Event Schedule

Search

Sunday, June 26

TIME	SESSION
7:00 AM-5:00 PM	**Registration** Location: Aurola Holiday Inn The University of Costa Rica has helped prepare this document detailing places to eat, shop, seek medical help, etc. Please review this document and keep a copy with... Read More
7:00 AM-5:00 PM	**Optional Pre-Conference Field Trips** Location: Depart from the Aurola Holiday Inn Several pre-conference and post-conference field trips are planned that will showcase the natural beauty of Costa Rica and the country's rich cultural heritage.Click here for more information. 4 Subsessions
4:00 PM-6:00 PM	**IASNR Student Forum** Location: Aurola B & C (3rd Floor), Aurola Holiday Inn **Speakers: Kindra De'Arman, Dana Johnson** The Student Forum is an opportunity for students to participate in sessions focused on professional development, networking, non-academic job preparation, and discussions of their research at the interdisciplinary nexus. The Student Forum aims to connect students and professionals in ... Read More
6:00 PM-8:00 PM	**Welcome Reception** Location: Augusto el Grande (17th Floor), Aurola Holiday Inn

Monday, June 27

TIME	SESSION
7:05 AM-7:10 AM	**Conference Bus Transportation** Transportation from The Holiday Inn San José-Aurola hotel to campus will be

provided as a courtesy from the University of Costa Rica. This transportation is provided on a first-come-first serve basis. Priority will be given to participants with special mobility needs.

This bus wil ...
Read More

8:00 AM-5:00 PM

Registration

Location: UCR – Continuing Education Building
The University of Costa Rica has helped prepare this document detailing places to eat, shop, seek medical help, etc. Please review this document and keep a copy with...
Read More

8:30 AM-9:30 AM

Welcome - Keynote Address 1

Location: Aula Magna
1 Subsession

9:30 AM-10:00 AM

Coffee Break

Location: Continuing Education Building Parking Lot
Vegetarian/Vegan snacks will be served in the cafeteria--these snacks are reserved for those who selected the plant-based meal option.

10:00 AM-11:30 AM

¿Como Publicar en Revistas Científicas Internacionales de Alto Impacto? - Parte I

Location: 100
Speaker: David Matarrita-Cascante

Authors: David Matarrita Cascante

Workshop Session Chair(s): David Matarrita Cascante (Texas A&M)

El presente taller ofrece a sus participantes una serie de sugerencias diseñadas para incrementar las probabilidades de éxito en cuanto a la tarea de publicar investigaci...
Read More

10:00 AM-11:30 AM

Water Governance in the Americas (Part I)

Location: 101
Session Chair(s): Adam Zwickle (Michigan State University), Ajay Singh (California State University)

Water is a finite and unpredictable resource necessary for the sustainability of civilization and its continued economic and social development. As the climate

changes and the uncertainty ...
Read More

4 Subsessions

10:00 AM-11:30 AM

Brokers & Boundary-Spanners in Natural Resources Management

Location: 102

Session Moderator: Mark Burbach

4 Subsessions

10:00 AM-11:30 AM

Stakeholder Partnerships Enhance the Impact of Sustainability - Capacity Building & Lessons Learned

Location: 205
Speakers: Kris Irwin, James Shelton, Fabricio Camacho, Richelle Winkler, Fern Perkins

Panel Session Chair(s): Kris Irwin (University of Georgia), Jay Shelton (University of Georgia), Fabricio Camacho (Tropical Science Center), Fern Perkins (Monteverde Institute, Costa Rica)

The lack of transdisciplinary integration and partnership development in the field of sustainability...
Read More

10:00 AM-11:30 AM

Risk & Vulnerability - Part I

Location: 309
Session Moderator: Jennifer Givens

5 Subsessions

11:30 AM-1:00 PM

Lunch Break

Location: Parking Building Ciudad de la Investigación
Vegetarian/Vegan meals are reserved for those who selected the plant-based meal option.

11:30 AM-1:00 PM

Networking Lunch Bunch

Location: Parking Building Ciudad de la Investigación

"The Networking Lunch Bunch" provides opportunities to meet others and explore topics of mutual interest in an informal setting during conference lunch breaks. Each table will be hosted by members of the Professional Development Committee, with prompts available to spur discussion on a variety of...

Read More

1:00 PM-2:30 PM

¿Como Publicar en Revistas Científicas Internacionales de Alto Impacto? - Parte II

Location: 100
Speaker: David Matarrita-Cascante

Authors: David Matarrita Cascante

Workshop Session Chair(s): David Matarrita Cascante (Texas A&M)

El presente taller ofrece a sus participantes una serie de sugerencias diseñadas para incrementar las probabilidades de éxito en cuanto a la tarea de publicar investigaci...
Read More

1:00 PM-2:30 PM

Water Governance in the Americas (Part II)

Location: 101
Session Chair(s): Ajay Singh (California State University), Adam Zwickle (Michigan State University)

Water is a finite and unpredictable resource necessary for the sustainability of civilization and its continued economic and social development. As climate changes and uncertainty of water...
Read More

3 Subsessions

1:00 PM-2:30 PM

Indigenous Action

Location: 102
Session Moderator: Mae Davenport

2 Subsessions

1:00 PM-2:30 PM

Meet the Editors of Society & Natural Resources

Location: 205
Speakers: Kristin Floress, Emily S. Huff

Authors: Kristin Floress, Emily S. Huff

Panel Session Chair(s): Kristin Floress (USDA), Emily S. Huff (Michigan State University), Jessica Hill (IASNR)

In this session, the Editorial team (Kristin Floress, Emily S. Huff, Jessica Hill) for Society & Natural Resources, the flagship j...
Read More

1:00 PM-2:30 PM

Pro-Environmental Behavior - Part I

Location: CEB Auditorium
Session Moderator: Christopher Wynveen

3 Subsessions

2:30 PM-3:00 PM

Coffee Break

Location: Continuing Education Building Parking Lot
Vegetarian/Vegan snacks will be served in the cafeteria--these snacks are reserved for those who selected the plant-based meal option.

3:00 PM-4:30 PM

A Facilitated Workshop with the IASNR Ethics Committee: An Invitation to Determine Aspirational Values & Goals for Inclusion in IASNR's Code of Ethics

Location: 100
Speakers: Sarah Church, Carla Koons Trentelman, Jessica Schad, Brooke McWherter, Azahara Mesa

Authors: Sarah Church, Carla Koons Trentelman, Jessica Schad, Brooke McWherter, M. Azahara Mesa-Jurado

Roundtable Session Chair(s): Sarah Church (Montana State University), Carla Koons Trentelman (Weber State University), Jessica Schad (Utah State University), Brooke McWherter (Purdue Univers...
Read More

3:00 PM-4:30 PM

Risk & Vulnerability - Part II

Location: 101
Session Moderator: Arnold "Beau" Brodbeck

3 Subsessions

3:00 PM-4:30 PM

Rewilding: Presentations & Panel Discussion Organised by the IUCN CEM Rewilding Thematic Group

Location: CEB Auditorium

Session Chair(s): Sally Hawkins (University of Cumbria), Ian Convery (University of Cumbria)

Rewilding has the potential to create transformational change in social-ecological systems, with long-term goals of restoring complete, self-sustaining ecosystems and ecocentric societal values. S...
Read More

4 Subsessions

3:00 PM-4:30 PM

Place-Based Energy Transitions (Part I)

Location: 205
Session Chair(s): Jeffrey Jacquet (Ohio State University), Julia Haggerty (Montana State University)

This session explores the how the energy transition away from coal and towards renewable energies is impacting (and being impacted by) the places where the transition occurs. Case studies ...
Read More

3 Subsessions

3:00 PM-4:30 PM

Systems Thinking for Sustainability

Location: 309
Session Moderator: Candace May

5 Subsessions

4:30 PM-5:30 PM

New Member Session

Location: Continuing Education Building Auditorium
Are you a new member of IASNR or want to learn more about the association? Join us for the IASNR New Member's Meeting! This is an informal get-together with IASNR Executive Officers, Council members, IASNR Staff, and new members.

5:30 PM-5:45 PM

Conference Bus Transportation

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This bus wil ...
Read More

6:30 PM-8:30 PM

Poster Session/Silent Auction

Location: Don Augusto (3rd Floor), Aurola Holiday Inn

8:30 PM-10:30 PM

Young Professionals' Event (Early Career Professionals' Event)

Location: Aurola Holiday Inn - Restaurante Mirador (17th Floor)

Tuesday, June 28

TIME	SESSION
7:05 AM-7:10 AM	**Conference Bus Transportation** Transportation from The Holiday Inn San José-Aurola hotel to campus will be provided as a courtesy from the University of Costa Rica. This transportation is provided on a first-come-first serve basis. Priority will be given to participants with special mobility needs. This bus wil ... Read More
8:00 AM-5:00 PM	**Registration** Location: UCR – Continuing Education Building The University of Costa Rica has helped prepare this document detailing places to eat, shop, seek medical help, etc. Please review this document and keep a copy with... Read More
8:30 AM-10:00 AM	**Organizational Culture Change in Service of Sustainability: Transformational Leadership, Policy, & Human Behavior** Location: 100 **Speaker: Elise Amel** Workshop Session Chair(s): Elise Amel (University of St. Thomas), Christie Manning (Macalester College) The pace and scope of individual behavior change is slow, small, and unreliable. Systems change is needed for human society to successfully persist into the future. Thus, in addition to... Read More
8:30 AM-10:00 AM	**Dilemas y Soluciones Socio-Ecológicas en México** Location: 101 Session Moderator: Jesse Abrams 3 Subsessions
8:30 AM-10:00 AM	**Indigenous Perspectives & Knowledges** Location: 102 Session Moderator: Naomi Krogman 3 Subsessions
8:30 AM-10:00 AM	**Human Dimensions of Natural Resources: A New Textbook**

Location: 205

Speakers: Emily S. Huff, Kenneth Wallen

Panel Session Chair(s): Emily S. Huff (Michigan State University), Kenneth Wallen (University of Idaho)

We are publishing a new textbook for undergraduates and some practitioners, on the Human Dimensions of Natural Resources. At this panel, we will present an overview of the book, how it ...
Read More

8:30 AM-10:00 AM

Water Resources & Human Behavior

Location: 309

Session Moderator: Amit Pradhananga

4 Subsessions

10:00 AM-10:30 AM

Coffee Break

Location: Continuing Education Building Parking Lot

Vegetarian/Vegan snacks will be served in the cafeteria--these snacks are reserved for those who selected the plant-based meal option.

10:30 AM-12:00 PM

Human Dimensions of Urban Forests & Greenspace

Location: CEB Auditorium

Session Chair(s): Mysha Clarke (University of Florida), William Stewart (University of Illinois)

The purpose of this organized session is to highlight the human dimensions of urban greenspace including urban parks, urban forests, and community gardens. With the majority of the world&rsquo...
Read More

5 Subsessions

10:30 AM-12:00 PM

Adaptación, Resiliencia y Justicia

Location: 101

Session Moderator: Jesse Abrams

3 Subsessions

10:30 AM-12:00 PM

Ecological Restoration

Location: 102

Session moderator: Zoe Ketola

4 Subsessions

10:30 AM-12:00 PM

Leveraging Psychology to Enhance Sustainable

Behavior

Location: 205
Speaker: Elise Amel

Workshop Session Chair(s): Christie Manning (Macalester College), Elise Amel (University of St. Thomas)

As psychologists, we argue that “environmental problems” are actually human behavior problems. Global crises such as climate change, ocean acidification, plastic pollution, ...
Read More

10:30 AM-12:00 PM

Water Governance

Location: 309

Session Moderator: Christopher Gibson
2 Subsessions

12:00 PM-1:30 PM

Lunch Break

Location: Parking Building Ciudad de la Investigación

Vegetarian/Vegan meals are reserved for those who selected the plant-based meal option.

1:30 PM-2:30 PM

Keynote Address 2

Location: Aula Magna

1 Subsession

2:30 PM-4:00 PM

Social-Political Environmental Justice Networks Across the Western Hemisphere: A Cross-National Case Comparison of Over 500 Environmental Justice Conflicts

Location: CEB Auditorium

Session Chair(s): Jessica Rudnick (University of California San Diego, California Sea Grant), Linda E. Mendez-Barrientos (University of Denver)

Environmental justice (EJ) refers to a social movement, field of scholarship, and growing emphasis of public policy which seek to assess and addr...
Read More
4 Subsessions

2:30 PM-4:00 PM

Soundscapes

Location: 101

Session Moderator: Trace Gale

4 Subsessions

2:30 PM-4:00 PM

Advances in Natural Resource Social Science

Location: 102

Session Moderator: Paul Van Auken

4 Subsessions

2:30 PM-4:00 PM

Place-Based Energy Transitions (Part II)

Location: 205

Session Chair(s): Jeffrey Jacquet (Ohio State University), Julia Haggerty (Montana State University)

This session explores the how the energy transition away from coal and towards renewable energies is impacting (and being impacted by) the places where the transition occurs. Case studies ...

Read More

3 Subsessions

2:30 PM-4:00 PM

Urban Sense of Place: Parks & Greenspaces

Location: 309

Session Moderator: Megha Budruk

3 Subsessions

4:00 PM-4:30 PM

Coffee Break

Location: Continuing Education Building Parking Lot

Vegetarian/Vegan snacks will be served in the cafeteria--these snacks are reserved for those who selected the plant-based meal option.

4:30 PM-6:00 PM

Understanding the Role of Sustainability in Education: The Student Perspective

Location: 100

Speakers: Zoe Ketola, Shardul Tiwari, Kindra De'Arman, Thomas Vermeesch

Roundtable Session Chair(s): Zoe Ketola (Michigan Technological University), Shardul Tiwari (Michigan Technological University)

The integration of sustainability concepts into multidisciplinary research at institutions of formal education frequently necessitates the support of student res...

Read More

4:30 PM-6:00 PM

Transformation of Socio-Ecological Systems through Integration Theory, Policy, & Practice

Location: 101
Speakers: Trace Gale, Francisco Valenzuela, Jon Kohl, Carlos Hernandez Hernandez, Stanley Arguedas Mora, Andrea Ednie, Erica Rieder

Panel Session Chair(s): Trace Gale (Centro de Investigación en Ecosistemas de la Patagonia, CIEP/PUP Heritage Consortium), Francisco Valenzuela (PUP Heritage Consortium), Jon Kohl (PUP Heritage Consortium)

Description: The world faces great challenges in the form of ...

Read More

4:30 PM-6:00 PM

Energy & Resource Conflict

Location: 102

Session Moderator: Stacia Ryder

5 Subsessions

4:30 PM-6:00 PM

Outdoor Recreation

Location: 205

Session Moderator: Steven Selin

4 Subsessions

4:30 PM-6:00 PM

Conflict, Collaboration, & Peacebuilding

Location: 309

Session Moderator: Emily Hayes

2 Subsessions

6:00 PM-6:15 PM

Conference Bus Transportation

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This bus wil ...
Read More

7:00 PM-9:00 PM

Quiz Bowl

Location: Don Augusto (3rd Floor), Aurola Holiday Inn
Speakers: Kindra De'Arman, Elizabeth Golebie, William Stewart

The Quiz Bowl is a fun event where student teams compete in a trivia-style question-based game. The atmosphere is lighthearted, jovial, and is meant to facilitate networking and camaraderie among IASNR student members. Trivia questions for 2022 relate to several categories, including ...
Read More

Wednesday, June 29

TIME	SESSION
7:05 AM-7:10 AM	**Conference Bus Transportation** Transportation from The Holiday Inn San José-Aurola hotel to campus will be provided as a courtesy from the University of Costa Rica. This transportation is provided on a first-come-first serve basis. Priority will be given to participants with special mobility needs. This bus wil ... Read More
8:00 AM-5:00 PM	**Registration** Location: UCR – Continuing Education Building The University of Costa Rica has helped prepare this document detailing places to eat, shop, seek medical help, etc. Please review this document and keep a copy with... Read More
8:30 AM-10:00 AM	**A Facilitated Workshop on Advancing Stakeholder Engagement in Socio-Ecological Systems – Part I // Taller Facilitado Sobre el Avance de la Participación de los Actores Públicos y Privados en los Sistemas Socioecológicos – Parte I** Location: 309 **Speakers: Jennifer Edwards, Tahnee Robertson, Stacia Ryder, Andres M Urcuqui B** Workshop Chair(s): Weston Eaton (Penn State), Marisa Manheim (Arizona State University), Steve Smutko (University of Wyoming) Participatory approaches to science and decision making are increasingly common for managing complex socio-ecological challenges. However, normative, political, and ... Read More
8:30 AM-10:00 AM	**Taller Facilitado con el Comité de Ética de la IASNR: Una Invitación a Definir los Valores y Objetivos a los que Aspiramos para Incluirlos en el Código de Ética de la IASNR** Location: 101 **Speakers: Azahara Mesa, Brooke McWherter, Sarah Church, Carla Koons Trentelman, Jessica Schad** Workshop Session Chair(s): M. Azahara Mesa-Jurado (El Colegio de la Frontera Sur), Brooke McWherter (Purdue University), Sarah Church (Montana State University),

Carla Koons Trentelman (Weber State University), Jessica Schad (Utah State University)

La ética es una parte esencial en...
Read More

8:30 AM-10:00 AM

Wildlife Politics

Location: 102

Session Moderator: Krista Lyons

4 Subsessions

8:30 AM-10:00 AM

Changing Senses of Place: Navigating Global Challenges

Location: 205

Speakers: William Stewart, Richard Stedman, Lilly Briggs

Panel Session Chair(s): Daniel Williams (USDA Forest Service, Rocky Mountain Research Station)

This panel session will discuss the recently published book Changing Senses of Place: Navigating Global Challenges (Eds., Raymond, Manzo, Williams, Di Masso, & Wirth, 2021, Cambridge University ...
Read More

8:30 AM-10:00 AM

Renewable Energy Policy

Location: 100

Session Moderator: Paulus Mau

4 Subsessions

10:00 AM-10:30 AM

Coffee Break

Location: Continuing Education Building Parking Lot

Vegetarian/Vegan snacks will be served in the cafeteria--these snacks are reserved for those who selected the plant-based meal option.

10:30 AM-12:00 PM

A Facilitated Workshop on Advancing Stakeholder Engagement in Socio-Ecological Systems – Part II // Taller Facilitado Sobre el Avance de la Participación de los Actores Públicos y Privados en los Sistemas Socioecológicos – Parte II

Location: 309

Speakers: Jennifer Edwards, Tahnee Robertson, Stacia Ryder, Andres M Urcuqui B

Workshop Chair(s): Weston Eaton (Penn State), Marisa Manheim (Arizona State University), Steve Smutko (University of Wyoming)

University), Steve Smutko (University of Wyoming)

Participatory approaches to science and decision making are increasingly common for managing complex socio-ecological challenges. ...

Read More

10:30 AM-12:00 PM

The Interaction between the COVID-19 Pandemic & the Environment

Location: 101

Session Chair(s): H Carolyn Peach Brown (University of Prince Edward Island), Kimberly Wishart Chu Foon (University of Prince Edward Island)

COVID-19 has caused widescale impacts across the globe. This novel zoonotic virus is in part characterized by its rapid spread and comparatively hig...
Read More

4 Subsessions

10:30 AM-12:00 PM

Access & Equity

Location: 102

Session Moderator: Richelle Winkler

4 Subsessions

10:30 AM-12:00 PM

Social & Political Landscapes of Fire- Part I

Location: 205

Session Moderator: Catrin Edgeley

3 Subsessions

10:30 AM-12:00 PM

Urban Sense of Place: Water

Location: 100

Session Moderator: M. Azahara Mesa-Jurado

5 Subsessions

12:00 PM-1:00 PM

Lunch Break

Location: Parking Building Ciudad de la Investigación

Vegetarian/Vegan meals are reserved for those who selected the plant-based meal option.

1:00 PM-2:00 PM

IASNR All Member's Meeting/Awards

Location: Aula Magna

Our all-members meeting has also been called the General Assembly or the IASNR Business Meeting. It is a gathering open to all IASNR members as defined in our

Constitution and Bylaws. In the past, an all-members meeting has been convened every year during our annual conference to address issues of i...
Read More

2:00 PM-3:30 PM

Redes de Turismo Comunitario en América Latina: ¿Amor en Tiempos del COVID?

Location: 100

Speakers: Elizabeth Carrion, Marlon Calderon, Francisco Rincón Gallardo, Jacinto Rodriguez

Panel Session Chair(s): Camila Rojas (Inter-American Foundation), Ana Carmona (Inter-American Foundation)

El turismo en todo el mundo se ha visto extremadamente afectado por la pandemia de COVID-19. Muchos proveedores de turismo, especialmente los de pequeña escala que dependen cas...
Read More

2:00 PM-3:30 PM

Urban Environmental Governance

Location: 101

Session Moderator: Lincoln Larson

3 Subsessions

2:00 PM-3:30 PM

Coastal & Marine Management

Location: 102

Session Moderator: Arielle Levine

4 Subsessions

2:00 PM-3:30 PM

Social & Political Landscapes of Fire- Part II

Location: 205

Session Moderator: Matthew Carroll

4 Subsessions

2:00 PM-3:30 PM

Pro-Environmental Behavior - Part II

Location: 309

Session moderator: Elizabeth Golebie

4 Subsessions

3:30 PM-4:00 PM

Coffee Break

Location: Continuing Education Building Parking Lot

Vegetarian/Vegan snacks will be served in the cafeteria--these snacks are reserved for those who selected the plant-based meal option.

those who selected the plant-based meal option.

4:00 PM-5:30 PM

Using Systems Thinking to Educate about Sustainable Food Systems & their Interaction with the Natural Environment

Location: 100

Session Chair(s): Alexa Lamm (University of Georgia), Kristin Gibson (University of Georgia), Allison Fortner (University of Georgia), Catherine Sanders (University of Georgia)

Educational techniques to enhance students' critical thinking skills around scientific topics, specificall...
Read More

3 Subsessions

4:00 PM-5:30 PM

Wildlife Population Management

Location: 101

Session Moderator: Brennan Radulski

5 Subsessions

4:00 PM-5:30 PM

Sustainable Recreation & Tourism

Location: 102

Session moderator: Francisco Valenzuela

5 Subsessions

4:00 PM-5:30 PM

Natural Resource Agencies & Trust

Location: 103

Session Moderator: Kirk Jalbert

5 Subsessions

4:00 PM-5:30 PM

Climate Experience & Action

Location: 205

Session Moderator: Casey Taylor

5 Subsessions

4:00 PM-5:30 PM

Diversity in Conservation

Location: 309

Session Moderator: Milton Newberry

2 Subsessions

5:30 PM-5:45 PM

Busses Depart from University: Banquet

Transportation to the banquet at Ram Luna will be provided as a courtesy from the University of Costa Rica.

This bus wil depart at 5:45 PM.

5:30 PM-5:45 PM

Busses Depart from University: Hotel

Transportation to the hotel will be provided as a courtesy from the University of Costa Rica.

This bus wil depart at 5:45 PM.

7:00 PM-9:00 PM

Closing Banquet

Location: Ram Luna (Transportation from UCR provided for those who registered for the banquet)

Click here for more information about Ram Luna.

2022 IASNR Conference Poster Presentations

Please find below the titles, abstracts, authors, and presenter details for this years' poster session.

Agricultural and Non-Agricultural Actors' Perceptions of Water Quality Issues and Interventions in the Chesapeake Bay Watershed

Nutrient pollution by point and nonpoint sources has led to water quality problems in the Chesapeake Bay Watershed (CBW) that must be addressed for a healthy ecosystem. While both agricultural and non-agricultural actors contribute to excess nutrient runoff, relationships can be strained when attempts are made to attribute and address water quality issues. The degree to which blame shifting and resulting inaction towards addressing water quality exists, however, is not clear. We assess the degree to which there is alignment between non-agricultural and agricultural actors on concern about water quality issues in the CBW and their support for various interventions outlined in previous research on water quality policy tools. To do this we draw upon data collected from an online panel of 1,355 residents and a mail/online survey of producers (data is currently being collected) across the CBW in the United States (U.S.) in 2021 and 2022, respectively. Preliminary results indicate that residents are generally concerned about water quality in the CBW and believe that nutrients need to be reduced. As a reduction strategy for urban lawn runoff, they are most supportive of voluntary incentives such as credits that lower water utility bills and least supportive of laws. To control farm runoff, residents were most supportive of a voluntary certification program, and lease supportive of litigation. We expect that CBW producers will also be less supportive of regulatory and litigation than voluntary incentives to create behavior change. While past studies have outlined ways that addressing water quality issues can impact urban-agricultural relationships, this study provides insights into where there is convergence and disagreement on water quality issues and interventions, including perhaps that there is not as much blame shifting as previously assumed, that can be used to inform policy aimed at addressing nutrient pollution from various sources in the CBW. Author(s): Jessica Schad, Sarah Church, Edem Avemegah, Brennan Radulski

Jessica Schad, Utah State University

Are You Vibing with Sustainability?: Review of Students' Attitudes Toward Sustainability at Colleges and Universities

Climate change has become a critical worldwide issue in the recent decades. Prior research suggests the need for increasing sustainability awareness and attitudinal change among younger generations in order to make an effective difference in tackling environmental issues. In turn, many colleges and universities have made a concerted effort to incorporate education for sustainable development into their curricula. With a growing need to determine if we, as a society, are headed in the right direction in terms of environmental action, questions persist about the extent to which ESD and other education efforts can affect sustainability attitudes and behavior(s). To address these questions, we pursued a systematic review of higher education students' awareness of, attitudes towards, and actions regarding sustainability. We implemented a mixed methods systematic review process using a literature search and review, descriptive statistics, and thematic analysis of empirical research examining sustainability attitudes of higher education students that were published between 2000-2021. The results showed that a majority of this research was conducted outside of the U.S. and utilized quantitative methodology as a research design. Additionally, we found overarching themes including, but not limited to, overall positive sustainability attitudes, value in and need for education for sustainable development, and recycling as a primary sustainable action. The most prevalent findings showed that higher education students are generally aware of the importance of environmental sustainability, but neglect to act upon their knowledge and attitudes if it requires change from their basic needs. Future research should focus more on the type of sustainable actions taught at colleges and universities and student attitudes toward action performance in relation to current societal issues that may impact access to basic needs (e.g., COVID-19 pandemic). Author(s): Caroline Lopez, Milton Newberry

Caroline Lopez, Bucknell University, Undergraduate Psychology and Spanish Studies Student. Circulation Desk Assistant, Bertrand Library. Study Group Facilitator, Teaching and Learning Center.

Balancing Captivity with Accessibility: A Qualitative Look at Perceptions of Captive and Non-Captive Wildlife Viewing Experiences

Wildlife populations have been critically affected by human-induced change, with over 26% of mammals threatened with extinction. Despite human development and actions serving as the primary drivers of biodiversity loss, the field of wildlife conservation has continually focused on ecological approaches as the primary solution. This gap overlooks the crucial role of social science in understanding human-nature relationships and the importance of these relationships in conservation. Two of the most common ways of fostering relationships between people and wildlife are through 'captive' and 'non-captive' wildlife viewing experiences. Both experiences can have positive short- and long-term effects on visitors' environmental learning and pro-conservation behavior. Therefore, these experiences are important for enhancing public support for conservation. However, no studies to date have conducted qualitative research to specifically explore participant takeaways on captive and non-captive wildlife viewing experiences. To achieve this goal, 17 exploratory photo-elicitation interviews were conducted using purposive sampling to compare the two types of experiences in terms of participant perceptions and preferences as well as overall experience strengths and weaknesses. Content analysis of these interviews emphasized the importance of balancing authenticity and accessibility when creating wildlife viewing experiences. In addition, the findings provide compelling insight into the public perception and changing nature of zoos. In conclusion, this study provides a novel look at captive and non-captive wildlife viewing experiences to better understand individuals' thoughts, feelings, and connections to each type of experience. Looking forward, these findings may help in focusing conservation efforts at specific wildlife viewing experiences to promote human-wildlife connections. Author(s): Marena Sampson, Megha Budruk

Marena Sampson, Arizona State University, Graduate Research Assistant

Culturally Centered Approaches to Climate Adaptation and Resilience in the Great Lakes Region

Manoomin (Ojibwe) or Psiŋ (Dakota) (wild rice, Zizania palustris) is a cultural and ecological keystone species in the western Great Lakes region, and to the Anishinaabeg, is considered a gift and an animate being. It has experienced extensive loss in range and abundance, as a result of colonization, human-caused changes in hydrology and biotic-ecological communities, and climate change. The decrease of Manoomin harvesters has also been identified as a major threat to Manoomin, because without broader public awareness and understanding of Manoomin, its decline is largely ignored in public discourse. Harvesting and processing Manoomin not only maintains cultural relationships with this life-giving plant, it also supports cross-cultural community building. Through a collaboration with tribal natural resource agencies, inter-tribal organizations, university researchers, and environmental organizations, we bring together Western science and Indigenous ways of knowing and healing to support the social-ecological health and climate adaptation of Manoomin. One aspect of this collaborative is the facilitation of a Tribal Adaptation Menu (TAM) workshop focused on Manoomin. TAM workshops conducted thus far have explored vulnerability, resilience, and adaptation under a changing climate at a landscape or ecosystem scale. For the first time, a TAM workshop will center on one being, Manoomin. We present a framework for tribally-driven, collaborative social-ecological science, and describe how the TAM is being adapted to this effort. The work illustrates the value of collaborative partnerships in developing culturally centered approaches to climate adaptation and resilience. Author(s): Jessica Tran, Sara Smith, Melonee Montano, Robert Croll, Darren Vogt, Marne Kaeske, Hilarie Sorensen, Deidre Peroff, Michael Dockry, Mae Davenport

Jessica Tran, Yale University, Environmental Fellow

Decision Support in Conservation Agriculture Design: Evaluating A Collaborative Whole-Farm Conservation Design Process Informed by Agbufferbuilder

Social science research on agricultural conservation practice adoption suggests increased information-sharing and relationship-building between conservation designers and stakeholders and integration of stakeholders' knowledge and preferences into designs may increase practice adoption. Decision support tools can facilitate these interactions and provide valuable design information. The Diffusion of Innovations theory guides our collaborative efforts: we will work with volunteer early adopters to conduct and evaluate a collaborative whole-farm conservation design process based on field-edge buffers created with AgBufferBuilder and informed by additional water quality decision support tools. We first evaluated AgBufferBuilder through testing in randomly selected fields from three HUC12 watersheds within Michigan's Shiawassee River basin with different estimated sediment loading contributions based on the Great Lakes Watershed Management System decision support tool (GLWMS). Results vary between watersheds but indicate the potential for considerable improvement across all watersheds ranging from 65-90% increase in sediment capture capacity over existing non-cropped 'buffer' area with little or no increase in total farm area not in crop production. Next we will recruit stakeholders to participate in a collaborative design process and process evaluation. After enrollment, participants will take part in initial semi-structured interviews to review AgBufferBuilder design recommendations specific to their farm and discuss their design priorities and preferences with our research team. We will incorporate these inputs into three designs representing distinct future scenarios and present these designs to stakeholders. Finally, stakeholders will participate in another semi-structured interview to provide feedback on the designs and discuss strengths and limitations of AgBufferBuilder as a decision support tool to inform whole-farm conservation design. Author(s): Patrick Oelschlager, Aaron Thompson

Patrick Oelschlager, Purdue University , Graduate Research Assistant

Designing An Algorithm for Mapping Supply of Ecosystem Services and Optimized Administration Cost Provided by Urban Forest in South Korea

For the sustainable management of ecosystem services in urban forests, it is essential to quantify the supply of ecosystem services by using the knowledge of the distribution of spatial ecosystem service-related factors according to the size of the target site. Ecosystem services occur when ecological and socioeconomic factors interact with each other. Thus, both the supply amount in the ecosystem aspect and the cost in the economic aspect should be considered simultaneously in ecosystem services management. However, the direct and indirect goods of ecosystem services function in a complex manner depending on the site, so it is not easy to set and evaluate universal indicators. This study devised an algorithm which can apply the land use scoring method through literature review and expert Delphi analysis on detailed variables of the data of the land cover classification map (1:5000), clinical map (1:5000), forest location soil map (1:5000), and land environment assessment map (1:5000) provided by South Korea. Furthermore, this paper proposes an optimization algorithm that presents an ecosystem supply improvement plan, simultaneously minimizing the total cost and satisfying the required ecosystem supplies. The solution of which is effectively obtained by the so-called tabu search procedure. The algorithm devised in this study can provide primary data for judging the initial ecosystem service supply conditions in the planning stage when discussing establishing an ecosystem service management policy among stakeholders for urban forest resources that are difficult to access in practice. In addition, it can provide a basis for judging the cost involved when changing the supply of ecosystem services according to the demand of local residents. This will increase the efficiency of budget planning for ecosystem service management policies and promote the ecological welfare of local residents. Author(s): Jang-Hwan Jo, Sunghwan Cho

Jang-Hwan Jo, Wonkwang University

Engaging Private Landowners in Government-Funded Habitat Restoration Projects: Pathways and Barriers

The conservation community has long recognized the critical role that private landowners play in efforts to improve fish and wildlife habitat in order to recover threatened and endangered species. In many rural areas dominated by agricultural working landscapes, government agencies like the U.S. Fish and Wildlife Service struggle to gain the trust of ranchers and farmers, a prerequisite for successful federally funded habitat restoration projects. This project aims to identify barriers and pathways to habitat restoration on private lands, drawing on theories associated with the human dimensions of wildlife management, political ecology, and environmental psychology. In particular, the application of trust theory presents an opportunity to examine potential obstacles to and drivers of collaboration on government-funded restoration projects. Our project includes two phases: first, we interview practitioners across the U.S. who have had success engaging private landowners in habitat restoration; then we conduct a case study of landowner attitudes in the Upper Klamath Basin along the California-Oregon border in the western U.S., where two species of sucker fish with cultural importance to the Klamath Tribes are listed under the Endangered Species Act, and where the USFWS hopes to invest over $100m in restoration funds on private lands in the Sprague River Valley. Case study methods include document analysis, semi-structured interviews, and participant observation in relevant public decisionmaking settings. In this presentation, we report on results from Phase 1 of the project. Author(s): Laura Duffy, Hannah Gosnell

Laura Duffy, Oregon State University, Graduate Research Assistant and Teaching Assistant

Envisioning Co-Benefits of Conservation and Military Readiness Through Participatory Modeling

Land change science has long assisted decision-makers to better understand the implications of their development and conservation choices and evaluate the tradeoffs between competing socio-environmental needs. At the forefront of sustainable development pathways, scientists, governments, and the public are co-producing model parameters and scenarios of adaptation through participatory modeling. In this project we bring together stakeholders from military and conservation to understand and anticipate how future urbanization may impact working lands, critical ecosystems, and landscapes that support the military mission. Through the adaptive, iterative process of participatory modeling participants: a) identified priority landscapes, b) co-developed scenarios of urban growth, and c) interpreted results. Results and visualizations can be used in management contexts to clearly illustrate co-benefits for integrated planning strategies that address goals of national and environmental security. While current planning efforts are mostly focused on increasing compatible land use surrounding military bases, our efforts concentrated on the “spaces between the bases”, or those corridors with overlapping military and conservation interests that are not currently protected. Author(s): Georgina Sanchez, Jelena Vukomanovic, Lindsey Smart, Mary Lou Addor, Alexander Yoshizumi, Carrie Gonzales, Robert Bardon

Georgina Sanchez

Examining Prolonged Community Engagement in Participatory Modeling During and After a Community Science Project: Participant Data Approaches for Mutually Beneficial Science Products

Citizen or community science (CS) can be a powerful tool for improving participation in scientific research, and public participation is vital to the practice of Citizen Science. Using a contributory Citizen Science project, CrowdHydrology.com, that crowdsources stream height and temperature data on the Boyne River (MI, USA), we explore how using theory from scholarship on public participation in environmental policy can improve engaging volunteers throughout citizen science projects. Citizen scientists were engaged using Senecah's (2004) public participation paradigm, Trinity of Voice, throughout the project. Through analysis of interview texts, participants reported that the presence of participation throughout the study improved the communication of the science, model, and rationale for continued participation. Interactions with citizen scientists ultimately shaped model outputs and how the modeling team chose to display results—making them more useful to community members' professional and recreational interests. We argue that designing engagement practices focused on giving participants voice promises more meaningful interactions with research participants which has the potential to sustain or enhance CS participation—a critical component for CS projects. This type of engagement and scholarship of engagement may be useful to other participatory modeling or CS projects that aim to produce scientific outputs that benefit both communities and science. Author(s): Nicole Terherst Amezcua (University of Missouri), Damon M. Hall (University of Missouri), Christopher S. Lowry (University at Buffalo), Jason H. Knouft (Saint Louis University), Darren L. Ficklin (Indiana University)

Nicole Terherst Amezcua

Examining Tribes' and First Nations' Public Comments on Grizzly Recovery in the North Cascades

The UN has called for urgent action to reverse global biodiversity loss this decade. Simultaneously, there is increasing global recognition of the need to center the voices of and give decision-making power to those who are most likely to be impacted, particularly Indigenous peoples, in environmental governance. Biodiversity restoration efforts will need to be in alignment with established and emerging tenets of decolonization and justice in order to address these dual concerns. It is thus important for research to move beyond critiques of environmental decision-making processes towards the investigation of structural changes that serve to recognize and uphold Indigenous sovereignty. This study analyzed public comments from a species restoration initiative to understand how and to what extent the interests of Indigenous communities were represented, and engages with literature on decolonial frameworks to suggest pathways forward. We text mined 140,000+ public comments about a stalled proposal to reintroduce grizzly bears to the North Cascades Ecosystem to understand the diversity and prevalence of concerns, priorities, and values expressed by commenters who identified as members or representatives of Indigenous Tribes and Nations with traditional territories overlapping with the grizzly bear recovery area. We found that many of the region's Tribes and Nations were not represented, and that those that were expressed diverse and divergent attitudes and preferences with regard to grizzly bear restoration. Furthermore, we found that attitudes, preferences, and values expressed by Indigenous peoples themselves often contrasted with statements made by non-Indigenous commenters purportedly on behalf of Tribe or First Nation interests. We contextualize these findings within Ardell et al. (2021)'s tenets of the Decolonial Model of Environmental Management and Conservation and investigate ways to decolonize restoration and rewilding planning and governance. Author(s): Brooke Sutherland, Anna R. Santo, Kai M.A. Chan

Brooke Sutherland, University of British Columbia

Exploring Mountain Biking Research through a Systematic Literature Review

Since the 1980s mountain biking as a recreational sport has grown at a rapid pace both nationally and globally. This trend has become more apparent during the COVID-19 crisis, as individuals seek opportunities to recreate outdoors and away from crowded spaces. As mountain biking continues to grow in popularity, communities and recreation area managers need to consider the implications of this outdoor recreation activity. Mountain biking is often looked to as a rural economic development tool that is sustainable as long as management practices are executed successfully and appropriately for mountain bike use. This includes understanding the social, environmental, financial, and physical aspects surrounding the outdoor recreation activity. Studies of mountain biking continue to be conducted and in recent years there has been a surge in research. There is a need to understand the current state of mountain biking research and to synthesize the veins of inquiry, ranging from medical studies to leisure studies. To understand what research has been published so far on mountain biking and where the research is lacking, we conducted a systematic literature review of articles related to mountain biking. Conservation and resource managers have begun to address the need for identifying factors that lead to associated impacts of mountain biking but so far there has not been a comprehensive compilation of the past literature to move toward recommendations for best management practices. Mountain biking can lead to multiple associated impacts, but most of the literature considers the economic and ecological, while studies on the social aspects are minimal. This poster will use the findings from the systematic literature review to suggest future research needs. Author(s): Katelyn Kuklinsk, Jessica Leahy, Kimberly Coleman

Kimberly Coleman, SUNY - Plattsburgh

Fish Out of Water: Exploring Sense of Place Salience in Community Acceptance of Land-Based Aquaculture Projects

Overfishing, destruction of natural habitats, and an increasing appetite globally for protein render identifying alternatives to wild caught fish – specifically, Atlantic salmon (Salmo salar) – critical. While current marine farming operations feature both open and closed net-pens, these aquaculture techniques present potential risks such as waste accumulation and fish disease. An expanding suite of technologies for raising salmon, land-based recirculating aquaculture systems (RAS) hold promise in addressing these issues and meeting global consumer demand. However, proposed RAS facilities in the United States have been met with a range of community responses, not always positive. Identifying the community-based tensions contributing to acceptance or rejection of RAS facilities can assist in understanding how sense of place affects community resilience amidst environmental change. Between February 2020 and June 2021, we conducted stakeholder interviews (n = 71) across 3 proposed U.S. RAS facilities to explore the salience of various community and facility-related perceptions of siting. Using a grounded-theory approach appropriate for studying emerging natural resource conflicts, we conducted collaborative initial coding of the transcribed interviews in the form of attribute, simultaneous, sub-, descriptive, and in-vivo coding. Future rounds will include axial and pattern coding. To date, code frequencies suggest that both positive and negative perceptions of community character and change are highly important, that RAS operations are perceived as offering benefits at various scales, and that many stakeholders acknowledge environmental risk mitigation techniques used. Beyond contributing to the environmental communication literature, this research has transdisciplinary applications, involving stakeholders in research, policy making, the aquaculture industry, and local government. In this framework, preliminary findings are presented and discussed. Author(s): Gabriella Gurney, Nathan Smith, Laura Rickard

Gabriella Gurney, University of Maine

Human Dimensions of Small-Scale Fisheries: Co-Management Alternatives for the Galapagos Grouper Fishery

The Galapagos Marine Reserve (GMR) is a protected area enacted in 1986, encompassing a 40 nautical mile belt surrounding the Galápagos archipelago. Fishing activities are permitted in the GMR only for subsistence purposes and are reserved for the local population. Nonetheless, the pressure exerted over specific marine resources has contributed to fisheries depletion in the past. The regionally endemic Galapagos grouper, Mycteroperca olfax, locally known as bacalao, is one of the most highly-priced local finfish species and shows severe signs of depletion. Presently, there are no specific managerial guidelines for the species. Objectives. 1) to Update the existing information about the Representativeness of the bacalao in the total sailfin fish catch. 2) To seek innovative sources of income for the small local fishers. 3) To promote local people's participation in the local market as key actors of the Galapagos conservation under an ecosystem-based fisheries management scheme. I will use a Social-Ecological Systems Framework (sensu Ostrom 2007, 2009) and a mixed-methods approach. The methods will include Semi-structured interviews regarding people's perceptions about the status of the fishery and the performance of the Reserve's management. I will apply a survey protocol to evaluate local people's support for the managerial alternatives identified. I will survey fish landings of the Galapagos grouper by direct observation and assess the impact of potential interventions using an agent-based modeling approach. The proposed study aims to guide future management interventions with the Galapagos grouper fishery into a co-management perspective while identifying potential novel managerial alternatives and reconciling conservation and sustainable development objectives with equity and participation for the local stakeholders. Author(s): Manuel Morales, Nia Morales

Manuel Morales, University of Florida

Improving Governance Responses by Reframing Cross-Sectoral Interactions for Sustainability: The Case of Rio Negro Basin in Uruguay

Collaboratively tackling sustainability problems require significant analytical and reflection efforts. While the most immediate adverse effects tend to be the focus, the compounded root causes driving change are overlooked. Scholars have asserted that different problem-solving framing may improve transdisciplinary diagnosis and governance responses. This study applies the Transformational Problem-Solving (TPS) framework to reframe cross-sectoral interactions toward an agent-focused perspective to support tradeoffs identification. In combination with a normative focus on sustainability, the food-energy-water (FEW) nexus approach is employed as a bridge to support decision-making on tradeoffs that can be pivotal in policy, planning, and practice in different sectors at the basin level. When the FEW nexus interactions are reframed using the TPS framework, stakeholders' activities are explicit, and intervention points are exposed beyond only reframing from silos to interdependencies between sectors. A document analysis method applying an analytical codebook is employed to examine public data, documents, reports, and peer-reviewed articles to inform the problem reframing and understanding of the causal-effect structure of the problem. Qualitative research will capture specific factors and actors driving change in the FEW nexus decision-making context. The results will provide an overall perspective of the root causes (e.g., motives, capacities, resources) and immediate causes (e.g., technologies, infrastructure, activities), and the benefits and adverse effects, along with the identification of causing, benefiting, and affected stakeholders. Because sustainability and the FEW nexus approach foster transdisciplinary collaboration, the reframing will identify where different disciplines could lead efforts toward sustainability. For instance, the preliminary analysis has yielded intervention points in policy priorities, behavior and actions, and infrastructure design. Author(s): Glorynel Ojeda Matos, Dave D. White

Glorynel Ojeda Matos, Arizona State University, Ph.D. candidate, Graduate Research Assistant - INFEWS Research Project in Latin America

Institutional Analysis of Lower Colorado River Basin Water Governance

Despite a large body of water governance literature regarding the Colorado River Basin, we lack complete understanding of the relationships between local and system-wide objectives. Understanding current water governance helps identify processes of water use and rights to inform decision-makers at various authority levels about future-focused water supply policies amidst climate change. The questions guiding this study are: What types of rules (level and management type) are made at which level (basin, sub-basin, state)? What level do these rules target and how did they evolve? Publicly available governmental documents and data were collected to identify formal, local- and system-wide actors and their institutional rules and responsibilities regarding the Colorado River's physical water supply. Formal actors were identified and characterized via the allocation, movement, and storage of the lower basin's water as of the early 2020s. Water governance types were operationalized using the action arena (action situations and actors) within Ostrom's Institutional Analysis and Development framework. Action situations are identified by the rules each actor must abide by and their rights, responsibilities, and constraints based on formal (i.e., written) rules. Preliminary findings show operational rules as most prevalent, indicating rules are set informally. Collective-choice rules occurred least, indicating that processes for collaboration at this scale are not formalized. The rules target localized actors and are issued by regional actors. We expect this research will identify tensions, trade-offs, and power differences between local and system scale objectives. The broader impact of understanding tradeoffs will inform negotiations of new allocation and operational rules post-2026. Our research contributes futures planning ideas based on current system examinations. Next, our approach will be deployed to examine the other Colorado River water-reliant states and Mexico. Author(s): Krista Lawless, Margaret Garcia, Dave White

Krista Lawless, Arizona State University

Reducing Residential Water Demand in the United States: A Theory of Planned Behavior Approach

Nearly one-sixth of river basins are unable to meet water demands for society and the natural environment in the U.S. Simple behavioral-based approaches are needed to reduce residential water demand. The Theory of Planned Behavior (TPB) is often used to understand environmental intentions and behavior, including water conservation. The purpose of this study was to examine the direct and indirect effects of attitude, subjective norms (SNs), and perceived behavioral control (PBC) on respondents' self-reported water conservation intention and behavior. An online questionnaire was administered to 1,049 U.S. residents who were recruited via non-probability opt-in sampling methods. Constructs were created for attitude, SNs, PBC, intent to engage in water-related environmental civicism, intent to engage in domestic water-related conservation practices, and water conservation behavior. Exploratory factor analysis, confirmatory factory analysis, and path analysis were conducted via SPSS and AMOS. Results found TPB constructs accounted for 21% of variance in intent to engage in water-related environmental civicism, 15% of variance in intent to engage in domestic water-related conservation practices, and 36% of variance in water conservation behavior. SNs had a direct effect on intent to engage in water-related environmental civicism. Attitude, SNs, and PBC had a direct effect on intent to engage in domestic water-related conservation practices. Intent to engage constructs had a direct effect on water conservation behavior. Attitude, SNs, and PBC had an indirect effect on water conservation behaviors. Educators should focus on increasing attitude and PBC as SNs had an inconsistent relationship with intention and behavior constructs. Researchers should conduct focus groups to further explore SNs inconsistent relationship with intention and behavior constructs so that water conservation interventions can address inconsistencies in water conservation behavior in the future. Author(s): Kristin Gibson, Alexa Lamm, Kyle Woosnam

Kristin Gibson, University of Georgia, PhD Student

Sensing From All Angles: Building Water Security for Wildland Urban Interface (WUI) Communities

Recent wildfires in California and Oregon caused significant damage to water distribution systems which resulted in water that was contaminated with benzene and other volatile organic compounds (VOCs). To understand the risk of exposure to contaminants, we developed a machine-learning model based on neural networks that accurately (85%) predicted water contamination after wildfire using publicly available spatial predictors such as topography, land cover, fire weather, type and density of infrastructure, and physical soil properties. We then developed the Wildfire Vulnerability Explorer, a user-friendly interface that combines the water contamination predictive model with a place based social vulnerability assessment utilizing census, parcel, and land use data. Using fuzzy-logic Environmental Evaluation Modeling System (EEMS), the Wildfire Vulnerability Explorer provides an interactive visualization of areas most vulnerable to post-fire water contamination. The explorer allows the user to visualize how social and environmental factors interact to more accurately reflect on-the-ground vulnerability conditions. Utilization of the explorer can help facilitate community conversations regarding innovations in water infrastructure and community response/adaptation to wildfire events; especially in regards to equitable access to water distribution resources. Stakeholders from both Santa Rosa and Paradise, California, have provided key suggestions and validation of the explorer for their respective communities. Through this explorer, wildfire-prone communities will not only be able to better understand water contamination risk, but also identify feasible adaptation strategies that best meet their community needs. As WUI communities continue to expand, tools like the Wildfire Vulnerability Explorer are instrumental in identifying ways to live with fire and ensure that social equity is considered and maintained in disaster preparedness and response efforts. Author(s): Eliza Amstutz, Jenna Tilt, Lisa Ellsworth, Andres Schmidt, Mike Gough

Eliza Amstutz, OSU

Shedding Light onto Relationships Between Nature and Local Inhabitants: Using the Lens of Ecosystem Services for Future Environmental Governance in Protected Areas

Despite changing views on nature and conservation protected areas (PAs) such as national parks (NPs) are considered core and vital areas of ecological networks. Since 2001 there has neither been established a single NP in Poland, nor any existing NP has been enlarged. Until today 23 established NPs cover only around 1% of the territory of Poland, which places the country below the European Union average. The environmental deadlock has been caused mainly by 1) changes in environmental law, allowing local governments to veto the creation of a NP, and 2) local societal opposition against new PAs. These two factors correspond both with the alleged conflict of interests between Polish conservationists and the forestry sector as well as with the current global debate on paradigms of nature conservation. There is also a widespread belief that applying the lens of the socio-ecological system may help understand emerging opposition towards the creation or enlargement of NPs. In the study, we aimed at a) defining patterns in understanding relationships between nature and local inhabitants using the perspective of various types of benefits from nature, b) finding how insights based on interpreting ES and NCP concepts can translate into the management of local natural resources. We conducted the research using a multifaceted, comprehensive questionnaire survey among local inhabitants (527 respondents) in three municipalities embedded in the area of long-planned Turnicki NP in the sub-mountain valuable natural region of south-eastern Polish Carpathians. The results bring insights into our understanding of relationships between nature's meaning to local inhabitants and attitudes towards local natural resources driving support for PAs. They also contribute to the ongoing debate on the potential role of the ES concept in supporting preventing worldwide biodiversity decline by emphasizing social and economic aspects of nature. Author(s): Mariusz Bockowski, Joanna Tusznio, Marcin Rechcinski, Malgorzata Grodzinska-Jurczak

Mariusz Boćkowski, Jagiellonian University, Phd Candidate

Values Embedded in Relational Values: Synthesizing concepts derived from human-nature relationships to assess their contribution to environmental assessment

Since the establishment of Ecosystem Services (ES) or, more recently, Nature's Contributions to People (NCP), discourses around environmental assessment have evolved from prioritizing instrumental values (i.e., how does nature benefit people?) and intrinsic values (i.e., what is nature's inherent value, independent of people?) to include relational values. Relational values are derived from our relationships and responsibilities to nature. The concept represents a key shift in natural resource policy and management: it facilitates the integration of multiple knowledges (e.g., scientific or local) and foregrounds sustainability, among other benefits. Relational values comprise a range of concepts that themselves have a rich history and literature that is often disconnected from relational discourses. This study aims to synthesize these embedded concepts that, similar to relational values, describe values derived from relationship and responsibility to nature and assess their contributions to ongoing discourses surrounding environmental assessment. The author employed a scoping review methodology to locate and analyze studies that feature the relevant concepts. Approximately 50 studies were gathered from Scopus and thematically coded using a blended inductive and deductive approach. "Stewardship", "connection", and "belonging" were among the most well-developed concepts in the literature that describe values arising from nature-human relationships. The findings demonstrate a longer and richer history of relational values research than is documented under the recent term, "relational values". These concepts underscore the importance of engaging with such antecedents to meaningfully integrate people, place, and policy in environmental assessment. Author(s): Emily Wells, Kate Sherren

Emily Wells, Dalhousie University, Master of Environmental Studies Student

Water and Equity in the Texas Hill Country

The Texas Hill Country landscape includes the headwaters of 13 rivers that sustains life from the rural communities of Central Texas, through the rapidly growing cities of the I-35 corridor, to the bays and estuaries of the Gulf of Mexico. Environmental conservation has long been interwoven with dynamics of racial oppression and exclusion related to race, class, and gender. The Texas Hill Country has not escaped the effects of this history and dynamics, and conservation organizations understand in order to achieve their mission in protecting the Hill Country's natural resources, their work must create a culture of inclusion and equality from all stakeholder communities, particularly communities of color and other underserved communities who are often excluded. The project goal was to provide a baseline, holistic understanding of where diversity, equity, and inclusion (DEI) and environmental justice (EJ) issues intersect with water within the Hill Country. We collected and curated demographic data from 23 existing state-wide and national databases to develop geospatial information within our project area. In addition, we also collected water management information from underserved communities via web-based surveys and in-person interviews to better understand water equity issues and concerns related to Texas Hill Country water resources. From these data, we identified and map vulnerable communities and associated water measures ranging from water providers, recreational access, contamination, and economic barriers. Key recommendations were outlined to increase community engagement from our project. Author(s): Angelica Lopez, Roel Lopez, Marisa Cristina Bruno

Angelica Lopez

What Biodiversity Information Protected Area Managers Need for Visitor Management? Highlights From a Global Online Survey

To manage tourism and visitor activities effectively in protected areas in support of biodiversity conservation goals, protected area (PA) managers can benefit from timely and useful information to inform and justify their decisions. IUCN and other organizations have published a variety of guidelines, handbooks, and manuals alike, and they have organized webinars and training modules for this purpose. There is also a growing body of scientific literature on tourism and biodiversity conservation. To understand PA managers' biodiversity information needs, their training experience, and their accessibility to related resources, we administered an online questionnaire survey of PA managers through the IUCN World Commission on Protected Areas, Tourism and Protected Areas Specialist Group between September and November 2020. We obtained 231 survey responses from respondents who identified themselves as protected area managers in 49 countries. The majority of the respondents: 1) worked for a government agency, 2) had jobs in which decisions are made in office, 3) had responsibilities on managing natural resources at or around visitor sites, and 4) had taken some short-term training on relevant topics. Seventy-two percent and 66% of respondents, respectively, indicated that locations of endangered wildlife and plant populations as the most critically important information needed, yet more than half of the respondents had low access to that same information. Managers indicated a high need for locations of permanent and seasonal water bodies, and recent animal sightings monitoring. Managers gathered biodiversity information for decision making from several major sources, including scientific publications, their own protected area, other colleagues, and external partners. This presentation will present and visualize these and other selected survey results and discuss the implications for information gaps, communication strategies, and capacity building priorities. Author(s): Yu-Fai Leung, Kelly Bricker, Julianne Reas

Julianne Reas, North Carolina State University, Graduate Student

Why Does Rangeland Management Needs Social Science? Understanding the 'New Faces' of Range Managers

Rangeland management research has historically focused on the ecological dimensions of these unique ecosystems, but the social dimensions of rangeland management have been understudied. Considering rangelands as complex socio-ecological systems, this conceptual paper offers a framework providing insights into how increased engagement of social science research can improve the management of contemporary rangeland ecosystems. We posit the framework in response to shifting socio-demographic trends within the human dimensions of rangeland systems, which include an increasing number of individuals, other than the typically studied white male ranchers, that are becoming central to the management of rangelands; an increasing number of younger ranchers inheriting ranches from their aging parents; and an increasing presence of exurban migrants moving from cities to rural areas. These trends are shaping the new socio-demographic "faces" of range managers. Within such context, the offered framework centers its attention on the range managers and discusses their relationship with different relevant social institutions and natural resources while offering insights on how social science research can facilitate a better understanding and more up to date information concerning these relationships. Author(s): David Matarrita-Cascante, Jacob Lucero, Cinthy Veintimilla, Morgan Treadwell, Doug Tolleson, Bill Fox

David Matarrita-Cascante, Texas A&M University