of case studies, and students develop their own case studies as a final project. Supporting topics include activism, environmental remediation, law, and policy.

Factors Contributing to the Success of Women's Businesses in Urban and Rural Nepal

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The inclusion of women in the global economy is fundamental to sustainable development and economic growth, and today, women in all countries must have an equal role in socio-economic

development. In Nepal, a least-developed country where women are key to changing society and contributing to their country's development, supporting their business ventures is crucial. Based on preliminary research from 2012 that examined the problems women entrepreneurs face in Nepal, this research, a field survey of 68 women involved in businesses in urban and rural areas of Nepal, identifies the factors that contribute to the success of women's businesses in Nepal. Findings from the survey highlight the differences among factors considered necessary for a successful business by women working in rural areas and those by women working in an urban environment. Factors relating to society and family, education and skill training, personal characteristics, financial support, procurement and management of resources, and the role of cooperatives are analyzed and the results presented.

ABSTRACTS FOR POSTER PRESENTATIONS

Biology of Hunger and Population: An Undergraduate Course for Non-Science Majors

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Biology of Hunger and Population is a four credit course for non-science majors in the adult degree studies division of New York University. This has been taught onsite as well as online as a blended asynchronous course.

The course content covers the interrelationships between hunger and overconsumption, food production and population change from a bio-social perspective. Issues such as sustainability, food security, energy options, soil, food crop production and improvement, plant disease threats, domestication of food crops, evolution and the impact of the green revolution are discussed. Emerging human disease threats such as HIV/AIDS are discussed in the context of poverty and hunger. A special focus of the course is the analysis of biotechnology and genetically modified foods and the potential of these technologies to solve the problems of global hunger and malnutrition. The search for an environmentally sustainable society or an eco-economy based on renewable energy is covered. The course concludes with an examination of the biological and ethical aspects of the earth as the commons.

This course has been developed on the innovative Science Education for New Civic Engagements and Responsibilities (SENCER) model. SENCER is a nationally recognized model funded by the National Science Foundation for science education reform. To reflect SENCER ideals, Biology of Hunger and Population connects basic scientific concepts to civic engagement and public policy in issues of food production, sustainability, hunger and population change.

Exotic Invasive plant Exchange between Northeast Asia and Northwest USA

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Plant invasion is occurring through national borders by human activities. Specially, invasive plants of these exotic plants have negative effects on biological diversity in local areas by threatening native plants. The northeast Asia region including China, Japan and Korea have traded a variety of things economically and historically with Northwest region, USA. So, many exotic invasive plants are introduced and exchanged into both regions. But, the status and inventories of these exotic invasive plants are rarely investigated up to now. Our study objective is to list exotic invasive plants in both regions which native range is on other regions and set up the management strategies. We firstly gathered literatures and used the databases on exotic plants in their countries and selected invasive plants from the exotic plants. And we analyzed the data from perspective of origin, life history, condition in native range, transport route and so on. From our data, more effective management options was discussed.

The Spread of False Brome (Brachypodium sylvaticum) from Stream and Road Network in the Andrews Forest, western Oregon

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This objective of this study is to investigate how road and stream network have influence on the distribution of false brome at HJ Andrews Forest. The hypotheses of this study are that Brachypodium sylvaticum is dispersed mainly along roads when B. sylvaticum invades into new habitat at first and then this species may be dispersed along streams and junctions between roads, the tributaries from the roads can make B. sylvaticum invade into near streams. We checked out the distribution and dispersal mechanism of false brome which has been newly invaded into Northwest areas of USA in an experimental forest, H. J. Andrews Forest. All third-, fourth-, fifth-order streams and main streams of Lookout creek in the Andrews Forest were investigated for B. sylvaticum in the Andrews Forest during August, 2012 to June, 2013. The roads in the vicinity of third- or higher-order streams were surveyed to record the locations of B. sylvaticum. Locations of B. sylvaticum were positioned by GPS. The individual counts in each population, substrate texture, associated vegetation and other characteristics were recorded. The distance from the creek and main stream and patch diameter of false brome are estimated in classes of 0-3m, >3-7.5, >7.5-15, >15-30, and >30m along the creek to main stream. All B. sylvaticum patches are mapped in study area using GIS. B. sylvaticum were distributed along roads and streams in the Andrews Forest, and invaded into tributaries between road and stream networks. This study showed that the invasion of exotic plants can be accelerated by road and streams networks through water pathways.

Analyzing The Impacts of Climate Change On African American Communities In The United States

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The problem of climate change impacts continues to be felt in numerous places at a growing proportion. Considering that climate change problems occur at greater frequencies in settings in which the biophysical processes of storms, flooding and hurricane threats interact with the built environment in communities at the margin. The recurrent nature of the trends, leave in their wake catastrophic damages resulting in the displacement of people and the degradation of the environment. Compounding the problem is the large presence of Blacks in the epicenters and landing paths where inclement weather hazards occur. There is also a growing lack of education and limited public enlightenment campaign in the Black community on the hazards of climate change. Notwithstanding the inadequacies of planning laws for not emphasizing sustainable community design principles and resilient planning in minority neighborhoods, the socio-economic hardship of these communities and the fact they lack the resources to move to safer grounds continues to linger. At the same time very little work has been done in the literature identify the impacts of climate change in communities of color. Realizing the gravity of the issue, this research will fill that void in the literature by analyzing the growing effects of climate change in the Black community using a mix scale methodology of descriptive statistics and primary data. Emphasis is on the issues, factors fuelling the problems, an environmental analysis of the trends and the current efforts to mitigate the issue and future lines of action. The preliminary results show that while current efforts to address the problems remain ineffective, African American communities feel the impacts through the degradation of their surrounding ecology. To mitigate the problems, the paper offers numerous recommendations ranging from the need for more education of African Americans on climate change to the promulgation of effective policies.

The Place of Beliefs and Identity in an Alliance of Farmers and Environmentalists in Opposition to Coal Seam Gas Mining

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The nature of interrelationships between stakeholders has the potential to shape the current perceptions and future direction of environmental and natural resource management (ENRM) issues. Lobby groups – both representative of industry, and community based or “grassroots” interests – play a significant role in determining the public perception and policy environment of ENRM issues. These lobby groups, and more broadly their generic stakeholder classifications, are too often viewed as static and unchanging, and the wider ranging implications of these intergroup interactions are not explored due to the issue-based focus of stakeholder enquiry.

The contentious issue of coal seam gas (CSG) mining in Australia has led to the establishment of a grassroots group, The Lock the Gate Alliance (LTGA), which campaigns in opposition to the expansion of the CSG industry. The LTGA is described as a union between farmers and environmentalists; two stakeholder groups which are generally considered to be in conflict. The dynamic and complex social drivers which facilitated this alliance provide insights into the potential for longer-term conciliation between these stakeholder groups.

This study used social psychological methodologies to explore the nature of the interrelationships within the LTGA. The role of, and feedbacks between, the beliefs of individuals within the group, and the self- and group-identity of LTGA members were investigated. Differences were found in the beliefs of members in relation to CSG mining within the LTGA membership, however over the time of engagement with the LTGA, the differences became less pronounced. That is, engagement with the group led to homogenisation of the beliefs of individuals. Through the application of social identity theory, this was attributed to hierarchical negotiation across personal beliefs in order to maintain a coherent group narrative. These findings suggest that stakeholder relations present further-reaching implications for ENRM than simply affecting the specific issue at hand.

The Role of Ragpickers in bringing about Urban Environmental Sustainability in Developing Countries

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Sanitation and waste management pose a severe challenge to the fast urbanizing world. Collection, segregation, reuse and recycling are crucial processes in waste management. Ragpickers, also known as scavengers, play an uninstitutionalized, but vital role in these processes.

Ragpickers have existed for thousands of years, in cultures worldwide. Today, in developing countries, ragpickers form 1% of the total urban population (Medina, 2008). However, they often find themselves on the wrong side of technocracy and bureaucracy in the modern cities of the south. Their services are looked upon as unnecessary and as a blot to the developed urban landscape. Sustainable development features as one of the top goals of international development agenda especially so of the ‘Sustainable Energy for all’ Project, 2012. But policy decisions of infrastructural expansion in cities, without ensuring social safeguards to the displaced vulnerable populations, has only resulted in an ever growing economic and environmental unsustainability. This paper studies the situation of the Bhangis of Mumbai and the Cartoneros of Buenos Aires. It proposes an analytical framework to demonstrate that the institution of scavenging can be socially desirable, economically viable, and environmentally sound.

The paper argues that ragpickers play a critical role in the reuse and recycling of materials scavenged from waste streams. They contribute extensively towards the environmental and sanitary health of the cities in developing countries. On one hand, these activities extend lives of dumps and landfills minimizing the municipal expenditures. On the other, they contribute to job creation, thus reducing pressures on the administrative structures of the cities. Ragpickers then have a direct impact on society, economy, and the environment. The study recommends institutionalizing the informal sector of ragpickers incorporating them into the formal mechanisms of urban waste management as a holistic and therefore, sustainable solution.