

synthesis map that combines these allocations to highlight areas of agreement and uncertainty, and tables summarizing potential benefits for each allocation decision.

This training will provide participants the theory and experience to begin using ROOT in their own analyses.

Session Lead: **Peter Hawthorne**, Ecologist, Natural Capital Project

9:00am-10:30am; 11:00am-12:30pm; 1:30pm-3:00pm; 3:30-5:00pm *Jacobson-Sorensen Hall, Room 123*

**W6) Open Support Hours/The NatCap Sandbox/Ask a NatCapper!**

Throughout the day on Thursday, various staff members (scientists, software developers, GIS analysts, and others) will be available for one-on-one or small group consultation about attendee projects, research, or other questions. We will post a schedule that shows what kind of NatCap experts will be available when, to help you decide when to stop by.

Session Lead: **Stacie Wolny**, Senior GIS Analyst, Natural Capital Project

11:00am – 12:30pm *Paul Brest Hall Conference Suite, Room 382 (upstairs from the main hall)*

**W7) Play Roads to a Resilient Future**

Join a group led by NatCap trainers to play the most recent iteration of our training game series, Tradeoff! Teams will consider maps of potential road routes through a terrestrial landscape, and decide how to balance both infrastructural and ecosystem service costs to choose the best route. There will be prizes for the winning team!

Session Lead: **Henry Borrebach**, Outreach & Training Lead, Natural Capital Project

## 2018 Natural Capital Symposium: Detailed Agenda

The Natural Capital Symposium runs a full program of sessions from Monday-Wednesday. Thursday runs a variety of (mostly half-day) workshops, working groups and additional training/project support time. The full M-W program is split across four simultaneous tracks:

The **Pathways to Impact** track highlights engagements where an understanding of nature's benefits has had an impact on a decision, a stakeholder process, or an outcome. The panel sessions in this track focus on work that addresses a real policy window in collaboration with local stakeholders, where it can be demonstrated—or at least there is good reason to believe—that the ecosystem service information is, has, or will be used to inform decisions.

The **New Frontiers** track focuses on leading edge, experimental, and/or theoretical work that is advancing the science and practice of ecosystem services. The sessions in the New Frontiers feature robust interchanges of creative ideas at the farthest reaches of ecosystem service science, in a variety of formats, from panel sessions, to lightning or ignite talks and roundtable discussions.

The **Approaches & Applications** track contains 90-minute and half-day workshop sessions on key topics for practitioners and project teams who are looking to get their own natural capital-based projects underway, as well as more traditional conference sessions with presentations followed by opportunities for discussion. The workshop sessions are led by NatCap staff, partners, and collaborators. Additional training support is also available during the Open Support Hours on Thursday.

The **Special Topics** track features smaller-group sessions focused around more specific topic areas, to allow for deeper dives into several sub-topics of our key themes. The sessions will take a more interactive format, allowing new opportunities for Symposium attendees to “get into the weeds” on specific topics. *\*We can accommodate a maximum of 40 people in these sessions.*

After the first section on Keynotes and Plenary Sessions, this document is organized by track. Please use the daily schedule to help determine which sessions from each track are running concurrently. **We strongly encourage attendees to visit sessions from across all four tracks**, to gain the most from attending this event.

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## Keynotes and Plenary Sessions

### Monday, March 19

8:30am – 9:20am

*Paul Brest Hall*

#### K1) Symposium Kick-off and Partnership Welcome

We will begin the Symposium by welcoming attendees from near and far. After introductions, **Gretchen Daily** (Natural Capital Project, Stanford University), together with leaders from across the NatCap partnership, will provide brief opening remarks.

9:20am – 9:40am

*Paul Brest Hall*

#### K1 continued) The Power of Network and Community

Speakers:

- **Mary Ruckelshaus**, Managing Director, Natural Capital Project
- **Anne Guerry**, Chief Strategy Officer & Lead Scientist, Natural Capital Project

9:40am – 10:30am

*Paul Brest Hall*

#### K2) Gretchen Daily in Conversation with Leaders from China

Discussants:

- **Ouyang Zhiyun**, Professor and Director, Research Center for Eco-Environmental Science, Chinese Academy of Sciences
- **Zhang Yali**, Director, Ecological Department, Human Settlements and Environment Commission of Shenzhen Municipality
- **Zhang Hongzong**, Mayor of Fuzhou Municipal People's Government
- **Wang Xiaorong**, Deputy Mayor of Lishui City

11:00am – 12:30pm

*Paul Brest Hall*

#### K3) Sustainable Development Panel

This panel session will explore how private and public-sector actors are integrating nature's values into sustainable development decisions, including planning and investment. We will explore emerging solutions, best practices, and lessons learned. We'll do so from a systems perspective, in conversation with governments, multilateral development banks, companies, investors, and civil society. What are the key roles each actor can play and how does it all connect? How can accessible science, knowledge, and tools related to natural capital help? What policy and finance mechanisms are succeeding in incentivizing conservation of natural capital? How can best practice reach scale? The panel will delve into cases from Myanmar, Mozambique, and Mongolia.

Speakers:

- **Carter Brandon**, Lead Economist Natural Resources and Climate, World Bank
  - *"Using Natural Capital to Define Sustainability"*
- **Vanessa Ushie**, Division Manager, Policy Analysis, African Natural Resources Centre, African Development Bank
  - *"Financing and Policy Initiatives on Natural Capital in Africa"*
- **Albano Manjate**, National Director, Ministry of Economy & Finance, Government of Mozambique
  - *"Natural Capital Program – Experiences and challenges related to Resilient Ecological Infrastructures in Mozambique"*
- **Win Myint**, Policy Manager, WWF Myanmar and Nirmal Bhagabati, Lead Natural Capital Scientist, WWF-US
  - *"Mainstreaming Natural Capital in Myanmar"*

1:30pm – 3:00pm

*Jacobson-Sorensen Hall Room 142*

#### W3) Biodiversity Guidance for Natural Capital Assessments

The Natural Capital Protocol is a guide for businesses looking to better understand and manage their relationships with the environment using a natural capital framework. Increasingly accepted as the standard framework for companies looking to understand natural capital, the Protocol recognizes the importance of biodiversity as an underlying component of natural capital, but also recognizes the challenges in capturing the specific values of biodiversity. Sometimes values can be attributed—for example for the role a specific insect species has in pollinating a crop, or the role a forest ecosystem may have in watershed maintenance—but many values, particularly those related to underlying ecosystem function, resilience to change or the 'intrinsic' values of nature, tend to be hidden or missing altogether. These challenges were underlined by the public consultation to the Protocol where concerns were raised that biodiversity and its relationship to natural capital was insufficiently covered, that not enough attention was given to non-financial values and that, ultimately, companies would struggle to manage or even recognize impacts and dependencies on biodiversity as a result. In this session we will be running a consultation with materials developed by the Natural Capital Coalition and the Cambridge Conservation Initiative to provide input on proposed approaches to improving the integration of biodiversity in the Natural Capital Protocol and suggest key limitations for future improvement.

Session Leads: **Chris Anderson & Jeff Smith**, Stanford Center for Conservation Biology

9:00am – 10:30am

*Paul Brest Hall Conference Suite, Room 382 (upstairs from the main hall)*

#### W4) SEALS Workshop

The SEALS model (Spatial Economic Allocation Land-use Simulator) is a new, prototype tool created by researchers from NatCap in partnership with Unilever to connect results from global economic models to scenario generation of land-use, land-cover maps. This workshop will introduce some of the underlying assumptions and theory behind the economic model and the spatial allocation model and address how multi-level modelling such as this can increase realism of scenario generation. We will explore results created from the SEALS model based on global projections of agricultural and urban expansion from the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). In particular, we will explore how relatively coarse (30km by 30km) spatial projections from 2050 and 2100 can be downscaled to higher resolutions suitable for InVEST (30m or 300m). The workshop will end with a preview of the SEALS software and user-interface created to implement the model along with a discussion of next steps, ideas for extension and other possible application of multi-level spatial modeling.

Session Lead: **Justin Johnson**, Economist, Natural Capital Project

1:30pm – 5:00pm

*Paul Brest Hall Conference Suite, Room 382 (upstairs from the main hall)*

#### W5) ROOT Hands-on Workshop

Spatial landscape planning is a complex process that must confront a variety of informational and deliberative challenges. The Restoration Opportunities Optimization Tool (ROOT) helps address these challenges in the context of ecosystem service trade-off analysis.

A ROOT analysis identifies areas with the highest potential to increase provision of multiple ecosystem services (ES) under alternative management scenarios using linear and integer programming optimization. Based on user-generated analyses of potential ES changes across potential activity sites, mapping of key service endpoints, and decision-specific constraints, ROOT calculates optimal portfolios of restoration locations to support multiple ecosystem service objectives. The primary outputs from ROOT analyses are a suite of optimized restoration and alternative management allocations reflecting different prioritizations of each ES objective, a

processing of different types of data to support research, decision making, results dissemination and information discovery. InVEST Freshwater models are benefited by having the support of a data management platform that operates as web-based GIS, which allows InVEST users to fetch all data needed from one single source with rich metadata (RBIS raster and vector databases), visualization of results (RBIS WMS support) and a collaborative environment for results dissemination (RBIS platforms are designed for integrated freshwater resources management projects with multiple stakeholders contributing data). In this workshop, participants will have the opportunity to explore how RIOS and InVEST SDR and Seasonal Water Yield models have been supported by using an RBIS platform within the Sao Paulo Water Fund, Brazil. Participants will understand how having a complete data management platform supporting their modeling exercises using InVEST allow their results to achieve greater impact. Participants should have basic GIS knowledge, and prior experience with RIOS and/or InVEST models will be helpful (but not required). Please bring a laptop, preferably with Firefox and a GIS application installed (for example, QGIS or ArcGIS).

Session Lead: **Jorge Leon**, Latin America Water Funds Specialist, The Nature Conservancy

9:00am – 12:30pm

*Jacobson-Sorensen Hall Room 142*

**W2) IPBES Stakeholder Co-creation of Multiscale Scenarios for Nature Futures**

An important step for the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) is to catalyze the development of nature-centered multi-scale scenarios for a sustainable future and to facilitate cross-scale and cross-sectoral coordination to assess and reverse declines in biodiversity and ecosystem services (BES). Existing scenario approaches have limitations and gaps that constrain their usefulness for policy application and management practice. To address these issues, the IPBES Scenarios and Models Expert Group initiated the development of a set of multiscale scenarios for Nature Futures based on positive visions for human relationships with nature. The Nature Futures Scenarios are envisaged to shift the traditional ways of forecasting impacts of society on nature to nature-centered visions and pathways that will integrate interlinkages within social-ecological systems (including biodiversity, ecosystem functions and services, and human well-being) and incorporate multiple systems of knowledge across scale and sectors. (Rosa et al., 2017). They will explore impacts of alternative policy and management options in nature conservation and sustainable development, supported by the improved use of scenarios and modelling. At its first visioning workshop in September 2017 in Auckland, New Zealand, a diverse group of 73 participants from 31 countries used a suite of participatory methods to develop seven positive visions for future. These visions emphasize a diversity of views on human-nature relationships, including both indirect and intangible benefits and direct uses of nature, appreciation for biodiversity in specific elements and more holistically, localization as well as global management of ecosystem service flows, and varying degrees of the use of technology and intensities of nature management to improve the status of nature and its contributions to people. The visions identified in this workshop do not represent all possible futures as it was only the first step in a 4-year process of developing Nature Futures Scenarios, which will involve iterative cycles of visioning, stakeholder co-creation, and modelling with global, regional and local consultations during 2018. In this stakeholder co-creation workshop at the Natural Capital Symposium, we aim to further refine preliminary visions developed from the first visioning workshop in New Zealand, with perspectives from the private sector (including social business), civil society, and non-profit organizations that have previously been under-represented. We invite all Symposium participants to enrich, complement, and fill the remaining gaps in the current set visions.

Session Lead: **Carolyn Lundquist**, Principal Scientist, NIWA and University of Auckland

- **Samdanjigmed Tulganyam**, Superintendent for Biodiversity, Oyu Tolgoi Mining, Mongolia
  - *"Private Sector Involvement in Sustainable Development and Planning"*

Moderator: **Nik Sekhran**, Chief Conservation Officer, WWF-US

**Tuesday, March 20**

8:00am – 8:45am

*Paul Brest East*

**K4) Coffeehouse Chat: "Infrastructure and Natural Capital – Stories from the Front Line"**

We will hear about experiences in diverse regions of the world - the Arctic, Africa, and Asia - facing challenges meeting the need to build new - and upgrade existing - built infrastructure in ways that are sustainable and climate resilient. We will hear inspiring first-hand stories from leaders using natural capital approaches and innovations in policy, planning, and finance to improve infrastructure decision-making, including investments in ecological infrastructure.

Storytellers:

- Hon. **Fran Ulmer**, Chair, US Arctic Research Commission – Stories from Alaska
- **Vanessa Ushie**, Division Manager, Policy Analysis, African Natural Resources Centre, African Development Bank – Stories from Africa
- **Yolanda Goncalves**, National Director for Cooperation and Planning, Ministry of Land, Environment and Rural Development, Government of Mozambique – Stories from Mozambique
- **Kyaw Kyaw Lwin**, Deputy Director General, Forest Department, Ministry of Natural Resources and Environmental Conservation - Stories from Myanmar

Moderator: **Kate Newman**, VP Public Sector Initiatives, WWF-US

2:00pm – 3:15pm

*Paul Brest Hall*

**K6) Keynotes: Emily McKenzie, Rich Sharp, and Jerry Yang**

- **2:00pm-2:15pm Emily McKenzie**, Chief Adviser, Economics and Sustainability, WWF Global Science
- **2:15pm-2:45pm Rich Sharp**, Software Architect, Natural Capital Project
- **2:45pm-3:15pm Jerry Yang**, Founding Partner, AME Cloud Ventures, **in conversation with Gretchen Daily**

3:45pm – 4:30pm

*Paul Brest Hall*

**K7) Keynote: Mark Tercek, in conversation with Mary Ruckelshaus**

7:30pm – 8:30pm

*Stanford Bing Concert Hall*

**Special Evening Event: The Harmony of Green Growth and Well-Being**

You are cordially invited to a special evening event illuminating the intimate connections between people and nature. We will feature reflections from **Chris Field** (Perry L. McCarty Director, Stanford Woods Institute for the Environment) and **John Hennessy**, the 10<sup>th</sup> President of Stanford University. These will be followed by a Chinese performance symbolizing the harmony of green growth, promoting the well-being of people and nature, introduced by **Zhu Li** (Associate Director, Conservation, Paulson Institute). Doors open at 7:15, program begins at 7:30pm. Dessert and drinks reception to follow.

## Wednesday, March 22

8:00am – 8:45am

*Paul Brest East*

### **K8) Coffeehouse Chat: Integrating Community, Ecology and Profit for Sustainable Land Management**

Hunter Lovins, founder and president of Natural Capital Solutions, is a long-time creator and advocate of approaches to secure natural capital on working lands. She is also on the board of the Savory Institute, a global leader in the realms of holistic management and regenerative agriculture. She will lead a dialogue on the potential of these approaches, and kick off a day in which we feature several sessions examining the role of the private sector in stimulating change in our productive systems.

Featured Speaker: **Hunter Lovins**, Founder and President of Natural Capital Solutions, Board Member, Savory Institute

Moderator: **Becky Chaplin-Kramer**, Lead Scientist, Natural Capital Project

3:30pm – 4:30pm

*Paul Brest Hall*

### **K9) Keynote: Pavan Sukhdev, President, WWF International**

Pavan Sukhdev is a scientist by education, an international banker by training, and an environmental economist by passion.

4:45pm – 5:45pm

*Paul Brest Hall*

### **K10) Keynote: Jane Lubchenco, University Distinguished Professor at Oregon State University**

Dr. Jane Lubchenco, University Distinguished Professor at Oregon State University, is an environmental scientist with expertise in the ocean, climate change, and interactions between the environment and human well-being.

5:45pm – 6:45pm

*Rehnquist Courtyard*

### **Keynote Reception**

Please join us for drinks and light snacks in honor of our keynote speakers.

## Pathways to Impact Track

### Monday, March 20

2:00pm – 3:30pm

*Paul Brest East*

### **P1) Realizing the Values of Natural Capital: Successes and challenges in opening green growth pathways in China**

Join these leaders working in cities and counties that are pioneering new policy and finance mechanisms for opening green growth pathways in China. We will hear about specific, pilot cases for testing and demonstrating particular approaches to secure both livelihoods and natural capital.

Speakers:

- **Zhang Hongxing**, Mayor of Fuzhou Municipal People's Government, Jiangxi Province
- **Wang Xiaorong**, Deputy Mayor of Lishui City, Zhejiang Province
- **Zhou Zheyun**, Executive Deputy Mayor of Leishan County, Guizhou Province
- **Zhao Peng**, The Nature Conservancy – China

Moderator: **Xu Weihua**, Associate Professor, Chinese Academy of Sciences

from people to nature, scholars and practitioners increasingly emphasize cultural services as a reciprocal relationship between people and place and as values that may be more appropriately assessed through deliberative and participatory methods. In this session we explore frontiers in assessing and bringing to the forefront cultural ecosystem services as well as opportunities and challenges in bringing this type of knowledge into decision-making processes.

Speakers:

- **Rachelle Gould**, Assistant Professor, University of Vermont
- **Jasper Kenter**, Scottish Association for Marine Science
- **Kelly Meza Prado**, Researcher, Natural Capital Project, University of Minnesota
- **Pua'ala Pascua**, Biocultural Specialist, Center for Biology and Conservation, American Museum of Natural History

Moderator: **Leah Bremer**, Conservation Scientist, University of Hawai'i at Manoa

1:30pm – 3:00pm

*Paul Brest West*

### **S5) Earth Observations for Ecosystem Services**

Tools to quantify ecosystem services (ES) could be dramatically improved through the integration of Earth Observation (EO) data. Integrating newer EO products will move ES tools beyond simplistic categorical representations of land-use, a paint-by-numbers approach to assigning a ES provisioning value to all pixels in the same class. These opportunities for integrating EO data into ES range from EO products that are ready for integration with little to no modification, to manipulation of the data or models through the creation of novel ES models built on EO data. This special session will highlight current efforts to integrate EO into ES models and will identify priorities for future work.

Speakers:

- **Kyle Story**, Computer Vision Engineer, Descartes Lab
- **Alessandro Baccini**, Scientist, Woods Hole Research Center
- **Jay Angerer**, Associate Professor, Texas A&M University
- **Glenn-Marie Lange**, Senior Environmental Economist, World Bank

Moderators: **Becky Chaplin Kramer**, Lead Scientist, Natural Capital Project & **Kate Brauman**, Lead Scientist for Global Water Assessment at the University of Minnesota's Institute on the Environment

## Workshops and Working Group Sessions

**\*We request that you please RSVP for sessions you plan to attend on Thursday, via links available with these session descriptions on the Symposium website.**

### Thursday, March 22

9:00am – 3:00pm

*Jacob-Sorenson Hall Room 138*

### **W1) Integrating InVEST with the RBIS Data Management Platform**

In this workshop, participants will be introduced to integrating InVEST freshwater models (Sediment, Nutrients, Hydropower and Seasonal Water Yield) with River Basin Information System (RBIS) platforms. The River Basin Information System (RBIS) is an open source data management platform precisely designed for integrated freshwater resources management projects. Besides data management and storage, RBIS provides functions for the visualization, linking, analysis and

services. We present here findings and insights from this global assessment, and will discuss with the audience possible implications for its application to public and private sector decision-making.

Speakers:

- **Hal Mooney**, Professor of Environmental Biology, Stanford University
- **Kate Brauman**, Lead Scientist for Global Water Assessment at the University of Minnesota's Institute on the Environment
- **Henrique Periera**, Professor of Biodiversity Conservation, German Center for Integrative Biology Research, Group on Earth Observations Biodiversity Observation Network
- **Becky Chaplin-Kramer**, Lead Scientist, The Natural Capital Project

## Wednesday, March 22

9:00am – 10:30am

*Jacobson-Sorensen Hall Room 123*

### **S3) Climate Change**

Substantial progress has been achieved in recent years to better understand the services provided by nature that are essential to both mitigating greenhouse gas emissions and creating resilience to the impacts of climate change. There are nevertheless still significant gaps in tools, frameworks, and modeling approaches that prevent planning for truly resilient, sustainable development. These include fundamental limitations in available data, science, and current models that do not adequately address the dynamics of a rapidly warming world. How can this community better integrate existing knowledge about climate change and natural capital to provide robust, decision-relevant information, while also accounting for gaps and deep uncertainties? How can academics and practitioners address these limitations in ways that create fit-for-purpose information for decision makers and planners? This discussion-focused session will explore these limitations and potential solutions to address them, focusing on cases in Myanmar and the US, including the Bay Area.

Speakers:

- **Rob Griffin**, Economist, Natural Capital Project, Woods Institute for the Environment and Department of Biology, Stanford University
  - *"Sea Level Rise Adaptation in the Coastal San Francisco Bay Area"*
- **Radley Horton**, Lamont Associate Research Professor at Columbia University's Lamont-Doherty Earth Observation
  - *"On Integrating Climate Science with Natural Capital Science for Decision-making"*
- **Katherine Mach**, Director of Stanford Environment Assessment Facility, Stanford Woods Institute for the Environment
  - *"A Focus on Risk and Solutions: Lessons from climate assessments and responses"*
- **Lisa Mandle**, Senior Scientist, Natural Capital Project
  - *"Toward Climate Smart Natural Capital Assessments for Development Planning - Myanmar and beyond"*

Moderator: Ryan Bartlett, Lead Climate Risk Management, WWF-US

11:00am – 12:30pm

*Jacobson-Sorensen Hall Room 123*

### **S4) Frontiers in Cultural Ecosystem Services**

Cultural ecosystem services have been described as the "intangible" ways that people relate to and benefit from landscapes and marine ecosystems. A range of novel ways of thinking about cultural ecosystem services, including as shared socio-cultural values and as relational values, have recently emerged. Rather than thinking about, for example, cultural services as benefits flowing

4:00pm – 5:30pm

*Paul Brest East*

### **P2) Sustainable Development Roundtable**

This interactive session provides participants with the opportunity to share their experiences developing and implementing the approaches, information, and incentives needed to make inclusion of natural capital in development planning commonplace. We will start with a series of rapid Ignite-style talks, highlighting examples from around the globe and covering multiple dimensions of sustainable development planning—from advancing science to deploying and scaling innovative policy and finance mechanisms. Presentations will be followed by open discussion among presenters and audience members. Together, we will share perspectives, exchange lessons learned, and work to identify solutions to obstacles faced in accounting for nature's values in development decisions.

Speakers:

- **Leidy Tatiana Rodríguez Torres**, Universidad Industrial de Santander
  - *"Impact Assessment of the Productive Transformation on the Ecosystem Services of Las Cruces Micro-basin in San Vicente de Chucurí, Colombia"*
- **Rachel Neugarten**, Director, Conservation Priority Setting, Conservation International
  - *"Trends in Protected Area Representation of Biodiversity and Ecosystem Services in Six Tropical Countries"*
- **John Quinn**, Assistant Professor, Furman University
  - *"Mapping the Impact of Urbanization, Conservation, and Governance Decisions on Ecosystem Services"*
- **Barano Siswa Sulistyawan**, Conservation Science Leader, WWF-Indonesia
  - *"Greening Indonesia's Infrastructure Policy"*
- **Anabela Rodrigues**, Country Director, WWF Mozambique
  - *"Transforming Public Planning Systems with the Private Sector and Communities for Water and Food Supply"*
- **Adrian Vogl**, Senior Scientist, Natural Capital Project
  - *"Resilience in the Amazon: Nature-based, integrated watershed management for growing urban centers"*
- **Justin Johnson**, Economist, Natural Capital Project
  - *"Mapping National Green-planning to Sustainable Development Goal Attainment in West Africa"*

Moderator: **David McCauley**, Senior Vice-President Policy and Finance, WWF-US

## Tuesday, March 21

9:00am – 10:30am

*Paul Brest East*

### **P3) Connecting Science, Tools, and Processes for Watershed Management and Securing Freshwater Ecosystem Services**

Effective nature-based solutions to maintain freshwater ecosystem services typically require interventions on whole-watershed scales. There is general agreement that watershed conservation will reduce water-related risks and will have multiple beneficiaries. However, mainstreaming that understanding into decisions is often hindered by fragmentary baseline data and limited understanding of the impact pathways and time spans in which interventions lead to tangible improvements for beneficiaries. Science has to play a key role in providing approaches to make both water risks and benefits of watershed management transparent even in data-scarce settings. However, with limited resources at hand, practical scientific approaches need to be considerate of the information needs of stakeholders and decision makers. This session highlights most relevant

knowledge gaps and identifies in turn which scientific approaches and new data would be of most operational value to enable better watershed management. We also discuss tools and case studies for how a nexus between science and policy enables successful implementation of watershed conservation.

Speakers:

- **Jorge Leon**, Latin America Water Funds Specialist, The Nature Conservancy
  - *"Natural Infrastructure Investment Opportunities in Sao Paulo's Cantareira Water Supply System"*
- **Lindsay Bass**, Manager, Corporate Water Stewardship, WWF US
  - *"Linking Water Risk and Ecosystem Services: The new water risk filter"*
- **Kari Vigerstol**, Water Security Director of Science and Innovation, The Nature Conservancy
  - *"Turning Innovative to Normal: Knowledge transfer and replication of great ideas"*
- **David Lallemant**, Assistant Professor, Nanyang Technological University, Singapore
  - *"A Risk Framework for Quantifying Natural Flood Mitigation and its Application to the Chindwin Basin, Myanmar"*

Moderator: **Rafael Schmitt**, Postdoctoral Researcher, Natural Capital Project

11:00am – 12:30pm

*Paul Brest East*

#### **P4) Creating Enduring and Resilient Programs for Water Security**

Through showcasing compelling examples of long-running programs that secure freshwater and other ecosystem services, this session will address the critical ingredients for designing, implementing, and sustaining durable programs. Speakers will bring a range of perspectives on what makes programs work in the long run—getting the science right, engaging appropriate partners, designing efficient and equitable programs, leveraging existing policies, creating new incentives, and allowing for course corrections whenever necessary. We will also discuss ongoing challenges to getting this mix right, with perspectives on securing public and private funding through multilateral channels and by engaging business.

Speakers:

- **Luis Gámez**, Research & Development, Empresa de Servicios Públicos de Heredia, Costa Rica
  - *"Internalization and payment of watershed environmental services: Pragmatical lessons"*
- **Paola Bauche**, Director, Northwest Regional Program, Mexican Funds for Conservation of Nature
  - *"Watershed conservation in the context of climate change: Integrated management of ten coastal watersheds in Northwest Mexico"*
- **Leon Szeptycki**, Executive Director, Water in the West, Stanford Woods Institute for the Environment
  - *"Allocating water for environmental flows during the California drought"*
- **Adrian Vogl**, Senior Scientist, Natural Capital Project
  - *"Innovations for linking watershed management science to practice: Lessons learned and opportunities"*

Moderator: **Marcelo Guevara**, Regional Coordination Officer for Latin America, Natural Capital Project

Practical tools and data visualization key concepts to communicate natural capital results will be presented. We will share inspiring examples and a visualization toolbox for ecosystem services analysts. Participants will engage in a typical visualization case, and will have the opportunity to raise the visualization challenges they encountered. No technical background required.

Session Lead: **Charlotte Weil**, Data Analyst, Natural Capital Project

Add'l Speaker: **Gregg Verutes**, Geographer & Visualization Specialist, National Audubon Society

## Special Topic Sessions

*\*\*PLEASE NOTE: Special Topics sessions (except S5) can accommodate a maximum of 40 people/session\*\**

### Tuesday, March 21

9:00am – 10:30am

*Jacob-Sorenson Hall Room 123*

#### **S1) The Nature Conservancy's Bridge Collaborative**

Ecosystem services conceptually link nature and human well-being. While this idea connects health, development and the environment, the evidence commonly used to inform decisions, underpin models, or design monitoring programs remains fragmented. The Bridge Collaborative, a partnership of The Nature Conservancy, PATH, the International Food Policy Research Institute (IFPRI), and Duke University exists to help break down these silos. The Bridge Collaborative's 150 members representing over 100 organizations have developed an evidence evaluation framework that provides a common basis for use of evidence across health, development, and environment spheres. The framework addresses what is considered admissible evidence (e.g., should qualitative studies and randomized controlled trials be in the same evidence synthesis?) and what constitutes a strong body of evidence (e.g., are white papers and peer reviewed publications equal? Are more studies better?). Agreements on these issues should help make transdisciplinary ecosystem service assessments (such as IPBES assessments) faster and more consistent, aid with interpretation of results from production function models (such as InVEST), and help identify knowledge gaps that can be filled by monitoring and adaptive management programs. But do they really help? In this session, we will dive into real health and development evidence related to water security and urban heat islands. You will hear what representatives from health, development, and environment disciplines have agreed on, and share your own views on ecosystem service evidence use.

Session Leads: **Heather Tallis**, Global Managing Director, Lead Scientist, The Nature Conservancy, and **Christine Jacobs**, Design Lead, Bridge Collaborative, The Nature Conservancy

11:00am – 12:30pm

*Jacobson-Sorensen Hall Room 123*

#### **S2) IPBES**

The Intergovernmental Science/Policy Platform on Biodiversity and Ecosystem Services (IPBES) assesses the state of biodiversity and of the ecosystem services it provides to society, in response to requests from decision makers. The first IPBES assessment of knowledge on biodiversity and ecosystem services and their interlinkages at the global level is slated for completion in 2018. The scope of the assessment is to evaluate the status and trends with regard to biodiversity and ecosystem services, the impact of biodiversity and ecosystem services on human well-being, and the impact of potential future scenarios of human development on biodiversity and ecosystem

- "NatCap Software Tools for Scenario Generation: MESH, ROOT, and SEALS"
- **Kim Fisher**, GIS Analyst and Developer, Wildlife Conservation Society
  - "Visionmaker: An urban sustainability app for ecological democracy"

Moderator: **Jan Kuiper**, Postdoctoral Researcher, Stockholm Resilience Centre

## Wednesday, March 22

9:00am – 12:30pm

*Tresidder Memorial Union Oak East Lounge*

### **A4a) Hands-on with InVEST: Freshwater and Terrestrial (concurrent w/ A4b)**

It is often useful to understand not only how much water is produced by a landscape annually, but also the seasonal variation of water production, and differentiation between quick flow and baseflow. The InVEST Seasonal Water Yield model provides information on which parts of the landscape contribute to baseflow and quick flow. In this session, we'll give an introduction to this model, share case studies of its use, and have hands-on time running the model with sample data. Please come prepared with InVEST and a GIS installed on your laptop.

Lead Trainer: **Stacie Wolny**, Senior GIS Analyst, Natural Capital Project

Co-Trainers:

- **Ginger Kowal**, GIS Programmer Analyst, Natural Capital Project
- **Kelly Meza Prado**, Researcher, Natural Capital Project
- **Nirmal Bhagabati**, Senior Program Officer (Environmental Services), WWF US Conservation Science Program

9:00am – 12:30pm

*Paul Brest Hall Conference Suite, Room 382*

### **A4b) Hands-on InVEST: Coastal (concurrent w/ A4a)**

Coastal ecosystems provide numerous benefits to people, including supporting livelihoods through fishing and tourism as well as reducing risk to coastal hazards by attenuating incoming waves. Yet, competing needs for development can threaten those ecosystems. During this session we will go in-depth with the InVEST Coastal Vulnerability Model after introducing the suite of marine-focused InVEST models that address these trade-offs and highlight the role of healthy ecosystems. The Habitat Risk Assessment model assesses the cumulative effect of multiple human activities on ecosystems. The Recreation and Tourism model explores the value of coastal ecosystems to provide recreation opportunities and support livelihoods in the tourism industry. The Coastal Vulnerability model measures how changes in ecosystems lead to changes in risks from coastal hazards. The goal of this session is to introduce the scientific underpinnings of these models and discuss different contexts in which to apply them. We will also explore the basic structure of InVEST models in general and learn about the InVEST file structure, the user interface, and types of model inputs and outputs. Focusing on the Coastal Vulnerability model, we will build familiarity with running and interpreting results and use exercises designed to illustrate how real-world planning decisions can be informed with quantitative model results.

Lead Trainer: **Katherine Wyatt**, Ecosystem Services Analyst, Natural Capital Project

1:30pm – 3:00pm

*Tresidder Memorial Union Oak East Room*

### **A5) Communicating Natural Capital Information**

Natural capital assessments aim to inform decision makers. However, delivering efficiently complex, multidimensional, spatial results - typical output of ES assessments - is a difficult task. Data visualization techniques can greatly enhance communication capacities, with appropriate metrics, graphs and maps adapted to various audiences of stakeholders, partners and communities.

## Wednesday, March 22

9:00am – 10:30am

*Paul Brest East*

### **P5) Urban Intangibles/Livable Cities**

Over 60% of the land projected to become urban by 2030 is yet to be built. For future and existing urban areas, planners face important environmental and social challenges ranging from climate change adaptation to air pollution, migration, or gentrification. In this context, nature-based solutions such as urban parks, street trees, or vegetated roofs are increasingly considered, raising key questions for researchers and practitioners. What are the services and disservices provided by nature-based solutions? How do their benefits change with urban context (climate, built infrastructure, population growth)? Can nature-based solutions increase resilience and social justice in cities? This session will explore these questions from a theoretical and practical perspective, highlighting the current research efforts in the field of urban ecosystem services and current projects that aim to implement nature-based solutions in cities.

Speakers:

- **Perrine Hamel**, Ecosystem Services Scientist, Natural Capital Project
  - "NatCap in the City: Early engagement and vision for the Cities program"
- **Han Baolong**, Chinese Academy of Sciences
  - "Assessing Urban Ecosystem Services in Chinese Major Cities"
- **Rob McDonald**, Lead Scientist, The Nature Conservancy
  - "Urban Greenprinting: Crafting a shared spatial vision of what nature can do for a city"
- **Kate Malmgren**, Urban Ecologist, Google
  - "Untapped Potential of the Urban Landscape: Experience from Google's ecology program"
- **Joe DiStefano**, Principal and Co-Founder, Calthorpe Analytics
  - "Supporting Environmental Change and Sustainable Urban Planning with the UrbanFootprint Software Platform"

Moderator: **Anne Guerry**, Chief Strategy Officer and Lead Scientist, Natural Capital Project

11:00am – 12:30pm

*Paul Brest East*

### **P6) Standards for the Private Sector**

The world's major private-sector organizations exceed all but the largest governments in financial resources and influence, making their operating decisions vital for achieving global environmental sustainability and green growth. Collectively, multinational corporations and the financial system broadly drive the behavior of whole sectors of production. A growing number of companies and financial investors have made public commitments to sustainability. These commitments are increasingly converging around a common set of standards to govern behavior and decision-making. For example, in the infrastructure sector, sustainability standards are emerging to support companies financing, developing, and designing infrastructure projects. However, for these commitments to be meaningful they need to be based on reliable, transparent data on ecosystem changes. We consider what new approaches or information sources are needed to evaluate impacts of investment standards across the private and finance sectors, suggesting a shift from self-reporting on ESG metrics to accountability based on real-time remote-sensing data and ecosystem service modeling.

Speakers:

- **Ben Caldecott**, Director, Oxford Sustainable Finance Program, Smith School of Enterprise and the Environment
  - "Evolution of Data, Finance, and Reporting - Current and future applications for financial institutions"

- **Elizabeth White**, Chief Strategist, Sustainability, International Finance Corporation, World Bank Group
  - *"Ecosystem Service Risk Management and Natural Capital"*
- **Helen Crowley**, Head of Sustainable Sourcing Innovation, Kering
  - *"Sustainable Sourcing: The role of companies in driving standards"*

Moderator: **Mark Gough**, Executive Director, Natural Capital Coalition

1:30pm – 3:00pm

*Paul Brest East*

### **P7) Safe and Sustainable Coastal Communities**

This session will explore issues of sustainable development in coastal zones, including the information and science needed to support novel, nature-based approaches to enhancing resilience of coastal communities. Panelists will bring their perspectives and experiences from multilateral development banks, the private sector, foundations, community-based efforts, and academia. The session will address issues related to social, economic and environmental aspects of sustainable development in coastal systems, demand for information by the private sector, and opportunities for scaling and mainstreaming.

Speakers:

- **Claudia Madrazo**, President, Fundación Claudia y Roberto Hernández
  - *"The Kanan Kai Alliance and the Relentless Art of Weaving Systems Transformation for the MesoAmerican Reef in Mexico"*
- **Carter Ingram**, Senior Manager, Ernst and Young
  - *"Bridging divides to build resilience"*
- **Katie Arkema**, Senior Scientist, Natural Capital Project
  - *"Integrating natural capital in coastal development to advance outcomes for nature and people"*
- **Hugh Possingham**, Chief Scientist, The Nature Conservancy
  - *"Conundrums in choosing the best conservation action for coastal resilience: restore or protect? Act on the land or the sea? Defend or retreat?"*

Moderator: **Katie Arkema**, Senior Scientist, Natural Capital Project

## **New Frontiers Track**

### **Monday, March 19**

2:00pm – 3:30pm

*Paul Brest West*

#### **N1) Lightning Talks**

This session provides a venue for researchers and practitioners to learn about and share diverse experiences and work with natural capital approaches. The session will consist of several short presentations followed by small group breakout discussions.

Speakers:

- **Priya Shyamsundar**, Lead Economist, The Nature Conservancy
  - *"What can Conservation Agriculture do for Air Pollution?"*
- **Chris Coutts**, Associate Professor, Florida State University
  - *"The Ecology of Health"*
- **Marcello Hernandez-Blanco**, PhD Student, The Australian National University

## **Tuesday, March 21**

9:00am – 10:30am

*Tresidder Memorial Union, Oak East Lounge*

### **A2) Toward Realistic, Plausible, Positive Futures for the Planet**

Scenarios are plausible stories about how the future of a social-ecological system might unfold. Scenario planning can be an important tool in social-ecological transformations because it forces people to think explicitly about alternative situations, consider key uncertainties and tradeoffs, and create an understanding that a different order of things is possible. Moreover, scenarios can draw on the power of human imagination, to help us rethink and re-feel our affiliation with the biosphere and envision a desirable future. Most scenarios however, and even our imaginations, are deeply rooted in the past, relying on extrapolations of previous experiences and present trends. To adequately anticipate the radical change, novelty, and surprise in the Anthropocene we may need to take a whole new approach to scenarios. In this session we will discuss new ways of engaging with the future, and the role of science in guiding today's collective choices, to channel the transformative and creative potentials of human societies towards positive futures for the planet.

Speakers:

- **Stephen Carpenter**, Scientist, Center for Limnology, University of Wisconsin-Madison
  - *"Exploring the Futures of Nature and People: What's next?"*
- **Henrique Pereira**, Professor of Biodiversity Conservation, German Center for Integrative Biology Research, Group on Earth Observations Biodiversity Observation Network
  - *"Positive Visions for our Relationship with Nature"*
- **Alex Steffen**, Planetary Futurist, Planetary Thinking LLC
  - *"Imagining Cites that can Save the Planet"*
- **Andrea Downing**, Researcher, Stockholm Resilience Centre, Stockholm University
  - *"Pathways to Global Sustainability"*

Moderator: **Emily McKenzie**, Chief Adviser, Economics and Sustainability, WWF Global Science

11:00am – 12:30pm

*Tresidder Memorial Union Oak East Lounge*

### **A3) Scenarios: Useful tools, shining examples, and best practices**

Ecosystem service modeling tools, like InVEST, are developed to categorize and quantify nature's contribution to people. Importantly, these models allow for quantitative exploration of alternative futures, exposing tradeoffs and their implications. Yet, besides producing quantitative outputs, models and scenarios are foremost tools that help to elicit values, preferences and objectives of beneficiaries. As part of an iterative participatory process, exploratory scenarios evoke critical reflections and foster long-term thinking, ultimately leading to co-design, collective action, and wise decision-making. Although participatory scenario studies have been successfully conducted all over the world, large-scale implementation is constrained by practical issues and methodological questions. In this session practitioners and tool developers will present compelling examples and share best practices.

Speakers:

- **Katherine Wyatt**, Ecosystem Services Analyst, Natural Capital Project
  - *"Bridging the Scenario Divide: making the most of qualitative and quantitative approaches for sustainable development planning in The Bahamas"*
- **Stephen Carpenter**, Scientist, Center for Limnology, University of Wisconsin-Madison
  - *"Envisioning the Future of the Yahara Watershed"*
- **Justin Johnson**, Economist, Natural Capital Project

- **Chris Field**, Director, Stanford Woods Institute for the Environment
- **Jessica Hellmann**, Director, Institute on the Environment, University of Minnesota
- **Ben Packard**, EarthLab Director, University of Washington

Moderator: **Anne Guerry**, Chief Strategy Officer & Lead Scientist, Natural Capital Project

1:30pm – 3:00pm

*Jacobson-Sorensen Hall, Room 123*

#### **N7) Implementing InVEST in New Contexts**

Individual ecosystem service models are important elements in the process of understanding how people benefit from nature. However, easy integration of multiple models and data sources are required to develop workflows that are usable in real decision contexts, and also to explore dependence on key assumptions. This session's presenters will share experiences of how they have compared or integrated multiple models (often including InVEST) into workflows or toolkits built for specific research or decision purposes.

Speakers:

- **Claudia Moster**, PhD Candidate, University of São Paulo
  - *"InVEST Toolbox Integration with RBIS Data Management Platforms"*
- **Francesco Tonini**, Software Engineer and Systems Modeler, Michigan State University
  - *"The Telecoupling GeoApp: A Web-based application for mapping and analysis of telecoupled human and natural systems"*
- **Carla Elliff**, PhD Student, Universidade Federal da Bahia
  - *"Shoreline Protection Provided by Coral Reefs in a Brazilian Archipelago"*
- **Elizabeth White**, Head: Strategy/Economics Sustainability and Resilience, International Finance Corporation
  - *"Applying the Natural Capital Protocol: Valuing natural capital impacts and dependencies in the tea, coffee and tourism industries"*

Moderator: **Nirmal Bhagabati**, Senior Program Officer (Environmental Services), WWF-US Conservation Science Program

## Approaches & Applications Track

### Monday, March 20

2:00pm – 5:30pm

*Tresidder Memorial Union, Oak East Lounge*

#### **A1) Getting Started with a Natural Capital Approach**

This session is intended for those who are new to taking a natural capital approach to informing decisions. It will begin with a preview of our training offerings and guidance on navigating the Approaches & Applications track at this year's Symposium. We will discuss ways of approaching a natural capital analysis, and provide illustrative case studies. This session will also introduce NatCap's primary software suite, InVEST, walk through typical workflows, and give an overview of the various models available within it. Bring your laptop if you'd like help installing InVEST, RIOS, OPAL or QGIS software.

Session Lead: **Stacie Wolny**, Senior GIS Analyst, Natural Capital Project  
Additional Speaker: **Mark Gough**, Executive Director, Natural Capital Coalition

- *"The Economic Value of the Ecosystem Services of 7 Ramsar Sites in Costa Rica"*
- **Ali Mohammed Rezaie**, PhD Student, George Mason University
  - *"Investigating the Role of Natural Habitats and Features in Coastal Resilience"*
- **Diego Herrera**, Economist, Environmental Defense Fund
  - *"Environmental Impact Bond for Nature-Based Resilience: An application to large-scale wetland restoration in coastal Louisiana"*
- **Glenn-Marie Lange**, The World Bank
  - *"Natural Capital in the Wealth of Nations"*
- **Nell Campbell**, Research Scientist, Earth Systems Research Center, Institute for the Study of Earth, Oceans and Space
  - *"Beyond Carbon Farming"*

Moderator: **Katherine Wyatt**, Ecosystem Services Analyst, Natural Capital Project

4:00pm – 5:30pm

*Paul Brest West*

#### **N2) Scaling Ecosystem Service Assessments**

This session presents approaches that have the potential to enhance the scalability of ecosystem service assessments, through a combination of innovative tools, creative applications of data in new contexts, and modeling advances.

Speakers:

- **Daphne Yin**, Consultant, Indufor
  - *"Rural Valuation Tool: A bottom-up approach to valuing natural and social capital of the commons"*
- **Andrea Ghermandi**, Senior Lecturer, University of Haifa, Israel
  - *"Using Geotagged Photos from Social Media to Value the Recreational Benefits of Kerala's Wetlands in India"*
- **Bill Miller**, Professor, Northwestern University
  - *"Optimizing Sustainable Reconstruction in an Era of Increasing Disasters"*
- **Zach Parisa**, President, SilviaTerra
  - *"Natural Capital Markets for Small Landowners - A practical, data-driven market"*
- **Dave Fisher**, Geospatial Analyst, Natural Capital Project
  - *"Decision Support Tools for Measuring Recreation Across Publicly Owned Lands"*

Moderator: **Rob Griffin**, Economist, Natural Capital Project

### Tuesday, March 20

9:00am – 10:30am

*Paul Brest West*

#### **N3) Human Health**

This session explores frontiers in understanding the natural capital underpinnings of human health, with a focus on infectious disease. Bringing together experts in medicine, public health, and disease ecology, the panel will synthesize the state of knowledge of nature-human health linkages, and share new research directions aimed at enabling decision-makers to make use of this critical information.

Speakers:

- **Katherine Burke**, Deputy Director, Stanford Global Health, Primary Care and Population Health (Discussant)

- **Grant Miller**, Associate Professor of Medicine, Senior Fellow at the Freeman Spogli Institute and the Stanford Institute for Economic Policy Research
  - **"Global Health, the Environment, and Behavior Change"**
- **Matthew Gribble**, Professor in Environmental Health, Emory University
  - *"Marine Protected Areas and Adult Mortality Rates: a Preliminary Longitudinal Analysis of Country-Level Data"*
- **Erin Mordecai**, Professor in Biology, Stanford University
  - *"Impacts of Anthropogenic Change on Vector-borne Disease"*
- **Stephen Luby**, Professor of Medicine and Senior Fellow at the Stanford Woods Institute and the Freeman Spogli Institute
  - *"Two Efforts to Attribute Reduced Human Infectious Disease Burden to Ecosystem Investments"*

Moderator: **Lisa Mandle**, Senior Scientist, Natural Capital Project

11:00am – 12:30pm

*Paul Brest West*

#### **N4) Livable Cities Roundtable**

As the world becomes increasingly urbanized, cities face the challenge of growing and developing while still providing a healthy, safe, equitable and sustainable living environment for their residents. Urban nature, often in the form of "green infrastructure", may supply critical ecosystem services that enhance livability in cities. In this session, we showcase research from across the world that explores urban ecosystem services and how these services may contribute to building resilience in cities in the face of global change. Cross-cutting themes include: cultural ecosystem services in cities, water quality and other health challenges, incorporating nature into urban spatial planning, and applications of ecosystem service and resilience theory in the Global South. The session starts off with short Ignite-style presentations that provide an overview of different case studies, to be followed by group discussions with the speakers.

Speakers:

- **Grazia Zulian**, Scientific and Technical Project Officer, Joint Research Centre, European Commission
  - *"Assessing cultural ecosystem services provided in European cities: A cross-scale application of the ESTIMAP-recreation model"*
- **Jinlong Liu**, PhD Candidate, University of Melbourne
  - *"Urban cultural ecosystem service flows: A model connecting providers of multiple services and users of urban green spaces"*
- **Andrea Lund**, PhD Candidate, Emmett Interdisciplinary Program in Environment and Resources, Stanford University
  - *"Violence and vectors: engaging adolescent girls in participatory mapping in informal settlements in Fiji"*
- **Thomas Hilde**, Assistant Professor in Urban Planning, Cleveland University, and Robert Paterson, Associate Professor in Community and Regional Planning, University of Texas at Austin
  - *"Green infrastructure for disaster resilience: integrating ecosystem services into scenario planning"*
- **Emily Howe**, Aquatic Ecologist, The Nature Conservancy
  - *"Optimizing green storm water infrastructure for people and nature: advancing urban storm water planning through design thinking, pollution loading, social equity metrics"*

- **Genevieve Mercier**, Senior Environmental Strategy and Programs Officer, Natural Capital Commission
  - *"The economic value of the National Capital Commission's green network"*
- **Benis Egho**, Principal Researcher, Council for Scientific and Industrial Research, Stellenbosch, South Africa
  - *"The integration of resilience principals into urban spatial planning: Durban as a case study"*
- **Rebecca Shirer**, Science and Planning Manager, The Nature Conservancy
  - *"Mapping beneficiaries of land protection in New York State"*

Moderator: **Maïke Hamann**, Postdoctoral Researcher, Natural Capital Project

### **Wednesday, March 22**

9:00am – 10:30am

*Paul Brest West*

#### **N5) Cross-sectoral Sustainable Development: Financing Regenerative Grazing in the Gobi Desert, Mongolia**

Mongolia has seen a rapid rise in rangeland grazing pressure due to increasing global demand for cashmere along with privatization of a formerly government-run livestock industry. The national herd had nearly doubled 1990s-levels by 2009, leading to widespread degradation of rangeland systems. The pace and reliability of conservation focused legislation development within government is limited. In some regions this legislative void is being filled by private sector and conservation NGO enterprises. In this panel, we highlight a unique partnership and a promising pilot for promoting regenerative and sustainable grazing in the Gobi Desert, one of the most imperiled ecosystems in the region, that could serve as a model for market-driven restoration in other degraded systems. The global apparel company Kering is working with the Mongolian extractives company Oyu Tolgoi and Wildlife Conservation Society to incentivize improved grazing practices, providing Kering with sustainable cashmere and Oyu Tolgoi with biodiversity offsets for mining impacts, and restoring rangeland quality for livestock, wildlife, and other critical ecosystem services.

Speakers:

- **Stuart Anstee**, Principal, Stuart Anstee & Associates
- **Onon Bayasgalan**, Lead for Sustainable Enterprise, WCS Mongolia
- **David Hamilton**, Principal Adviser in Biodiversity, Oyu Tolgoi Mining
- **Helen Crowley**, Head of Sustainable Sourcing Innovation, Kering
- **Enkhuvshin Shiilegdamba**, Country Director, WCS Mongolia

*\*in lieu of separate talk titles, the contributors of this session have provided a detailed discussion guide, please see the abstract booklet pdf for more details*

Moderator: **Becky Chaplin-Kramer**, Lead Scientist, Natural Capital Project

11:00am – 12:30pm

*Paul Brest West*

#### **N6) Practical Academia**

Universities are hubs of innovation, creativity, interdisciplinary, scholarship, deep thinking, and more. In some fields (e.g., medicine), they are also critical connectors between research and practice. In others (e.g., those related to sustainability), actionable research can be hampered by traditional academic structures and cultures. In this session, we will explore some barriers facing translational research, highlight bright spots that are breaking down these barriers, and discuss novel ways forward.

Speakers:

- **Jane Lubchenco**, Professor, Oregon State University
- **Hugh Possingham**, Chief Scientist, The Nature Conservancy