



What will I get out of this?

*How to collect and utilize sensitive species and habitat data to inform wildlife compatible resiliency planning*

Abstract

In response to climate change driven storms and sea level rise, coastal parks are grappling with resiliency strategies. Options include sand placement and dune construction, which may conflict with wildlife management. In 2012, Hurricane Sandy struck Gateway National Recreation Area, flattening dunes and giving biologists the opportunity to document changes in breeding piping plover habitat selection. In 2013/2014 GATE biologists recorded nest sites, derived available habitat from pre and post storm aerial imagery and mapped landcover. Results indicate increased nesting habitat, which piping plovers utilized. Nest distance from the intertidal zone increased, compared with pre-storm data, reducing nest flooding by 100%. GATE is involved in testing the iPlover app, which utilizes nest data to explore the influences of sand placement and sea level rise on piping plover nesting. The ability to understand shorebird responses to these variables is critical to formulating resiliency options that are compatible with endangered species recovery.

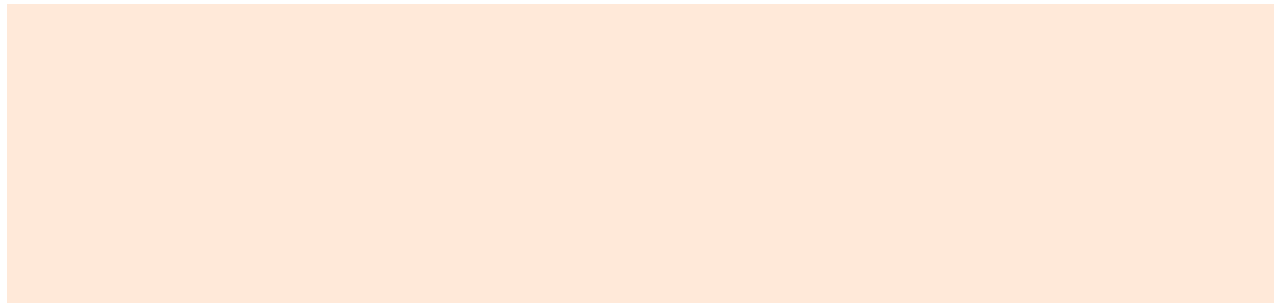
Keywords

*Shorebirds, Resiliency, Hurricanes*

Lead author /  
Session organizer

**Hanem Abouelezz** Biologist  
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Additional  
authors / organizers



If this is a session of  
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**Kahilina'i: Building Partnerships and Saving Trails on the Kona Coast**

What will I get out of this?

*The audience will learn about our successes building community-based partnerships with State offices, Native Hawaiian Organizations, and descendant Native Hawaiian communities through trail stabilization projects*

Abstract

Continuing the legacy of caring for trails practiced by generations of Native Hawaiian families along the Kona coast, earthquake damaged sections of the Kīholo-Puakō and the Pīkohene-Kapalaoa have been repaired and stabilized. In a partnership effort by the National Park Service, Hui Aloha Kīholo (a Native Hawaiian Organization), Hawai'i Division of State Parks, Nā Ala Hele State Trails and Access Program, the 'ohana (families) of Napu'u and community volunteers these ancient and historic trails have been repaired so they can safely be traveled by cultural practitioners and recreational hikers alike. The preservation team, made up of NPS archaeologists and Hawaiian stonemasons, hosted a variety of public workshops focused on traditional skills of dry-set stonemasonry and cutting edge technologies used to document the process, including LIDAR mapping.

Keywords

**community, trails, partnerships**

Lead author /  
Session organizer

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What will I get out of this?

*Learn about the dark skies over the Colorado Plateau, activities that threaten them, and solutions created by a diverse partnership to protect the night sky.*

Abstract

As part of the National Park Service Call to Action, the agency is leading an effort to establish landscape scale conservation of dark skies free from light pollution. The Colorado Plateau is sparsely populated, has minimal impact from outdoor lighting, and a high percentage of public land ownership, resulting in an ideal place for launching this novel conservation effort. This voluntary effort will link citizens, communities, tribes, businesses, and state and federal agencies in a collaborative effort to protect natural darkness for people and wildlife. Impetus is driven by the popularity of public stargazing programs, the local tourism economy, and a sense of community pride in this natural and cultural heritage.

Keywords

*night, sky, light*

Lead author /  
Session organizer

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Additional  
authors / organizers

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What will I get out of this?

*Audience will learn about listed species monitoring and the benefits of a long-term monitoring project to determine aquatic conditions in a National Park.*

Abstract

Summer steelhead (*Oncorhynchus mykiss*), a federally listed fish, have been monitored by the NPS for 34 years on Redwood Creek in Redwood National Park and private lands upstream. The adult fish migrate upriver in spring, hold in pools during summer, and spawn during winter. Park staff snorkel 24 miles of mainstem Redwood Creek in summer to index population trends. Additionally mainstem and tributary water temperatures are measured, coastal cutthroat trout counted, and other aquatic species noted. Redwood Creek summer steelhead are a declining stock. The combined effects of land use and significant storms have deposited large amounts of sediment in mainstem Redwood Creek, increased water temperatures, and degraded fish habitat. Given high summer water temperatures and absence of deep pools, the prospect for recovery of Redwood Creek summer steelhead is poor. The importance and other benefits of long-term monitoring are also discussed.

Keywords

*Salmonids, Long-term monitoring,*

Lead author /  
Session organizer

**David Anderson** Fishery Biologist  
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Additional  
authors / organizers

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Death of the Tanoak – Sudden Oak Death Disease in Redwood National Park

What will I get out of this?

*We will present information on the discovery, treatments, and expectation of a new forest treatment program to control the spread of Sudden Oak Death.*

Abstract

The north coastal redwood forests had been free of the causal agent of Sudden Oak Death (SOD) disease – Phytophthora ramorum until the discovery, in late summer 2014, of two infestation sites along the banks of Redwood Creek in Redwood National Park. These sites have now exposed these forests to this disease. The species most directly threatened by SOD is the oft considered “lowly” tanoak. This majestic tree, the most common hardwood species in the northern coastal redwood biome, is now threatened because of its severe vulnerability to this disease. A keystone species, it is instrumental in providing food resources for many wildlife species, creating unique structural elements and habitat for wildlife, and is a sacred and often used resource for local tribes. We will present RNP’s program to control the spread of SOD, and the park’s attempt to delay widespread SOD infestation and tanoak mortality

Keywords

*Disease, Tanoak, Management*

Lead author /  
Session organizer

**Leonel Arguello** Chief of Vegetation Management  
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Laura Morgan - Redwood National Park

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# Who Made This Land?

What will I get out of this?

*Historical records can help us understand how the landscape has come to be what it is today, if we know how to use them.*

Abstract

This poster will consider the variety of historical sources available to resource managers to understand past land use practices that have shaped the present environment. Specific examples will be illustrated from ongoing research in and around Pinnacles National Park in California. Documentary evidence in public records and private collections can reveal a great deal of valuable information about the ways in which our present landscapes have come into being through the successive and cumulative influences of homesteaders, miners, ranchers, public land managers, and others. The comparative value and limitations of these sources will be outlined and briefly considered, as well as where these sources can be found, and how they should be used. The complementary relationship between written records and non-documentary evidence--for example, from archeology--will also be illustrated.

Keywords

**History, Land, Environment**

Lead author /  
Session organizer

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Additional  
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[Empty area for additional authors/organizers]

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Comparing sea level rise and storm surge modeling methods for Northeast coastal national parks

What will I get out of this?

*Understand the data needs and tradeoffs between two inundation modeling methods and sets of sea level rise scenarios. Compare accuracy needs for different applications.*

Abstract

The scenarios, scale and accuracy of inundation mapping for sea level rise (SLR) and storm surge projections affect their use for climate adaptation planning. We compare results from two SLR and storm surge modeling projects for coastal national parks that use similar methods, different scenarios and different data inputs. As part of a University of Rhode Island led project to get high accuracy elevations (RTK GPS) at locations of special interest within Northeast Region parks, inundation risk was estimated for three SLR scenarios. Storm surge was estimated by storm category using NOAA's SLOSH model at current sea level for mean tide. This will be compared with results from a University of Colorado Boulder led project for 117 coastal parks mapping inundation under local SLR scenarios for the years 2030, 2050, and 2100 and storm surge mapping using SLOSH for mean and high tide using best available LiDAR data.

Keywords

**SLR, storm surge**

Lead author /  
Session organizer

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Maria Caffrey, University of Colorado, Boulder

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What will I get out of this?

*Share lessons learned from Hurricane Sandy preparation and recovery projects with a focus on climate adaptation.*

Abstract

The extensive recovery from Hurricane Sandy has been an opportunity to apply climate adaptation strategies and a learning process about where we are ready for change. It has also highlighted where some of our biggest information and planning needs are. This session will provide updates on recovery projects for facilities, natural and cultural resources. In advance of the storm, some parks had already begun to implement adaptation measures. Emergency preparedness plans were implemented and what was learned from them will be an important part of adapting them to future climate change. Post storm, climate adaptation was a consideration in a range of recovery, response and long term planning efforts. The lessons learned from Hurricane Sandy are being incorporated into the management of affected parks, but also need to be shared more broadly so other parks can plan to adapt to increased impacts of future storms.

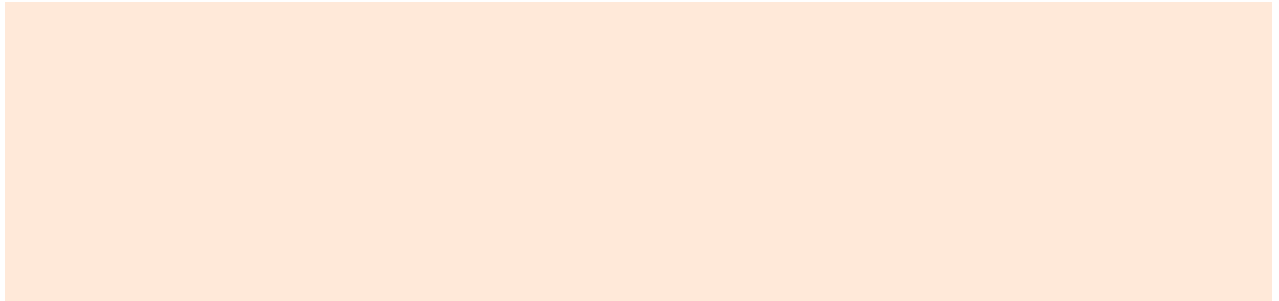
Keywords

**Hurricane Sandy, adaptation**

Lead author /  
Session organizer

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**Understanding Ecological Response to Major Storm Events – Hurricane Sandy**

Mary Foley, Chief of Natural Resource Stewardship and Science, Northeast Region, National Park Service

**Utilizing applied science for planning and design in rebuilding Sandy damaged infrastructure**

Tim Hudson, Sandy Hurricane Recovery Manager for the Northeast Region, National Park Service

**When the Waters Rise: Understanding the FFE of Historic Structures in a Post Sandy Park**

Tim Hudson, Sandy Hurricane Recovery Manager for the Northeast Region, National Park Service

**Assateague Island National Seashore adaptive strategies to climate change and sea level rise for facilities**

Randy Hartz, Maintenance Mechanic Supervisor, Assateague Island National Seashore, NPS









The World Heritage Program: A Laboratory for Linking Nature and Culture

What will I get out of this?

*Learn about the international role of the World Heritage Convention and discuss opportunities and challenges facing this treaty and the conservation of World Heritage Sites.*

Abstract

Through the 1972 World Heritage Convention countries around the world agree to work together to recognize and conserve our most important shared heritage – across national boundaries and across cultures. Today, there are over 1000 World Heritage Sites - and over 200 are diverse places with significant natural resource value such as the wilds of East Africa’s Serengeti, the Dorset and East Devon Coast of England, and the Great Barrier Reef in Australia. This presentation will share first-hand knowledge of the implementation of this international treaty and an understanding of its challenges and potential. Currently, IUCN is advancing initiatives to better recognize the inter-connection of natural and cultural values and the bio-social character of the world’s most significant landscapes and seascapes. One of these multi-disciplinary initiatives is defining new, integrated methods and practices to more fully acknowledge human rights and indigenous people and their knowledge in managing World Heritage Sites.

Keywords

*international, conservation, heritage*

Lead author /  
Session organizer

**Tim Badman** Director, World Heritage Programme

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What will I get out of this?

*With natural spaces in high demand throughout Los Angeles, discover what it takes and hear behind-the-scenes stories about transforming single-function gray infrastructure into multiple-benefit parks.*

Abstract

It's undeniable that almost everyone retreats to natural settings for respite. As society becomes increasingly technologically-oriented and cities expand to become more urbanized, the gap between urban dwellers and nature continues to grow. A Los Angeles park agency will share restoration strategies for weaving 'nature' into the city fabric. Integrating ecologically-rich design with recreation and high-functioning stormwater management techniques is explored in this presentation highlighting case studies of converted under-utilized vacant land into elegant multiple-benefit parks. Moving into the future, cities must encompass nature as a framework for development; interweaving 'the wild' into the urban fabric to create places that are functional and sustainable. Focus will be placed on how the conversion of vacant land into multiple-benefit natural parks has become a model for others to follow for the holistic revitalization of cities. Design processes, technical considerations, and unique landscape elements of several completed nature parks will be shared.

Keywords

*multiple-benefit, parks, stormwater-management*

Lead author /  
Session organizer

**Brian Baldauf**

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Additional  
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## The Indigenous Cultural Landscape Approach in the Chesapeake Bay Watershed: Update and Next Steps

What will I get out of this?

*Learn how the Indigenous Cultural Landscape concept has been applied in the Chesapeake Bay watershed and what might be in store for the future.*

Abstract

This moderated panel discussion will provide an update on the Indigenous Cultural Landscape approach to the development and planning of the Captain John Smith Chesapeake National Historic Trail, managed by the National Park Service's Chesapeake Bay Office. The Indigenous Cultural Landscape views large landscapes from the perspective of American Indian nations at the time of their first contact with Europeans. Such landscapes comprise the cultural and natural resources and relationships that would have supported the historic lifestyles and settlement patterns of Native groups in their totality. The concept presents the indigenous view of one's homeland on a regional rather than site based scale. The panel will discuss these ideas, the challenges of implementation on the ground, and how the idea might be coordinated with other traditional ideas of cultural landscapes. Audience questions and discussion will be welcomed.

Keywords

*indigenous, cultural, landscapes*

Lead author /  
Session organizer

**Brenda Barrett**

Additional  
authors / organizers

Brenda Barrett, Editor, Living Landscape Observer

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**Moderator**

Brenda Barrett, Editor, Living Landscape Observer

**Applying the Indigenous Cultural Landscape Approach in the Nanjemoy Peninsula of Maryland**

Dr. Julia A. King, Associate Professor, St. Mary's College of Maryland

**Thoughts on the Indigenous Cultural landscape and the National Register Landscape Initiative**

Barbara Wyatt, National Register Program, National Park Service





What will I get out of this?

*Learn about shared concerns between Parks and cities . Compare e.g. strategies used in Downtown Eastside Vancouver with Parks Canada and Aboriginal parks co-management.*

Abstract

This paper seeks to establish dialogue between those concerned with Parks and their futures and those working to make cities more liveable and sustainable. Urban cultural policy of the last twenty years incorporates environmental concerns such as urban greenspace, the cultural, public health, and civic value of parks, walkable neighbourhoods and amenities such as community gardens. Parks advocates debate tourism, heritage and resource extraction versus pristine environments. But the presence of these parallel concerns in parks and cities is not generally acknowledged. Both Parks and towns and cities face the pressures of resource extraction and industry, transportation corridors, residential development and gentrification, land claims including those of First Nations, tourism, and more. With examples from the Downtown Eastside of Vancouver, new BC Parks use policy, and issues in Canada's national parks, this paper will suggest the potential for knowledge exchange between Parks and cities and those advocating for them.

Keywords

*Parks, Cities, similarities*

Lead author /  
Session organizer

**Alison Beale** Professor

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What will I get out of this?

*The presentation provides insight into restoration of a national recognized icon that is both a natural and cultural resource.*

Abstract

The Yosemite Grant of 1864 protected the Yosemite Valley and the Mariposa “Big Tree Grove” for future generations. This enabling legislation is considered by many to signal the birth of the conservation movement. A hundred years later, the trees of the giant sequoia grove “that started it all” continue to awe visitors with their immense and serene presence. In these hundred years, the grove has also accumulated a clutter of human impacts that detracts from visitor experience and possibly compromises the grove’s future vigor. A centennial restoration project is underway that focuses on reducing human infrastructure and restoring natural water flow in order to enhance the resilience of this grove in an increasingly dry future. This project improves both the health of the grove and visitor experience. This paper provides insight into restoration of a national recognized icon that is both a natural and cultural resource.

Keywords

*Yosemite, sequoias, restoration*

Lead author /  
Session organizer

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What will I get out of this?

*This paper will provide information on a new program that will implement sea level monitoring instruments to parks identified as vulnerable to sea level rise.*

Abstract

This paper will discuss examples of how issues of sea level rise, coastal change, and lake level variation in our NPS coastal and Great Lakes units can be addressed. A new program is currently being developed in the Water Resource Division's Ocean and Coastal Resources Branch of the National Park Service to supplement on-going sea level work throughout the Service. This program will provide technical assistance to parks that are particularly vulnerable to sea level rise and shoreline change. It will utilize geodetic survey data such as GPS, Airborne LIDAR, and Terrestrial LIDAR to develop highly accurate digital elevation models of changing coastal park shorelines. A sea level monitoring program is also being coordinated nationally. This program will propose installation of a series of both temporary and permanent tide gauge stations in critically vulnerable and identified coastal parks, with plans to integrate with NOAA's National Water Level Observation Network.

Keywords

*sea, monitoring, coastal*

Lead author /  
Session organizer

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Additional  
authors / organizers

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## Enjoy the View by Daylight and Starlight

What will I get out of this?

*This session explores protection of iconic scenic vistas and premier night sky viewing opportunities through cross-boundary collaboration and policies that reduce haze and light pollution.*

Abstract

In many national parks and monuments, visitors anticipate clear views of iconic landscape features as well as spectacular stargazing opportunities at night. However, these scenic resources are often diminished by air and light pollution, much of which originates outside park boundaries. This session explores regional collaboration and national regulations that protect daytime and nighttime visual resources, and gives examples of park policies that reduce light pollution on a local scale. The first step in protection is understanding the resources at risk, so we also discuss scenic vista evaluation, anthropogenic light assessment, and long-term monitoring of the aerosols which impair visibility. Two NPS Calls to Action are highlighted: Enjoy the View, aimed at protecting clean air and treasured views through resource assessment and cooperative conservation; and Starry, Starry Night, which established the Colorado Plateau Dark Sky Cooperative in collaboration with other federal agencies, partners, and local communities.

Keywords

**Visibility, Night-Sky, Collaboration**

Lead author /  
Session organizer

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Melanie Peters, Natural Resource Specialist, NPS Air Resources Division

### Identifying important scenic views – where they are and why they are important

Mark Meyer, Visual Resource Specialist, NPS Air Resources Division

### Protecting natural lightscapes in park developed zones with fully sustainable outdoor lighting management

Laura Williams, Night Skies Inventory Coordinator, Grand Canyon National Park

### Clearing the Haze: Forty years of research and policy to improve daytime and nighttime visibility

Bret Schichtel, Physical Scientist, NPS Air Resources Division

### Landscape-scale viewshed conservation

Laura Rotegard, Superintendent, Horace Albright Training Center

### A Cosmic Odyssey: Creating a New Approach to Sky Designations

Eathan McIntyre, Physical Scientist, Grand Canyon-Parashant National Monument

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# Night sky-friendly outdoor lighting in the land of the midnight sun

What will I get out of this?

*This poster illustrates universal design principles for night sky-friendly outdoor lighting, as applied in a recent retrofit project in Denali National Park.*

Abstract

As dark night skies become more difficult to find in urban and suburban environments, many people seek stargazing opportunities in their national parks. Unfortunately, parks are increasingly affected by light pollution from external and internal sources. Lighting technology continues to advance rapidly, providing an overwhelming array of outdoor lighting choices, and not all options are equally night sky-friendly. Denali National Park managers are retrofitting outdoor light fixtures in developed areas of the park that are accessible during wintertime, when the midnight sun gives way to long, dark, aurora-filled nights. While design choices factor in several local considerations, there are a few universal outdoor lighting design principles that apply to every situation where outdoor lighting is being considered. Equally as important as full-cutoff shielding, safe, energy-efficient outdoor lighting should be yellowish rather than bluish, not overly bright, only illuminated when needed, and should not spill over into unintended areas.

Keywords

**Night Sky, Outdoor-Lighting**

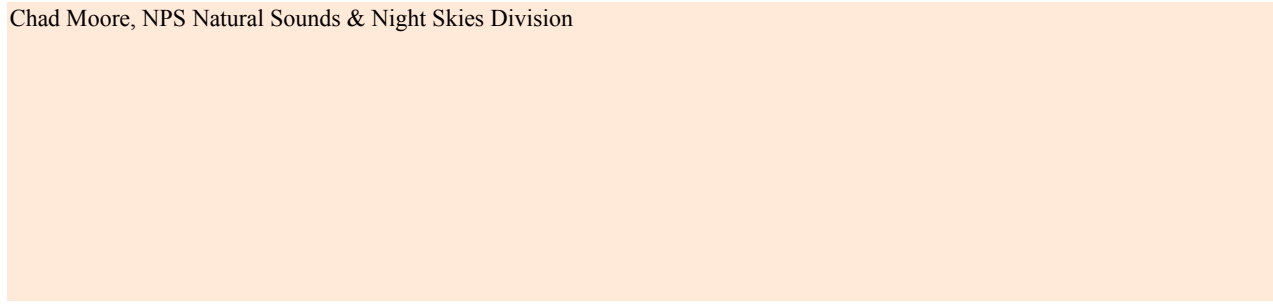
Lead author /  
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Additional  
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Chad Moore, NPS Natural Sounds & Night Skies Division



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**Ride Respectfully: using motorcycle outreach to protect natural sounds in national parks**

What will I get out of this?

*The issue of motorcycle noise in parks is an ongoing issue across all units. This session describes a proactive approach to resource protection through outreach.*

Abstract

Together, the predominantly quiet background sound levels in national parks and the unique properties of motorcycle noise present a difficult challenge for park management and resource protection. Over the past decade, complaints about motorcycle noise in parks have increased considerably. Often, the noise generated by motorcycles can be heard more than 10 miles from a road, so even a single vehicle can be significant. To address the issue of motorized recreation in parks, the Natural Sounds and Night Skies Division has initiated an outreach campaign reminding motorcyclists to “Ride Respectfully.” Over the past two years, the Ride Respectfully campaign has been showcased in four parks, including Rocky Mountain National Park, Crater Lake National Park, Glacier National Park, and Devils Tower National Monument. Presentations at this session will discuss the background of the motorcycle noise issue, principles of this outreach campaign, technological solutions developed specifically for the project, and lessons learned.

Keywords

**Noise, motorcycle, resource**

Lead author /

**Emma Brown** Acoustical Resource Specialist

Session organizer

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Additional authors / organizers

Lochen Wood  
Christopher Garsha  
Scott McFarland  
Frank Turina**Program Mgr, Policy Planning and Compliance, NSNSD/ Introduction to motorcycle outreach project**

Frank Turina

If this is a session of Invited Speakers or a Panel Discussion, additional speakers/panelists and titles of their presentations are given here

**Environmental Protection Specialist/ Outreach implementation**

Lochen Wood

**Acoustical Technician/ Engineering solutions**

Christopher Garsha or Scott McFarland

**Chief of Resource Management, Devils Tower NM/ Park perspective**

Renee Ohms

**Acoustical Resource Specialist/ Lessons learned and next steps**

Emma Brown



Where am I going and how do I get there? Honest conversations about conservation careers

What will I get out of this?

*Student attendees will hear honest advice on how to find federal, academic, and non-profit jobs related to parks and protected areas, environmental studies/science, etc.*

Abstract

This session is an opportunity for graduate students to hear about different conservation careers, such as jobs with the National Park Service, other land management agencies, non-profit organizations, universities, and colleges. Representatives from each of these fields will give students honest advice about finding and securing these different types of jobs. Students will learn some of the pros and cons of working in these different sectors, have opportunities to ask career specialists questions in an informal setting, and have opportunities to network with potential future employers. Students will leave the session more knowledgeable about different conservation career paths, with new strategies for being more competitive in their respective job markets and new connections with representatives for future mentoring. The session will consist of short presentations and roundtable discussions. After the session, representatives and students will be invited to continue their conversations at a nearby restaurant.

Keywords

Lead author /  
Session organizer

**Matthew Browning** Graduate Student Representative to GWS Board

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Additional  
authors / organizers

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What will I get out of this?

*Audience members will leave with deeper understandings of the ethical, political, economic, methodological, and practical issues associated with advanced technology applications for visitor use management.*

Abstract

Using advanced technology for visitor use management is burgeoning. Researchers and managers now use a) GPS tracking, b) unmanned aerial video (drones), c) time-lapsed photography, and d) blue-tooth phone applications to evaluate visitor travel patterns, congestion, human-wildlife interactions, ecological-recreation impacts, timing of use, and infrastructure capacity. Although managers use this information for defensible decisions, visitors may desire solitude, technology absent experiences, and freedom without others observing. The appropriateness of advanced technology for visitor management is influenced by space, time, agency type, political environment, resources, and visitor characteristics. Alarming, there is a lack of formal and documented discourse about these considerations, which this panel will address. The panel is intentionally balanced with agency personnel, wilderness purists, technology centrists, and technology advocates, all familiar with the applications and issues. Each panel member will provide a brief position statement and then engage in a thoughtful debate addressing questions from the moderator and audience.

Keywords

**visitor use management**

Lead author /  
Session organizer

**Matthew Brownlee** Professor

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Additional  
authors / organizers

I used this space to include Panelist #6. However, panelist #6 is not a co-organizer.

Invited speaker/Panelist #6: Dan Dustin

Title of invited speaker/panelist #6's presentation: Protecting wilderness values from the onslaught of advancing research technology

**Benefits and impacts of technology development and application in protected area planning, management, and**

Tom Fish

**Out of focus: Complexities of visitor use monitoring with technology**

Alan Watson

**Striking a balance between being a late adopter of technology and an obsolete laggard**

Jeff Hallo

**A pragmatic perspective on technology use for social science research in parks**

Nathan Reigner

**Elegant simplicity: Technologies untrammeling protected natural areas**

Logan Park

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Seed collection as the basis of restoration strategy

What will I get out of this?

*Systematic seed collection approaches that broadly sample genetic diversity are critical for effective park restoration strategies.*

Abstract

The collection of native seed supporting restoration efforts is of increasing importance as numerous ecological stressors impact protected areas. The Southeast Arizona Group, in cooperation with the Sonoran Desert Network and the Southwest Exotic Plant Management Team, initiated a systematic effort to collect seed on three NPS units in Southeastern Arizona. This project report examines the effort to systematically sample plant genetic resources found in these three park units. The findings include considerations in developing seed collection protocols and sampling techniques, issues surrounding NPS participation in other national seed collection efforts, and the need to develop collaborations across agency and other land management boundaries. Conservation of park genetic resources is of critical importance in the era of climate change and being able to collect seed in the broadest possible manner allows managers the best range of options to conserve and restore park plant resources for future generations.

Keywords

*Restoration, seed collection*

Lead author /  
Session organizer

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Jason Meteljak, Chief of Resources, Southeast Arizona Parks

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## Re- Envisioning the Application of the National Environmental Policy Act (NEPA) within Land Management Agencies

What will I get out of this?

*This session challenges members to re-evaluate their own perceptions of NEPA by examining both successful and unsuccessful methods for implementing NEPA requirements in protected areas*

Abstract

Land management agencies, particularly those in western states, often face strict scrutiny and aggressive legal challenges when implementing requirements associated with the NEPA process. This Challenge Session will seek to evaluate the effectiveness of new solutions being implemented by agency leaders who are tasked with fulfilling the laws statutory and public perception requirements. We will investigate what is working and what isn't and discuss new, innovative and proactive solutions towards meeting our responsibilities as public stewards while avoiding excessive litigation or negative public perception. Participants interested in this controversial conversation are encouraged to bring examples of their own problem solving resulting in successful resolution and ideas for garnering broader support, both internal and external, for realizing the goals of the NEPA process. This facilitated discussion will include participants from federal agencies, academia, and private industry.

Keywords

**NEPA, legal requirements**

Lead author /  
Session organizer

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authors / organizers

Ken Cline, College of the Atlantic, Professor, Environmental Law and Policy

Tom Flanagan, Environmental Quality Division, NPS Natural Resource Stewardship and Science

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Dave Jacob, NEPA Technical Specialist, NPS Natural Resource Stewardship and Science









What will I get out of this?

*This paper describes several studies that have been done to better understand braided stream systems and the effects of these changing systems on park infrastructure.*

Abstract

The dynamics of braided streams in many of Alaska's National Parks have widespread effects on park infrastructure, including flooding, erosion, and the distribution of aggregate materials. Streamflow in these systems is difficult to measure and understanding the forces driving channel migration, aggradation, and erosion is complex. Shifting climate, glacial ice loss, and isostatic rebound further complicate the long-term story of change. Parks have undertaken a wide range of studies to increase our understanding of these systems ranging from detailed geomorphic studies involving repeat LIDAR measurements to using timelapse photography to measure fluctuations in streamflow. These studies have broader applications to other parks and in other areas where the dynamics of braided stream systems are important.

Keywords

*geomorphology, braided-streams, infrastructure*

Lead author /  
Session organizer

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authors / organizers

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What will I get out of this?

*Abandoned mineral development sites exist in 133 parks. Aside from natural resource damage and safety issues, these sites are valuable cultural resources and wildlife refuges.*

Abstract

Mining and other mineral resource development have occurred in many areas throughout the United States that are now units of the National Park System. Many have serious safety issues and resource impacts. Commodities extracted include precious and base metals such as gold, silver, platinum, lead, copper, and zinc; industrial minerals such as clays, limestone, borates, and talc; energy commodities including uranium, coal, oil, and gas; building stone; and aggregate materials such as sand and gravel. NPS conducted a Systemwide inventory and assessment of its AML sites from 2010 through 2013, identifying 37,050 AML features in 133 NPS units. The majority of features (81%) are located in the Pacific West Region’s southern California desert parks, but all seven NPS regions have AML features. Of the 37,050 features inventoried, 3,814 (10.3%) in 76 NPS units are in need of remedial action at a cost of \$141 million over 12 years.

Keywords

*mine, AML, restoration*

Lead author /  
Session organizer

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authors / organizers

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## Partnership case studies at parks and protected areas from an international perspective

What will I get out of this?

*Discussion will be valuable as we discuss various types of partnerships used in several international settings, including cooperatives, NGOs, governmental, and sponsorships.*

Abstract

Partnerships are now a common method of sustaining parks and protected areas worldwide. Partnership, however, can be multi-faceted and complex, and can vary greatly in parks and protected areas around the world. This discussion will delve into the various methods of partnering through the use of five case studies from around the world. The audience will have the opportunity to learn about successful partnerships from the five invited speakers. In turn, audience members will have the opportunity to discuss partnership efforts that have worked (and not worked) for them. The case studies include developed outdoor recreation areas (Vienna, Austria; Vietnam) as well as rural settings (Amazonian Brazil, northeastern Brazil) and a unique perspective on partnering from an NGO (Germany). Outcomes will be understanding best practices and benchmarking of partnership methodologies, as well as an understanding of the role in partnerships in developing sustainable park and protected areas.

Keywords

*partnerships, management*

Lead author /  
Session organizer

**Robert C. Burns** Associate Professor

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authors / organizers

**New solutions for an urban national park under use pressure: A stakeholder-driven planning approach (Austria)**

Arne Arnberger, Associate Professor, BOKU - University of Natural Resources and Life Sciences, Vienna

**Engaging corporate businesses in protected area management and conservation projects (Germany)**

Eick von Ruschkowski; Department Head for Nature Conservation and Environmental Policy, Nature and Biodiversity

**Fernando de Noronha National Marine Park): A Variety of Partnerships (Brazil)**

Jasmine Cardozo Moreira, Chefe do Departamento de Turismo, Universidade Estadual de Ponta Grossa, Ponta Grossa - Paraná -

**NPS International Partnering and Collaboration (Vietnam) (working title)**

Thomas E. Fish, National Coordinator, Cooperative Ecosystem Studies Units Network, U.S. Department of the Interior, Main

**Developing a Cooperative Partnership on the Tapajos National Forest (Brazil)**

Robert C. Burns, Recreation, Parks and Tourism Program West Virginia University, 6125 Percival Hall, West Virginia University,

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What will I get out of this?

*Presenting a novel approach to share soundscape information from specific areas of the parks.*

Abstract

National Parks provide an acoustic environment rich with natural sounds. Visitors to these areas can experience an expansive awakening to and perception of a complex and variable natural soundscape. Long-term acoustical recordings document the spatial and temporal qualities of this complex environment. Demonstrating these soundscapes has been primarily confined to short recordings of particular species vocalizations. In an effort to expand the interpretation of park soundscapes and engage potential visitors, an interactive web-based acoustic mapping project is under development at Grand Teton and Yellowstone national parks. Hundreds of thousands of hours of continuous recordings have been collected from many of locations. Several minute-long illustrative recordings from these sites along with photographs, and sound level and sound source summaries provide an enjoyable and informative experience, but also provide potential visitors the ability to choose areas of the park to explore further based on expected sounds of those areas.

Keywords

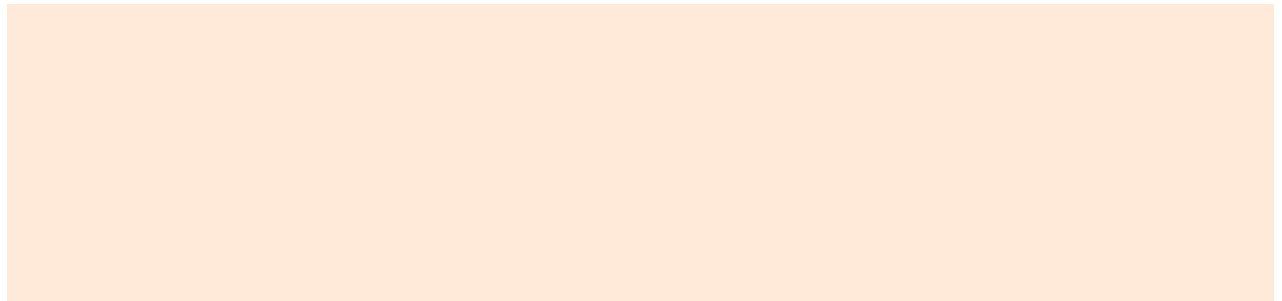
*Soundscapes, mapping, recordings*

Lead author /  
Session organizer

**Shan Burson** Bioacoustic Ecologist

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authors / organizers



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What will I get out of this?

*A Model for Successful Sister Park Collaboration*

Abstract

White Sands National Monument and Area de Protección de Flora y Fauna Cuatrociénegas (Mexico) were designated as “sister parks” in 2006. Since that time, there have been remarkable achievements in the development of this young partnership. Specifically, (U.S.) project to inventory endemic species has been completed, a shared groundwater study has been initiated, a wetland inventory and study is planned to start in the near future, a Cuatrociénegas employee was detailed to White Sands, vital sign monitoring protocols have been shared, and interpretive and educational material have been developed and exchanged. Additional future collaborative activities are also planned. This presentation will review the accomplishments of the sister park partnership and the strategies used to insure that this partnership provides tangible benefits to both protected areas, which may be applied to other sister park partnerships.

Keywords

*Gypsum, Water, Sisters*

Lead author /  
Session organizer

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authors / organizers

Juan Carlos Ibarra Flores, Protection Area Wildlife Cuatrociénegas, Cuatro Cienegas, Coahuila, Mexico

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## Catalyzing Innovation in the Parks

What will I get out of this?

*This session delivers specific tools, strategies, and lessons learned in the quest to catalyze visionary innovation initiatives for park planning, management, and design.*

Abstract

America's parks are constantly changing. And yet too often their tools for facing today's challenges—shifting demographics, climate change, new technologies, and economic constraints—remain rooted in the past. This session explores the power of innovation processes to catalyze fresh ideas for twenty-first century parks. Innovation instruments such as competitions, design challenges, and other initiatives ask bold questions that bring new perspectives and creative energy to rethinking parks' role as cultural destinations, the experiences of their visitors, and the sustainability of their infrastructure. This session shows how innovation tools can infuse park design and management with contemporary ideas and practices; rethink research agendas; encourage multidisciplinary collaboration; and forge new partnerships with agencies, community groups, nonprofits, and universities. Case studies including the Parks for the People competition (2012), National Parks Now (2014), and Designing the Parks offer lessons learned for park planners, designers, and managers in search of innovation and inspiration.

Keywords

*innovation, design, transformation*

Lead author /  
Session organizer

**Jeff Byles** Partnership Director

Being Here Landscape Architecture & Environmental Design [jeff@beingheredesign.com](mailto:jeff@beingheredesign.com)

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authors / organizers

#### So What Is Public Realm Innovation, Anyway?

Jeff Byles, Session Organizer

#### Title TBA

Shaun Eyring, Chief, Resource Planning and Compliance, Northeast Region, NPS

#### Parks for All Forever: Engaging the Community in Park Planning and Design

Catherine Barner, Vice President, Projects and Stewardship, Golden Gate National Parks Conservancy

#### Adapting With Success: New Ideas for Crissy Field and The Presidio

Kevin Conger, Principal, CMG Landscape Architecture

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## Visitor Use Management Planning

What will I get out of this?

*In Visitor Use Management, interagency collaborations critically inform quality planning efforts; this session will discuss successful collaborations in planning with social sciences and commercial services.*

Abstract

Federal land managers strive to provide maximum opportunities and benefits from public use and access, while at the same time ensuring that natural and cultural resources are protected. To meet this need, an Interagency Visitor Use Management Council was chartered by the NPS, USFS, BLM, USFWS, USACE, and NOAA. This session will include an update on the council's activities, and how that work is influencing NPS's current approach to visitor use management planning. We'll also discuss a recently initiated visitor use management plan at Delaware Water Gap NRA to highlight the NPS's current approach. Additionally, this session includes an overview on data needs for visitor use management, and new initiatives by the NPS Social Science Program to support those needs. Finally, with participation from the Park Planning and Special Studies Program, speakers will also discuss how visitor use management planning and commercial services are interrelated.

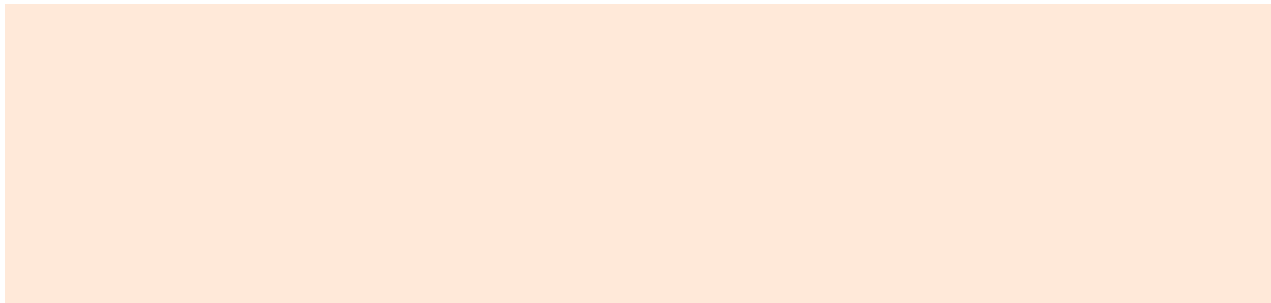
Keywords

**NPS, Visitor-Use, Planning**

Lead author /  
Session organizer

**Kerri Cahill** Visitor Use Management Team Lead  
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**Updates from the Interagency Visitor Use Management Council**  
Kerri Cahill

**Visitor Use Management Planning in Action: Delaware Water Gap NRA**  
Rachel Collins

**Data Needs for Visitor Use Management: New Initiatives**  
Bret Meldrum

**Integrating Visitor Use Management and Commercial Services Planning**  
Jennifer Stein

**Integrating Visitor Use Management and Commercial Services Planning**  
Wendy Berhman

**A Preliminary Spatial Analysis of Archaeological Sites in Isle Royale National Park**

What will I get out of this?

*Audience will learn about a predictive model for archaeological sites at Isle Royale National Park. Project enhances management efforts and highlights value of archaeological resources.*

Abstract

Isle Royale National Park (ISRO), located in Lake Superior off the coast of Michigan's Keweenaw Peninsula, is well-known as a National Wilderness Area and for its long-term environmental studies of wolf and moose populations. Lesser-known but important resources include the historic and prehistoric archaeology of the island, including habitation and copper mining sites associated with the Woodland and Archaic periods. Management of these sites is challenging, due to the time-intensity of traditional archaeological survey, the difficult terrain of the island, and lack of adequate resources and staffing. This poster demonstrates preliminary information relating to efforts to build and test a GIS predictive model for locating, recording, and testing prehistoric archaeological sites within portions of Isle Royale National Park. Desired outcomes include supporting Park efforts to manage archaeological resources, finessing the use of predictive modeling for ISRO, and generating data that enhances an archaeological understanding of the island's prehistoric populations.

Keywords

*ISRO, Archaeology, GIS*

Lead author /  
Session organizer

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Additional  
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What will I get out of this?

*Participants will gain a better understanding of Parks Canada's portfolio of heritage places, its current challenges and upcoming opportunities.*

Abstract

The presentation will start with the story of the creation of Parks Canada's system of National Historic Sites. A few examples of national historic sites will be illustrated including Quebec Fortifications, Carleton Martello Tower, Bellevue House, Grosse-Ile and the Iris Memorial and Saoyu-Ehdacho. The presentation will also discuss Parks Canada's challenge to maintain its built heritage assets in good condition and how this lead to a thorough review of its asset portfolio. A recent announcement made by Canada's Prime Minister Stephen Harper to support infrastructure improvements to heritage, tourism, waterway and highway assets located within national historic sites, national parks, and national marine conservation areas across Canada will inject money into Parks Canada's system of heritage places. The presentation will end with the illustration of some of the projects to be undertaken in the five years to come.

Keywords

***Parks Canada, historic***

Lead author /  
Session organizer

**Genevieve Charrois** Director, Heritage Conservation

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authors / organizers

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What will I get out of this?

*Audience will learn about specific digital preservation technologies and how CyArk's project facilitated Park and community engagement, techniques that may benefit sites across the US.*

Abstract

This paper discusses the multifaceted 4-year initiative to document three Japanese American Confinement Sites across the western United States: Manzanar, Topaz, and Tule Lake. Supported by the Japanese American Confinement Sites Grant Program of the National Park Service, Oakland-based nonprofit CyArk created 3D digital reconstructions of these three sites to better facilitate the education, dissemination, and broader discussion of the incarceration of over 120,000 Japanese Americans during World War II. The minimal physical remains at these sites today lends towards difficulties in site preservation and remembrance. CyArk and the involved parks jointly dedicated the project to providing the public with an easily accessible reconstruction of these sites to stir education and reflection about this turbulent time in history. This paper will discuss the multiple relationships involved in completing this project, from government entities to the local community, to curate a virtual 3D experience that succinctly communicates these sites of travesty.

Keywords

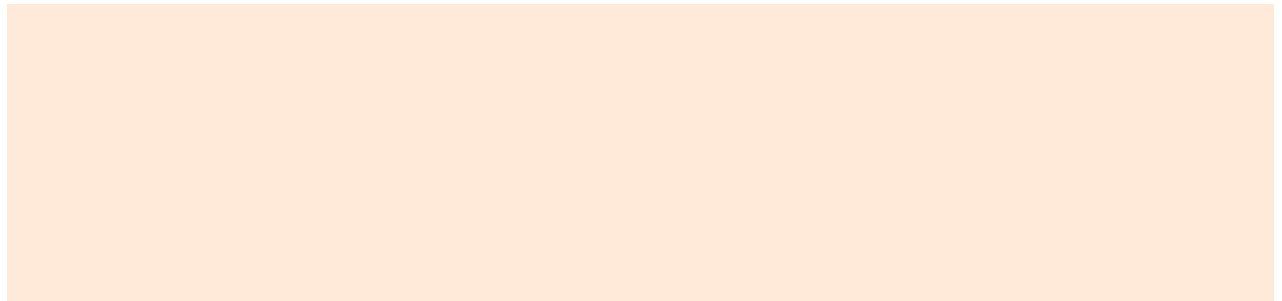
**3D, Digital, Education**

Lead author /  
Session organizer

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What will I get out of this?

*The National Park Service will present an revised framework for developing Resource Stewardship Strategies for all parks that is based on a park's foundation document.*

Abstract

Resource managers need a tool to link long-range conceptual planning with implementation and everyday management decisions for achieving a park's desired natural and cultural resource conditions. To meet this need, the National Park Service has been continuing its development of a Resource Stewardship Strategy (RSS) framework that is based on a park's foundation document. RSSs establish science- and scholarship-based methods to determine measurable targets for successful resource management. They include a comprehensive strategic plan for achieving and maintaining those targets over time. The session will begin with an overview of the RSS program followed by a discussion of recent changes to the RSS format and lessons learned from past efforts. Panelists will share their vision for future RSSs as well as experiences using RSSs, their processes, funding and personnel decisions, and challenges and successes. A facilitated Q&A period will close the session to stimulate ideas for program enhancement.

Keywords

**Resources, Stewardship, Strategy**

Lead author /  
Session organizer

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**Chief of Planning - NPS Park Planning and Special Studies / Introduction to RSSs**

Patrick Gregerson

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**RSSs at parks - Lessons Learned**

Superintendent from a park with a recently completed RSS

**RSSs at parks - Lessons Learned**

Chief of Resources at a park with a recently completed RSS

**Natural resource stewardship and RSSs**

Representative from the Natural Resource Stewardship and Science program

**Cultural resource stewardship and RSSs**

Representative from a regional cultural resources program





When rangers meet Alarmed Alice and Dismissive Dan: Advancing climate change communications in NPS

What will I get out of this?

*Learn how localized climate impacts in parks can be communicated for a diversity of audience types, ranging from climate advocates to skeptics.*

Abstract

NPS National Capital Region has partnered with George Mason University's Climate Change Communication Center to develop educational tools to aid rangers in meeting NPS climate change communication expectations for engaging diverse audience types. This project has applied the Global Warming's Six Americas classifications to communicate localized climate impacts in an innovative ranger guidebook, which was distributed in the fall of 2014 . Pre- and post-guidebook distribution data on rangers' climate change beliefs and communication practices allow this dynamic document to be improved and evaluated for effectiveness. This paper will describe our approach in applying social science research that is statistically representative of the American population to interpretive materials, and the results of our pre-distribution survey. We will demonstrate how we have designed the guidebook include information about each of the major NPS bioregions and tailored messages for specific beliefs, attitudes, and motivations about climate change.

Keywords

*climate, communication, NPS*

Lead author /  
Session organizer

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Jenell Walsh-Thomas, PhD student, George Mason University's Center for Climate Change Communication

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Will a hot California affect breeding northern elephant seal females and pups?

What will I get out of this?

*Audience members will learn about a newly identified potential effect of climate change on elephant seals and how thermographic cameras can be used with wildlife.*

Abstract

Pinnipeds may come onshore for extended periods of time during the breeding season and many species retreat to the water if exposed to high ambient temperature. However, the natural behavior of adult female northern elephant seals with lactating pups is to avoid the water during this sensitive time. As California's air temperature is predicted to increase due to climate change, female elephant seals may need to adapt or suffer from hyperthermia. A colony in Point Reyes National Seashore displays this previously undescribed behavior of retreating to the water at high ambient temperatures. We used a thermographic camera to measure skin temperature of adult females and pups and investigated the seals' different thermoregulatory properties and behaviors at different stages of lactation. Environmental variables, such as ambient temperature and solar radiation, were analyzed for their effect on skin temperature. Results will inform park managers on potential elephant seal conservation actions.

Keywords

*Climate change, conservation*

Lead author /  
Session organizer

**Sarah Codde** Pinniped Biological Technician  
Point Reyes National Seashore sarah\_codde@nps.gov

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Dr. Dan Crocker, Sonoma State University.  
Dr. Sarah Allen, National Park Service.

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## Achieving Effective Stewardship by Making the Shift from Traditional to Collaborative Education Program Development

What will I get out of this?

*This session challenges participants to rethink traditional NPS approaches to resource education by exploring place-based service learning, co-created with teachers to achieve common goals.*

Abstract

Across the country, teachers and schools are being challenged by a rapidly shifting educational context that asks them to design learning opportunities focused on 21st century skills, including critical thinking, problem solving, and scientific and civic literacy. Meanwhile, the NPS strategic vision Achieving Relevance in Our 21st Century asks the service to “accept and fully embrace our role of critical contributor to America’s educational ecosystem...”. This session will bring participants to the intersection of these two arenas, demonstrating the strong potential of co-created place-based service learning opportunities to address common NPS and school goals, grounded in the experience of ten urban and rural parks within the Northeast Region. This session will share the promising practices of place-based service learning and challenge participants to dive into an exploration of the potential application of this approach to meeting contemporary NPS resource conservation and educational objectives in their park and program areas.

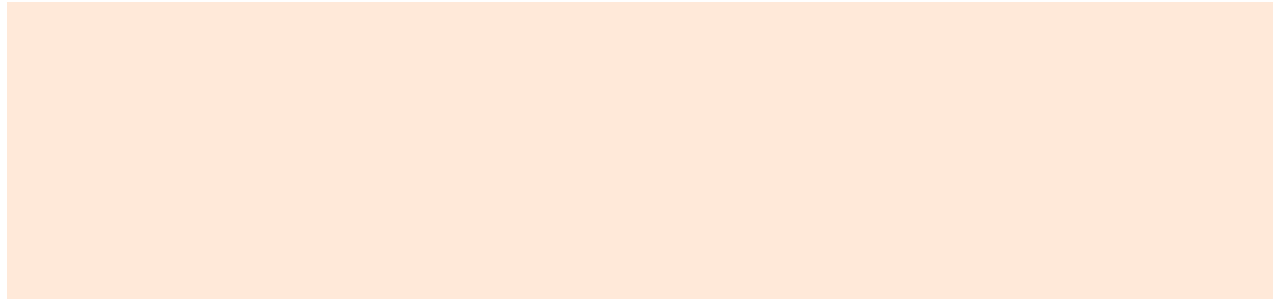
Keywords

*sharing-authority, co-creating, education*

Lead author /  
Session organizer

**Cris Constantine** Education Program Manager  
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**Principal, Confluence; Park for Every Classroom Partner and Place-based Service Learning Content Expert**  
Delia Clark

**Park for Every Classroom Coordinator: Salem Maritime NHP; partner, Essex National Heritage Area**  
Maryann Zujewski

**Northeast Region Education Program Manager, Park for Every Classroom Regional Program Coordinator**  
Cris Constantine

What will I get out of this?

*Predator management on National Preserves: When does active game management take the 'natural' out of 'naturally-functioning ecosystem?'*

Abstract

In enacting the Alaska National Interest Lands Conservation Act (ANILCA) in 1980, Congress' stated purpose was to establish nationally significant areas to preserve them "for the benefit, use, education, and inspiration of present and future generations." While the congressional designation of "National Preserves" in Alaska specifically allows for sport hunting; the taking of wildlife for sport purposes in National Preserves is generally regulated by the State. With the passage of Alaska's 1994 'Intensive Management' Statute; State and federal management objectives appear to diverge. In September of 2014, the Alaska Region of the National Park Service proposed to amend regulations for sport hunting and trapping in National Preserves. Under this proposal, State laws or regulations that authorize hunting or trapping activities or management actions involving predator reduction efforts, with the intent or potential to alter natural predator-prey dynamics to increase hunter success; would not be adopted.

Keywords

*wildlife, predator, Alaska*

Lead author /  
Session organizer

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What will I get out of this?

*Biodiversity Discovery is an adaptable approach to addresses biological conservation objectives while inspiring an appreciation for national parks and the natural world among public audiences.*

Abstract

Increasing global threats such as climate change, invasive species, and loss of habitat, have made national parks critical reserves of biodiversity. However, the majority of species in parks—primarily invertebrates, non-vascular plants, fungi, and microorganisms—remain undiscovered. Simultaneously, decreasing relevancy of national parks and the disconnection of youth from nature threaten the foundation of the NPS. Biodiversity Discovery provides an opportunity to improve both situations; an opportunity to address biological conservation objectives while inspiring an appreciation for national parks and the natural world among youth and public audiences. Biodiversity Discovery is a cooperative effort where scientists join with students or other public volunteers to conduct science-based biological inventories. Examples from across the service, demonstrate the potential for biodiversity discovery to contribute to a wide-range of goals. The NPS Biodiversity Discovery Program provides guidance and resources to help parks coordinate, initiate, and execute Biodiversity Discovery events to meet unique park objectives.

Keywords

*Biodiversity, Relevancy, Inventory*

Lead author /  
Session organizer

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What will I get out of this?

*Participants will understand the vision and practice behind Parks Canada's evolving relationships with Aboriginal partners, including current and future tools on effective Aboriginal engagement.*

Abstract

Strong relationships with Aboriginal partners are essential to Parks Canada achieving its vision and mandate. Over the years, Parks Canada has had many opportunities to better understand "what works" when it comes to fostering long-lasting relationships based on long-term commitment, trust, and mutual respect, along with opportunities to learn from past mistakes. Today, the path forward will continue to foster partnerships and connections Aboriginal peoples have with traditionally-used lands, including; facilitating access for Aboriginal peoples to Parks Canada heritage places, encouraging traditional activities and the use and transfer of traditional knowledge, and continuing to foster strong relationships through formal agreements.

Keywords

**Aboriginal, Cooperative management**

Lead author /  
Session organizer

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Measuring social and economic effects of NPS lands: an overview of tools with example applications

What will I get out of this?

Attendees will gain an understanding of methods used to measure socioeconomic benefits through explanations, examples, and exposure to tools available to public lands managers.

Abstract

NPS lands and resources provide a wide range of socioeconomic benefits to both nearby communities and society as a whole, including job creation, unique recreational opportunities, and subsistence and tribal uses. There is an increasing need to identify and measure socioeconomic effects of public land management decisions and the public's use of public lands and resources. The USGS and NPS are collaboratively developing tools to address these needs. This presentation will explain methods used to measure economic effects and will provide the NPS Visitor Spending Effects analysis as an example of measuring economic activity generated in local economies, and an analysis of the economic value of carbon sequestered by national parks as an example of ecosystem service valuation. Attendees will be introduced to ASPN (Assessing Socioeconomic Planning Needs), a tool developed to help planners and managers identify key socioeconomic issues that can arise as a result of land management actions.

Keywords

socioeconomic, benefits, tools

Lead author /  
Session organizer

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Leslie Richardson - US Geological Survey

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What will I get out of this?

*A proven methodology for World Heritage managers to more effectively understand and use their 'Outstanding Universal Value' (OUV) for planning and management will be demonstrated.*

Abstract

The term 'Outstanding Universal Value' (OUV) provides the foundation for nominating a site as World Heritage, and all World Heritage properties are required to have a Statement of OUV (SoOUV). OUV is central to the way the World Heritage Committee assesses whether the values for a World Heritage property are maintained or lost, so OUV needs to remain the fundamental cornerstone for managing these sites. This session will outline a methodology for World Heritage managers to 'operationalize' their SoOUV to more effectively understand and use their OUV for planning and management. The approach helps to identify the key attributes of OUV, to assess the current status of those attributes and the key factors that are threatening them, enabling measurable actions to be developed to address those threats. The same methodology can similarly be applied to other non-OUV values within a World Heritage property or other protected area.

Keywords

Lead author /  
Session organizer

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**Invasives plant early detection and control following Yosemite's Rim Fire: Strategies for the landscape level**

What will I get out of this?

*Yosemite developed a successful toolset and strategy to implement post-fire invasive plant survey and treatments that are ready for implementation by other land managers.*

Abstract

Wildfire is an integral ecosystem process, but can also facilitate the introduction and spread of invasive plants; fire creates disturbance and suppression operations can act as invasive plant vectors. In response, Yosemite implements targeted early detection and rapid control of invasive plants post-fire. Areas with the highest probability of invasive plant occurrence are targeted based on previously known infestations, fire management operations, and habitat suitability. Past surveys honed techniques on fires smaller than 7,000 acres. We validated our methods on a landscape level after the 2013 Rim Fire burned 78,000 acres in the park. Demonstrated strategies are needed after fires to prevent invasive plant establishment. As the scale and severity of fires across the region are predicted to increase due to a changing climate and a resetting of the fire return interval, such early detection post-fire procedures will be increasingly vital.

Keywords

*Invasive-Plants, Fire, Yosemite*

Lead author /  
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What will I get out of this?

*Audience members will gain exposure to the challenges and conflicts associated with achieving sustainable development and conservation in the context of central Panama.*

Abstract

Despite global concerns about deforestation, we lack rigorous understanding of how deforestation affects and is affected by smallholder farmers. Given the perception of farming as a main cause of deforestation and biodiversity loss, NGOs and the Panamanian environmental authority are promoting agroforestry projects among farmer associations within the buffer zone of Santa Fe National Park. The research objectives of this study are: 1) Examine why farmers, NGOs, and government agencies participate in agroforestry projects; 2) Describe the relationship between agroforestry projects and farmer associations; 3) Document conservation and agroforestry practices of farmers on their farms. The research links micro-level natural resource management of smallholder farmers and livelihood strategies with macro-level projects and discourse about agroforestry. Methods include semi-structured interviews and participatory mapping. The research will show how farmer association members embrace, ignore, or otherwise respond to the messages of environmental NGOs, government, and other outside actors.

Keywords

*agroforestry, Panama*

Lead author /  
Session organizer

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# Starting a George Wright Society Student Chapter

What will I get out of this?

*This session will inform attendees about the first George Wright Society student chapter. It will also encourage the development of additional student chapters.*

Abstract

Students are an important subset of the George Wright Society. In order to encourage further involvement with the organization with the goal of long-term membership, the George Wright Society has established its first student chapter at Clemson University. The student chapter receives academic, networking and professional development benefits for its participation. The Clemson University student chapter has been incredibly successful in their inaugural year. The purpose of this session is to explain George Wright Society student chapters, share Clemson University's experiences thus far and encourage and recruit students to begin chapters at their respective universities. Additional goals will be to create a network of George Wright Society student chapters and devise ways to communicate and collaborate in the future.

Keywords

*students, student chapters*

Lead author /  
Session organizer

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Sources of invasive plant introductions in Yosemite: When 4 million visitors are not the problem

What will I get out of this?

*This presentation provides land managers information to target invasive plant surveys and prevention efforts. Managers will be inspired to assess potential vectors in their lands.*

Abstract

Invasive plants (invasives) are one of the biggest threats to Yosemite’s fabled biodiversity. Over four million visitors come to Yosemite annually and provide a tremendous vehicle for invasives introductions. To better understand and ultimately curb infestations, Yosemite implements integrated pest management to prevent, detect, and control invasives. Botanists completed a three year comprehensive surveyed for invasives. Surveys targeted areas based on the probability of occurrence by assessing habitat suitability and propagule pressure. We categorized infestations based on associated sources e.g. road, trail, construction site, horse, fire operations, campground, unknown, etc. Our results indicate infestations are most closely related to park operations (employee housing and facilities), stock use, roads, and concessionaire buildings. Besides stock use, few infestations were associated with visitor activities. As such, future survey and prevention efforts may be best targeted at park management operations as staff and operations appear to be the biggest culprits in introducing invasive plants.

Keywords

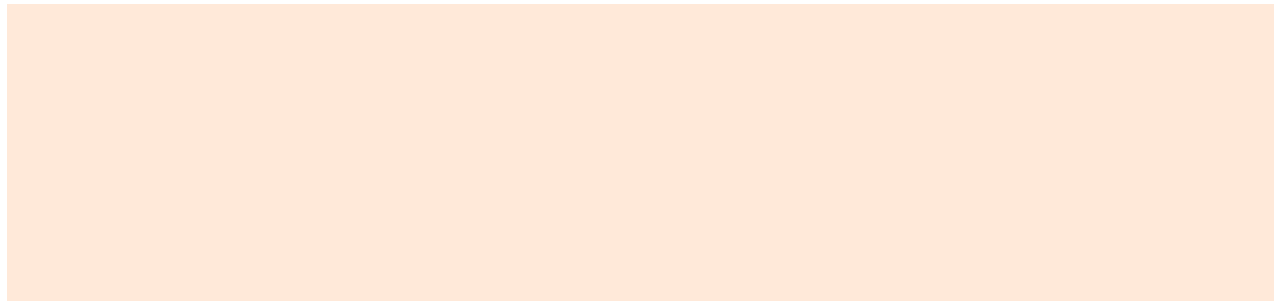
*Yosemite, weeds, prevention*

Lead author /  
Session organizer

**Garrett Dickman** Botanist

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**Interdicting Aquatic Invasive Species: Pathway definition, risk analysis, and risk prioritization**

What will I get out of this?

*Learn about the application of a national framework for aquatic invasion pathway ranking and prioritization process to a specific protected area.*

Abstract

In order to inform the response planning efforts for the quagga mussel invasion at Glen Canyon NRA, an interagency working group was formed in late 2013 to provide an objective evaluation of potential pathways and vectors of spread of dreissenid mussels and other AIS relevant to Lake Powell. This analysis is science-based and informed by collective knowledge and experience of regional aquatic invasive species managers and scientists who used the framework developed by the National Invasive Species Council and the Aquatic Nuisance Species Task Force: "Training and Implementation Guide for Pathway Definition, Risk Analysis, and Risk Prioritization". Fifteen pathways were eventually scored through a three-step process and additional refinements were made to analyze sub-categories of come and go boats. This poster presents the process and outcomes to rank and prioritize pathways at Glen Canyon NRA.

Keywords

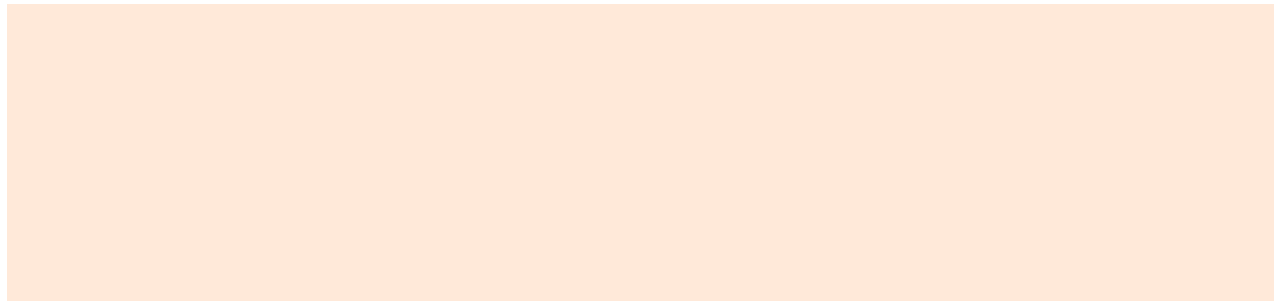
*aquatic invasive species*

Lead author /  
Session organizer

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What will I get out of this?

*I seek to examine how a park, initially developed to protect a single species, can continue to hold value to local residents.*

Abstract

Las Baulas National Marine Park in Costa Rica was established to protect nesting leatherback turtles. However, the current park model, closing off land and expecting wildlife and people to thrive, has created antagonism. Local residents have few opportunities to engage with park management and disregard park regulations. Moreover, the park's flagship species, the leatherback turtle, is now critically endangered. I seek to examine how a Park, initially developed to protect a single species, can continue to hold value to local residents. During December 2014 I will interview officials and local and foreign residents. I will utilize planning and policy theories to determine if additional value and community engagement can be found by proposing a new park philosophy, one that actively engages residents through co-management and citizen science opportunities, facilitates leatherback restoration, and underscores the value of the entire ecosystem. These data may define a collaborative future for people and wildlife.

Keywords

*co-managment, turtles, interviews*

Lead author /  
Session organizer

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## Five Qualities and Beyond: Integrating Wilderness Character in the National Park Service

What will I get out of this?

*The 1964 Wilderness Act mandates wilderness character preservation. Following the Act's 50th anniversary (2014), this session will demonstrate the contemporary, interdisciplinary relevance of wilderness character.*

Abstract

The National Park Service recently developed concepts, tools, and examples for integrating wilderness character into park planning, management, and monitoring - culminating in the 2014 release of two guidance documents: 1) User Guide to Integrating Wilderness Character into Park Planning, Management, and Monitoring; and 2) Wilderness Stewardship Plan Handbook. The User Guide provides managers with succinct guidance, templates, and examples about integrating wilderness character and streamlines compliance through a transparent decision-making framework consistent with NPS policy. The Handbook offers direction for wilderness stewardship plan development rooted in wilderness character preservation. Together, these products create the structure for park-to-park sharing of experiences, ideas, and best practices to reach wilderness stewardship goals as quickly and efficiently as possible. Panelists from different NPS parks and programs will highlight case studies where one or both documents were implemented. Dialogue with the audience to consider the importance/applicability of wilderness character and stewardship will follow.

Keywords

*wilderness character, stewardship*

Lead author /  
Session organizer

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**What is wilderness character? An exploration of law, policy, and practice**

Erin Drake, Communications and Outreach Specialist, NPS Wilderness Stewardship Division

**The NPS Wilderness Character User Guide and Stewardship Plan Handbook: An Overview**

Chris Holbeck, Natural Resource Program Manager, NPS Midwest Regional Office

**Integrating Wilderness Character into Park Planning, Management, and Monitoring: Case study #1**

Brenda Todd, Planner, NPS Denver Service Center

**Integrating Wilderness Character into Park Planning, Management, and Monitoring: Case study #2**

Christina Miller, Planner, Olympic NP

**What does this all mean? The future of wilderness character preservation in the NPS**

Tim Devine, Branch Chief for Training and Development, NPS Wilderness Stewardship Division

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Advancing NPS Biodiversity Discovery beyond the Call to Action: A Roundtable Discussion

What will I get out of this?

*Discover strategies and benefits of Biodiversity Discovery in the NPS; then evaluate and discuss innovative approaches for advancing biodiversity discovery beyond the "Call to Action".*

Abstract

"A Call to Action" launched a new vision for the second century of NPS stewardship. Biodiversity Discovery was identified as a way to inspire the next generation of stewards by engaging youth and citizen scientists in science-based biological inventories that contribute to NPS knowledge of park biodiversity. The NPS was challenged to conduct Biodiversity Discovery activities in at least 100 parks before 2016; as of July 2014, this goal has been met. Biodiversity Discovery has proved valuable in advancing the NPS mission. This workshop will summarize the strategies, styles, and benefits of Biodiversity Discovery through the "Call to Action." Participants will then be invited to discuss innovative approaches for advancing biodiversity discovery toward becoming a service-wide solution (and example) for tackling complex social and environmental issues of the future.

Keywords

*Biodiversity, Inventory, Relevancy*

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Session organizer

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## Climate Change Refugia as a Tool for Climate Adaptation

What will I get out of this?

*Managing for climate Refugia offers a potential climate adaptation strategy for transitions or long term efforts. What are the opportunities and challenges of implementation?*

Abstract

The concept of climate refugia has a long history in Quaternary Science, but now describes a strategic management approach for climate adaptation. Here refugia are areas buffered from contemporary climate change so as to increase persistence of valued physical, ecological, and cultural resources. Physical processes (such as cold air pooling) and conditions (cooler, moister and topographically complex) contribute to maintaining components refugia but may not be stable or persistent enough to support the biological community. Four Sierra Nevada case studies will be presented: The recovery program for endangered bighorn sheep constitutes a de facto network of long term refugia; American pika's thermal regimes on talus habitat provide potential localized refugial clusters; Cold air drainages containing Cascadian flora are examples of functioning refugia. Identification and objectives need to be developed to provide information for prescribed plans and wildfire strategies; and Devils Postpile manages Soda Springs as a meadow refugium amidst several challenges.

Keywords

*refugia adaptation management*

Lead author /  
Session organizer

**Deanna Dulen** Superintendent

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**Cold-air Pooling in the Mountains—What do we need to know?**

Michael Dettinger, Research Hydrologist, USGS

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**Refugia for Climate Adaptation: Examples from Sierra Nevada Bighorn Sheep and American Pika**

Constance Millar, Senior Scientist, Pacific Southwest Research Station USDA

**Cold Air Drainages as Climate Refugia for plants (and other less motile organisms)**

Alison Colwell, Botanist, Yosemite National Park

**Soda Springs Meadow as a climate change refugium: Management implications for visitor use and biological communities**

Monica Buhler, Ecologist and Resource Education Specialist, Devils Postpile National Monument







Changes in Landbird Distribution and Abundance related to Vegetation Changes at Channel Islands National Park

What will I get out of this?

*While learning about the status of Channel Islands NP landbirds, the viewers will learn how to evaluate landbird monitoring trends in relation to vegetation changes.*

Abstract

To discern recent breeding landbird trends related to vegetation change at Channel Islands NP (CHIS) for the Natural Resource Condition Assessment (NRCA), we evaluated a long-term (21 year) dataset comprising both line transect and point count data, both of which included estimated distance to birds detected, at three levels: annual presence/absence of species, frequency on point-count transects, and density estimation via distance methods. Overall, trends were apparent for the 32 most abundant of the park's 44 breeding species, but the methods failed to detect trend for rare species. Changes in the distribution and abundance of some species over the 21 year period were related to management actions and ecological changes such as the cessation of cattle grazing on Santa Rosa Island, removal of non native pigs and ungulates from Santa Rosa and Santa Cruz Islands, the decline of island foxes (*Urocyon littoralis*), and increases in peregrine falcon (*Falco peregrinus*) populations.

Keywords

**Landbird trends**

Lead author /  
Session organizer

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## Diversity on Public Lands

What will I get out of this?

*Audience will become more familiar with issues affecting diverse visitation to public lands and what certain parks are doing to address this.*

Abstract

The issue this project seeks to understand and help solve involves diversity of visitation on public lands. The question this project seeks to address is; “What barriers exist to public lands visitation from diverse populations?” This project seeks to address this question through a combination of forum-style events involving minority community members and land managers, “outings” to public lands and interviews with key stakeholders. As well, assessment of participant’s perceptions of public lands and their cultural relevancy will be collected through interviews and survey methods. This project seeks to create awareness and dialogue about barriers that prevent certain groups from visiting public lands and in the long run make public lands more accessible for all cultural and ethnic groups.

Keywords

**Diversity, Public Lands**

Lead author /  
Session organizer

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What will I get out of this?

*Through case study of a rapidly changing landscape, audience will learn approaches to incorporating various sources and magnitudes of change into management of natural resources.*

Abstract

One challenge of managing protected areas is determining what conditions we are managing for and how to incorporate various sources and magnitudes of change into our assessment of past, present, and desired future conditions. Glacier Bay, Alaska has experienced one of the most rapid rates of de-glaciation on record. In conjunction with this de-glaciation comes large scale landscape change as new lands and waters are exposed, the land rebounds from the release of the glacier's weight, successional changes occur, and estuarine waters respond to changing levels of freshwater runoff from glacial melting. It is through this lens of larger scale spatial and temporal change that we must view biophysical change on various other spatial and temporal scales. A synthesis of this approach of viewing multiple scales of change, including the challenges of understanding this complexity, will be presented using examples of how the park approaches management of various resources.

Keywords

*de-glaciation, landscape, change*

Lead author /  
Session organizer

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Managing the Future: Developing Spatial Decision Support Systems to Assist National Parks Manage Climate Change

What will I get out of this?

*The audience will learn how decision support systems can be used to support Parks in planning for the management and adaptation to climate change.*

Abstract

Climate change is a major issue currently facing National Parks. Spatial Decision Support Systems (SDSS) can be an invaluable tool for park managers to approach climate change. SDSS will help make thoughtful and effective decisions regarding the impact of climate change on a park. SDSS combines the spatial abilities of a Geographic Information System (GIS) with a decision support system (DSS). The integration of spatial information in a DSS framework makes SDSS an indispensable tool for national park managers. SDSS can provide various future scenarios and predictive models to help managers plan for the future of their park. Managers can use a SDSS to assess the impact of climate change on the ecology of their park and also the impact on the visitors. The robustness and flexibility of a SDSS helps park managers keep the mission of the park service in mind when planning for climate change.

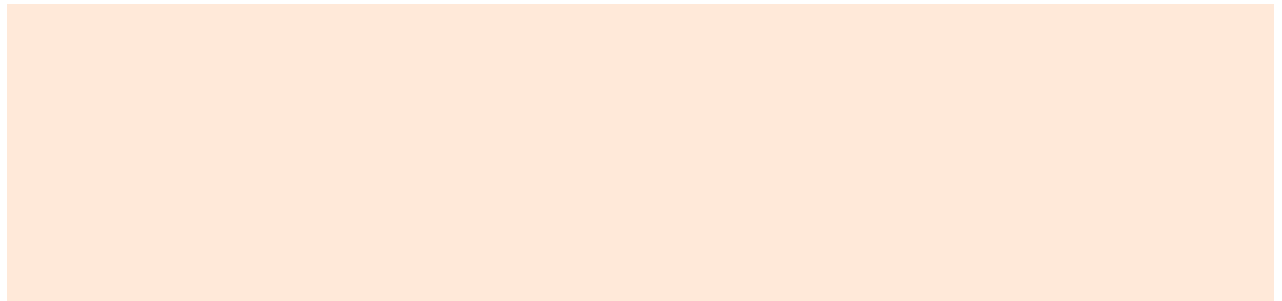
Keywords

**GIS, Decision Support**

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Climate change adaptation in the NPS: emerging approaches for resources, infrastructure, operations, and visitor experience

What will I get out of this?

*Parks are at various stages of climate change adaptation. Assessing this diverse 'landscape' and fostering dialogue on the topic will refine and facilitate future efforts.*

Abstract

Climate change impacts all aspects of park management from natural and cultural resource protection to park operations and visitor experience. Climate change adaptation is a relatively new and rapidly evolving arena of conservation, and this Compass Session assesses and shares where National Park Service (NPS) adaptation is, where we want to go, and what we'll need to get there. Invited speakers provide an NPS-wide summary of adaptation planning and actions, share key examples from specific parks and landscapes, and outline current capacity and potential future directions. Following presentations, we wish to engage the audience in a discussion of adaptation and how we can refine our efforts to manage under continuously changing conditions.

Keywords

*adaptation, climate, uncertainty*

Lead author /  
Session organizer

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Gregor Schuurman; Ecologist, Climate Change Adaptation; Climate Change Response Program, National Park Service

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**Taking stock of NPS climate change adaptation: trends, achievements, and lessons learned**

Gregor Schuurman; Ecologist, Climate Change Adaptation; Climate Change Response Program, National Park Service

**Climate change adaptation for fire-adapted landscapes in the Southern Sierra Nevada**

Charisse Sydoriak; Chief, Division of Resources Management and Science; Sequoia & Kings Canyon National Parks

**Coastal parks in a seascape of climate change planning in the San Francisco Bay Area**

Sarah Allen; Ocean and Coastal Resources Program Lead; Pacific West Region, National Park Service

**Enhancing Adaptive Capacity in Rare/Endangered Native Hawaiian Plant Populations in a Changing Climate**

Jeffrey Mallinson, Biologist, Haleakala National Park

**Continuing NPS climate change adaptation: building capacity, harnessing partnerships, and refining approaches**

Nicholas Fisichelli; Ecologist, Climate Change Adaptation; Climate Change Response Program, National Park Service

## Science with Citizens: An Update on the Dragonfly Mercury Study

What will I get out of this?

*The GWS provides the perfect venue to meet with this interdisciplinary team to discuss scientific advances, emerging issues, and the future of this successful program.*

Abstract

The citizen scientist study of mercury in dragonfly larvae is approaching its fifth consecutive year of sampling in the national parks. The project blends students with scientists, park interpreters with resource managers, and mercury with dragonfly larvae. Mercury is a potent neurotoxin that threatens resources and values the NPS is mandated to protect. To date, over 45 park units have participated, contributing over 1,000 dragonfly larvae samples, 300 citizen scientists, and 1,800 volunteer hours. The collection of dragonfly larvae is facilitated by the park and conducted by the citizens, and samples are sent to labs at the University of Maine, Dartmouth College, or the U.S. Geological Survey for analysis of mercury. Findings shed light on the risk of mercury contamination in the national parks. Join project coordinators and park staff for an information sharing session on ideas, improvements, and insights as the project attracts a wider audience and expands influence.

Keywords

*mercury, dragonfly, citizen*

Lead author /  
Session organizer

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Sarah J. Nelson

### The Big Picture on Mercury

Colleen M. Flanagan Pritz

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### Putting the "bio" in "biogeochemist" - tracing mercury from air to water to biota

Sarah J. Nelson

### Interpreting dragonfly larvae as "biosentinels"

Ann Rodman, Branch Chief, Physical Sciences Yellowstone NP

### Understanding resources and values using dragonfly larvae

Regina Rochefort, Science Advisor, North Cascades National Park Service Complex

### Engaging citizen scientists at Acadia National Park to collect dragonfly larvae

Michael Marion, Lead Education Ranger, Acadia National Park

## Ecological response and recovery of Northeast coastal national parks to Hurricane Sandy

What will I get out of this?

*Hurricane Sandy substantially altered several national parks, but they were found to be ecologically resilient, recovering quickly in the months and years following the storm.*

Abstract

Hurricane Sandy was one of the largest Atlantic hurricanes on record and it resulted in significant changes to coastal national parks in the Northeast Region. Extensive research on the ecological responses to this major disturbance is underway and this session will present updates on a range of studies. The comparative storm resilience of the natural environment to the built environment was instructive, showing that natural resilience in absence of shoreline infrastructure is stronger than altered shorelines. Resources are managed in the context of both natural and altered shorelines and research on topics from dune migration to water quality is helping to support management decisions about recovery projects. Some of these projects will be highlighted in the preceding session.

Keywords

*hurricane, ecosystem response*

Lead author /  
Session organizer

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Charles Roman, North Atlantic Coast CESU Coordinator, Northeast Region, National Park Service

### Overview of multiple studies assessing the response and resilience of coastal parks to Hurricane Sandy

Charles Roman, North Atlantic Coast CESU Coordinator, Northeast Region, National Park Service

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### Metrics of Dune-Beach System Evolution, Gateway National Recreation Area, NPS

Norbert Psuty, Professor Emeritus, Rutgers University

### Understanding Morphologic Response and Recovery to Quantify Geomorphic Resiliency of Barrier Island Beaches: Fire

Cheryl Hapke, Research Geologist, U.S. Geological Survey

### Response of Great South Bay ecology to a Hurricane Sandy created breach through Fire Island

Christopher Gobler, Professor, Stony Brook University

### Visionmaker Jamaica Bay: Sharing visions of ecological resilience after Hurricane Sandy

Eric Sanderson, Senior Conservation Ecologist, Wildlife Conservation Society













What will I get out of this?

*Attendees will learn about recent advances in pollution prevention and detection, monitoring, and climate change response.*

Abstract

Abstract content area (yellow background)

Keywords

Keywords input field (yellow background)

Lead author /  
Session organizer

**Steven Fradkin**

Additional  
authors / organizers

Additional authors / organizers input area (orange background)

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Parks Canada CoRe project videos

What will I get out of this?

*Demonstrate PCA's work in ecological restoration.*

Abstract

Participants will be able to view videos demonstrating PCA's work in ecological restoration in various PCA sites.

Keywords

*ecological restoration*

Lead author /  
Session organizer

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What will I get out of this?

*The audience will learn of a success story involving a multi-agency effort to move a federally endangered species towards recovery.*

Abstract

In the spring of 2014, 10 Sierra Nevada bighorn ewes and 4 rams were reintroduced to the Great Western Divide in Sequoia National Park, where bighorn had been extirpated since the early 1900s. This multi-agency operation was a milestone towards the recovery of this federally endangered species. In this presentation I will discuss the planning efforts and studies undertaken by the NPS in the years prior to this project, explain how the field operations, led by the California Department of Fish and Wildlife, took place, and provide an update on the status of the new herd one year post-release.

Keywords

**bighorn, reintroduction**

Lead author /  
Session organizer

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authors / organizers

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How many salmon are too many salmon?

What will I get out of this?

*I hope to focus the issue of the difficulty in defining 'natural' in national parks.*

Abstract

Preserving resources within their natural range of variation is a fundamental mandate for national parks in Alaska. While concern over 'unnatural' abundances of park resources often focus on rare or depleted resources, it is equally important to manage unnaturally overabundant resources. Sitka National Historical Park (SITK) faces a similar threat from an unnaturally abundant pink salmon (*Oncorhynchus gorbuscha*) in the Indian River. In the 1980s, peak abundance estimates varied between several hundred to 20,000 fish but now regularly exceed 400,000, presumably due to the operation of a salmon hatchery nearby. We used collection of salmon otoliths from pink salmon to identify 'straying' rates of hatchery produced salmon into SITK. Estimates varied between 7% and 17% annually, with fish from hatcheries found over 100km from the park. We discuss the implications for managing a park fishery in its natural condition relative to conflicts with alternative objectives from state fisheries.

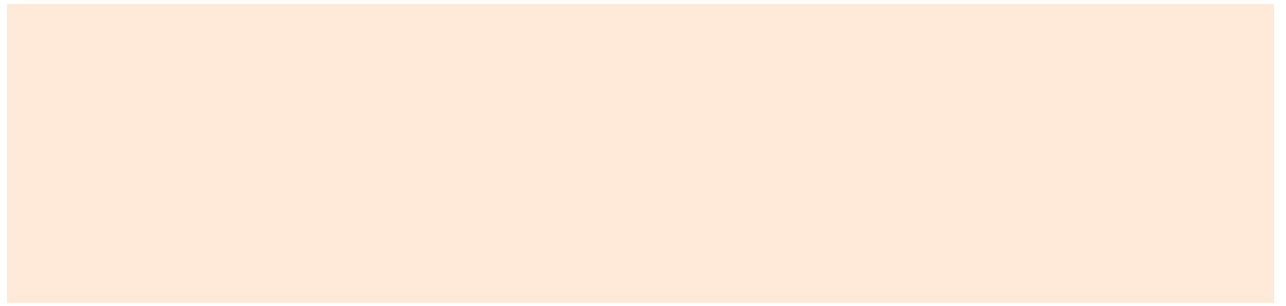
Keywords

*salmon, conservation, marine*

Lead author /  
Session organizer

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authors / organizers



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**When is wildlife in national parks 'conserved'?**

What will I get out of this?

***For park managers to effectively 'conserve' wildlife there must first be definitions of what constitutes 'conserved'. Are these definitions based on science or personal values?***

Abstract

NPS Management Policy mandates that park managers make decisions that conserve park 'values' which are defined as park resources, such as wildlife, and '...appropriate opportunities to experience enjoyment of those resources' even though park use may have negative impacts on wildlife. Ambiguity in the NPS Management Policies results in significant latitude in interpreting when resources are conserved. We propose a Panel Discussion that focuses on how different parks have defined 'conserved', focusing on wildlife, and the interplay between conserving a park resource vs. conserving a park value. Panelists will provide several case studies involving wildlife in national parks of Alaska that highlight when a management approach may be consistent with conserving a resource but inconsistent with park values. Discussion will focus on sources of conflict when stakeholders can relate to conserving a resource, which is more easily defined and subject to science, than a park value.

Keywords

***conserved, wildlife, management***Lead author /  
Session organizer**Scott Gende** Senior Science AdvisorNational Park Service [scott\\_gende@nps.gov](mailto:scott_gende@nps.gov)Additional  
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Guy Adema, Physical Scientist, National Park Service, Alaska Regional Office

**Science in a landscape shaped by qualitative guidance and emotion: Bear baiting on Alaskan parks**

Dr. Grant Hilderbrand, Wildlife Biologist, National Park Service

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given here**Coping with wolf control: making management decisions based on park values**

Dr. Joshua Schmidt

**When are humpback whales conserved in Glacier Bay?**

Dr. Scott Gende





What will I get out of this?

*This session will challenge the audience to think about how to incorporate mission-specific topics like visitor experience and resource protection into traditional long-range transportation planning.*

Abstract

Long-range transportation plans (LRTPs) are used to prioritize funding and investments for transportation entities across the country. They are legally required for federal land management agencies, which often have resource- or visitor-based missions that require a more interdisciplinary approach to transportation planning. Specifically, the National Park Service manages an extensive transportation portfolio (2.4 billion annual vehicle miles), and must incorporate typical transportation concerns like safety and asset management, as well as mission-specific topics like visitor experience and resource stewardship. This session will provide an overview of LRTPs in the park service, including work that has been done to-date and the future of the program, and will highlight two case studies. The first is the National LRTP, which used an interdisciplinary approach to incorporate mission-based elements into its planning process. The second is the Visitor Experience LRTP Guide, which provides direction for incorporating visitor experience into long-range transportation plans.

Keywords

**Transportation, visitor, resource**

Lead author /  
Session organizer

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#### Overview of NPS LRTP Program

Christine Bruins, Community Planner; NPS Denver Service Center - Planning Division

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#### Incorporating the NPS Mission: Visitor Experience

Rachel Collins, Visitor Use Management Specialist; NPS Denver Service Center - Planning Division

#### Incorporating the NPS Mission: Cultural Resources

John Gerbich, Community Planner; NPS Denver Service Center - Planning Division

#### Incorporating the NPS Mission: Natural Resources and Climate Change

Christine Bruins, Community Planner; NPS Denver Service Center - Planning Division



## Phenology for the Next Century of Science and Engagement in Protected Areas

What will I get out of this?

*We will build on our shared interests and experiences to envision the role of phenology in science, engagement, and conservation in the next century.*

Abstract

An understanding of phenology, the timing of life-cycle events, sheds light on biological response to climate change, informs invasive species management, and plays a key role in engaging the public in nature and the scientific process. Phenology monitoring, with both scientific and educational dimensions, is underway at 25 National Parks and National Wildlife Refuges. These diverse efforts provide key lessons and demonstrate the applicability of phenology in resource management while engaging the community. Join us, to learn more via 5 minute lightning talks by each panelist, followed by an open discussion with participants. Our goal is foster discussion to develop a vision for integrating phenology data with natural resource management and science applications. This session provides an opportunity to network with others who are interested in conducting phenology monitoring. Given the expertise on the panel and the opportunity to develop shared vision, this is sure to be a transformative session.

Keywords

*phenology, citizen science*

Lead author /  
Session organizer

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Jake Weltzin, Executive Director, USA-NPN and Ecologist, USGS

Jana Newman, National I & M manager, US Fish and Wildlife Service

Angela Evenden, Senior Science Advisor, Pacific West Region, National Park Service

Alyssa Rosemartin, Assistant Director and IT coordinator, USA National Phenology Network

Tim Watkins, Science and Education Coordinator, Climate Change Response Program, National Park Service

**Spring Forward: Taking phenology to the next level at natural protected areas**

Alyssa Rosemartin, Assistant Director, USA National Phenology Network

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**Building a state-wide phenology network: Lessons learned from the California Phenology Project**

Dr. Angela Evenden, Senior Science Advisor, Pacific West Region, National Park Service

**Citizen Science and phenology monitoring: The underutilized tools in our toolbox**

Dr. Jana Newman, National I & M manager, US Fish and Wildlife Service

**The Appalachian Trail: a case study in unifying phenology monitoring across eleven degrees of latitude**

Dr. Tim Watkins, Science and Education Coordinator, Climate Change Response Program, National Park Service

# The National Natural Landmarks (NNL) Program

What will I get out of this?

*National Natural Landmarks (NNLs) are owned by a variety of land stewards, participation in the program is voluntary; there are no restrictions placed on landowners.*

Abstract

The National Natural Landmarks (NNL) Program was established to encourage and support the voluntary conservation of sites that illustrate the nation's geological and biological history, and to strengthen the public's appreciation of America's natural heritage. The program offers participants the opportunity to share information, solve problems cooperatively, and conserve important natural areas. Since its establishment in 1962, the NNL Program has involved private, municipal, state, federal, and other landowners working together to conserve natural resources. National Natural Landmarks are selected for their outstanding condition, illustrative value, rarity, diversity, and value to science and education. NNLs include public and private lands with a wide variety of uses. The NNL designation is made after in-depth scientific study; all new designations must have owner permission. Currently, there are 597 National Natural Landmarks throughout the United States and its territories, which includes 99 NNLs within the Pacific West Region of the National Park Service.

Keywords

*NNLs, natural, landmarks*

Lead author /  
Session organizer

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Oak woodland restoration at Whiskeytown: meeting resource and fire management objectives with a GSA-Timber Sale

What will I get out of this?

*A case study is presented for an oak woodland restoration project in Whiskeytown, which was accomplished through a GSA Timber Sale*

Abstract

The goal of the Boulder Creek Thin was to restore 75-acres of conifer-encroached oak woodland while minimizing implementation costs. Park managers have documented how the lack of frequent and low intensity fire has enabled the park's oak woodlands to transition from sunny and open conditions, to dense heavily-stocked forests. This shift in composition and structure has resulted in oak mortality and decreased understory biodiversity; lacking intervention, these oak woodlands will not persist. Recognizing these substantial changes over a short time period, park managers have developed a restoration strategy that incorporates a GSA Timber Sale to meet restoration objectives with minimal cost, while providing jobs and materials to the local economy. In doing so, the park hopes to reduce the adverse impacts associated with future fire events, improve the health of the old growth oaks and conifers, and to facilitate future prescribed fire operations.

Keywords

*thinning, black oak*

Lead author /  
Session organizer

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Terra Perkins, Lead Restoration Technician at Whiskeytown NRA  
Sean Denniston, Chief of Resources and Interpretation at Whiskeytown NRA  
Tom Garcia, Fire Management Officer for Whiskeytown NRA and Lassen Volcanic NP

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What will I get out of this?

*Provide examples from Europe and USA of best practice in heritage areas and lessons as to the critical inputs required for a successful heritage area.*

Abstract

The heritage area ideal provides the model for the preservation and engagement of communities in protected landscapes. This paper compares the approach taken to heritage preservation in two regions - the Lackawanna Heritage Valley in Pennsylvania, USA and the former "HERIAN" project in Wales, UK - using each as an example of the wider approach to heritage areas in the USA and Europe. Both areas sought to tell the story of their industrial heritage and created a heritage tourism product with the aim of stimulating economic and social regeneration. The paper considers the origins and structure of each heritage initiative, their similarities and differences, and identifies the elements of best practice that can be exchanged, particularly in regard to community engagement. As National Heritage Areas increasingly face an uncertain funding situation, this paper ultimately draws on the comparison to identify the critical criteria required for NHAs to survive and succeed.

Keywords

*heritage, tourism, community*

Lead author /  
Session organizer

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Natural Resource Education and Outreach in a Cultural Resource Park: expanding the audience

What will I get out of this?

*Will learn about an approach to outreach and education with minimal staffing, collaboration between natural and cultural resources, and outreach to diverse audiences.*

Abstract

The historic significance of Manassas is the primary interpretive theme for the park. However, the park's 5,000 acres are becoming more significant as a natural resource site due to rapidly increasing urban development in the surrounding area. This situation however, does offer opportunity, as the park provides easy access for local schools and educational groups and is an ideal location from which to study natural processes. In 2013 we began a 4-year initiative with the goal of increasing the awareness and subsequently the use of the park for education and recreation. Some accomplishments to date include; establishment of two "Track Trail" self-guided tours, a park specific brochure that connects our cultural and natural resources, a cell phone tour that contains Virginia Standards of Learning information, partnerships with local schools, and outreach to local pediatrician offices. Future plans include handicapped accessible trails, Spanish versions of all brochures and citizen science projects.

Keywords

*education, collaboration, outreach*

Lead author /  
Session organizer

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Alison Sloop, Biologist, Giessell Aguilar-Biologist, Courtney Asher Biological Technician

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What will I get out of this?

*Participants will be encouraged to think about the complex social and human challenges facing national park stewardship and ways to address these challenges.*

Abstract

In an increasingly diverse America, ensuring continued support for national park stewardship rests on understanding and nurturing at least five interrelated connections between people and protected areas: 1) social construction, 2) trusteeship, 3) enjoyment, 4) cultural identification, and 5) “tracks through time.” Since the Yosemite Grant of 1864 planted the seeds of the national park idea in the U.S., some connections between people and parks have flourished. But other connections have ruptured or were never made in the first place. In a society facing rapid demographic and social change, sustaining all five connections presents challenges. Increasing the public's support for park stewardship in the twenty-first century will depend on successfully nurturing these relationships. This will require creative thinking about what national parks are, how they interact with their surrounding regions, and how they can connect with the broadest spectrum of the American public.

Keywords

*social dimensions*

Lead author /  
Session organizer

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The role of education in influencing wilderness values and management

What will I get out of this?

*Learn how education – even small amounts – can influence managers’ knowledge, attitudes, and values about wilderness which can lead to better wilderness management.*

Abstract

Managers often use education to influence wilderness users behavior as they strive to provide unconfined recreation. Some managers (particularly those who have wilderness as a collateral responsibility) may not have formal training in wilderness stewardship; thus, increasing their wilderness knowledge can lead to better wilderness stewardship. This study examines five years of pre and post tests of a Wilderness Values “test” in a wildland recreation management class to illustrate areas where value shifts – sometimes dramatic ones – are common. In some cases students change from biocentric to anthropocentric, while in other cases they switch from anthropocentric to biocentric. This study helps show that increasing knowledge can affect managers’ values which can fundamentally shift their efforts to maintain an untrammled wilderness while allowing anthropocentric uses of wilderness.

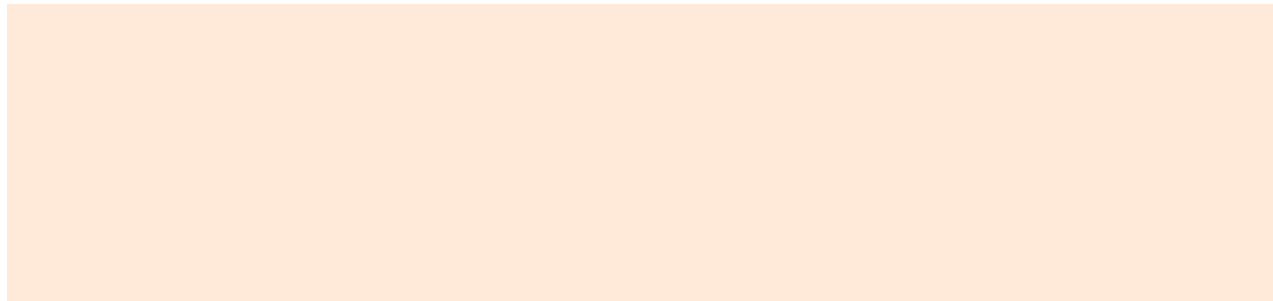
Keywords

*wilderness, education*

Lead author /  
Session organizer

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What will I get out of this?

*Participants will know where to access resources to design professional development plans and how to most effectively use the Career Academy for Natural Resources.*

Abstract

The National Park Service “Call to Action” directs the development of Career Academies to enhance professional and organizational excellence. Over the past several years individual career fields have been working to create discipline specific, competency-based learning opportunities. The Career Academy for Natural Resources development is being led by the Training Manager for Natural Resources with subject experts and university partners. The academy framework provides a structure for organizing learning opportunities based on natural resource essential competencies at the developmental, journey and advanced levels. The effort continues with collaboration of specialists and program managers from around the service. A new course, Implementing Park Science, is being designed to support professional development that increases scientific capacity, teamwork, collaboration and creativity. This presentation will focus on the Career Academy for Natural Resources Foundational Series and the Implementing Park Science course. It will also address professional development planning to maintain professional currency and networks.

Keywords

*training, professional development*

Lead author /  
Session organizer

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Park visitor brand awareness: Examining the effectiveness of World Heritage, park agency and destination brands

What will I get out of this?

*Learn about visitor awareness of World Heritage and other park brands; build effective communication for your agency or park.*

Abstract

This presentation reports on park visitors' awareness and recall of the World Heritage (WH) brand. More than 800 Canadian and US visitors to four southern Alberta World Heritage sites were surveyed. This study contributes to our understanding of how to manage and communicate public sector conservation brands.

In this study visitors' ability to recognize and recall the meaning of the World Heritage logo as well as other prominent conservation logos including the US NPS and Parks Canada's logos were documented. Visitor understanding of why the parks they were visiting were designated as important cultural and natural heritage sites was also assessed. Finally, links to regional destination promotional efforts were examined through visitor's knowledge of these promotional campaigns. Findings from this study provide insights for communications and education efforts undertaken by conservation agencies charged with managing these and other heritage sites.

Keywords

*World Heritage, communication*

Lead author /  
Session organizer

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Lessons Learned When "Sacred" bumps into "Profane" in Mountain Protected Areas

What will I get out of this?

*From case studies of collisions between metaphysical values and damaging development, some recommendations are made that may reduce future conflict in protected areas*

Abstract

This presentation attempt to derive lessons from seven global case studies of special places in mountain protected areas where sacred or cultural values did, did not or only partially did prevail against damaging development. These mountain sites are: Olympus, Kailash, Sinai, Cairngorms, Adams Peak, Tongariro and Uluru. Most of these are in legal status as National Parks or other kinds of formal Reserves, yet this does not assure their integrity when economic development looms. Several suggestions are made to enhance the mantle of protective conservation. Implications for Devil's Tower, San Francisco Peaks, Grand Canyon??

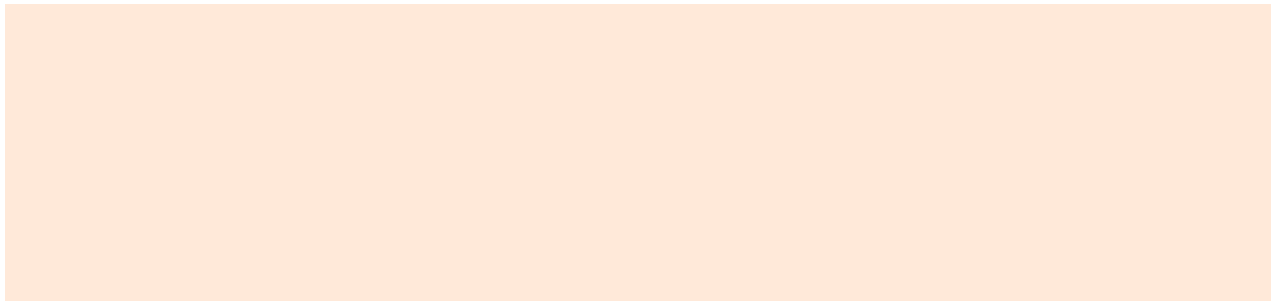
Keywords

**Sacred/cultural sites**

Lead author /  
Session organizer

**Lawrence Hamilton** Emeritus Professor of Forest Conservation  
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**Nature-based Recreation and Latino Engagement in Boulder County: Moving Towards Increased Social Equity**

What will I get out of this?

*Nature-based agencies need to be working towards greater inclusiveness of its citizens. This study provides insight into what agencies can do to be more inclusive.*

Abstract

Boulder County “smart growth” based policies have helped create a very livable and highly desired community for residents. One of the main pillars of its “smart growth” efforts is open space. But there are social equity concerns in terms of disproportionate visitor underuse by minorities, as visitor use is skewed towards Caucasians at these nature-based open space parks. Past research has shown differences between minority and majority populations in their preferences for recreation activity type and preferred settings for outdoor recreation. This qualitative study of 18 park and non-park participants learned what is working, what didn't work, and what local agencies and organizations should be doing more of in terms of engagement of Latino’s and possible preferred methods of nature-based recreation by Latinos. The insights from this study can further the ability of a nature-based agency/organization to provide desired amenities and programs for use by Latino community members.

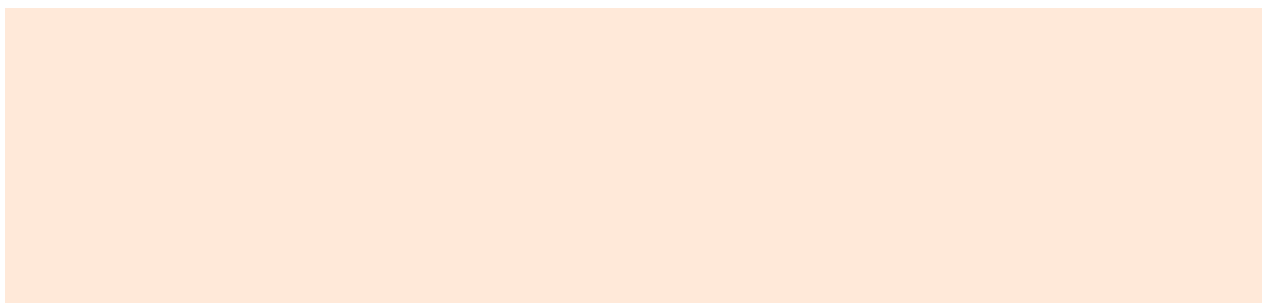
Keywords

*nature-based, equity, recreation*

Lead author /  
Session organizer

**Alan Hardy** Boulder County Parks and Open Space Recreation and Facilities Manager  
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Scaling Up - Large Landscape Conservation

What will I get out of this?

Participants will learn about how the NPS is "Scaling Up" its work with large landscape conservation.

Abstract

Our national parks, trails, heritage areas and landmarks reflect our nation’s history. Our parks preserve history, lands, waters, and wildlife across diverse landscapes - and they attract millions of visitors. Whether urban or rural and large or small, the preservation of these places depends upon connectivity—linkages with neighboring places and people. Their future depends upon shared goals by people working together across large landscapes. The need for scaling up large landscape conservation is greater now than ever before. These efforts require management tools and skills in collaboration, coordination, mediation, and facilitation of dialogue. They call for knowledge-building to include information at varying scales relevant to managing water, adapting to changing climate, protecting wildlife or historic resources. The NPS needs to work with its partners across communities and landscapes to develop governance structures and processes that strengthen dialogue, support shared actions, and enhance coordination.

Keywords

large landscape conservation

Lead author / Session organizer

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Additional authors / organizers

Christina Marts, NPS

If this is a session of Invited Speakers or a Panel Discussion, additional speakers/panelists and titles of their presentations are given here

Multiple empty light blue rectangular boxes for listing speakers and titles.

**The Way Forward for California State Parks; Implementing the Findings of the Parks Forward Commission**

What will I get out of this?

*Discussion of the findings and implementation of the California Parks Forward Initiative, addressing financial, operational, and cultural challenges facing State Parks.*

Abstract

The session will be a panel discussion on the findings and implementation of a new vision for California State Parks, the Parks Forward Commission report. Over the course of 18 months, an independent commission made up of experts, advocates and thought-leaders conducted a wholesale assessment of the park system. This independent process was designed to address the financial, operational, and cultural challenges facing State Parks to ensure the system's long-term viability. In the fall of 2014, the Parks Forward Commission adopted a long-term plan for a State Park system that meets the needs of all Californians, now and in the future. The panel will delve into the execution of the plan, and its broader relevance to park systems throughout the United States.

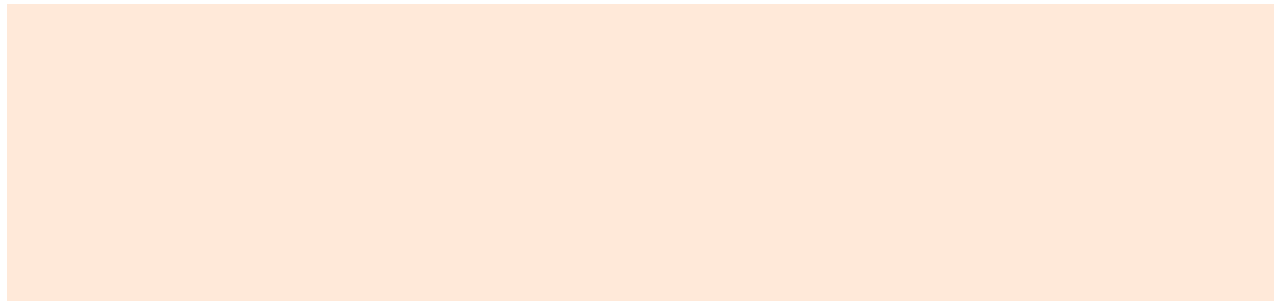
Keywords

**Parks Forward Commission**

Lead author /  
Session organizer

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**Executive Director, California Parks Forward Commission Initiative**  
Ken Wiseman

**California State Parks, Parks Forward Coordinator**  
Steve Szalay

**Member, California Parks Forward Commission**  
Caryl Hart

**Member, California Parks Forward Commission**  
Hawk Rosales











What will I get out of this?

*This project fosters stewardship of cultural and natural resources, it provides opportunity for visitors have a valuable, hands-on learning experience within the Heritage Garden.*

Abstract

Now in its third year, the Aztec Ruins Heritage Garden is a demonstration project focused on prehistoric agriculture, which has been in the greater Southwest U.S. for more than four millennia. The concept for the garden is based on archeological, ethnobotanical, and historical research at Aztec Ruins National Monument, the Four Corners region and beyond. More than 1,000 visitors have had opportunity to experience plants that were grown and used at Aztec Ruins when it was occupied 900 years ago. Visitors to the garden are introduced to natural and cultural resource stewardship concepts, and hundreds of volunteers have assisted in caring for the garden through planting and harvesting. The rich biological and cultural histories promote engagement with the local ecology, and foster understanding of subsistence agriculture. The garden's key concepts are relevant today, such as adaptation to changing climate conditions, limited water availability, and sustaining crop biodiversity for the future.

Keywords

*prehistoric agriculture, ethnobotany, resource stewardship*

Lead author /  
Session organizer

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We Have a Story to Tell

What will I get out of this?

*A short play about the quest to incorporate interpretation of Piscataway culture at Piscataway Park will frame a discussion of how parks interpret cultural landscapes.*

Abstract

Beginning with a reader's theater performance of "We Have A Story To Tell," a 20-minute play that explores the Accokeek Foundation's efforts to highlight the history and culture of the Piscataway people at Piscataway Park, this interactive session will explore the challenges of interpreting the multi-layered stories of cultural landscapes. For the Accokeek Foundation, that challenge is rooted in many factors, from the organizations' founding to preserve the view from George Washington's Mount Vernon, to its interpretation of colonial history in a predominately African American county with an important slavery story to tell, to its relationship with the Piscataway people who finally gained state recognition in 2012. The performance will serve as a springboard for learning how parks are incorporating stories that have in the past been marginalized. How can landscapes help us tell these stories in a way that engages visitors and honors the communities whose stories are told?

Keywords

*landscapes, stories, indigenous*

Lead author /  
Session organizer

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Enhanced Florida Bay protection and experiences – how active stakeholder participation secured the new vision

What will I get out of this?

*A controversial marine zoning concept gained strong support with compelling science, implementing a pilot project, using adaptive management, and extensive dialogue with key stakeholders.*

Abstract

In developing Florida Bay’s long-term management direction, park managers and stakeholders worked together over many years to identify a strategy for better protection to this unique 400,000-acre shallow-water estuary occupying the southern portion of Everglades National Park, while allowing for enhanced recreational pursuits. Strategies included creating increased awareness of Bay-resource issues, developing new stewardship measures for this world-renowned area damaged by decades of improper boating, and establishing extensive marine area zoning to improve resource- and visitor-use conditions. Building blocks to success for this component of the General Management Plan were 1) developing sound scientific data that the public understood, 2) implementing a pilot project to test the zoning concept before GMP completion, 3) using adaptive management to fine-tune the pilot project, 4) investing substantial time with stakeholders to identify potential solutions in many locations on the Bay that posed resource and visitor-use challenges (areas considered make-or-break issues for plan success).

Keywords

*resources, stakeholder consensus*

Lead author /  
Session organizer

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**Growing Future Resource Managers While building Bridges Between Native Communities and National Parks.**

What will I get out of this?

*This case study outlines the grass roots development of Native Conservation Corps (NCC), an immersive experience for native youth participating in NPS resource management.*

Abstract

Native Conservation Corps meets the Call to Action, “Stop Talking and Listen” by building bridges between native communities and National Parks. Developed at PEFO in 2011 the program has grown to include other NPS sites. Native youth live in national parks and engage in natural resource and interpretive work. While caring for and interpreting park resources, including archaeological sites considered significant to their communities, participants serve as ambassadors for their native communities by sharing aspects of their culture with NPS staff and visitors. Once they return home participants serve as ambassadors for the NPS by sharing what they learned about park resources and career opportunities with their communities. Examples of projects include vegetation monitoring; habitat restoration; petroglyph assessment and monitoring; and wildlife inventorying. Participants have returned to lead later corps and gone on to study law enforcement, range management, and other NPS related fields.

Keywords

*native, youth, nps*

Lead author /  
Session organizer

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Todd Hisaichi is an Interpretive Park Ranger at Muir Woods National Monument. Todd co-designed Native Conservation Corps (NCC) while working as a ranger at PEFO.

Lonnie Pilkington is a Natural Resources Program Manager Glen Canyon National Recreation Area (GLCA). Lonnie has led NCC at GLCA for 3 years.

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Science in a landscape shaped by qualitative guidance and emotion: Bear baiting on Alaskan parks

What will I get out of this?

*We integrated scientific and humanities approaches to inform decisions relative to a contentious issue emphasizing facts and logic rather than emotion and vague guidance language*

Abstract

The State of Alaska recently authorized the harvest of brown bears over bait in several Alaskan NPS units. This allowance was prohibited by NPS through the compendium process but also elevated the issue of the harvest of black bears over bait on these same units, a practice allowed since the designation of many of the Alaskan Parklands. Two fundamental questions were the potential ecological effects of this harvest practice on natural systems and behaviors and the potential incongruence of this practice with educational and public safety messaging regarding feeding of wildlife. We integrated scientific (harvest data analyses) and humanities (conservation ethics/argument analyses) methodologies to inform decision-making on this contentious issue. The regulation addressing bear baiting in Alaskan NPS units was published in the Federal Register in Summer 2014 and NPS is presently conducting public meetings and evaluating public comments with a final rule expected prior to the 2015 GWS.

Keywords

*bears, ethics, harvets*

Lead author /  
Session organizer

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## Putting Benefits Sharing to Work for Parks

What will I get out of this?

*Researchers and park staff learn how commercial application of research results from authorized research on park resources leads to benefits sharing and improved resource preservation.*

Abstract

Learn about National Park Service benefits sharing! When research originating under NPS permits or other authorizations results in an invention with a commercial application, parks may negotiate monetary or other benefits. Such benefits sharing improves conservation of park resources and enhances public benefits from research in parks. Parks develop agreements to share or decline benefits when entities notify parks of proposed commercial uses. Although new to NPS, “access and benefits sharing” has been of interest to the international community for many years.

Keywords

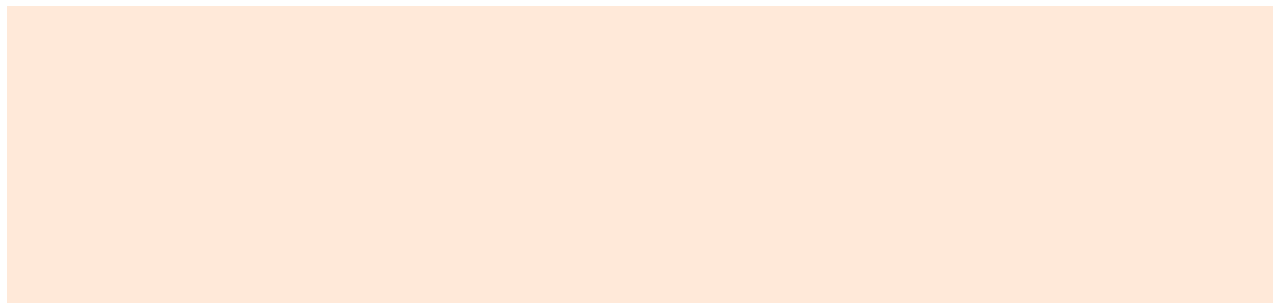
*benefits-sharing, research, permits*

Lead author /  
Session organizer

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**Legal Authority, Fundamental Legal Concepts, and Early Development of NPS Benefits Sharing**

Carla Mattix, Attorney Advisor, Office of the Solicitor, Department of the Interior

**Key Features of NPS Benefits-Sharing Policy and its Significance for Permitted Researchers and Park Staff**

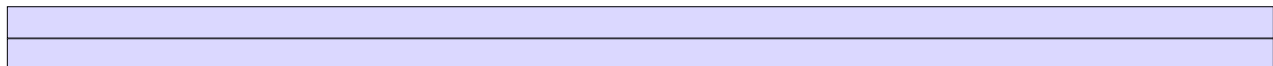
John Dennis, Deputy Chief Scientist, National Park Service

**From the Benefits-Sharing Handbook: Tools for Initiating and Managing Benefits Sharing**

Ann Hitchcock, Senior Advisor Scientific Collections and Environmental Safeguards, National Park Service

**The Nature of Benefits and Agreements to Share Benefits**

Linda Drees, Chief, Partnership and New Initiatives Branch, National Park Service









Law and National Parks: Bringing Managers and Legal Scholars Together

What will I get out of this?

*Protecting park values often means defending them, and understanding legal framework and context is essential. Share the enthusiasm when park managers and legal scholars collaborate.*

Abstract

Over the past several years, the University of Notre Dame Law School has promoted interaction between national park superintendents and environmental law scholars to discuss our common work with respect to the management of national parks. The national park superintendents have appreciated the surprisingly rare opportunity to discuss park management issues with colleagues and legal scholars, while the academics have greatly benefited from learning more about how the law shapes managers' decisions. In these gatherings, topics have ranged broadly from biodiversity and wilderness mandates to relations between the NPS and Congress, the courts, and state/local governments. This goal of this session, therefore, is to establish an informal working group of NPS managers and law professors and to forge a plan for further collaboration. Possible initiatives could include an informal legal consulting group for NPS managers, as well as research and problem-solving projects for law professors and their students.

Keywords

Law

Lead author /  
Session organizer

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Bob Krumenaker (Acting Superintendent, Nat'l Park Service, Everglades & Dry Tortugas Nat'l Parks)

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CityArchRiver 2015

What will I get out of this?

*Through extraordinary public-private partnership, CityArchRiver 2015 and the National Park Service are transforming the St. Louis Arch Grounds.*

Abstract

As a partner architect for the Museum of Westward Expansion and the lead architect for the NPS Ranger Station and Old Courthouse accessibility improvements, Trivers Associates is helping to navigate this transformative effort. Originally constructed in 1965, the Gateway Arch has long been isolated from downtown St. Louis - separated primarily by a depressed arterial highway. This project seeks to integrate the Gateway Arch into the fabric of the region, building connections to downtown and the river to create a more meaningful visitor experience. The poster will depict the overall project and highlight Trivers Associates' specific experience.

Keywords

*preservation, architecture, construction*

Lead author /  
Session organizer

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What will I get out of this?

*As the selected architects for the Old Courthouse, Trivers Associates had to navigate between two often opposing priorities - providing accessibility while maintaining historic integrity.*

Abstract

Creating accessibility within the confines of a historic structure while also maintaining historic integrity is a difficult but necessary modern design challenge. In this case study, exterior ramps have been designed keeping the Secretary of the Interior's Standards for Rehabilitation in mind: retain historic character, avoid removal of distinctive materials, differentiate new construction from old, and provide a solution compatible with historic materials, features, proportions and massing. In addition, if removed in the future, the intervention will maintain the essential form and integrity of the historic property and its environment. This case study outlines the design process, attributes, and details of the selected design.

Keywords

*architecture, accessibility, preservation*

Lead author /  
Session organizer

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What will I get out of this?

Abstract

Species conservation and area based conservation have evolved in parallel. There are many species whose spatial conservation needs extend beyond individual protected areas. Several such species are part of the history, culture and identity of people who share landscapes and habitats with them. Efforts to promote a notion of “heritage species” as a tool for international co-operation have so far not met with much success. Existing international legal instruments such as the World Heritage Convention (UNESCO) or the Conservation of Migratory Species (UNEP) do not provide sufficient frameworks to combine ecological and historical data and analyses that would be needed to establish and promote heritage-species research and conservation. In this presentation efforts to promote the notion of “World Heritage species” as part of UNESCO contributions to the implementation of the UNESCO-UNEP Great Ape Survival Project (GRASP) are briefly reviewed. Lessons learned from that example and emerging trends in the implementation of international conventions, agreements and programs are used to explore alternative pathways to promote collaborative research on heritage species and their conservation.

Keywords

*species, heritage*

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Session organizer

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Implementation of Improved Cave Management Practices at Coronado National Memorial

What will I get out of this?

*Coronado NMem is implementing an improved cave management program including outreach, restoration, white nose syndrome response, and collaboration with other regional cave managers.*

Abstract

In FY2014, Coronado National Memorial received funds to improve cave and karst management and develop WNS response. The memorial has a fledgling program that has remained dormant for many years. Coronado Cave is one of several caves in the park and is open to visitors as a wild cave experience. Park staff sought to employ a series of monitoring and restoration activities as well as develop outreach and educational opportunities regarding caves. We are partnering with other local cave parks to improve our regional understanding of similar karst in southeast arizona.

Keywords

*Caves, Karst, WNS*

Lead author /  
Session organizer

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Jason Mateljak is Chief of Resource Management for the Southeast Arizona Group of National Parks Service Units and managed project with Ryan. The Southeast Arizona group includes Chiricahua National Monument, Coronado National Memorial, and Fort Bowie National Historic Site.

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Restoration of a California grassland through intensive yellow starthistle control and native perennial bunchgrass reintroduction

What will I get out of this?

*The audience will learn about a successful grassland restoration project that includes a strong monitoring and experimental framework that has guided implementation of the project.*

Abstract

Since 2009, Pinnacles National Park has been actively restoring 140 acres of a highly degraded grassland and valley oak savannah system newly acquired in 2006. Restoration and research efforts include testing native bunchgrass re-vegetation methods, integrated pest management techniques to control YST, and extensive monitoring and mapping of target species, along with plant community response to treatments. Management techniques included prescribed burning, broadcast herbicide application, timed mowing, goat grazing, and manual hoeing or pulling with multiple partners, inmate crews and volunteers. These varied methods and consistent treatments over five consecutive years have successfully decreased YST populations to significantly less than 1% cover, and protected adjacent private and park lands from infestations. Based on knowledge and results gained from these efforts, the park is undergoing larger-scale drill-seeding with locally derived native perennial grass seed.

Keywords

*invasives, restoration, grasslands*

Lead author /  
Session organizer

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Learning by Listening: Oral History and Narratives of Wilderness

What will I get out of this?

*Through training in interviewing skills audience members will learn how oral history can help them better understand the complex past and future of wilderness areas.*

Abstract

Using case studies from Yosemite, Sequoia and Kings Canyon, and the Selway-Bitterroot, this workshop introduces practical how-to oral history techniques and explores how human stories and oral history are especially important to our understandings of wilderness landscapes. Although national parks have existed since 1872, the special “wilderness” designation is much more recent. Legislated in 1964, the Wilderness Act famously states that wildernesses are “untrammeled by man.” Yet, long before the act, wildernesses were trammed in fascinating narrative ways. What is the best method to document and preserve the human stories of these areas that are protected from human development and human impact? How can we use those personal stories to educate about and guide resource management? Through hands-on training in interviewing skills and multiple uses of oral history sources, audience members will learn how oral history can help them better understand the complex past and future of wilderness areas.

Keywords

*Oral history, wilderness*

Lead author /  
Session organizer

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What will I get out of this?

*Audience will learn about the changing resources of the Arctic and how climate has driven those impacts.*

Abstract

Sea ice records have been monitored since 1979, and have shown a progressive decline in total area covered by sea ice. Sea ice is particularly important to the Arctic region, dominating the ecological and economic development of the region. As sea ice has retreated, it has opened up the region for further resource extraction and marine transportation, increased coastal erosion by limiting shorefast ice armoring, changed or limited subsistence hunting opportunities, and necessitated a significant focus on resource protection from previously nonexistent oceanic disturbances and threats including marine incident preparedness and increased need for understanding the ecology of now at risk coastal systems, which are also undergoing rapid change.

Keywords

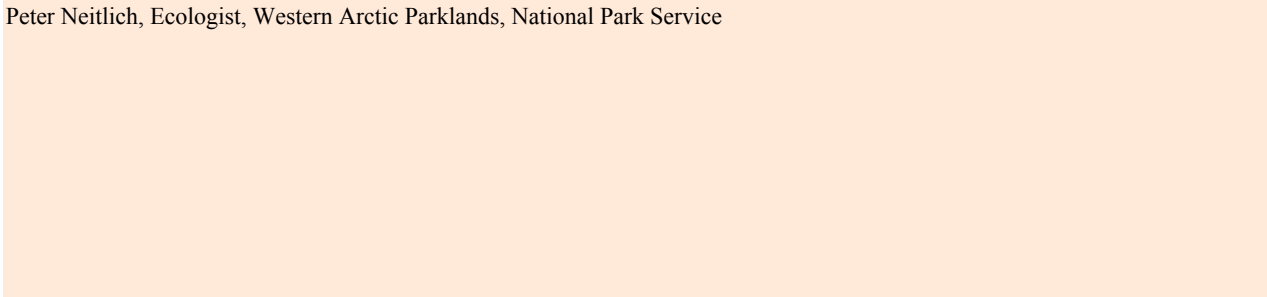
*Ice, climate, coast*

Lead author /  
Session organizer

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Peter Neitlich, Ecologist, Western Arctic Parklands, National Park Service



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Limitations of geographic response strategies in northwest Alaska

What will I get out of this?

*Audience will learn about the necessity for field truthing geographic response strategies and understanding nearshore currents to better protect trust resources.*

Abstract

Geographic Response Strategies (GRSs) in Northwestern Arctic Alaska are relatively currently being developed and established with the oldest draft plans to date selected in 2010 with completed drafts in 2011. In 2011 and 2012, a northwest ecological risk assessment and scenario planning exercise was conducted with many recommendations including testing of the GRSs. In 2013 the NPS was able to do a small pilot test of waters within Ikpek lagoon in Bering Land Bridge. Results indicated that the current GRS design would likely not be effective; furthermore, the tidal currents associated with interior lagoon dynamics indicated that there was a high potential for marine transport in unanticipated directions within the lagoon. This science has lead to a partnership to test most of the GRSs within the Northwestern Arctic coastal parks.

Keywords

*GRS, currents, Alaska*

Lead author /  
Session organizer

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Paul Burger, Regional Hydrologist, Alaska Region, National Park Service

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**Innovation: What it really means and why we should care—A hands-on workshop for leaders to help drive innovation**

What will I get out of this?

*Attendees will learn through engaging stories of leading innovators, hands-on activities, and open dialogue how to recognize, build, and apply effective and exciting innovation principles and tools.*

Abstract

We hear it everywhere: innovation leads to success. But what does “innovation” really mean, and how can we best use it in our work? Attendees will learn through engaging stories of leading innovators, hands-on activities, and open dialogue how to recognize, build, and apply effective and exciting innovation principles and tools.

Keywords

*Innovation, management, leadership*

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# The Anthropocene versus Climate Change as a Conceptual Framework for Addressing Global-Scale Stressors

What will I get out of this?

*Attendees will better understand the advantages and disadvantages of replacing climate change with the Anthropocene as a conceptual framework for addressing large-scale stressors.*

Abstract

The Anthropocene Era concept provides a better conceptual framework than climate change for communicating and addressing global-scale stressors. Climate change is not "the" large-scale threat to us and to our planet. There is also nitrogen deposition, air pollution, freshwater and ocean chemistry changes, and a host of other stressors that act in synergy with it. By contrast, the notion that we have entered the Anthropocene Era integrates global-scale threats. It captures their interrelatedness, the totality of their effects. The provocative Anthropocene Era concept is also vivid and meaning-laden, with an introspective, ethical dimension. It engenders questions about generational justice and the future we want for the planet. Increasingly, people are indifferent to climate change. At a time when many are suspicious of or baffled by its underlying science, the Anthropocene Era has greater potential to bring people to what needs to be the conservation paradigm of the future--Earth-System Stewardship.

Keywords

**Anthropocene climate change**

Lead author /  
Session organizer

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# Wilderness and Historic Preservation: A Case for Storied Landscapes

What will I get out of this?

*The audience will learn how cultural resources fit within the Wilderness Act, and understand how this informs current controversies over managing cultural resources in Wilderness.*

Abstract

This paper introduces a new framework for addressing cultural resources in Wilderness. It presents a contextual history of wilderness and historic preservation on federal public lands, and a brief policy analysis augmented by discussion of the four court cases pertinent to the issues. A new typology of wilderness heritage values is presented, drawing from principles, theories and concepts of both historic preservation and wilderness. These values are integrated into parameters and restrictions of the Wilderness Act to support a new framework for managing cultural resources in Wilderness. The paper closes with recommendations for new directions in managing America’s cultural heritage in Wilderness.

Keywords

*Wilderness, Historic, Cultural*

Lead author /  
Session organizer

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**Protecting Sacred Places in National Parks: Traditionally Associated Peoples and Consultation**

What will I get out of this?

*The National Historic Preservation Act plays a critical role in protecting cultural resources on Federal land. Consultation with traditionally associated people improves understanding and stewardship.*

Abstract

The First Amendment, American Indian Religious Freedom Act, the National Historic Preservation Act (NHPA), and Executive Orders 13007 and 13175 provide traditionally associated peoples with special rights, and Federal Land Managers with special obligations. These include the right of access to religious or sacred sites, the responsibility to manage and protect sacred places, and processes to ensure consultation. In particular, the NHPA requires Federal agencies to consult with traditionally associated people to understand their perspective on agency uses or actions. Consultation is the first step in project development and program planning. Misunderstandings easily arise from lack of early consultation, or and consultation that inadvertently leaves out important consultation partners. The voice of the traditionally associated people must be heard and understood to protect cultural resources, especially those with sacred or religious values, on federal lands.

Keywords

**Consultation, Protection, Planning**

Lead author /  
Session organizer

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**Cultural Anthropologist & American Indian Liaison, Yosemite NP**

Jennifer Hardin

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**Governmental Specialist & Liaison, Toulumne Band of me-Wuk, Indians**

Reba Fuller

**Anthropologist & Hawaiian Community Liaison, Hawaii Volcanoes National Park**

Keola Awong

**Deputy Chief Science & Resource Management, Grand Canyon National Park**

Janet R. Balsom

**Manager, Pacific Island Office of NPS**

Melia Lane-Kamahele

What will I get out of this?

*This work provides an assessment of the biological implications of changes in wetland hydrology expected with climate change on montane amphibians in the Pacific Northwest.*

Abstract

An essential aspect to the continuing success of protected areas, such as national parks, is understanding species responses to climate change. Amphibians, as a globally threatened group, represent a particular priority for mitigating the effects of climate change, which is expected to act synergistically with other threats to exacerbate declines. To address this, we monitored >35 Cascade frog (*Rana cascadae*) breeding sites within Olympic and Mt. Rainier National Parks that span a range of hydroperiod types and quantified the proportion of reproductive effort that was lost as a result of pond drying. We will use these data, along with existing demographic data and site-specific predictions of warming and drying, to explore how climate change will affect *R. cascadae*. These results can then be used to pinpoint specific areas within national parks in which climate change will threaten stability and identify priorities for climate mitigation with respect to montane amphibians.

Keywords

*amphibians, climate change*

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Session organizer

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Michael Adams, United States Geological Survey

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What will I get out of this?

*Participants will learn about 125 years of shared history and conservation in Yosemite and Sequoia, which were both established in 1890.*

Abstract

Sequoia National Park was established on September 25, 1890 and Yosemite National Park was established on October 1, 1890. In 2015, both parks will celebrate their 125th anniversary. The exhibit will highlight the shared history of preservation of the parks in the Sierra Nevada. For example, John Muir was instrumental in gaining support in Congress for the establishment of both parks. In addition to the 125th, we will also highlight both parks' efforts in helping create the National Park Service in 1916, as we move towards the NPS centennial in 2016. Yosemite and Sequoia were fundamental in showcasing the need for a National Park Service during the Mather Mountain Party. Yosemite and Sequoia would be honored to have a shared exhibit at the GWS 2015 meeting to highlight these important anniversaries for the conference participants.

Keywords

*anniversary, centennial, Yosemite*

Lead author /  
Session organizer

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Tree growth response to current forest management practices and drought in Redwood National Park

What will I get out of this?

*This poster will offer preliminary results investigating tree growth response to current second-growth forest management practices and drought in Redwood National Park.*

Abstract

The NPS Pacific-West region expends significant resources on forest management, primarily prescribed fire and mechanical thinning. An underlying rationale for these activities is that post-treatment forest structure is expected to confer resistance and resilience to disturbance, such as severe drought. We will present early results on how tree growth varies in response to forest management, and how this relationship changes during periods of drought. Tree growth was measured and analyzed from 30 research plots, spanning 8 different thinning treatments and untreated control sites within Redwood National Park. Early research efforts suggest fairly aggressive thinning is needed to produce large growth responses in these forests.

Keywords

**Forests, drought, thinning**

Lead author /  
Session organizer

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Rosemary Sherriff

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IUCN 2016 - Hawaii - Nature + Aloha

What will I get out of this?

*Introduce themes key to the IUCN 2016 meeting, international engagement and re-engagement following the World Parks Congress in Sydney in 2014.*

Abstract

Provide additional information to supplement GWS 2015 sessions following up on the World Parks Congress in Sydney, Australia and the look forward to the 2016 IUCN Congress sponsored by the United States to be held in the state of Hawaii. Themes will include biocultural conservation, sustainability, energy, invasive species, youth and diversity, climate change and relevancy.

Keywords

*IUCN 2016, biocultural*

Lead author /  
Session organizer

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Additional  
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## Sustainable Transportation in the National Parks

What will I get out of this?

*Attendees will be challenged to consider potential limitations of “conventional” transportation planning in national parks and the feasibility of new approaches being developed and applied.*

Abstract

In most cases, transportation planning in national parks might most appropriately be termed “demand-driven”. In this approach, rigorous analyses of park visitation, traffic, and parking data are used as a basis for transportation planning to accommodate current and projected future visitor demand, within financial constraints. Performance measures used to assess the quality of transportation systems in national parks are generally related to “moving people” efficiently. This approach is based on well-established principles for transportation planning in urban and rural communities. However, a demand-driven approach to transportation planning may not be suitable in national parks because it may enable levels of visitation that cause visitor crowding, resource impacts, and other unintended consequences. The purpose of this session is to present alternative approaches that challenge the conventional demand-driven approach to transportation planning in national parks.

Keywords

**Transportation**Lead author /  
Session organizer**Steve Lawson** Director, Public Lands

RSG slawson@rsginc.com

Additional  
authors / organizers**Sustainable Transportation in the National Parks, Part I: Emerging Innovations on Best Practices**

Steve Lawson, Director, RSG

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**Transportation-related Indicators and Standards of Quality**

Peter Pettengill, Outdoor Recreation Planner, Grand Canyon National Park

**Modeling Relationships among Transportation, Visitor Use, and Management**

Jeff Hallo, Associate Professor, Clemson University

**Understanding Relationships Between Park Transportation and Ecological Conditions: A Synthesis of Recent Work**

Chris Monz, Associate Professor, Utah State University

**Understanding Relationships Between Transportation-related Noise and Visitors' Experiences in Parks and Protected Areas**

Peter Newman, Professor, Penn State University

What will I get out of this?

*SESRC "Experts in Quality Survey & Evaluation Research" are here to assist attendees with evaluation requirements and designing and securing future research projects.*

Abstract

The Social and Economic Sciences Research Center (SESRC) at Washington State University (WSU) opened in 1970 and is a leader in telephone, mail, web, evaluation and face-to-face survey methods. The SESRC home to Dr. Don Dillman, has contributed to the overall science in significant landmark accomplishments with the 4th edition of Internet, Phone, Mail and Mixed-Mode Surveys, The Tailored Design Method, the most cited survey methods book of all time with over ten thousand citations.

Keywords

*Surveys, Evaluation, Data*

Lead author /  
Session organizer

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**Managing Wildlife and Human Behavior to Address Human-Wildlife Interactions**

What will I get out of this?

*This workshop will engage managers and practitioners in assessing and developing varying approaches to managing changes in animal and human behavior that affect human-wildlife interactions.*

Abstract

This workshop will engage participants in applying theory to practice in managing human-wildlife interactions. In the first hour, participants will learn about key principles and foundational aspects of animal behavior and human behavior that affect human-wildlife interactions. A case study will demonstrate how adaptive management strategies, including feedback from biological and sociological monitoring data and numerous targeted scientific studies, has been applied at Redwood National Park to affect human-wildlife interactions. In the second hour, participants will break into discussion groups around three main lifeforms of concern in parks (bears, ungulates, and meso-carnivores) to further brainstorm and refine the overarching principles and practice developing strategies to influence human behavior, using techniques such as commitments, social norms, prompts, effective messages, and convenience. Our ultimate goal is to synthesize information and recommendations to reduce risks to people and wildlife from human-wildlife interactions and improve management and consistency across the Service.

Keywords

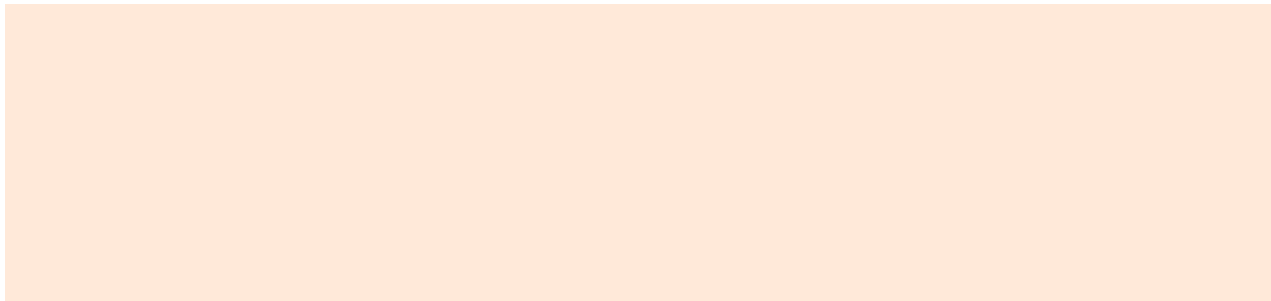
*stewardship, research, outreach*

Lead author /  
Session organizer

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**Managing Human-Wildlife Interactions: Principles of Animal Behavior Change and Learning**  
Kirsten Leong

**Managing Human-Wildlife Interactions: Principles of Human Behavior Change and Learning**  
Sara Melena

**Killer Potato Chips: Adaptive Management and Visitor Behavior Change to Conserve an Endangered Seabird**  
Keith Bensen, Fish and Wildlife Biologist, Redwood National and State Parks



**Commercial Air Tour Planning and Current Activities under the National Parks Air Tour Management Act**

What will I get out of this?

*Update on implementation of the National Parks Air Tour Management Act of 2000: results of air tour reporting, assessment of aircraft noise, voluntary agreement development*

Abstract

The National Parks Air Tour Management Act of 2000 was enacted to address concerns that noise from air tours over national parks could affect visitor experience and park resources. This session will provide an update on the following topics regarding air tour management: 1) an overview of the 2012 amendments to the Act, 2) review of information collected from commercial air tour operators that illustrate some trends in activity system-wide, 3) development of a strategy by the NPS Pacific West Region to evaluate the impacts of commercial air tours on natural soundscapes in wilderness, and 4) development of voluntary agreements with commercial air tour operators, where agreements address management issues necessary to protect park resources and visitor use without compromising aviation safety. NPS and Federal Aviation Administration staff will discuss voluntary agreements under development and lessons learned thus far.

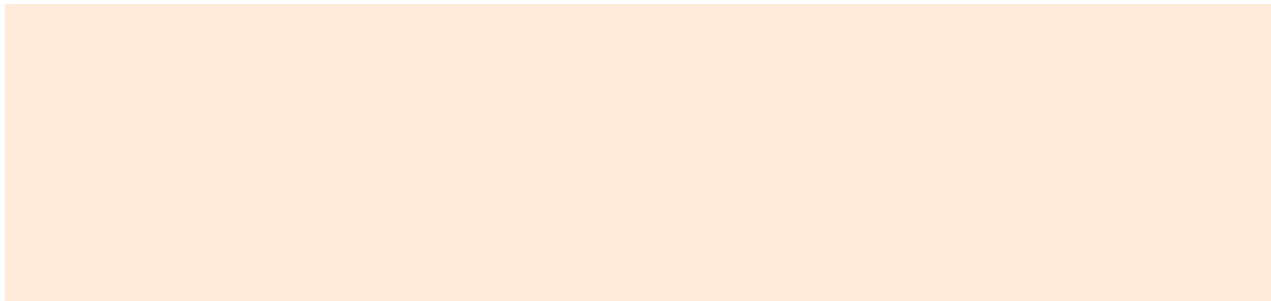
Keywords

*overflights, wilderness, soundscapes*

Lead author /  
Session organizer

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**Overview of amendments to the National Parks Air Tour Management Act of 2000**

Vicki Ward, Overflights Program Manager, NPS

**Results of 2013 Commercial Air Tour Reporting/Trends in Air Tour Activity over National Parks**

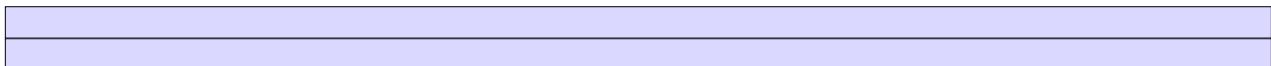
Brent Lignell, Overflights Planner, NPS

**NPS Pacific West Region Wilderness Air Tour Noise Assessment Strategy**

Judy Rocchio, Pacific West Region Soundscape Coordinator, NPS

**Developing a Commercial Air Tour Voluntary Agreement - Lessons Learned by NPS and FAA**

Keith Lusk, Special Programs Manager, Federal Aviation Administration





Connecting people to parks with iNaturalist

What will I get out of this?

*iNaturalist is a citizen-science technology platform that builds communities of stewards around parks providing new ways to engage the public and collect valuable monitoring data.*

Abstract

Protected areas are one of the most effective lines of defense against species extinction. However, if the public is not aware of or does not value this link between their local protected areas and the plants and animals it harbors, they will be strong advocates for their parks. Likewise, protected area managers need new streams of monitoring data to properly manage the species within parks amid continued land use and climate change. iNaturalist is a citizen science technology platform that builds communities of stewards around protected areas to provide new ways to engage the public and collect valuable monitoring data at the same time.

Keywords

*technology, engagement, citizen-science*

Lead author /  
Session organizer

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What will I get out of this?

*Through a series of short films, the audience will observe how Cabrillo NM partners with other agencies and institutions to resolve complex natural resource issues.*

Abstract

In 2014, Cabrillo National Monument embarked on a project that documented how the park approached complex resource management issues in partnership with local institutions and federal agencies. The result was a series of short films that are intended to serve as an educational tool that informs the public about the National Park Service mission, multifaceted issues that can arise in a small urban park and partnerships in action. In these short films (each less than 5 minutes), we explore management options for Cabrillo NM based peregrine falcons who may be preying upon the endangered least tern, the mysterious arrival of leopard sharks in our rocky intertidal, and the tenuous relationship between a threatened species of agave and its pollinator, the long-tongued Mexican bat.

Keywords

*science, resources, outreach*

Lead author /  
Session organizer

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# The Future of Science in the National Parks

What will I get out of this?

*This presentation will—in a hopefully provocative and accessible way—suggest what the future of science in national parks may be in the decades ahead.*

Abstract

The early decades of the 21st century promise significant advances in the directions, disciplines, and delivery of science for protected areas, especially national parks. Strategic needs of resource management agencies will continue to converge, and on-the-ground projects will challenge contemporary assumptions of basic and applied science. Beyond the obvious advances in climate change science, new and emerging disciplines—from forensic genomics to ethnoecology—will contribute new tools, new understanding, and new questions for both scientists and managers. The integration of advanced monitoring (downstreamed from declassified national security technology), big data, 4th generation social media, the expansion of specialized science courts, and the institutionalization of citizen science will alter who does sciences and how it is delivered. As the NPS enters its Centennial, this presentation will—in a hopefully provocative and accessible way—suggest what the future of science in national parks may be in the decades ahead.

Keywords

*science, national parks*

Lead author /  
Session organizer

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Protected Areas the future?

What will I get out of this?

*The audience will learn about the challenges facing protected areas and the what protected areas will be in the future*

Abstract

A Global driver of protected area expansion in Target 11 of the Aichi Biodiversity Targets. This target has quantitative, 17% coverage on land, 10% coverage in the Marine as well as detailed qualitative aspects such as protected areas being effectively and equitably managed, well connected and representative. The current coverage figures are 15.4% on land and 3.41% of the global ocean, however these figures do not tell the complete story. In order to achieve all aspects of this target we need to expand the concept of a protected area network to included gazetted sites as well as privately protected areas and community area. There needs to be a focus on the creation of additional protected areas in the marine environment. This presentation will be based on the global Protected Planet 2014 report.

Keywords

*Protected Areas, Coverage*

Lead author /  
Session organizer

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## Stories Are Resources, Too: Embracing Broader Narratives to Build Parks' Future Personal and Public Relevance

What will I get out of this?

*Story is the single source of relevance the NPS controls. Attendees discover why this is so and options for diversifying the system's storytelling capacity.*

Abstract

Story creates both a sense of experience and the experience of sense. It creates memorable moments, expectations, and engagement. Yet storytelling successes at the local level, in parks, aren't in isolation sufficient to sustain people's commitments to stewardship. To survive and thrive, parks and systems must compete in the national and global marketplaces of identities and ideas. How? By creating personal and public relevance that wins people's hearts and minds, their promotional support. To earn that backing, the NPS needs to expand and diversify its storytelling powers. Three means to strengthen and broaden these support-producing capacities for parks and protected areas include cultivating cross-training opportunities in subject-matter disciplines and the arts, developing metanarratives that unite sites into cohesive stories, and telling tales in different ways for different audiences. In these ways, through stories, its only source of power the NPS controls, the public can experience parks' increased inclusivity and relevance.

Keywords

*Story, power, relevance*

Lead author /  
Session organizer

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What will I get out of this?

*This session examines how shifting public policy priorities shape the creation and management of protected areas, with an emphasis on environmental, social and economic factors.*

Abstract

Drawing on a historical perspective, this compass session highlights the interplay of social policy and protected area management in the decades following World War II. As the United States experienced rapid cultural and economic change, parks and other public lands frequently emerged as sites of experimentation and contestation, with managers and diverse stakeholders questioning longstanding norms and practices. Key discussion points include: What role did managers, advocates, critics and others play in the designation of new national park units and in the re-interpretation of older sites? How did this process of conflict and negotiation shape the physical, narrative, and interpretive legacy of parks? Can protected area histories reveal shifts in American culture and social organization? Finally, what lessons can park histories impart for current and future NPS management practices, especially as it applies to the successful crafting and later implementation of policy over time?

Keywords

*policy, history, NPS*

Lead author /  
Session organizer

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**Creating a Native Hawaiian National Park: The Movement to Establish Kaloko-Honokōhau National Historical Park**

Chris Johnson, Historian, Pacific West Region, National Park Service

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**The Recreation Imperative: Urban Parks in the Age of Environmentalism**

Eleanor Mahoney, PhD Candidate, University of Washington

**The Job Corps Program: Waging a War on Poverty in the National Parks, 1964-1969**

Angela Sirna, PhD Candidate, Middle Tennessee State University

**Valuing Vision: Frances Payne Bolton and the Preservation of George Washington's "Overview"**

John H. Sprinkle, Jr., PhD, Bureau Historian, Park History Program, Washington Office, National Park Service

**Moderator / Chair**

David Louter, PhD, Chief, Cultural Resources Program, Pacific West Region, National Park Service













Resources Science and Stewardship in a Time of Uncertainty – How are we doing?

What will I get out of this?

*Sharing stories about resource and science stewardship that push the envelope would intrigue and give us all courage to face these uncertainties of change ahead.*

Abstract

I would like to have a conversation with other professionals that allows us to speak candidly about the future of our respective parks. We seem to be at a turning point with the Revisiting Leopold report to really question the resources management actions we have perfected over the decades. Are we making a difference or still trying to maintain a snapshot in time for the visitor. Have we truly improved the ecological integrity of our parks when outside threats continue to shift what our desired conditions should be? Separate pathways between science and applied resources management instead of an integration of minds working together towards one outcome still exist and I wonder if there is ever a way to truly align park needs with scientific interests. I offer many questions this sharing circle could tackle. I'm open to suggestion and hope this concept will somehow be delivered at the conference.

Keywords

*uncertainty, integrity, innovations*

Lead author /  
Session organizer

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Yosemite Valley – Experiencing a naturally cultural landscape

What will I get out of this?

*This presentation will provoke thought on past and future of Yosemite stewardship and provides with an overview of state of the art ecological restoration.*

Abstract

Yosemite Valley is a landscape culturally manipulated for thousands of years. When the federal government set aside Yosemite Valley in 1864 as a place of ‘public use, resort and recreation... inalienable for all time’, it changed the trajectory of the Valley forever. Most visitors do not understand the cultural evolution behind this seemingly natural place; that their perception of the scenery and experience of place is one that is designed. Today, the NPS must to steer the trajectory of Yosemite Valley to navigate visitor congestion, climate change, modified hydrologic function, and an anthropogenic fire regime. The NPS has begun implementation of a Valley-wide restoration plan that strives to capture both natural and historic fidelity. How far beyond natural should the NPS go to protect a snapshot in time? This paper will provide a history of Yosemite Valley and lay out its current condition, restoration success, future challenges, and steps ahead.

Keywords

*ecological, cultural, landscape*

Lead author /  
Session organizer

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Sue Beatty, Yosemite National Park  
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Garrett Dickman, Yosemite National Park

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How will climate change influence winter tourism along Minnesota’s North Shore?

What will I get out of this?

*Nature-based tourists’ behavioral responses to climate-related changes within a recreational system provide insights that can enhance tourism-dependent communities’ climate readiness.*

Abstract

Communities along the North Shore of Lake Superior are dependent upon nature-based tourism; however, recent data suggests tourism is declining within the region. Climate change may partially contribute to this trend. As weather conditions become less predictable and more variable, tourists are likely to modify habitual recreation behaviors. A multi-disciplinary research project is currently underway to assess North Shore communities’ adaptive capacity, objectively determine climate-related risks to tourism within the region and deliver science-based decision support tools. This poster presents results from an on-site survey assessing winter tourists’ past visitation patterns, their climate-related risk perceptions specific to the North Shore and their willingness to substitute alternative recreational activities for those impacted by increasingly variable climatic conditions. The results offer tourism providers a better understanding of how climatic change is likely to affect tourists’ visitation behavior.

Keywords

*climate, tourism, survey*

Lead author /  
Session organizer

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Mae Davenport, Associate Professor, Department of Forest Resourcees, University of Minnesota  
Mark Kanazawa, Professor, Department of Economics, Carleton College  
Dorothy Anderso, Emeritus Professor, Department of Forest Resourcees, University of Minnesota

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What will I get out of this?

*Conflict between protected area managers and indigenous peoples can only be resolved with dialogue. This session furthers dialogue and nurtures partnerships that protect sacred places.*

Abstract

Sacred places are the oldest protected areas on the planet, yet they are in peril within government protected areas and beyond. How can we better protect sacred places? We'll screen the film "Standing in a Sacred Ground: Pilgrims and Tourists" - on Russia's Altai Republic and Mt. Shasta in California, and discuss urgent current issues with filmmaker Christopher McLeod and Winnemem Wintu Chief Caleen Sisk.

Keywords

*sacred, land, sites*

Lead author /  
Session organizer

**Christopher McLeod** Producer and Director

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authors / organizers

**Producer and Director**

Christopher McLeod

If this is a session of  
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**Chief of the Winnemem Wintu Tribe**

Caleen Sisk

## Islands of Sanctuary Film

What will I get out of this?

*Conflict between protected area managers and indigenous peoples can only be resolved through dialogue. This session continues dialogue and nurtures partnerships to protect sacred places.*

Abstract

Indigenous Protected Areas are being recognized around the world as a new model of protected area, where sacred places are controlled and managed by native people. We'll screen the film "Standing in a Sacred Ground: Islands of Sanctuary" - on Australia's Northern Territory and the Hawaiian island of Kaho'olawe, and discuss these urgent issues with filmmaker Christopher McLeod and native leaders.

Keywords

*sacred, land, sites*

Lead author /  
Session organizer

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authors / organizers

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# Park Planning in a Changing Social and Natural Environment

What will I get out of this?

*How do you prepare parks for the future when so much of it will be so different from the past? Planners are on the front line.*

Abstract

Keywords

Lead author /  
Session organizer

**Kevin** **McNamee**

Additional  
authors / organizers

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Developing a vision for social science in the National Park Service

What will I get out of this?

*Social science data and knowledge is increasingly important for park managers to make thoughtful and collaborative decisions that balance resource protection and visitor experience.*

Abstract

The NPS is developing a strategy to update the vision for the disciplines comprising social sciences across the service called the Social Science Strategy (S3). The strategy guides the coordination of agency social science efforts for the next ten years. The S3 also aims to articulate a long-term vision for social sciences, solidify a professional network, identify related needs and opportunities, identify potential gaps in priority disciplines or programs, outline ways to leverage support, and set realistic goals and objectives that will further these sciences in the NPS to greater assist with informed decision making. Select NPS stakeholders are identified and tasked with creating a vision statement, identifying needs and opportunities, and defining goals and objectives. During this compass session, workgroup stakeholders will build from existing developments in the S3 and ask session participants to build off of existing elements to bolster and expand perspectives and communications within the strategy.

Keywords

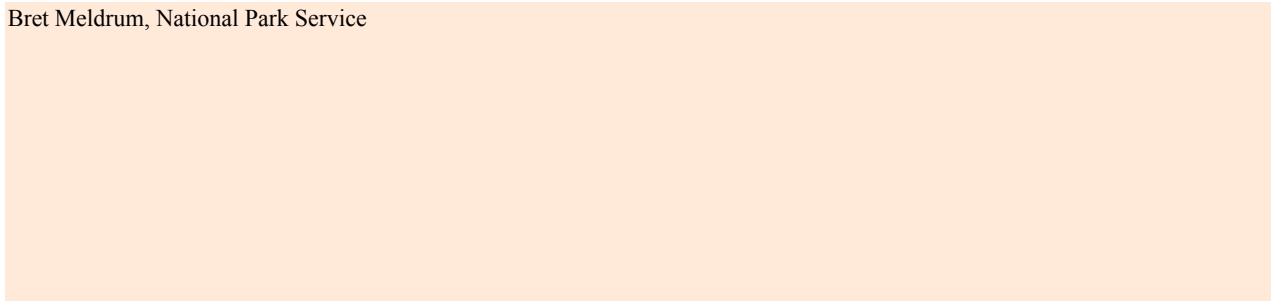
*Social science, planning*

Lead author /  
Session organizer

**Susan McPartland** Visitor Use Management Specialist  
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Bret Meldrum, National Park Service



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What will I get out of this?

*The audience will consider the role of the NPS in science communication and scientific literacy, and to reconsider the lines between resource management and interpretation.*

Abstract

Since the early days of the generalist Ranger Naturalist Service, disciplinary specialization and organizational division have grown between the NPS fields of Resource Management and Interpretation. However, given today's environmental challenges, coupled with a lack of public understanding of science, NPS leaders at the highest levels have identified science communication as an important agency goal. As such, there is a paradigm shift occurring in both resource management and interpretation that requires greater integration of science into interpretation and asks scientists to become better communicators. These aligning visions challenge the NPS to consider its role in science communication and scientific literacy, and to reconsider the lines between resource management and interpretation. This session explores science communication and its meaning in the NPS's second century. The panelists will share their visions and lead a discussion about the benefits, challenges, and the role of land management agencies in science communication and science literacy.

Keywords

*science, management, interpretation*

Lead author /  
Session organizer

**Sara Melena** Interpretive Specialist

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Mike Whatley, Office of Education and Outreach Chief, National Park Service

Tim Watkins, RLC/CESU National Coordinator, National Park Service

Alice Wondrak Biel, Writer-Editor, National Park Service

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**The state of science literacy in society**

Dr. John Falk

**The NPS Case for Convergence of Resource Management and Interpretation**

Dr. Ray Sauvajot

**The NPS Case for Convergence of Resource Management and Interpretation**

Julia Washburn

**Science Literacy and the National Park Service**

Tim Watkins

**Reconsidering the lines between resource management and interpretation**

Mike Whatley





Evaluating restoration methods for an endangered butterfly

What will I get out of this?

*This presentation will provide information on innovative restoration techniques for disturbance dependent species, including a federally endangered butterfly.*

Abstract

Golden Gate National Recreation Area received NRPP T&E funding to scientifically test the efficacy of employing different disturbance methods of burning and soil scraping to enhance habitat for the federally endangered Mission blue butterfly. The Mission blue utilizes three species of disturbance associated lupine host plants. The park has had trouble growing and outplanting these host plants to enhance habitat. Results indicate that both burning and scraping treatments were effective in stimulating regeneration of lupine host plants for the butterfly. Mission blue butterflies were observed using treatment plots. There was a substantial increase in non-native plant cover in both the mechanical and prescribed fire treatment plots compared to the control plots. Erosion was not an issue on the study plots either. Project outreach included development of a Mission blue brochure, updated park website, as well as to support events related to the Mission blue butterfly Species of Year campaign.

Keywords

*endangered, butterfly, restoration*

Lead author /  
Session organizer

**William Merkle** Wildlife Ecologist

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Additional  
authors / organizers

Alison Forrestel, Supervisory Vegetation Ecologist, Golden Gate National Recreation Area

Susie Bennett, Natural Resource Specialist, Golden Gate National Recreation Area

Christina Crooker, Stewardship Program Manager, Golden Gate National Parks Conservancy

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What will I get out of this?

*Understanding the nexus between tourism, conservation and community livelihood may stimulate better planning and promote conservation and sustainable tourism in many rural areas*

Abstract

Tourism is considered by many international organizations and governments to have the largest multiplier effects compared to other industries. However, studies have shown that benefits accrued from tourism often do not reach local communities who are the custodians of natural resources. This situation often triggers local communities to develop negative attitudes towards tourism and protected areas. Studies show increasing trends of conflicts, hostility and insecurity for tourists in areas where tourism is not directly benefiting local communities. Studies have also demonstrated that if locals are not actively involved in planning tourism developments, it becomes much harder for protected area managers to gain their support for conservation initiatives. Elevated poaching of Africa's mega fauna in the recent past provides clear justifications of lack of local community support for conservation initiatives. This study evaluates the potential of tourism industry in mitigating poverty and promoting sustainable livelihood and conservation in rural northern Tanzania.

Keywords

*Tourism, conservation, livelihood*

Lead author /  
Session organizer

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**Wildland fires limit the occurrence, severity, and size of subsequent fire**

What will I get out of this?

*We quantify the effectiveness and longevity of wildland fire as a fuel treatment.*

Abstract

Wildland fires can serve as fuel treatments in much the same way as mechanical thinning or prescribed fire. Federal fire policy fully supports the management of fire for multiple objectives and managers need to understand this fuel treatment effect when developing appropriate management responses to future fire events. Quantitative evidence is lacking for this treatment effect, how it varies by ecosystem, and how it decays over time. Using satellite imagery spanning 1972-2012 for four study areas in the Southwest and northern Rockies, we evaluated if wildland fire 1) reduced the probability of subsequent fires from occurring, 2) limited the size of subsequent fires by acting as fuel breaks, and 3) limited the severity of subsequent fires. Results show that wildland fires indeed limit the occurrence, size, and severity of subsequent fires, and that the strength and longevity of this effect varied by study area and ecosystem type.

Keywords

*fire ecology, management*

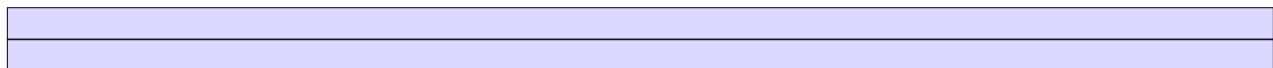
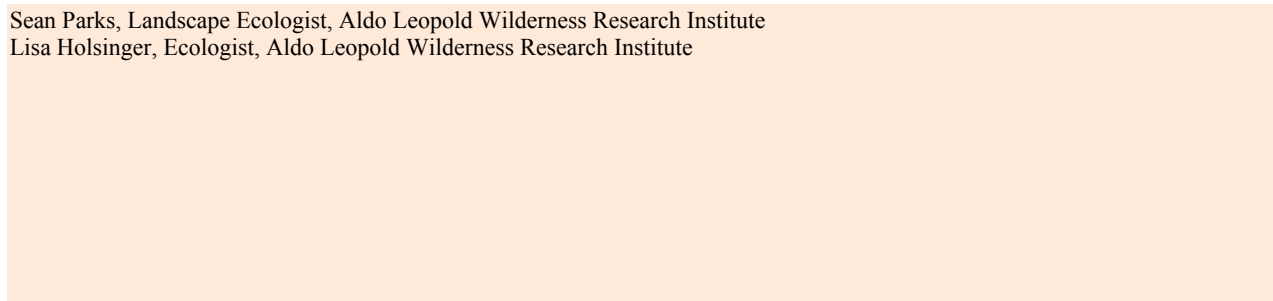
Lead author /  
Session organizer

**Carol Miller** Research Ecologist

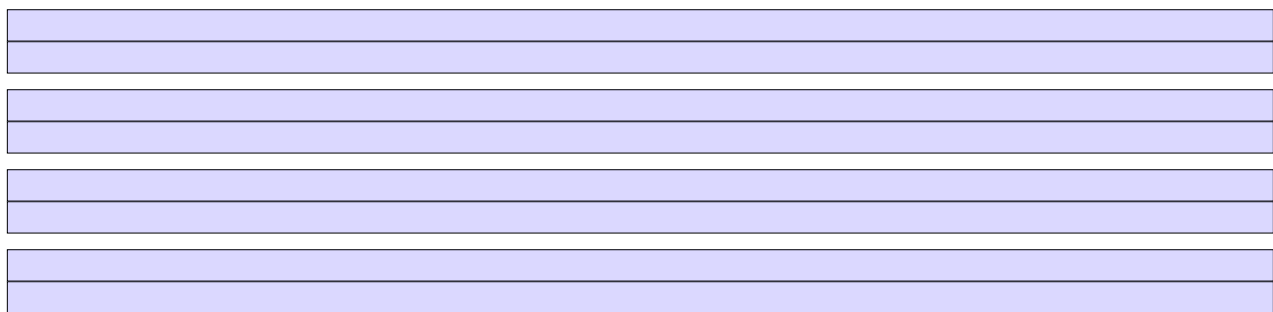
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Sean Parks, Landscape Ecologist, Aldo Leopold Wilderness Research Institute  
Lisa Holsinger, Ecologist, Aldo Leopold Wilderness Research Institute



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## The Role of Community Outreach and Interpretive Actions in Protecting Historic Park Resources

What will I get out of this?

*Session explores the ways community outreach and interpretive actions can promote protection and appreciation of historical resources in parks and protected areas.*

Abstract

The purpose of this session, organized by participants in a 2014 George Wright Society Park Break session, is to explore the ways community outreach and interpretive actions can be utilized to promote the protection and appreciation of historical resources in parks, protected areas, and cultural sites. Using Keweenaw National Historical Park and Isle Royale National Park as examples of how limited awareness by community members can potentially threaten park resources, the panelists will present strategies and stimulate conversation encouraging community support and resource stewardship through outreach and interpretation. This session will facilitate discussion of best practices for community outreach, including considerations of diversity, interests, and accessibility, as well as examine what it means for a site to be “relevant” to contemporary and future audiences. This session will also consider the ways parks, protected areas, and cultural sites can engage non-local stakeholders through programs such as Park Break.

Keywords

**Outreach, Interpretation**

Lead author /  
Session organizer

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Casey Campetti, Graduate Student, Indiana University of Pennsylvania

Stephanie Sullivan, Graduate Student, University of Arkansas

Maija Glasier-Lawson, Graduate Student, California State University–Chico

Mario Battaglia, Graduate Student, University of Arizona

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Yellowstone's Non-commercially Guided Snowmobile Access Program: Creating sustainable solutions with diverse partners

What will I get out of this?

*Audience members can learn from Yellowstone's experience with developing a highly controversial recreation program in partnership with diverse and often polarized stakeholder groups.*

Abstract

Over the past forty years, snowmobiling has become an intrinsic yet controversial part of the culture of Yellowstone and its surrounding communities. In 2004, after resource impacts and safety issues surpassed acceptable levels, Yellowstone restricted private snowmobile access and only allowed commercially guided tours. Following a decade of debate and lawsuits, the 2013 winter use Rule provided authorization the implementation of a Non-commercially Guided Snowmobile Access Program that includes a lottery system for permit allocation and a comprehensive education program to train members of the public to act as non-commercial guides. This presentation explores how the NPS worked together with a diverse group of stakeholders to build a pilot program designed to protect park resources and visitor safety and respond to the values of the local community. It will also examine the success of this program following the first season of implementation.

Keywords

*Winter Use, Yellowstone*

Lead author /  
Session organizer

**Christina Mills** Outdoor Recreation Planner  
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authors / organizers

Wade Vagias, Management Assistant, Yellowstone National Park

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**Man and Nature at 150**

What will I get out of this?

*“Man and Nature” by George Perkins Marsh was arguably the first environmental book published in North America. What can we learn from the events that spurred Marsh to write his warning?*

Abstract

“Man and Nature” by George Perkins Marsh was arguably the first environmental book ever published in North America. Though less well known, it is the Silent Spring of the land conservation movement. One hundred fifty years after Marsh put ink to paper, many of his warnings and observations are still relevant in contemporary conservation. What can we learn from the events that spurred Marsh to write his warning, and the response? How can our generation spark a new age of environmentalism? This session will feature a conversation with David Lowenthal, pre-eminent biographer of George Perkins Marsh, and author of *The Past is a Foreign Country*.

Keywords

*writing, communication*

Lead author /  
Session organizer

**Brent Mitchell** Senior Vice President, QLF

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Christina Marts, Assistant Superintendent, Marsh Billings Rockefeller National Park

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David Lowenthal, Professor Emeritus, University College London

Nora Mitchell, University of Vermont

Rolf Diamant, University of Vermont

## Scaling Up & Private Protected Areas

What will I get out of this?

*Learn about the first US national conference on large landscape conservation, and about the first global assessment of private protected areas.*

Abstract

Scaling Up to work at landscape level is a National Park Service centennial priority. Large landscape conservation requires a fundamental shift in thinking and action, addressing social, economic and ecological systems. Collaboration is key, among different public land management agencies, with private NGOs, and connecting to other sectors. Join us for a double feature matinee! Learn more about the findings of the first national conference on large landscape conservation, including NPS Scaling Up team efforts. And hear about the first global assessment of privately protected areas, recently released. Come and share your stories in the discussion.

Keywords

Lead author /  
Session organizer

**Brent Mitchell** Chair, IUCN Specialist Group on Privately Protected Areas

Additional  
authors / organizers

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Christina Marts, Assistant Superintendent, Marsh Billings Rockefeller National Park and Stewardship Institute
Brenda Barrett, Living Landscapes Observer





## Breakout Thinking in Difficult Times

What will I get out of this?

*Audience members will be challenged to move past any defeatism they might feel regarding current challenges, and explore ways to advance, remain current, address issues.*

Abstract

In difficult times, it's easy to blame circumstances, let them dictate inactivity (inertia), and accept the outcomes as unavoidable. Unfortunately, doing so has consequences for parks and protected areas, and the people who serve them. These consequences can lead to loss or impact to important resources. Resource managers, researchers and managers are facing budget sequestration, travel restrictions, conference attendance limits, limited research dollars, globalization, regional development pressures, and other challenges. The panelists will each explore a different aspect of the current management environment, give examples of breakout thinking that has help assure success and advancement despite challenges, and they will lead attendees in exploring options, with the hope that the discussions will benefit everyone in attendance.

Keywords

**breakout thinking**Lead author /  
Session organizer**Jerry Mitchell** Retired (Chief, Biological Resource Management, NPS)National Park Service [jmmcam03@hotmail.com](mailto:jmmcam03@hotmail.com)Additional  
authors / organizers

Steve Shackelton (Retired NPS), UC Merced

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**Remaining current in your science, scholarship, and networking, and building credibility**

Gary Davis

**Leveraging protected areas as economic generators, to reduce conflict and promote cooperation**

Steve Shackelton

**Keeping the research going**

Jan van Wagtendonk

**Partnering with universities**

Brett Wright

**Global parks, global collaborations, and shared global solutions**

Doug Morris

**Making connections: Linking heritage of agricultural landscapes with community engagement and protected area conservation**

What will I get out of this?

*Emerging initiatives recognizing natural and cultural heritage on agricultural landscapes demonstrate ways to engage communities, contribute to sustainable practices, and advance conservation of protected areas.*

Abstract

Agricultural landscapes encompass almost 50% of the US and include places with important natural and cultural heritage. Yet this heritage is often overlooked and these agricultural landscapes are under-represented in the nation's resource inventories and as part of protected areas. Today, these agricultural landscapes with heritage value face many challenges and it is timely to examine their conservation. Panel presentations describe initiatives by communities working in partnership with the NPS and other organizations to recognize the heritage values of agricultural landscapes in national parks and National Heritage Areas. Discussion will identify other examples and examine conservation strategies that engage communities, advance sustainable practices, and support economic revitalization. Discussion will also identify opportunities to further protect natural and cultural resource values of working agricultural landscapes and ways to connect to communities, protected areas and their regional landscape context. A summary of this session will be prepared for the conference proceedings.

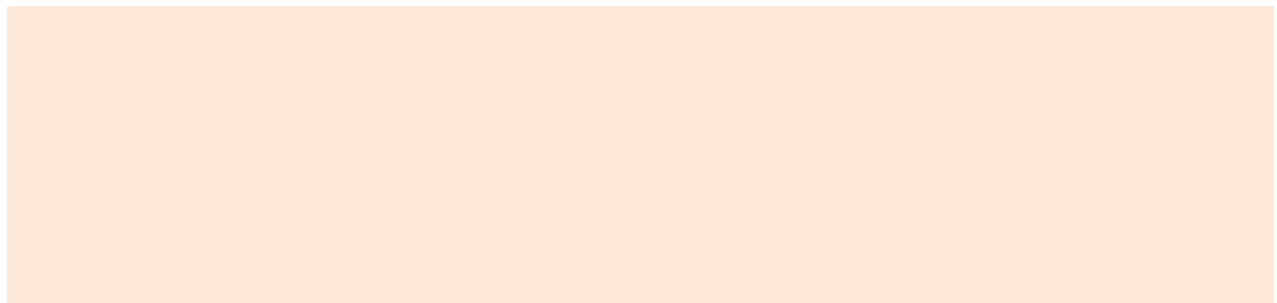
Keywords

**Agriculture, sustainability, engagement**

Lead author /  
Session organizer

**Nora Mitchell** Adjunct Associate Professor  
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Additional  
authors / organizers



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**Sustainable forestry as a strategy for cultural landscape conservation**

Christina Marts, Assistant Superintendent for Stewardship, Marsh-Billings-Rockefeller National Historical Park

**Partnerships for sustaining agriculture at Martin Van Buren National Historic Site: Developing management guidelines**

Bob Page, Director, Olmsted Center for Landscape Preservation, NPS

**Sustaining agriculture at Ebey's Landing National Historical Reserve: Reflections on progress and challenges**

Nancy Rottle, Associate Professor, Department of Landscape Architecture and Director, Green Futures Research and Design Lab

**Innovative ideas to recognize the cultural and heritage values of agricultural landscapes**

Brenda Barrett, Editor, Living Landscape Observer

**Another look at agricultural landscapes: Linking heritage values, community engagement, and sustainability**

Nora Mitchell, Adjunct Associate Professor, University of Vermont





What will I get out of this?

*The National Monitoring Network is an integrated, multidisciplinary, and multi-organizational program using multiple sources of data and information to improve monitoring of coastal waters.*

Abstract

The U.S. Geological Survey's (USGS) is implementing a demonstration project in the Albemarle Sound for the National Monitoring Network for U.S. coastal waters and their tributaries. The goal of the National Monitoring Network is to provide information about the health of our oceans and coastal ecosystems and inland influences on coastal waters for improved resource management. The network integrates biological, chemical, and physical features and links uplands to the coastal ocean. The purpose of the Albemarle Sound pilot study is to: 1) Inventory current monitoring programs in the Albemarle Sound, 2) Conduct a gap analysis to determine current monitoring needs, 3) Implement a monitoring program to address data gaps, and 4) Create a web-based map portal of monitoring activities. As part of the project, the USGS worked with stakeholders to inventory current programs and design a monitoring program. Results after 3 years of implementation will be discussed.

Keywords

*Estuary, Monitoring Network*

Lead author /  
Session organizer

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Additional  
authors / organizers

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Marine Protected Areas Atlas

What will I get out of this?

*MPAtlas.org is a website to explore the world's marine protected areas. This will be an exhibit of the tool and the curated MPA information.*

Abstract

Launched in 2012, MPAtlas.org (Marine Protected Areas Atlas) is an interactive website and resource for marine conservation as the most accurate and comprehensive source for gauging marine protected area progress around the world. Currently, visitors to the website can locate and learn about individual marine parks and reserves worldwide. MPAtlas has many valuable features including —the MPA Campaign Tracker. This tool is the only resource of its kind, providing a central location for the latest news and information about efforts to establish new marine protected areas around the world. MPAtlas will also track progress by country in achieving their MPA coverage goals including commitments under the Convention on Biological Diversity. We are also implementing many new query tools that will allow users to view and analyze data by a variety of social, political and ecological factors.

Keywords

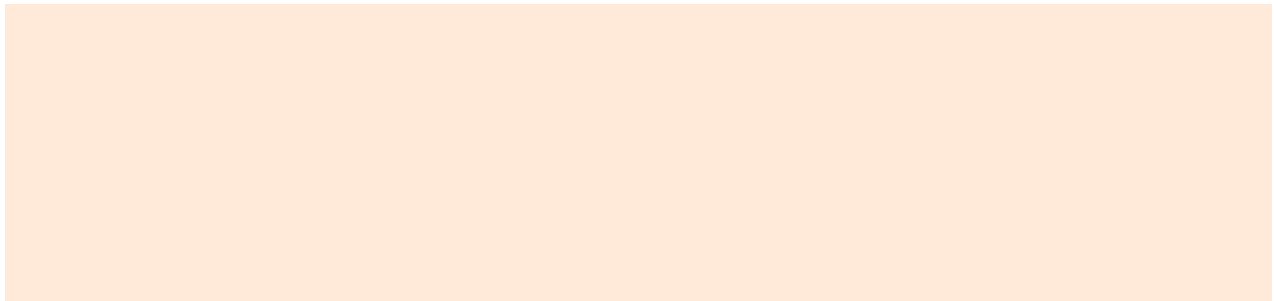
*marine reserve, MPA*

Lead author /  
Session organizer

**Lance Morgan** President

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Additional  
authors / organizers



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Superstorms, Shutdowns, and the Future of Cultural Resources: A Gateway Case Study

What will I get out of this?

*The session topic is the prioritization of cultural resources; a sustainable approach to cultural resource management given the realities of climate change and diminishing funding.*

Abstract

Gateway National Recreation Area includes over 500 historic structures, many of which are adjacent to water and are vulnerable to sea level rise and coastal storms. For years, the majority of the historic resources in Gateway have been vacant, in poor condition and in need of major capital repair. In order to allocate limited funding where it would have the most impact, the park's new General Management Plan systematically prioritized historic structures into three categories: Preserve, Stabilize and Ruin. With this process the park took the bold step of making the conscious decision to walk away from some significant cultural resources in the interest of being able to save others. This presentation will outline this process, discuss how Hurricane Sandy brought climate change into the conversation by making resiliency a primary consideration in prioritization, and raise for discussion some of the more difficult decision points for the park.

Keywords

**Cultural Resources**

Lead author /  
Session organizer

**Jennifer Nersesian** Superintendent

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Marilou Ehrler, Historical Architect, Chief of Cultural Resources, Gateway National Recreation Area

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What will I get out of this?

Abstract

As oil and natural gas production in the U.S. intensifies, parks are faced with addressing and minimizing the direct and indirect effects to park resources and values from energy development. Shale oil and gas development in the U.S. is one of the most rapidly expanding trends in onshore domestic hydrocarbon development, particularly from the Bakken Shale in ND and Marcellus and Utica Shales in the eastern U.S. Session presenters will provide an overview of shale oil and gas development and the technologies that make it possible; and ways to mitigate the effects of oil and gas development including policy and regulatory tools, opportunities to collaborate with stakeholders and other agencies, air quality and viewshed analyses, and natural sounds and night skies modeling to help protect park resources and values. The session format will be six 15-minute talks by agency staff, each followed by a brief question and answer period.

Keywords

**hydrocarbons, impacts, mitigation**Lead author /  
Session organizer

**Lisa Norby** Energy and Minerals Branch Chief  
National Park Service-Geologic Resources Division [lisa\\_norby@nps.gov](mailto:lisa_norby@nps.gov)

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Predicting Natural Ambient Sound Levels, the Spread of Noise from Energy Development, and Noise Impacts • Frank Turina,  
National Park Service, Natural Resource Stewardship and Science Directorate, Natural Sounds and Night Skies Division

#### **Development of Shale Oil and Gas Through High Volume, Hydraulic Fracturing - Scale, Scope, and Concerns**

Lisa Norby, National Park Service, Geologic Resources Division

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#### **North Dakota National Parks: In the Midst of the Bakken Oil Boom**

Valerie Naylor, National Park Service (retired)

#### **Shale Development in the Northeast Region: Booming Production Brings Challenges**

Mary Krueger, National Park Service, Northeast Region

#### **Hydraulic Fracturing: The Real Risks to Drinking Water Supplies Associated with the Subsurface Process**

Pete Penoyer, National Park Service, Natural Resource Stewardship and Science Directorate, Water Resources Division

#### **Air Resources and Viewshed Impacts and Mitigation**

Andrea Stacy, National Park Service, Natural Resource Stewardship and Science Directorate, Air Resources Division







**Invertebrates Everywhere! Using Collaborative Citizen Science to Document 5,000 Species in an Urban National Park**

What will I get out of this?

*Participants will see that new invertebrate species are everywhere, learn institutional collaboration lessons, and understand how to train and keep skilled volunteer citizen scientists.*

Abstract

Approximately 80% of life on Earth is an invertebrate. Many families of widely abundant insects are 35-90% undescribed. This case study examines lessons learned on the George Washington Memorial Parkway, an eastern, urban national park that documented over 5,000 species. Urban national parks contain valuable habitat where a surprisingly large diversity of invertebrates still flourish. Nearby cities in northern Virginia and Washington D.C. provide many educated volunteers who can be inspired and trained to conduct the time-intensive field, lab, and curatorial tasks needed to document astonishing invertebrate diversity. Institutional collaboration with expert taxonomists and sustained support at the park level is needed to carry multi-year inventories to completion. Many newly documented species may have integrated pest control or other management considerations.

Keywords

*invertebrate, biodiversity, collaboration*

Lead author /  
Session organizer

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## Call to Action #38: Enjoy the View – protecting clean air and treasured views

What will I get out of this?

*Air and visual resources face diverse threats. Learn from parks addressing these cross-boundary issues by participating in Call to Action item #38: Enjoy the View.*

Abstract

Call to Action item #38: Enjoy the View, aims to protect clean air and treasured views in parks through resource assessment and cooperative conservation. Over the past two years there has been a groundswell of interest from parks seeking guidance and a consistent approach, especially for evaluating scenic views. Delaware Water Gap NRA, Chaco Culture NHP, Gates of the Arctic NP & Pres, Catocin Mountain Park, and Monocacy NB have all taken the plunge and now have stories to share. Come learn about the cross-boundary issues these diverse parks are facing and how the Enjoy the View process works. Presentations will also address the National Park Service role of providing information and speaking to the value of air and visual resources for visitors and future generations. Finally, a sneak peek at the Enjoy the View products including air quality assessments and visual resource products will be shared.

Keywords

*visual-resources, air, park-experience*

Lead author /  
Session organizer

**Melanie Peters** Natural Resource Specialist, National Park Service - Air Resources Division

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Laura Rotegard, Superintendent, Horace Albright Training Center

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Mark Meyer; Visual Resource Specialist, NRSS Air Resources Division

Melanie Peters; Natural Resource Specialist, NRSS Air Resources Division

Leonel Arguello; Chief of Vegetation Management, Redwood National Park

Jim Von Haden; Natural Resources Program Manager, Chaco Culture National Historical Park and Aztec Ruins National







CCC Historic Designed Landscape: Opportunities to Expand Interpretation of Park History and Cultural Resources

What will I get out of this?

*Examine CCC historic designed landscape at Chiricahua NM. Explore different interpretive approaches to educate public and staff, illustrate value of integrated resources, importance of preservation.*

Abstract

The majority of older national parks and monuments contain historic designed landscapes. With the hand labor of the Civilian Conservation Corps and engineering talents of Park Service design teams, roads and trails, park structures, and recreation facilities were constructed to maximize visitor opportunities and minimize ecological intrusions. These cultural resources are significant because they link the natural resources of each park, its history of development and use to national themes of the Great Depression, work programs of the New Deal, and natural resource conservation. Yet in many parks this important story remains largely untold or inadequately interpreted. As we approach the Centennial, we really should look backward to celebrate each park's development. These designed landscapes offer a valuable canvas to reinterpret for the visiting public NPS' historic role in national recreation development and its modern one in protecting cultural resources still in use today.

Keywords

*landscapes, interpretation, CCC*

Lead author /  
Session organizer

**Robin Pinto** Landscape Historian  
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What will I get out of this?

*Learn how US/ICOMOS is enhancing access by CRM peers around the world to the best new US heritage practices, research and science, and vice versa.*

Abstract

Since its founding 50 years ago, US/ICOMOS has worked to deliver the best of international historic preservation and heritage conservation work, including professional approaches and results, to the U.S. domestic preservation dialogue. At the same time, in a collaborative approach, US/ICOMOS has shared and interpreted for the world the unique American historic preservation system. This presentation will introduce the US/ICOMOS 50th anniversary Knowledge Exchange initiative, which promises to supplement our traditional face-to-face programs with new digital and virtual efforts, with a special focus on the following themes: (1) Cultural Landscape practice (both rural and urban, with a focus on connecting natural and cultural professional practice); (2) Heritage as a Pillar of Sustainable Economic Development, (3) Climate Change and Heritage, (4) Heritage, Disaster and Resilience, (5) World Heritage management and the US World Heritage Tentative List and (6) Telling the Stories that Make up America's Diverse National Identity.

Keywords

*international, landscapes, climate*

Lead author /  
Session organizer

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## Conservation Gain: Restoring Ecological Integrity and Hope in Parks Canada's National Parks

What will I get out of this?

*Highlight exemplary conservation outcomes and innovations from projects that aim to restore ecological integrity and connect Canadians and park visitors to nature.*

Abstract

Parks Canada Agency (PCA) is mandated to maintain or restore ecological integrity across its 44 National Parks. We do so using key principles and guidelines, developed by PCA and recognised globally by IUCN, for effective, efficient and engaging management intervention. Under our Conservation and Restoration Program (CoRe), we strive to achieve measureable conservation gains for the highest priority issues, reporting publicly every five years. The current instalment of CoRe represents the most significant and comprehensive investment in ecological restoration ever undertaken by PCA. Through illustrative case studies, this presentation will highlight exemplary conservation outcomes from recent projects and innovations from current projects that aim to restore ecological integrity and connect Canadians and park visitors to nature.

Keywords

*restoration, Parks Canada*

Lead author /  
Session organizer

**Kent Prior** National Manager, Ecological Restoration

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**Sister Parks — Sharing Lessons Learned and Exploring New Opportunities in Developing Effective International Partnerships**

What will I get out of this?

*As "Sister Parks" become an important way NPS engages internationally, this session will address how to make these partnerships more effective, mutually beneficial and strategic.*

Abstract

Over the last 10 - 15 years, many NPS sites have developed "Sister Park" partnerships with parks and protected areas around the globe. Some of these have flourished, while others floundered. What are the keys to forming successful, long-term and sustainable international partnerships? In this session, several NPS staff engaged in sister parks will share their lessons learned, challenges addressed and ideas to make these partnerships as effective and beneficial as possible. Examples of both long-standing and relatively new Sister Park partnerships will be highlighted, with a lengthy discussion for all participants to help identify the keys to ensuring strong partnerships with international colleagues.

Keywords

**Sister Parks, international**

Lead author /  
Session organizer

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Ben Bobowski, Chief of Resources Management, Rocky Mountain National Park

Herbert Meyer, Paleontologist, Florissant Fossil Beds National Monument

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**From Sister Parks to Family Parks: Exploring New Concepts to Network Common Themes**

Herbert Meyer, Paleontologist, Florissant Fossil Beds National Monument

**U.S. - Mexico Sister Parks: Protecting Shared Resources and Heritage**

Darla Sidles, Superintendent, Saguaro National Park

**Rocky Mountain National Park's International Partnerships**

Ben Bobowski, Chief of Resources Management, Rocky Mountain National Park

Russell Galipeau, Superintendent, Channel Island National Park

Carol Mitchell, Everglades National Park

## Renewable Energy Development Case Studies and Applications for Enhanced Resource Protection

What will I get out of this?

*The scientific and land management community has made huge advances in identifying and mitigating impacts to protected areas. Learn about new tools and techniques.*

Abstract

Driven by federal and state policies and financial incentives, our nation is experiencing a rapid expansion in renewable energy development and related electric transmission upgrades, in a widespread effort towards creating a “New Energy Frontier.” While these efforts are laudable from climate change, air quality, and homeland security standpoints, many of the pilot projects are sited near parks, cultural sites, and other protected areas and have the potential to cause direct and landscape-level adverse impacts to protected and treasured resources. This session relies upon specific case studies of applied science to explore the efforts of the scientific community to create better tools for siting, design, mitigation, and monitoring for the next generation of renewable energy projects. Each speaker will present cutting edge updates, followed by joint panel-style discussion and Q&A with the audience.

Keywords

**renewable energy mitigation**

Lead author /  
Session organizer

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**Characterizing Tribal Cultural Landscapes for resource preservation and protection during renewable energy**

Valerie Grussing, Ph.D., Cultural Resources Coordinator, National Marine Protected Areas Center, National Oceanic and

**Utilizing visual impact evaluation for offshore renewable energy development in protection of National Seashore viewsheds**

Mark Meyer, National Park Service

**Landscape Alteration: Assessing Visitor Impacts from Wind Energy Development surrounding Southwestern U.S.**

Susan McPartland, Visitor Use Specialist, National Park Service

**Rethinking mitigation: A Case Study on Mitigating Solar Development near Joshua Tree National Park**

Andrea Compton, Chief of Resources, Joshua Tree National Park

**Utilizing Facilitated Dialogue to Interpret Energy Development for the Public**

R. Sky McClain, Interpretive Specialist, National Park Service

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The Collaborative Process for Creating a New Energy Frontier

What will I get out of this?

*Engage with leadership from organizations that at the forefront of the new energy frontier and help advance the conversation on how to deploy green energy while protecting treasured places.*

Abstract

The development of renewable energy projects on public lands and in federal waters has reached a watershed moment in our Nation’s history. The Department of the Interior and its partners are working to create a “New Energy Frontier” that decreases our dependence on foreign oil and reduces greenhouse gas emissions by providing clean energy opportunities for the public. Agencies have been working together with stakeholders to plan for development that is “Smart from the Start ,” which limits adverse impacts while maximizing public benefit. The scientific community is addressing these impact concerns, and to help create tools for better planning, design, mitigation, and monitoring. The panel moderator will lead a facilitated discussion between agency managers on how they have utilized planning processes, interagency collaboration, science, and guidance to address these issues. The panel will also discuss, with audience participation, next steps and the role of the scientific community.

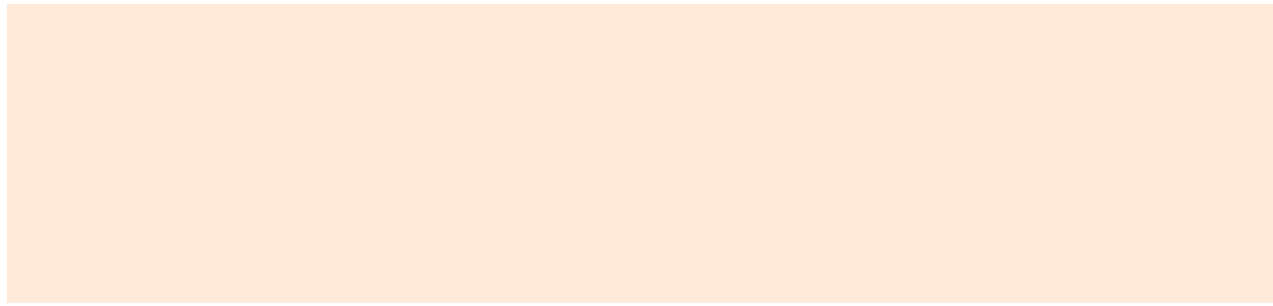
Keywords

*renewable energy development*

Lead author /  
Session organizer

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authors / organizers



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- Ray Sauvajot, PhD, Acting Associate Director, National Park Service
- Doug Boren, Pacific Region Renewable Energy Chief, Bureau of Ocean Energy Management
- Michael Sintetos, California Renewable Energy Program Manager, Bureau of Land Management
- David Lamform, Pacific Region Associate Director, National Parks Conservation Association

Connecting City Dwellers with Nature Where They Live

What will I get out of this?

*We have both attended national and international conferences to better inform our urban strategies. To achieve significant interdisciplinary shifts the conversation needs to be elevated.*

Abstract

As of 2006 we are now an urban species worldwide. What are the implications for our conservation and education work in urban environments with urbanite audiences? Every city offers vital opportunities to promote sense of place, eco-literacy and a stewardship ethic. Where and how people interface with the natural world—whether direct contact or representations from street murals to museums—typically happen in an eclectic landscape of learning and experience. For more than a decade San Francisco has been a laboratory for a wide variety of initiatives to more effectively cultivate an informed and engaged lifelong relationship to place. This workshop will share an inventory of efforts to date (and their challenges) followed by share-outs on best practices in other cities, and collective brainstorming of what is required to achieve our education and conservation goals with urban dwellers in the 21st Century.

Keywords

*urban, education, conservation*

Lead author /  
Session organizer

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**Ecoliteracy Coordinator/SF Unified School District**  
Elishama Goldfarb

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**Ecological Educator/Literacy for Environmental Justice**  
Anthony Khalil



**Hurricane Sandy Dune Overwashes in Fire Island’s High Dune Wilderness Area and Subsequent Vegetation Recovery.**

What will I get out of this?

*Vegetation recovery and coastal habitats are rebounding after Hurricane Sandy*

Abstract

One of the most significant natural impacts to park lands from Hurricane Sandy was dune overwashes. These overwashes pushed sand northward into the interior of the island, burying the coastal habitat that existed behind the former dune. Overwash areas were monitored for vegetation recovery and data quickly showed coastal habitats rebounding. Incorporated into the overwash vegetation monitoring, deer exclosures were constructed around a subset of vegetation plots. The exclosures were built to determine if the abundant white-tailed deer (*Odocoileus virginianus*) population was influencing the habitat recovery. Thus far, data indicates that the total percent cover of vegetation is higher in exclosed plots vs open plots suggesting white-tailed deer may be influencing vegetation growth in the overwashes. More research needs to be completed to determine if deer herbivory is a significant impact to the recovery of the coastal habitats impacted from Hurricane Sandy.

Keywords

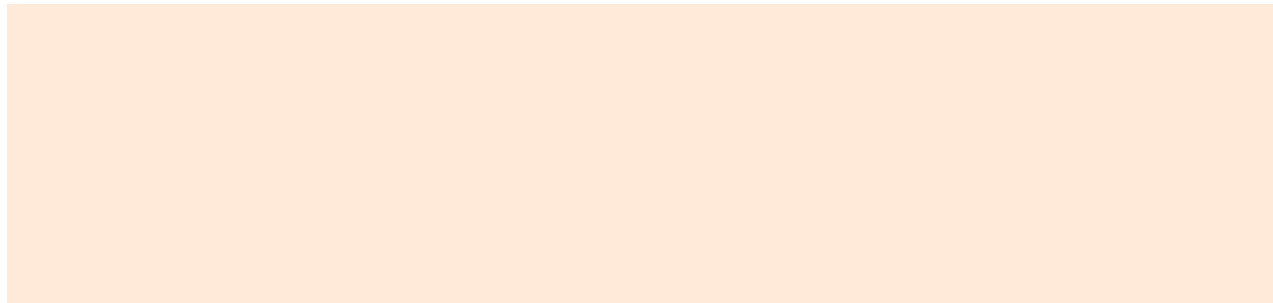
*Hurricane Sandy, Vegetation*

Lead author /  
Session organizer

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Utilizing Research and Monitoring to Inform Appropriate Management of Rare Maritime Forests on Fire Island

What will I get out of this?

*How research can be used to inform appropriate management of forests. See how vegetation monitoring can be used to assess the efficacy of deer management.*

Abstract

There are a few pockets of rare maritime forests within the boundaries of Fire Island National Seashore. The most famous being the Sunken Forest, which is a critically imperiled habitat and is one of only two known old-growth maritime holly forests in the world. Analysis of a dataset that dates back to nearly half a century has identified the major drivers that have influenced changes within this forest. These major drivers include; white-tailed deer herbivory, erosion, sea-level rise, and storms. To understand more about other maritime forests on Fire Island, new vegetation plots were deployed in 2012. These forests share similar trends to the Sunken Forest and appear to be experiencing the same pressures. Recent vegetation surveys will be used to assess the efficacy of deer management. How can the Seashore use this information to mitigate other impacts such as sea-level rise or more frequent storm events?

Keywords

*Vegetation, deer, sea-level*

Lead author /  
Session organizer

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**Vegetation Monitoring in Conjunction with Fire Island National Seashore's Deer Management Plan**

What will I get out of this?

*Fire Island National Seashore's use of vegetation monitoring to evaluate the efficacy of deer management*

Abstract

There are a number of rare maritime forests within the boundaries of Fire Island National Seashore. For example, the Sunken Forest is one of only two known old-growth maritime holly forests in the world. Managing rare maritime forests have become a challenge due to the increasing browsing pressure by white-tailed deer (*Odocoileus virginianus*). In response to the Seashore's concerns with its deer population and decreasing understory, the Seashore is developing a white-tailed deer management plan/EIS. The plan/EIS has initiated a study to monitor maritime forests on Fire Island utilizing permanent vegetation plots established in the 1960's, when deer were rarely seen on Fire Island, and newly established plots. Thus far, data collected in 2011-2013 shows that the total percent cover of ground layer vegetation is extremely low compared to the data from the 1960's and seedling recruitment targets developed in the deer plan are not being met.

Keywords

*deer, vegetation, browsing*

Lead author /  
Session organizer

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Collaborative Watershed Restoration in the Paige Boulder Watershed, Whiskeytown National Recreation Area

What will I get out of this?

*Watershed restoration restores natural upland hydrologic flow regimes and reduces sedimentation to downstream Critical Habitat in lower Clear Creek.*

Abstract

In 1997, a debris torrent started from a failed logging road in the upper elevations of Paige-Boulder watershed. The debris torrent destroyed two bridges and flooded a building at the Whiskeytown Environmental School and deposited an estimated 195,000 yds<sup>3</sup> of sediment into Paige Boulder and lower Clear Creek. Paige-Boulder is the highest priority watershed for restoration at Whiskeytown because its highly erosive headwaters discharge to the designated Critical Habitat for Central Valley steelhead and spring-run Chinook salmon, both federally listed T&E species. Chronic sediment transport and debris torrents and flows from Paige-Boulder watershed continue to compromise the cooperative salmonid restoration in lower Clear Creek. A cooperative watershed restoration project with the NPS and California Department of Transportation will begin May of 2016 in the Paige Boulder watershed by removing 6.8 miles of abandoned relict logging roads to reduce sedimentation to lower Clear Creek.

Keywords

*watershed, salmon, restoration*

Lead author /  
Session organizer

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What will I get out of this?

*Learn about how you can be involved in the programs featured at the World Parks Congress that can improve global protected area management capacity.*

Abstract

To address the problem of a large proportion of the world's protected areas losing resources as a result of inadequate management, IUCN's Global Protected Areas Program and WCPA are working in association with CBD, regional training centers and other partners to increase the effective and equitable management of protected areas through a comprehensive capacity development program. This panel will describe the components of a plan that was featured in the 2014 World Parks Congress. It will describe: A strategic framework for developing and evaluating CD programs; the creation of a global register of competences for protected area professionals; the creation of a Body of Knowledge and certification guidance for PA professionals and the establishment of a new Global Partnership for Professionalizing Protected Area Management. This panel will build understanding of the Program and create an interactive venue for participants to provide feedback and have an opportunity to become involved.

Keywords

**Capacity, global, training**

Lead author /  
Session organizer

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#### **Capacity Development and the World Parks Congress**

Ernesto Enkerlin-Hoeflich, Chair, IUCN World Commission on Protected Areas (WCPA), Mexico

#### **Strategic Pathways for Capacity Development in Protected Areas and other Conserved Territories (SPCD)**

David Reynolds, IUCN WCPA

#### **Evaluating conservation capacity development**

Ana Porzecanski, Director, Center for Conservation and Biodiversity, American Museum of Natural History, USA

#### **Review of the results of the WPC Pre-Congress capacity development sessions**

Jim Barborak

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What will I get out of this?

*Learn about efforts to interpret the historic slave market site, Forks-of-the-Road, in Natchez, MS, using nested landscape narratives at multiple scales.*

Abstract

In spring 2013, the author conducted a studio with graduate students focused on research and interpretive planning for the Forks-of-the-Road former slave market site in Natchez, MS. The site was the second largest slave market site in the South, after New Orleans, and received slaves for sale via overland routes along the Natchez Trace, as well as by boat from New Orleans, which offered an opportunity to interpret the regional impact of the site and the complex web of connections that map across it at the local, regional and national scale. The team worked with community activists and the Natchez National Historical Park to develop a range of multi-scalar interpretive/design proposals that interweave narratives of slavery at the regional, city, and site scale, focusing on the natural and cultural resources associated with the site, as well as broader intersecting narratives provided within the local urban and rural agricultural landscapes.

Keywords

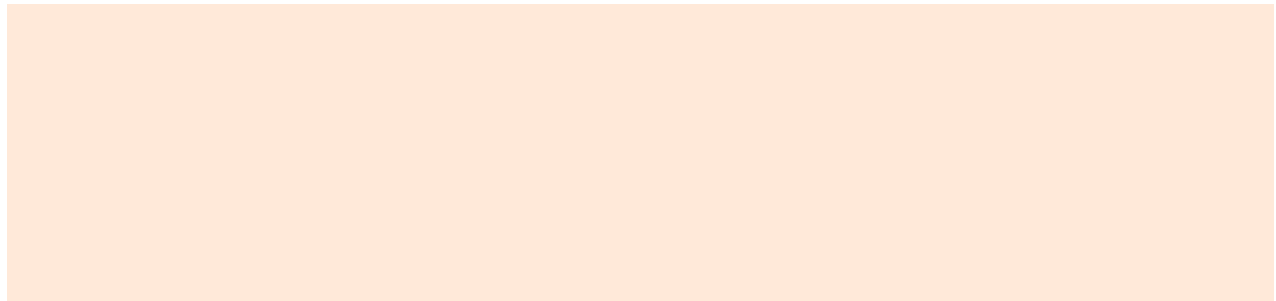
*Forks-of-the-Road, slavery, interpretation*

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What will I get out of this?

*We discuss creative methods for engaging diverse young people with production of media, by youth for youth, as a vehicle connecting them with outdoor spaces.*

Abstract

Each decade a new trend, issue, or area of inquiry surfaces about how best to engage urban youth. The Forest Service, for example, has increased their outdoor and environmental initiatives engaging young people with the outdoors and increasing public support. This panel will discuss how scholars at San Francisco State University collaborated with the Bayview-Hunters Point Center for Arts and Technology (BAYCAT) to explore cultural diversity, youth, media, and connections or barriers to outdoor enjoyment. Through this innovative project, we investigated the impact of media and communication on urban youth by involving predominantly ethnic minority youth as media producers. They were asked to examine their relationship with the outdoors to generate images and messages they believe will encourage other young people to explore public lands. In this session we'll detail project objectives, explain methodology, share results and recommendations (for USFS and other public land agencies), and facilitate discussion among attendees.

Keywords

**Youth, Outdoors, Media**

Lead author /  
Session organizer

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Dr. Nancy "Sami" Reist, Professor, SF State University, Department of Broadcast Electronic Communication Arts

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**(See notes provided at end)**

Dr. Kristen Pozzoboni, Assistant Professor, SF State University, Department of Child & Adolescent Development

**(see notes provided at end)**

Tanvi Sikand, Research Associate, SF State University

**(see notes at end)**

Villy Wang, Executive Director, Bayview-Hunters Point Center for Arts and Technology

**(see notes at end)**

Jose Alfaro, Production Manager, Bayview-Hunters Point Center for Arts and Technology

Modeling snow water equivalent in Yosemite National Park

What will I get out of this?

*A physically-based snow model capable of simulating forest canopy elements can provide spatially-explicit information about climate warming forest vulnerability where snow is shifting to rain.*

Abstract

Seasonal snowpack in California’s Sierra Nevada forms a natural reservoir that sustains the ecosystem during the summer dry season. While snowpack vulnerability to climate warming is understood at the scale of the entire mountain range, less is known at a scale relevant to resource managers. We employ a rigorous snow energy and mass balance analytical model to estimate snow depth and water equivalent over the Tuolumne and Merced River basins at 100-meter spatial resolution. Model results are evaluated using multiple independent snowpack observations including snow depth and SWE from distributed sensor networks and NASA’s Airborne Snow Observatory. At this scale, the model may be used to evaluate changes to ecosystem water availability and timing due to forest fire or other disturbances. The energy balance approach allows evaluation of snowpack under future climate or forest density without relying on typical temperature-index approaches that may have limited applicability in a changing climate.

Keywords

*snow, hydrology, forest*

Lead author /  
Session organizer

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Roger C. Bales, University of California Merced  
Thomas H. Painter, NASA Jet Propulsion Laboratory

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**Challenging the History and Future of Non-Indigenous Conservation Models**

What will I get out of this?

*Learning from indigenous stewardship models and perspectives on nature to deconstruct assumptions about dominant conservation paradigms, and inform more holistic directions for future conservation efforts.*

Abstract

Gisele Maria Martin and Hawk Rosales have been deeply involved in remarkable conservation movements in Vancouver Island and California that resulted in the declaration of indigenous peoples' "wilderness" and "park" areas established and stewarded by Tribal First Nations. They will discuss key principles underlying traditional systems of cultural knowledge that, for countless generations, have produced biologically diverse and abundant ecosystems, and will explain their unique movements through presentations of compelling photos and inspiring stories. They will chronicle Tribal First Nations' histories of loss, and the revitalization of connections with ancestral territories. The origins of ideas informing non-indigenous conservation models will be examined, along with dominant attitudes toward nature, indigenous peoples, and conserving land. Attendees will: gain greater understanding about the meaning of conservation; experience deconstruction of widely held assumptions embedded in non-indigenous conservation paradigms; and emerge better informed about how more holistic approaches should be incorporated into future conservation efforts.

Keywords

**Indigenous, First Nation**

Lead author /  
Session organizer

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Gisele Maria Martin, Independent Consultant, Citizen of Tla-o-qui-aht First Nation

**Tla-o-qui-aht Tribal Parks: A First Nation Network of Culturally-Managed Ecosystems**

Gisele Maria Martin, Independent Consultant, Citizen of Tla-o-qui-aht First Nation

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**InterTribal Sinkyone Wilderness: Stewarding Ancestral Coastal Lands & Waters**

Hawk Rosales, Executive Director, InterTribal Sinkyone Wilderness Council

What will I get out of this?

*Gain awareness of the diversity and ecology of pollinators, how little is known about these essential ecosystem service providers in parks, ways to share information.*

Abstract

Bees and syrphid flies comprise a dominant component of the pollinator fauna in northern and high elevation wilderness areas. Despite their essential role in maintaining plant communities and functioning ecosystems, most resource managers have virtually no information on pollinators in their parks. In an effort to build a baseline pollinator database in several Alaskan and Pacific Northwest parks (Denali, North Cascades, Olympics), I conducted an inventory of bees and syrphid flies, using traps and net-collecting. The effort yielded more than 2000 bees (in five families) and 700 syrphid flies, including many new state records, at least one species new to science, and one species known to be in severe decline in other parts of its range. A variety of methods were used to convey research findings to park staff and visitors, including campground and visitor center presentations, hands-on microscope sessions, fact sheets, and an interactive “virtual tour” of park pollinators.

Keywords

*pollinator, outreach, inventory*

Lead author /  
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**Tectonically Induced Uplift and Exhumation in Joshua Tree National Park**

What will I get out of this?

*Understanding the tectonic strain induced on the park by the San Andreas Fault, guides management decisions about research activities and scientific partnerships.*

Abstract

Vertical deformation along the 1100 km transform boundary between the Pacific Plate and the North American Plate in California is difficult to constrain at spatial and temporal scales. Only in areas where plate obliquity creates locally converging boundaries, are the manifestations of vertical deformation readily observable. Along the southern boundary of Joshua Tree National Park is an area where 27 degrees of plate obliquity creates a locally converging margin of the San Andreas Fault (SAF). Tectonically induced uplift and exhumation rates are constrained by apatite fission tracks and helium dating techniques. Rates of uplift are inversely proportional (decrease) with distance away from the SAF which is indicates of a northerly tilt in the southern mountain ranges of the park. In addition to the vertical deformation that has already occurred-27 degrees of plate obliquity- is imparting horizontal drag- throughout the western half of the park leading to increased seismicity.

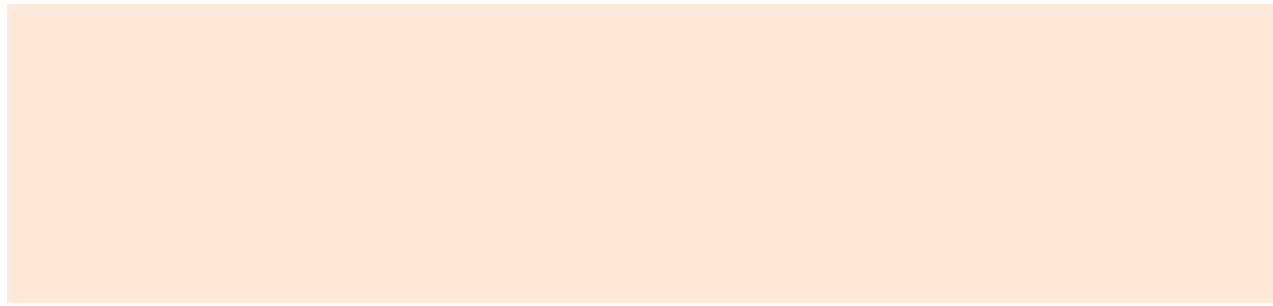
Keywords

**Tectonics Uplift Seismicity**

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Session organizer

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## The History of Geology and Geologic Resource Management in the U.S. National Parks

What will I get out of this?

*In consideration of the upcoming NPS Centennial, this session will provide a venue to highlight the agency's rich history of geology and geologic resource management.*

Abstract

Since the creation of Yellowstone National Park in 1872, geology and geologic resources management have featured prominently in the history of the national parks. Volcanoes, geothermal features, mountains, glaciers, arches, canyons, sand dunes, barrier islands, caves, fossils and other geologic phenomena are often the primary resource for which many national parks and monuments have been established. The geologic features, processes and landscapes represented in the U.S. National Park System have provided and continue to provide important opportunities for scientific research, public education and outdoor recreation. Many principles of geologic conservation and preservation have been forged by pioneering geologists and resource management specialists working in the national parks. The rich history of park geology has abundant accounts of human determination and scientific discovery. This session will attempt to highlight some of that history that has shaped America's geologic heritage throughout the National Park System.

Keywords

**NPS, Geology, Geoheritage**

Lead author /  
Session organizer

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### Preserving the Geologic Resources and Geologic Landscape at Yellowstone National Park

Lee Whittlesey, Historian, Yellowstone National Park

### Hands-on Geologic Resource Management: Watershed Restoration at Redwood National Park

Dave Steensen, Chief NPS Geologic Resources Division

### A Historical Perspective on Cave and Karst Management within the National Park Service

Dale Pate, NPS - National Cave and Karst Program Coordinator

### Preserving Fossils in the National Parks: A History

Vincent L. Santucci, Senior Geologist / Paleontologist, NPS Geologic Resources Division

### Born of Fire - The History of Volcanology in the National Park System

Laura C. Walkup, Physical Science Technician, Yosemite National Park

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Hunting with Non-lead

What will I get out of this?

*Audience members will walk away with an understanding of a growing threat of lead poisoning in wildlife and tools to mitigate that threat.*

Abstract

With studies demonstrating health impacts to over 135 wildlife species worldwide from spent lead ammunition, there is an urgent need for information on how to use non-lead ammunition and what options are available. This exhibit provides up-to-date and accessible information on why and how to use non-lead ammunition. Pinnacles National Park has pioneered a robust non-lead outreach and education program working on local, regional and national levels. These efforts in concert with intensive training and practice using non-lead ammunition provide many lessons learned and have inspired partnerships with other agencies and organizations with similar goals. With partners, we have also designed educational tools including brochures, banners, videos and a website. To further the NPS goal of getting lead out of park operations, we invite other park units and partners to request educational materials and contact us with any questions.

Keywords

*non-lead, lead, ammunition*

Lead author /  
Session organizer

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# Climate Change Adaptation in Denali National Park

What will I get out of this?

*Denali National Park's purpose and fundamental resources are being affected by climate change. Park staff are faced with deriving adaptation strategies to address these impacts.*

Abstract

Vistas from the park road, wildlife habitat, and fire regimes are already being impacted by climate change. These issues will be presented along with proposed adaptation strategies and the pros and cons of potential management actions. A key aspect of the debate, the trade-off between "natural" and "untrammelled" within the context of wilderness management, will be developed for each climate change adaptation strategy.

Keywords

*Climate, adaptation, wilderness*

Lead author /  
Session organizer

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# Advocating for Natural Resources in the Heat of Incident Management

What will I get out of this?

*Participants have a deeper understanding of the pressures of incident response that balance protecting lives and property while being sensitive to advocating for natural resources.*

Abstract

Natural resources in protected areas are increasingly under pressure from catastrophic events such as wildfires, oil spills, and other emergency incidents. To manage these events, the mission of the National Park Service’s emergency response community is dedicated to defending lives and property while protecting, restoring, and maintaining healthy ecosystems. There are many pathways to reach this goal including training incident resource advisors; integrating response protocols into stewardship plans; and creating collaboration between incident and resource management communities. All facets are critical to protect resource values. We hope to enlighten through our experiences to highlight the need for resource involvement in incident response.

Keywords

**Resource Advisor**

Lead author /  
Session organizer

**Richard Schwab** National Post- Wildfire Programs Coordinator

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Additional  
authors / organizers

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presentations are  
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American Innocence: Race and National Park Service Interpretation

What will I get out of this?

*Some parks interpret racial matters openly and honestly; others are remarkably inadequate. The Service should — and can — seek excellence in all racial interpretation.*

Abstract

Generally, the National Park Service seems proud of the attention it pays to racial issues, including its interpretation of sites in the national park system where racial matters are front and center. Concerns about inclusiveness and fairness to minority groups got its first big boost in the 1960s. However, half a century later and through close examination I have encountered parks where the Service is satisfied with interpretation of racial matters which are inadequate, misleading, and exceptionally poor. Such interpretation is unfair to minority groups and promotes the idea of "American Innocence"-that historically this country has been guilt-free regarding treatment of non-whites. Although certain parks have excellent interpretation involving racial issues, the National Park Service can-and must-do better than this. There are ways at hand to accomplish true Service-wide excellence.

Keywords

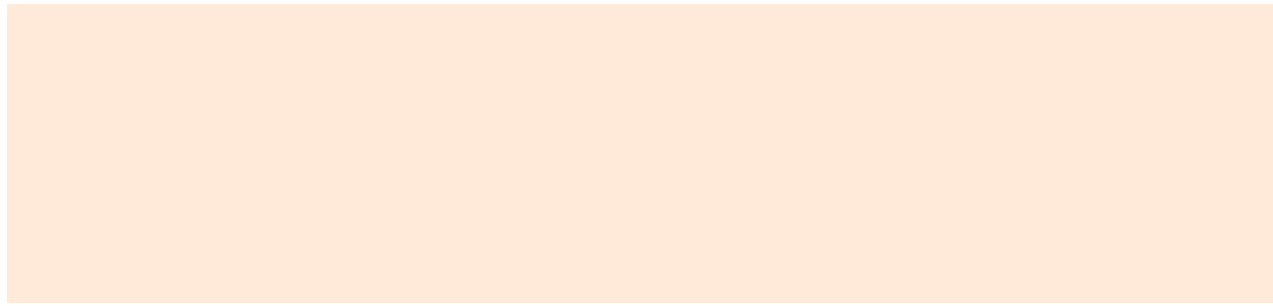
*interpretation, racial matters*

Lead author /  
Session organizer

**Richard West Sellars** NPS Historian (Retired)

n/a [rwsoffice@earthlink.net](mailto:rwsoffice@earthlink.net)

Additional  
authors / organizers



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The Greater Yellowstone Ecosystem Grizzly Bear Distinct Population Segment: Prospects for Possible Inter-ecosystem Dispersal for a Species Facing Delisting

What will I get out of this?

*This case study asks whether the GYE grizzly bear should be delisted when translocations will subsequently be needed to thwart the loss of genetic diversity.*

Abstract

The grizzly bear (*Ursus arctos horribilis*) in the lower 48 states is now confined to five subpopulations. The aim of this study was to qualitatively gain insight into the likelihood of grizzly bear dispersal between: (a) the Greater Yellowstone Ecosystem (GYE) and the Northern Continental Divide Ecosystem (NCDE), (b) the GYE and the Selway-Bitterroot-Frank Church River-of-No-Return Wilderness Complex (SBWA), and (c) the NCDE and the SBWA. Confirmed bear dispersal data was located and compared with data showing the location of roads and super-highways and human population density. GYE or NCDE bears are not using modeled 1997 “least-cost pathway” corridor routes, and this finding represents a rare of example of a modeled corridor later examined with real dispersal data. Instead, NCDE bears appear to be moving slowly in a southerly direction towards the GYE and SBWA and from the GYE towards the SBWA. The US Fish and Wildlife Service (USFWS) plans to delist the GYE grizzly bear “distinct population segment” (i.e., remove its ‘threatened’ status) in 2015 and then do periodic translocations after 2020.

Keywords

*corridors, planning, isolation*

Lead author /  
Session organizer

**Craig Shafer** Post graduate  
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Additional  
authors / organizers

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**E. coli Contamination of the North Fork Virgin River upstream of the Zion Narrows**

What will I get out of this?

*Will hear of a water contamination problem that is widespread, where the science is very straight-forward, but the solution is complex even with state support.*

Abstract

Contamination of the North Fork of the Virgin River with E. coli bacteria has been documented for six years and the state of Utah has listed the reach, including the designated Wild River in Zion National Park, on the 303d list of non-compliant waters. Monitoring by the park and the state has identified the source as irrigation return flows from pastures at the Narrows Trailhead. The case is of special interest to the UDWQ because of the large number of recreational users, the National Park link, and the pervasiveness of livestock grazing along streams in Utah. TMDL planning and remedial actions are currently underway funded by the state, NPS, EPA, NRCS, and BLM, but this is complicated by complex land ownership patterns, and some reluctant landowners. The solution, improved irrigation practices, has the possibility to be a win-win outcome, but may cost more than the value of the livestock raised.

Keywords

*water quality, Zion*

Lead author /  
Session organizer

**David Sharrow** Hydrologist  
Zion National Park blsharrow@gmail.com

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authors / organizers

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What will I get out of this?

*When is a chair more than a chair? When it engages visitors in a conversation and invites them to relax and reflect on their journey.*

Abstract

Four years ago, as part of a Visitor Experience Opportunities Workshop, 18 red chairs were placed in the landscape in Gros Morne National Park, Newfoundland and Labrador as a visitor engagement and promotional tool. Visitors were asked to share their pictures, stories, and experiences through various social media platforms. Now, Red Chairs can be found in many Parks Canada sites across the country. When is a chair more than a chair? When it's Red, when it's in an unexpected location, when it engages the visitor in a conversation and invites them to relax and reflect on their journey. Sit back, relax, and join the Red Chair Revolution and find out why visitors love them so much!

Keywords

**RedChairs, Visitor, Engagement**

Lead author /  
Session organizer

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authors / organizers

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What will I get out of this?

*Storytelling is an integral part of creating memorable visitor experiences and can make strong emotional connections. Sometimes you have to invite other voices in.*

Abstract

Many of us have encountered a staff member at a protected site who really connects, makes us think larger about where we are, and leaves us with a greater appreciation of the place we are in. How do they do it? Many times, it's through the power of story. Storytelling is an integral part of creating memorable visitor experiences and done well, creates a stronger, more meaningful relationship between the visitor and the resource. Come experience how one Parks Canada interpreter uses the power of story to weave natural and cultural history into the fabric of every interpretive journey. Sometimes you have to sing your song, sometimes you have to invite other voices in.

Keywords

*storytelling, authentic, memorable*

Lead author /  
Session organizer

**Fred Sheppard** ERVE Field Advisor

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authors / organizers

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## Weed Prevention: Kickstarting the Weed Free Forage and Mulch Economy in California

What will I get out of this?

*Gain a better understanding of the status of certified weed free forage and mulch in California and what hurdles have been surmounted.*

Abstract

The Weed Free Forage and Mulch economy involves both agricultural, equestrian, and environmental stakeholders and has historically been a politically charged arena. An interagency group of stakeholders is migrating through the unwieldy list of concerns regarding product reliability. After three years of negotiating and keeping the eye on the prize, the program is starting to witness some movement toward the adoption of the national standards for certification and sale (as outlined in the North American Invasive Species Mapping Association). This poster addresses some of the pitfalls, concerns and solutions that have been explored.

Keywords

*weeds, forage, mulch*

Lead author /  
Session organizer

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National Park Service, EPMT Program [bobbi\\_simpson@nps.gov](mailto:bobbi_simpson@nps.gov)

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authors / organizers

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What will I get out of this?

*Audience members deepen their understanding of good lighting practices and factors to consider in specifying outdoor lighting solutions.*

Abstract

Public awareness of the need to reduce “light pollution” (e.g., glare, light trespass, sky glow) seems to be at an all-time high, but what this really entails, what the end-product can look like, and how to achieve it is often not understood. Employment of "Good Lighting Practices" goes far beyond simply choosing an energy-efficient bulb or directing light downward. Knowing what is possible through such practices can sometimes only be understood by seeing actual outcomes. This exhibit uses before-and-after photos and documentation of Musco’s lighting retrofits of various NPS units over the past decade to help illustrate factors important to specifying any outdoor lighting scenario. Conference attendees are encouraged to ask questions and strive to deepen (or begin) their understanding of these practical lighting principles.

Keywords

*Stars, Light, Energy*

Lead author /  
Session organizer

**Brandi Smith** Lighting Studies Researcher

Musco Sports Lighting brandi.smith@musco.com

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authors / organizers

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What will I get out of this?

*NPS nighttime recreation and resource management provides multi-perspective evaluations on protecting and enjoying parks after dark, and seeks audience input on postulated night research trajectories.*

Abstract

Nighttime recreation experiences are increasingly recognized as important components to the enjoyment and preservation of NPS units. Understanding manager, visitor, and gateway perceptions regarding these experiences may help advance nighttime dual-mandate fulfillment. This session presents current NPS management (314 units) perceptions of night recreation/resources, lighting, and factors influencing those perceptions, analyzed by NPS designation. A 3-park study captured visitors' perceptions of nighttime environments and nighttime experience importance, including habituation to light pollution, providing insight into which experiences should be promoted/ managed. Expounding on stargazing quality, visitor-based indicators and standards for night sky observation were formulated over two studies at Acadia NP, providing further implications for night (light) management. However, whose sky standards should we use? NPS, community, and visitor perspectives on night sky management were analyzed with discourse-based research, providing insight to improving communication on management initiatives between such groups. Where should night management and research go from here?

Keywords

*pollution, lighting, camping*

Lead author /  
Session organizer

**Brandi L. Smith** Lighting Studies Researcher; Good Lighting Practices Fellow

Musco Lighting Company; Clemson University [brandi2@g.clemson.edu](mailto:brandi2@g.clemson.edu)

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**Managers' Perceptions of Nighttime Resources and Nighttime Recreation in 314 NPS units: Designation-based analyses**

Brandi L. Smith

**NPS Visitors' Perceptions of Nighttime Park Environments and Importance of Night Recreation Experiences**

Brandi L. Smith, Lighting Studies Researcher, Musco Lighting Company; Good Lighting Practices Fellow, Clemson University

**Indicators and Standards of Quality for Night Sky Viewing at Acadia National Park**

William Valliere, Researcher, University of Vermont

**Whose Night Sky? Social Constructions of the National Park Service's Newest Natural Resource**

Monika M. Derrien, Graduate Student, University of Vermont

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## Return of the Buffalo: A discussion of the impacts of federal buffalo on receiving Tribes

What will I get out of this?

*The session will provide an update on current Tribal usage of buffalo acquired from federal facilities and show the positive impacts on Tribal life.*

Abstract

ITBC has been assisting Tribes in acquiring buffalo considered “surplus” by federal parks and refuges since 1992. During that time Tribes have incorporated the buffalo into various aspects of their life and this session will show the impacts. Tribes have utilized the buffalo for cultural purposes, for addressing health issues and economic development. Current issues concerning regulations that limit the ability of buffalo to get to Tribes as well as the transfer of live buffalo from Yellowstone National Park will also be discussed. The role Tribes play in federal buffalo management and conservation of the species as well as the future of tribal buffalo management and the inclusion of federal “surplus” buffalo will also be discussed.

Keywords

**Tribal, bison**

Lead author /  
Session organizer

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**ITBC President, Blackfeet Nation Buffalo Manager**

Ervin Carlson

**Executive Director ITBC**

Jim Stone

**Buffalo Manager, Taos Pueblo**

Delbert Chisholm

**ITBC Representative, Cheyenne and Arapaho Tribe**

Chester Whiteman

**Buffalo Manager, Standing Rock Sioux Tribe**

Mike Faith

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Photo monitoring from gigapixel to drone; new techniques showcase change in the Presidio, GGNRA

What will I get out of this?

*Audience members will learn fun and compelling new tools and techniques to improve photo-monitoring for many different applications.*

Abstract

The Presidio of San Francisco became part of the Golden Gate National Recreation Area in 1994. Since that time, many acres of contaminated Army landfills have been remediated and restored to wetlands, sand dunes, and grasslands which now support thriving populations of five threatened or endangered plant species. Presidio photo monitoring has evolved to document these twenty years of landscape change with the advent of new digital tools and media displays. Drones and robotics now enable land managers to create high resolution imagery at the landscape and micro scale. The presentation will showcase inexpensive hardware and software such as Gigapan and Photosynth and how we have used them to better tell the stories of landscape transformation over the past 20 years.

Keywords

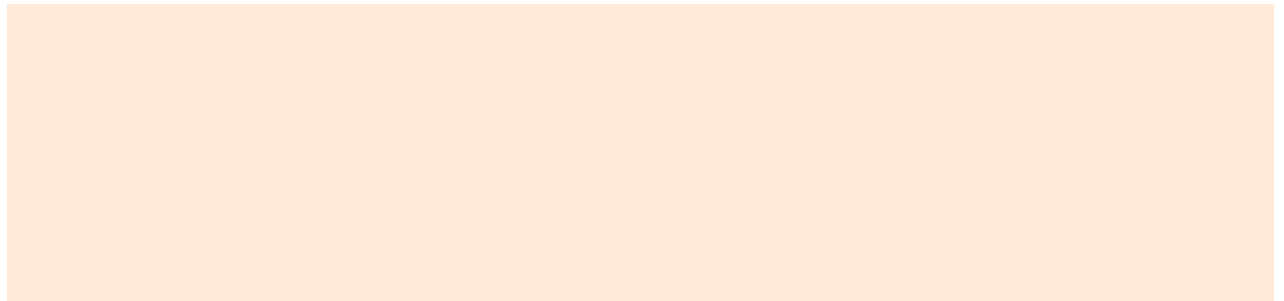
*Photo-monitoring, Presidio, Gigapan*

Lead author /  
Session organizer

**Lewis Stringer** Supervisory Restoration Ecologist

Presidio Trust [lstringer@presidiotrust.gov](mailto:lstringer@presidiotrust.gov)

Additional  
authors / organizers



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# Climate-Smart Resources Stewardship Strategy?

What will I get out of this?

*Share challenges and success stories relevant to creating a “climate-smart” natural and cultural resource stewardship strategy.*

Abstract

Share challenges and success stories relevant to creating a “climate-smart” natural and cultural resource stewardship strategy. Address the following topics: (1) deciding on desired future conditions for a “no-analog” future, (2) decision-framing and prioritization platforms given high uncertainty, (3) selecting where, when, and how to intervene, (4) addressing land management unit interests within a broad geographic or regional context; and (5) integrating infrastructure, resource protection, and visitor experience objectives in the process. Present the process and outcomes of the Sequoia and Kings Canyon National Parks Giant Sequoia Pilot Climate Smart Resources Stewardship Strategy.

Keywords

*engagement facilitated dialog*

Lead author /  
Session organizer

**Charisse Sydoriak** Division Chief, Resources Management and Science

Sequoia and Kings Canyon National Parks charisse\_sydoriak@nps.gov

Additional  
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Koren Nydick, Science Coordinator, SEKI


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**Nature's transformational power: health metrics and measures linked to Healthy Parks Healthy People**

What will I get out of this?

*This session provides examples and discussion of programs and research demonstrating the transformational power of parks to provide physical and psychological health and wellbeing opportunities.*

Abstract

Parks are the predominantly natural places preserved specifically for socio-environmental interactions. These unique places protect rare, sensitive, resources and ecological processes that are vital to our livelihoods, health, and wellbeing. The purpose of this session is to explore the role of parks as health resources, for physical and psychological wellbeing. This session will provide examples of research and programmatic initiatives aimed at promoting resource health and preservation, and human health and wellbeing, as moderated by these natural features. Presenters will describe initiatives to promote health, and research demonstrating the restorative power of nature, followed by an audience and presenter discussion. Participants will gain insight and understanding regarding the power of nature experience --- from the psycho-biophysical benefits of natural soundscapes, to park-based nature contact with youth. Methodologies for advancing Healthy Parks Healthy People-focused research and programs will also be provided.

Keywords

**Parks, Health, Wellbeing**

Lead author /  
Session organizer

**B. Derrick Taff** Assistant Professor, Recreation, Park, and Tourism Management

Penn State University bdt3@psu.edu

Additional  
authors / organizers

Diana Allen, Chief, NPS Healthy Parks Healthy People

If this is a session of  
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**National Park Service Healthy Parks Healthy People Science Plan Overview**

Jennifer Thomsen, Postdoctoral Scholar at Stanford University

**Social Science Examinations of Park Soundscapes: Overview and Lessons Learned**

Peter Newman, Dept. Head, Recreation, Park, and Tourism Management, Penn State; Karen Trevino, Chief, NPS Nat. Sounds,

**The Effects of Natural Sound on Human Cognition and Restoration**

Lauren Abbott, Graduate Student, Penn State University

**Perceptual Studies on the Need for Natural Sound**

Jacob Benfield, Assistant Professor, Psychology, Penn State University

**Parks and Trails Metrics: Supporting Health Promotion**

Courtney L. Schultz, Doctoral Student, North Carolina State University





**A Flood of Numbers: Monitoring and Data Management**

What will I get out of this?

*Data, data everywhere, but how do we get a drink out of that firehose? This session offers a range of relevant answers.*

Abstract

[Empty abstract box]

Keywords

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Lead author /  
Session organizer

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Additional  
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What will I get out of this?

*Managing a park without knowing what your visitors know is like driving blind. This session will inform the audience about a wide range of visitor impacts that affect parks.*

Abstract

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Keywords

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Lead author /  
Session organizer

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**Climate Change**

What will I get out of this?

*There's no bigger problem, and it needs to be addressed from every angle in the "hard" and social sciences. This session provides a sampling of current thinking.*

Abstract

[Empty abstract box]

Keywords

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Lead author /  
Session organizer

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Cultural Legacies: Case Studies in Continuing Relevance

What will I get out of this?

*Listen in as cultural resources professionals explain their perennial challenge to not only preserve the past, but convey its important lessons to new audiences.*

Abstract

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Keywords

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Lead author /  
Session organizer

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**Education, Outreach, and Citizen Science**

What will I get out of this?

*The public is a huge potential source of knowledge waiting to be tapped. Hear case studies covering science, visitor diversity enhancement, and outreach to the next generation of leaders.*

Abstract

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Keywords

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Lead author /  
Session organizer

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Historic Structures and Landscapes: Old Problems, New Solutions

What will I get out of this?

*Historic structures and landscapes are among the most challenging park resources to take care of. Attendees will discover how cultural resource managers are handling a wide spectrum of problems.*

Abstract

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Keywords

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Modeling: Projections, Predictions, and Precautions

What will I get out of this?

*Modeling is only going to become more important as social and physical changes affect parks everywhere; case studies illustrates advances ... and caveats.*

Abstract

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Keywords

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Session organizer

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**Monitoring Fire and Managing its Effects**

What will I get out of this?

*Learn about expanding the use of existing fire monitoring databases, using decision-making tools, postfire effects, and restoration techniques.*

Abstract

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Keywords

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Lead author /  
Session organizer

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Monitoring, Managing, and Restoring Vegetation

What will I get out of this?

*Vegetation in parks is being heavily impacted by climate change and other stressors. Come hear about how scientists and park managers are responding.*

Abstract

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Keywords

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Lead author /  
Session organizer

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**Natural Resources Policy on the Frontlines**

What will I get out of this?

*Policy is the guiding force behind every on-the-ground natural resources management decision. Audience members will leave this session with a better understanding of the connections.*

Abstract

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Keywords

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Lead author /  
Session organizer

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Natural Sounds and Noise Management

What will I get out of this?

*Maintaining natural soundscapes in parks and other protected areas has emerged as a major resource management focus. Catch up with what's going on.*

Abstract

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Keywords

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Lead author /  
Session organizer

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On the Edge of Transformation: Coastal Processes

What will I get out of this?

*Learn about how we are moving toward a better understanding of coastal systems, one of Earth's most vulnerable under climate change.*

Abstract

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Lead author /  
Session organizer

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# Partnerships as a Problem-Solving Tool

What will I get out of this?

*The audience will discover that the hard work of building partnerships is justified by the practical pay-off in tackling tough issues.*

Abstract

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Keywords

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Lead author /  
Session organizer

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authors / organizers

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Protected Areas as Part of the Larger Social Context

What will I get out of this?

*Presentations in this session remind us that parks, protected areas, and cultural sites are social constructs that depend on the continuing support of society as a whole.*

Abstract

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Keywords

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Lead author /  
Session organizer

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Reaching Out to a Diverse World: New Programs, Critical Issues

What will I get out of this?

*Everyone calls for partnerships and outreach, but it's never easy to pull off. Speakers in this session share how they do it, and what still needs to be done.*

Abstract

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Keywords

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Lead author /  
Session organizer

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Responding to Invasive Plant Species

What will I get out of this?

*Controlling invasive plant species is among the most difficult problems in resource management; this session will provide examples of new ideas and thinking.*

Abstract

[Empty abstract box]

Keywords

[Empty keywords box]

Lead author /  
Session organizer

**TBD**

Additional  
authors / organizers

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Restoration: The "Long Game" of Protected Area Conservation

What will I get out of this?

*Restoration of protected areas will be necessary for a long, long time to come. Vegetation, rivers, old mines, rangelands, wetlands, wilderness—this session has examples from across the board.*

Abstract

[Large empty yellow box for abstract text]

Keywords

[Small empty yellow box for keywords]

Lead author /  
Session organizer

**TBD**

Additional  
authors / organizers

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The Little (and Often Overlooked) Things that Run the World: Insects

What will I get out of this?

*Arguably, the most important animals on the planet are the ones under our feet (or buzzing through the air); this session explains why.*

Abstract

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Keywords

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Lead author /  
Session organizer

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Widening Challenges to Water Quality

What will I get out of this?

*Find out about the expanding range of impacts on water quality that managers are dealing with, from the old (recreational use) to the new (pharmaceuticals).*

Abstract

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Keywords

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Lead author /  
Session organizer

**TBD**

Additional  
authors / organizers

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Wildlife Management I

What will I get out of this?

*Wildlife is still the centerpiece of the visitor experience in protected natural areas, and is perhaps the most visible kind of resource management. The first of two sessions' worth of case studies.*

Abstract

[Empty abstract box]

Keywords

[Empty keywords box]

Lead author /  
Session organizer

**TBD**

Additional  
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Wildlife Management II

What will I get out of this?

*Wildlife is still the centerpiece of the visitor experience in protected natural areas, and is perhaps the most visible kind of resource management. The second of two sessions' worth of case studies.*

Abstract

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Keywords

Keywords input field (yellow background)

Lead author /  
Session organizer

**TBD**

Additional  
authors / organizers

Additional authors / organizers input area (orange background)

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Wings of Change: Managing Bird Species

What will I get out of this?

*Case studies provide insights into avian demographics, responses to toxicity, and more.*

Abstract

[Empty abstract box]

Keywords

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Lead author /  
Session organizer

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What will I get out of this?

*Gain an understanding of the current status of the U.S. Biosphere Program, learn about recent efforts and challenges, and discuss new future of program.*

Abstract

U.S. involvement in UNESCO's international Man and the Biosphere Program has ranged from strong engagement to a long period of inactivity. Recently, there has been an effort to reengage the U.S. in the international network and this presentation will focus on the opportunities and challenges for the United States' involvement and current efforts of the revival effort driven by a recently established group, the U.S. Biosphere Reserve Association. Some of the recent approaches include information sharing with the Biosphere Reserve Information Portal and the Open Parks Network made possible through partnerships with the George Wright Society and Clemson University. These information sharing platforms offer an opportunity for biosphere reserve units and other protected areas to share success stories and challenges to provide broader lessons for protected area management in a variety of contexts. The presentation will conclude with opportunities that can contribute to the revival of the U.S. MAB program.

Keywords

*biosphere reserve, UNESCO*

Lead author /  
Session organizer

**Jennifer Thomsen** Postdoctoral Scholar  
Stanford University [jthomse@clemson.edu](mailto:jthomse@clemson.edu)

Additional  
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What will I get out of this?

**Forthcoming**

Abstract

In February 2014 NPS Director Jonathan Jarvis issued a Director’s Policy Memorandum (14-02) on “Climate Change and Stewardship of Cultural Resources.” The memorandum acknowledges that “climate change poses an especially acute problem for managing cultural resources because they are unique and irreplaceable” and that the National Park Service has a leadership role in shaping the nation’s strategy for managing the current and predicted affects of climate change on our cultural properties and communities. This session will bring together panelists to discuss issues, strategies, and actions currently underway to address the “three essential questions” identified in the memorandum — adaptation, decision-making, and communication — and provide an opportunity for participants to participate in a robust discussion of next steps.

Keywords

**climate change**Lead author /  
Session organizer**Stephanie Toothman** Associate Director, CRPSNational Park Service [stephanie\\_toothman@nps.gov](mailto:stephanie_toothman@nps.gov)Additional  
authors / organizers**Overview of major policy issues**

Stephanie Toothman, National Park Service

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presentations are  
given here**Policy and decision-making per charettes**

Shaun Eyring, National Park Service

**Guidance, Secretary’s Standards**

Brian Goeken, National Park Service

**Cultural landscapes management**

Bob Page, National Park Service

**Climate change and indigenous peoples**

Melia Lane-Kamahele

What will I get out of this?

*Audience will get in-depth introduction to CRC and engage in a FAQ and dialogue on how their responsibilities can address and support the CRC goals.*

Abstract

In October 2013, the National Park Service issued the Cultural Resource Challenge (CRC), the long-awaited “companion” to the successful Natural Resource Challenge that brought a new vision and resources to the NPS natural resources science and management programs. The CRC responds to more than a decade of reports documenting the challenges facing the NPS stewardship of park resources, as well as those of our partners in the national preservation program. This session is an opportunity to learn more about, and engage in conversations about the Cultural Resource Challenge, progress on addressing the five goals and 2016 budget proposals. NPS Associate Director Stephanie Toothman will present an update on key actions identified for each of the goals - for example the heritage initiatives addressing Goal 3 - "Connect all Americans to their heritage resources..." or the development of the Cultural Resource component of the NPS Climate Change strategy (Goal 4 - Integrate the values of heritage stewardship into major initiatives and issues).

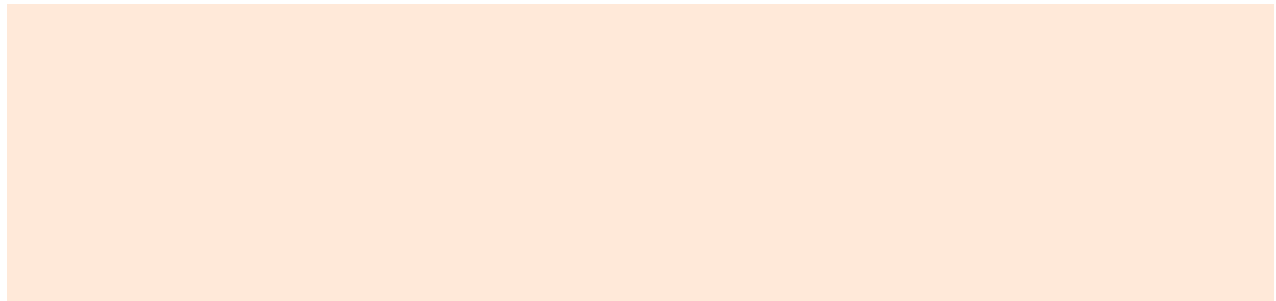
Keywords

*cultural resource challenge*

Lead author /  
Session organizer

**Stephanie Toothman** Associate Director, CRPS  
National Park Service [stephanie\\_toothman@nps.gov](mailto:stephanie_toothman@nps.gov)

Additional  
authors / organizers



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Stephanie Toothman
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What will I get out of this?

***Explosive growth in interest and a rapidly changing regulatory landscape; substantial uncertainty within the scientific community; benefits, concerns and limitations that must be considered.***

Abstract

With the increasing interest in the use of Unmanned Aerial Systems (UAS) in general, many of the federal land management agencies have seen a corresponding increase in requests to use UAS for scientific research on federal lands. The rapidly changing landscape regarding the regulation of the use of UAS has created a good deal of uncertainty within the scientific community. Further, while there are unequivocally myriad benefits to using UAS including the potential for reduced costs, reduced safety risks, reduced natural resource/environmental impacts and increased opportunities for data collection including from more remote places, UAS are not without impacts of their own. This panel session will explore various aspects of UAS for scientific research including: an update on rules, regulations and guidance for UAS use, benefits and concerns, experience and lessons learned from the field, Wilderness areas, and the benefits and limitations of various UAS technologies.

Keywords

***UAS, Unmanned, Aviation***

Lead author /  
Session organizer

**Karen Trevino** Division Chief

NPS karen\_trevino@nps.gov

Additional  
authors / organizers

Matthew A. Burgess, Coordinator, UF Unmanned Aircraft Systems Research Program, University of Florida

David M. Bird, Emeritus Professor of Wildlife Biology, Department of Natural Resource Sciences, McGill University

#### **Current rules and regulations for UAS use including the DOI/FAA MOU on UAS**

James Traub, Aviation Management Specialist, National Park Service (WASO VRP)

#### **Case Studies and Lessons Learned from UAS Missions Flown for Scientific Research**

Mike Story, Remote Sensing Specialist, National Park Service (WASO IMD)

#### **The View From Above - The Federal Interagency Roundtable**

Bruce Quirk, UAS Liaison, USGS

#### **Perspectives on UAS in Wilderness**

Guy Adama, Natural Resource Chief, Alaska Regional Office, NPS (invited)

#### **Benefits and Limitations of UAS Technology for Scientific Applications**

Dr. Benjamin Houmann, Central Michigan University

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The Natural Neighbors project: Cross-promotion between protected areas and museums and similar institutions

What will I get out of this?

*Cross-promotion between protected areas and museums and similar institutions is an effective but underused strategy for encouraging urban people to experience and understand nature.*

Abstract

The Natural Neighbors project is looking at cooperation between protected areas and natural history museums and similar institutions (science centers, zoos, aquariums, botanic gardens, and museums of cities or regions) in encouraging urban people to experience and understand nature. Such cooperation can include exhibits, signs, publications, websites, apps, lectures, and tours. Although there are good examples in the U.S. and abroad, they are the exception rather than the rule. This international project is exploring ways of changing this. It is being conducted by InterEnvironment Institute in cooperation with California conservation agencies and the IUCN World Commission on Protected Areas.

Keywords

*museums, protected areas*

Lead author /  
Session organizer

**Ted Trzyna** Chair

IUCN WCPA Urban Specialist Group [Ted\\_Trzyna@InterEnvironment.org](mailto:Ted_Trzyna@InterEnvironment.org)

Additional  
authors / organizers

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Multiple empty boxes for invited speakers or panel discussion details.

# Assessing Impacts to Night Skies and the Night Time Photic Environment

What will I get out of this?

*Participants will learn a new methodology for assessing impacts to night sky resources, including: quantifying baseline conditions; estimating light emissions; and quantifying changes to baseline*

Abstract

Night sky resources and night time photic environments are easily degraded by development outside of park boundaries. Lighting from facilities many miles away can cause a reduction in night sky quality over parks and a degradation of the night time photic environment on which humans and nocturnal wildlife depend. Efforts to protect these resources have been hampered by the lack of a methodology for assess potential impacts from proposed actions. The NPS Natural Sounds and Night Skies Division has developed a methodology for conducting impact analyses for night skies for use in NEPA reviews and other purposes. This presentation will describe this methodology as it was used to assess potential impacts from oil and gas development near Chaco Culture National historic Park. The presentation will focus on data requirements, analytical methods, challenges, and solutions to this approach. Usefulness of the methodology to other types of development will also be discussed.

Keywords

**Night Skies, NEPA**

Lead author /  
Session organizer

**Frank Turina** Program Manager for Policy, Planning, and Compliance  
NPS, Natural Sounds and Night Skies Division [frank\\_turina@nps.gov](mailto:frank_turina@nps.gov)

Additional  
authors / organizers

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**A sustainable winter use plan for Yellowstone? Steps taken to end 17 years of debate**

What will I get out of this?

*Specific and actionable steps undertaken to resolve this longstanding policy conflict, including the use of strategic communications, new and emerging science, and stakeholder engagement*

Abstract

In October of 2013 the National Park Service once again published a final Rule to govern winter use in Yellowstone National Park, one of the most controversial and litigated issues in NPS history. Only this time... there were no lawsuits, no posturing from special interest groups, no scathing letters from elected officials, and no threats of legislation. Instead, only silence, interspersed with favorable press from stakeholders on all sides of the issue. Is it possible that after almost two decades of planning, including seven distinct NEPA processes, ten federal lawsuits, and more than 1.1 million public comments that the Yellowstone winter use policy debate is over? This presentation will focus on the specific and actionable steps undertaken by NPS staff to resolve this longstanding policy conflict, including the use of strategic communication, new and emerging science, and stakeholder engagement, to prepare a sustainable long-term winter use plan for the park.

Keywords

**Yellowstone, Winter Use**

Lead author /  
Session organizer

**Wade Vagias** Management Assistant  
Yellowstone National Park wade\_vagias@nps.gov

Additional  
authors / organizers

Dan Wenk, Superintendent  
Molly Nelson, Engineer  
Christina Mills, Planning Assistant  
Mike Yochim, Denver Service Center

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**Recreation, values and stewardship: Rethinking why people engage in pro-environmental behaviors in protected areas**

What will I get out of this?

*Attendees will engage with the value concept and learn about various processes that shape people's decisions to engage in activities that benefit the environment.*

Abstract

Stewardship behavior is a centerpiece for effectively maintaining and protecting park resources. Multiple factors such as environmental values affect behavior reported by stakeholders such as outdoor recreationists and are essential for understanding why people do (or do not) opt for minimum impact activities. The speakers in this session will explore a variety of psychological processes that underlie behavior, including “held” values and belief structures that shape behavior and “assigned” values that reflect how people evaluate landscapes. Following a series of presentations, the panelists will engage with members of the audience to further discuss the timely topic of how to sustain the opportunities provided to people by the environment. This session will use the value concept as a vehicle for reviewing select case studies and questioning how managers can incorporate multiple and often competing perspectives into decision-making.

Keywords

**Recreation, Wilderness, behavior**

Lead author /  
Session organizer

**Carena van Riper** Assistant Professor  
University of Illinois at Urbana-Champaign [cvanripe@illinois.edu](mailto:cvanripe@illinois.edu)

Additional  
authors / organizers

Ryan Sharp

If this is a session of  
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**Predicting behavioral intentions to comply with recommended Leave No Trace practices**

Wade Vagias

**Economics, ecosystem services, and protected areas – monetary and non-monetary perspectives**

Ken Bagstad

**Pro-sustainable behaviors and loyalty: Exploring factors that influence protected areas and a Zambian tourism market**

Jane Kwenye

**Connecting concepts of place and value: The case of Channel Islands National Park**

Carena van Riper

**An investigation of value orientations and Leave No Trace behaviors among white water rafters**

Ryan Sharp







What will I get out of this?

*How to manage bikes in parks, based on the results of the scientific studies (of the effects on erosion, plants, and animals).*

Abstract

The sport of mountain biking is expanding rapidly, fueled partly by the mountain bike and tourism industries, the Olympics, and other competitive events (recently, e.g., "adventure racing"). It is putting intense pressure on wildlife habitat, worldwide, as well as inhibiting efforts to protect additional lands. It is important, therefore, to assess its impacts on wildlife, people, and the environment. I reviewed all the available studies, focusing primarily on physics and conservation biology. All of the studies on mountain biking that attempt to compare the impacts of hiking and mountain biking (which address primarily erosion, but also intimidation of wildlife, horses, and other trail users) conclude that their impacts are essentially the same. However, their research designs all have serious flaws: they ignore speed and distance travelled, and nearly all ignore impacts on wildlife; they also make no attempt to test mountain biking under realistic conditions (e.g. normal speeds).

Keywords

*mountain biking, wildlife*

Lead author /  
Session organizer

**Mike Vandeman** N/A

N/A [mjvande@pacbell.net](mailto:mjvande@pacbell.net)

Additional  
authors / organizers

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# Rim Fire Recovery Update

What will I get out of this?

*Learn about Rim Fire suppression repair, Burned Area Emergency Response treatments, hazard tree and salvage operations, restoration, and reforestation.*

Abstract

Update on Rim Fire Recovery Efforts since the Rim Fire including suppression repair, Burned Area Emergency Response treatments, hazard tree and salvage operations, restoration, and reforestation.

Keywords

*wildfire, recreation*

Lead author /  
Session organizer

**Dusty Vaughn** Recreation Specialist/Public Service Program Leader (Interim)

USDA Forest Service, Stanislaus National Forest, Groveland Ranger [gdvaughn@fs.fed.us](mailto:gdvaughn@fs.fed.us)

Additional  
authors / organizers

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What will I get out of this?

*This discussion proposes to have the audience think deeper and challenge their own assumptions about how to successfully provide meaningful youth engagement opportunities.*

Abstract

In recent decades, youth engagement has gained increased attention, becoming a major priority among land management agencies, conservation organizations and nature advocates. However, a disconnection between youth and nature continues to grow. In response, various national initiatives have come to fruition. One of the most recent and overarching of these is the Interior Department's Youth in the Great Outdoors, which aims to "inspire millions of young people to play, learn, serve and work outdoors" and challenges the nation to bridge this growing disconnection by working together to establish meaningful experiences for diverse youth in the outdoors. Using this background as the guiding spirit, our panel of youth engagement experts will discuss best practices on how to provide youth with outdoor experiential opportunities that are transformative, inclusive and relevant to the communities we serve. The audience will be challenged on their assumptions and the current level of engagement their opportunities provide.

Keywords

**Youth, Diversity, Community**

Lead author /  
Session organizer

**Fernando Villalba** Natural Resource Specialist

National Park Service fernando\_villalba@nps.gov

Additional  
authors / organizers

#### **The Big Picture: Being Inclusive is Being Sustainable**

Charles Thomas, PWR Regional Youth Programs Coordinator, National Park Service

#### **Engaging of Urban Youth in Nature and Conservation**

Antonio Solorio, Youth Programs Manager, Santa Monica National Recreational Area

#### **Let's get Deep, Let's get Transformative: Meaningful Youth Engagement and Development**

Rona Zollinger, PhD, President, New Leaf Collaborative

#### **Where the Youth Meet the Dirt: Transformative and Inclusive Engagement in Practice**

Fernando Villalba

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## Data Management: What is it and what can it do for me?

What will I get out of this?

*Audience members will learn what data management is, the implications of poor data management, and advantages and techniques for improving data management.*

Abstract

In an era of mobile devices, satellite trackers, wildlife cameras, and continuous data collectors, it is easy to acquire immense amounts of data in short periods of time. With this abundance of new technology and data, it is increasingly important for parks to prioritize and invest in data management. Proper data management can greatly reduce program costs by preventing the loss or corruption of data, by utilizing resources more efficiently, and by preventing data redundancy. This presentation will discuss common data management mistakes and highlight practices employed by the NPS Inventory and Monitoring program that could be adopted in any park program.

Keywords

**Data management**

Lead author /  
Session organizer

**Sarah Wakamiya** Data Manager

San Francisco Bay Area Network, National Park Service sarah\_wakamiya@nps.gov

Additional  
authors / organizers

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## Field Stations in National Parks: Opportunities and Challenges

What will I get out of this?

*Field Stations offer significant opportunities for science and society, as well as organizational challenges, for sponsoring institutions and the NPS units where they are located.*

Abstract

National Park units preserve unique natural and cultural resources. With these resources come opportunities for scientific study. One way to facilitate study is through the operation of permanent research facilities. Enhanced partnerships between field stations and NPS is a recommendation by the National Academy of Sciences. Panelists will explore the concept of field stations located in U.S. national parks run through partnerships with universities and share experiences as managers of those facilities. They will provide examples of projects completed or underway at selected field stations and discuss how projects are mutually beneficial to the educational institution and the NPS unit. Navigating organizational structures can be challenging to both parties. Panelists will discuss specific challenges facing field stations in parks including: handling changes in park and university leadership, conducting manipulative research in areas where the mission of preservation is paramount, and operating under limited term special use agreements.

Keywords

*research, partnerships, education*

Lead author /  
Session organizer

**Dan Wakelee** Associate Provost

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Additional  
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Tom Arsuffi, Becca Fenwick, Michael T. Stevens

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Dan Wakelee, Associate Provost, California State University Channel Islands

Tom Arsuffi, Director, Llano River Field Station, Texas Tech University

Becca Fenwick, Director, SNRS Yosemite & Sequoia Kings Canyon, UC Merced

Michael T. Stevens, Director, Capitol Reef Field Station, Utah Valley University



Glacial Velocity as a Predictor of Outburst Flood Hazard at Mount Rainier, WA

What will I get out of this?

*Changes in glacial velocity can be used to predict outburst flood potential and the methods can be used for hazard prediction in other glacier-sourced watersheds.*

Abstract

Mount Rainier contains more glacier ice than all other Cascade Range volcanoes combined. In the past, glaciers on Mount Rainier have unleashed damaging outburst floods without warning. An empiric link between changing glacial velocities and outburst flood hazard had been previously observed, and 2011-2012 the surficial velocity field of the lower 1 km<sup>2</sup> of the Nisqually Glacier was calculated from repeated measurements of numerous on-glacier sites. During this time, observed velocities in the upper portions of the study area accelerated while the lower portions did not. This is consistent with previous observations of glacier behavior prior to the occurrence of an outburst flood. Shortly after our study concluded, a glacial outburst flood took place. Further monitoring of glacial velocities could provide a predictive methodology for glacial outburst floods in similar terrain. This would enhance employee and visitor safety, along with infrastructure protection at Mount Rainier and in similar dynamic environments.

Keywords

*Glacier, Outburst Floods*

Lead author /  
Session organizer

**Laura Walkup** Physical Science Technician  
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Additional  
authors / organizers

Scott Beason, Mount Rainier National Park  
Paul Kennard, Mount Rainier National Park  
Justin Ohlschlager, Mount Rainier National Park

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## From wilderness to city edge: The role of urban protected areas in metropolitan regions and protected area systems

What will I get out of this?

*This Compass Session presents a global to local perspective of the role and growing importance of urban protected areas within metropolitan regions and within protected area systems.*

Abstract

This Compass Session presents a global to local perspective of the role and growing importance of urban protected areas within metropolitan regions and within protected area systems. It highlights various aspects of urban protected areas including human health, environmental protection, governance, public policy, changing values, strategic and land use planning, stewardship and partnerships, and changing demographics. This session provides a greater understanding of urban protected areas and offers some best practice guidelines and insights for developing robust, relevant, and accessible protected area systems in metropolitan settings..

Keywords

**regional park systems**

Lead author /  
Session organizer

**Mike Walton** Senior Manager

Capital Regional District - Regional Parks [lwilson@crd.bc.ca](mailto:lwilson@crd.bc.ca)

Additional  
authors / organizers

Jeff Ward, Manager of Planning, Resource Management & Development, Capital Regional District - Regional Parks

Lynn Wilson, Regional Park Planner, Capital Regional District - Regional Parks

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### Urban protected areas: A global perspective

Ted Trzyna, Chair, Urban Specialist Group, IUCN World Commission on Protected Areas

### Near wilderness and its relevancy to our nations' park systems

Mike Walton, Senior Manager, Capital Regional District - Regional Parks

### Necessary attributes of local decision-making that achieve positive outcomes for regional nature conservation, citing

Lynn Wilson, Park Planner, Capital Regional District - Regional Parks

### The Bay Area's Protected Lands and Changing Demographics

Annie Burke; Deputy Director, Bay Area Open Space Council

### Planning for a System of Regional Protected Areas in the Capital Region of British Columbia

Jeff Ward, Manager Planning, Resource Management and Development, CRD Regional Parks



## The Promise of Protected Areas in an Era of Change

What will I get out of this?

*This session will highlight key elements and outcomes from the Responding to Climate Change Stream at the 6th IUCN World Parks Congress in Sydney.*

Abstract

Climate change is already significantly impacting natural and cultural systems. Conservation leaders from around the world shared approaches, strategies, and necessary policies for mitigating and adapting to change at the 6th IUCN World Parks Congress in Sydney, Australia. Results from the Congress include the inherent “natural solutions” protected areas possess to abate the effects of climate change, as well as the development of entirely novel adaptation actions that move us beyond current practices to transform our thinking, goals and practices in a fundamentally altered world. Topics also emphasized the critical role of education, effective communication, and community engagement. The session will invite North American national park leaders from the US, Canada, and Mexico to share key outcomes and lessons from the Congress.

Keywords

*climate, solutions, resilience*

Lead author /  
Session organizer

**Leigh Welling** Chief, Climate Change Response Program

US National Park Service [Leigh\\_Welling@nps.gov](mailto:Leigh_Welling@nps.gov)

Additional  
authors / organizers

Stephen Woodley

### Key Roles that Parks and Protected Areas Play in a Changing Climate

Leigh Welling, NPS

### Ecosystem Carbon Management Experiences Across Global Protected Areas to Reduce Climate Change

Patrick Gonzalez, NPS

### Restoring Natural Systems to Provide Resilience to Climate Change

Karen Keenleyside, Parks Canada

### Managing for Climate Change in Alaska and the Arctic

Bert Frost, NPS

### Best Practices Guidance for Managing Protected Areas Under Climate Change

Stephen Woodley, IUCN

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What will I get out of this?

*Participants will examine recommendations and global, regional and national goals for MPAs, including a community-based approach, and provide practical, grounded advice about moving forward.*

Abstract

The ocean makes up 71% of our 'blue planet,' yet less than 1% is fully protected. This issue was a key focus at the 2014 World Parks Congress, featuring a Marine Cross-Cut Theme to address marine and coastal issues across all areas of the Congress. This included a marine component of the "Promise of Sydney" – a collective statement of the milestones and recommendations emerging from the Congress. This session will take a critical look at this "Promise," to identify a path forward to achieve these ambitious goals. We'll discuss the need for a new paradigm, based on a fresh global understanding of and respect for the ocean and the communities that depend upon it. We'll also talk about which of the lessons of Sydney are most relevant to our work, and how we can collaborate to foster more resilient, connected and effective networks of marine and coastal protected areas.

Keywords

**MPA, global, WPC**

Lead author /  
Session organizer

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Additional  
authors / organizers

Dan Laffoley, World Commission on Protected Areas - Marine, Vice Chair

#### **Setting the Stage: The Marine Theme at World Parks Congress — Recommendations and Relevance**

Lauren Wenzel, National Marine Protected Areas Center

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#### **Reaching Our Goals for Marine Conservation**

Stephen Woodley, IUCN

#### **Engaging a New Generation**

Karen Keenleyside, Parks Canada

#### **MPA Managers' Role in Implementing the Promise of Sydney**

Mike Wong, Parks Canada

#### **Safeguarding Our Marine World Heritage**

Tim Badman, IUCN

What will I get out of this?

*Emerging best practices from Bay Area park, health, and community partnerships.*

Abstract

This session will delve into practical questions about how park and health professionals can work together on the ground to make their programs a success, and what are the best practices that have emerged so far in the early stages of this movement.

Keywords

*Health, Relevancy, Partnership*

Lead author /  
Session organizer

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Dr. Curtis Chan, Medical Director of Maternal, Child & Adolescent Health, San Francisco Department of Public Health

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Mona Koh, Community Relations Manager, East Bay Regional Park District

Jim Wheeler, Recreation Manager, San Francisco Recreation and Park Department

Kristin Wheeler, Program Director, Institute at the Golden Gate

Chris Spence, Director, Institute at the Golden Gate















Partners in Amphibian and Reptile Conservation: Round Table Discussion

What will I get out of this?

*The PARC round table discussion will allow attendees to find out more about amphibian and reptile conservation and what PARC can do for them.*

Abstract

Discussion of PARC initiatives that NPS and the other ten agencies on PARC's Federal Agency Steering Committee (Bureau of Land Management, Department of Defense, Environmental Protection Agency, Farm Service Agency, US Fish and Wildlife Service, US Forest Service, US Geological Survey, National Marine Fisheries Service, Natural Resources Conservation Service, and Animal and Plant Health Inspection Service) will assist attendees in staying / becoming current on amphibian and reptile conservation as coordinated at the federal level. Attendees will also hear about past and current conservation efforts of the greater PARC network, which (in addition to federal agencies) has as its partners: state agencies, researchers, academia, non-governmental organizations, zoos, industry, hobbyists, students, contractors, environmental consultants, etc. - basically, ANYONE with an interest in amphibian and reptile conservation. Participants will also share amphibian and reptile conservation initiatives going on at their site locations

Keywords

*PARC, herpetofaunal, conservation*

Lead author /  
Session organizer

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authors / organizers

Empty box for additional authors/organizers.

**NPS Alternate on PARC's Federal Agency Steering Committee; Supervisory Biologist at Rocky Mountain National Park**  
Mary Kay Watry

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Partners in Amphibian and Reptile Conservation (PARC) – An Overview

What will I get out of this?

*Audience members will learn about the mission of PARC, as well as the conservation actions, services and products provided by PARC.*

Abstract

Partners in Amphibian and Reptile Conservation (PARC) is a network and inclusive partnership of federal agencies, state agencies, non-governmental organizations, researchers, academics, commercial industry (pets, forest products, etc.), and private citizens – anyone with an interest in amphibian and reptile (herpetofaunal) conservation. The mission of PARC is to conserve herpetofauna and their habitats as integral parts of our ecosystem and culture through proactive public and private partnerships. PARC is the largest herpetofaunal conservation effort ever undertaken because PARC works to conserve both amphibians and reptiles, regardless of status, whereas most herpetofaunal conservation efforts focus on one of these vertebrate classes or a specific taxon (e.g., turtles) or only on rare species. This presentation will provide an overview of PARC, including the services and products provided by PARC, and how to benefit from this partnership; as well as a brief overview on the importance of herpetofauna and the threats they face.

Keywords

*Herpetofauna, network*

Lead author /  
Session organizer

**Jen Williams** Federal Agencies Coordinator for Partners in Amphibian and Reptile Conservation

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Additional  
authors / organizers

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Mohave tui chub: Where We are 12 Years Later

What will I get out of this?

*This presentation discusses efforts to raise the profile of an endangered species, then harness that energy into research, new habitats, populations, public education and awareness.*

Abstract

The Mohave tui chub (*Siphateles mohavensis bicolor*) is an endangered desert fish first listed in 1970. Its sole source population for the species is MC Spring in Mojave National Preserve, plus five transplanted populations at locations throughout the southern California desert, including Lake Tuendae and Morning Star Mine pond in the Preserve. In 2002, the chubs in Lake Tuendae were being threatened with an Asian tapeworm (*Bothriocephalus achelognathii*) infestation. As a result of a presentation delivered at the 2002 George Wright Conference, substantial progress has been achieved to improve the Mohave tui chub's chances for survival and possible downlisting to threatened. In 2003 Mojave National Preserve hosted a workshop for agency personnel and scientists. Three research studies were completed, and new populations were created at two locations. School programs have been developed to increase public awareness, and additional habitats are being explored for future introductions.

Keywords

*chub, desert, aquatic*

Lead author /  
Session organizer

**Danette Woo** Environmental Compliance Officer

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Additional  
authors / organizers

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What will I get out of this?

*This session brings together the latest research in assessing predictors of success for protected areas in conserving biodiversity outcomes.*

Abstract

We have invested globally in protected areas as our key strategy to halt biodiversity loss. However we have done a very poor job at assessing how well protected areas actually conserve biodiversity. What are the best predictors of protected area outcomes, globally and in Canada and the US? What needs to be done to get a better understanding of this critical factor? This session will report on global and national studies that look at biodiversity outcomes with surprising results. It will challenge the session participants to rethink the ways the protected areas are assessed.

Keywords

**biodiversity, protected areas**

Lead author /  
Session organizer

**Stephen Woodley** Task Force Co-Chair

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Additional  
authors / organizers

#### **Introduction to what we know about biodiversity outcome sin protected areas**

Stephen Woodley, IUCN

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#### **Results of the IUCN Global Assessment on Biodiversity Outcomes in Protected Areas**

Ian Craigie, Megan Barnes, Jonas Geldmann and Stephen Woodley

#### **Conservation Gain: Monitoring the state of Parks Canada's National Parks**

Stephen McCanny and Dan Kehler

#### **Are US National Parks Effective? When and Why?**

Joe DeVivo





A phenological detectability calendar for invasive plant species

What will I get out of this?

*We present a useful new tool for planning plant surveys and invasive plant management.*

Abstract

Detection is the necessary first step in managing invasive plant species. The detectability of most plant species changes throughout the year with phenological stages. The Invasive Species Early Detection Program of the San Francisco Bay Area National Parks has developed a detectability calendar based on phenological stages of target invasive plant species. Phenophase and detectability by distance class were recorded for each species observed during early detection surveys. Most species had the highest detectability at peak flowering, as is typically assumed. However, some species and life forms were more detectable in fruit, or were equally detectable in senescence. This calendar will be used to predict the best times to search for select species, and can also be used by land managers to plan control efforts when both detectability and phenology are optimal. This calendaring tool can be replicated easily in any region for any set of target plant species.

Keywords

*invasive plants*

Lead author /  
Session organizer

**Eric Wrubel** Botanist

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Additional  
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Robert Steers, San Francisco Bay Area Inventory and Monitoring Program.

Andrea Williams, Marin Municipal Water District.

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## Summit to Sea: Restoring and Protecting the Aquatic Biodiversity of the National Park System

What will I get out of this?

*Will increase the awareness of issues facing the diverse but largely unseen (by visitors) aquatic systems and species managed by the National Park Service.*

Abstract

The National Park Service manages diverse aquatic ecosystems that include the waters of two oceans, alpine lakes and everything in between. Many of these unique systems and the species that occupy them have been directly or indirectly impacted by human activities. Biologists and resource specialists in National Parks are working to restore native freshwater and marine species that have been depleted by human harvest, interactions with introduced and invasive species, habitat modification and climate change. Restoration typically requires standardized monitoring and in many cases focused research using cutting-edge methods and technologies. This session includes a sampling of ongoing recovery and restoration efforts

Keywords

*aquatic ecosystem restoration*

Lead author /  
Session organizer

**John Wullschleger** Fisheries Program Leader  
National Park Service john\_wullschleger@nps.gov

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authors / organizers

**The Challenge of Recovering Mountain Yellow-legged Frogs in Sequoia and Kings Canyon National Parks**  
Danny M. Boiano and Isaac C. Chellman

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**The Effectiveness of Marine Protected Areas in Protecting and Promoting Exploited Species**  
Dave Kushner and Nicholas Shears

**The Complex Case of Colorado's Cutthroat: The Greenback Cutthroat Trout in Rocky Mountain National Park**  
Mary Kay Watry

**Eradication of Nonnative Trout and the Response of Threatened Bull Trout at Crater Lake National Park**  
David Hering & Mark Buktenica

**An Overview of Salmon Recovery in the Elwha River Following Dam Removal**  
Patrick Crain & Sam Brenkman

**Summit to Sea: Restoring and Protecting the Aquatic Biodiversity of the National Park System**

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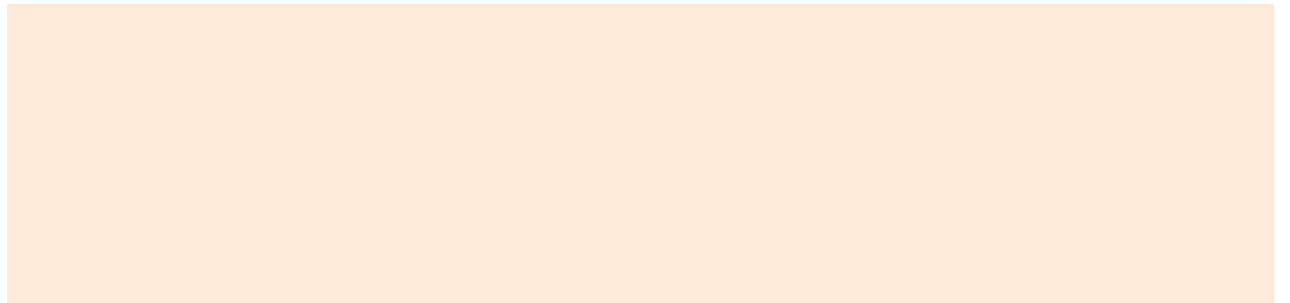
Keywords

*aquatic ecosystem restoration*

Lead author /  
Session organizer

**John Wullschleger** Fisheries Program Leader  
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authors / organizers



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**Distinct Native Char Populations of the Elwha River**

Patrick Crain

**Elwha River Adult Salmonid Migration and Distribution Immediately Following Dam Removal**

Patrick Crain

**The role of science and technology: Perspectives on Pacific Salmon from Olympic National Park**

Sam Brenkman

**Cost-effective assessment of fish communities using next-generation sequencing of environmental DNA**

Trey Simmons

**Marine Fishing Education for Everyone**

Karl Brookins





Cooperative Ecosystem Studies Units Network

What will I get out of this?

*Participants will learn about the opportunities available through the CESU Network for federal agencies and for tribal, university, and nonfederal partners.*

Abstract

The Cooperative Ecosystem Studies Units (CESU) Network is a national consortium of federal agencies, tribes, academic institutions, state and local governments, nongovernmental conservation organizations, and other partners working together to support informed public trust resource stewardship. The CESU Network includes 14 federal agencies and 345 nonfederal partners. These partners are organized into 17 university-based Cooperative Ecosystem Studies Units (CESUs) encompassing all 50 states and U.S. territories. The 17 CESUs bring together scientists, resource managers, students, and other conservation professionals, drawing upon expertise from across the biological, physical, social, cultural, and engineering disciplines to conduct collaborative and interdisciplinary applied projects that address natural and cultural heritage resource issues at multiple scales and in an ecosystem context. Since 1999, the CESU Network has supported nearly \$1 billion in research, education, and technical assistance projects, funded through approximately 12,000 projects.

Keywords

*research, technical-assistance, education*

Lead author /  
Session organizer

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Additional  
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Tom Fish

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## The Many Consequences of Seeing "Nature"

What will I get out of this?

*Our topic is the role and impact of nature perception on protected areas. Historians and historical geographers will present the results of original, cutting-edge research.*

Abstract

Our session updates attendees on the historical role of cultural perception in the creation, management and support of America's protected areas. Each paper explores how a conception of nature shaped these places. Peter Blodgett begins with an examination of the National Council on Outdoor Recreation's vision for nature recreation during the rapidly changing 1920s. Terence Young then surveys the nationalistic fears that prompted Clinton Clarke and Warren Rogers to initiate the Pacific Crest Trail in the 1930s. Lary Dilsaver continues our western orientation as he illustrates the evolving role that "desert" played in the creation and defense of Joshua Tree NP. Shifting east, Katie Algeo and Collins Eke reveal what became of Mammoth Cave NP's former residents after they were forced out in the 1930s to create "wilderness." Finally, William Tweed revisits the continuing influence of Stephen Mather and Horace Albright's humanistic vision for America's national parks.

Keywords

*nature perception, history*

Lead author /  
Session organizer

**Terence Young** Professor

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authors / organizers

**'A Needful Social Force': The National Conference on Outdoor Recreation and Leisure as Nation Building**

Peter Blodgett

**Renewing Our Faith and Ideals: Christian Nationalism and the Origins of the Pacific Crest Trail**

Terence Young

**A National Park in the Wasteland: American and NPS Perception of the Desert**

Lary M. Dilsaver

**Where Did All the People Go?: Using Census Data to Track Out-Migration during Park Creation**

Katie Algeo and Collins Eke

**A Long Shadow: The Continuing Influence of Stephen Mather and Horace Albright on the NPS**

William C. Tweed

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