

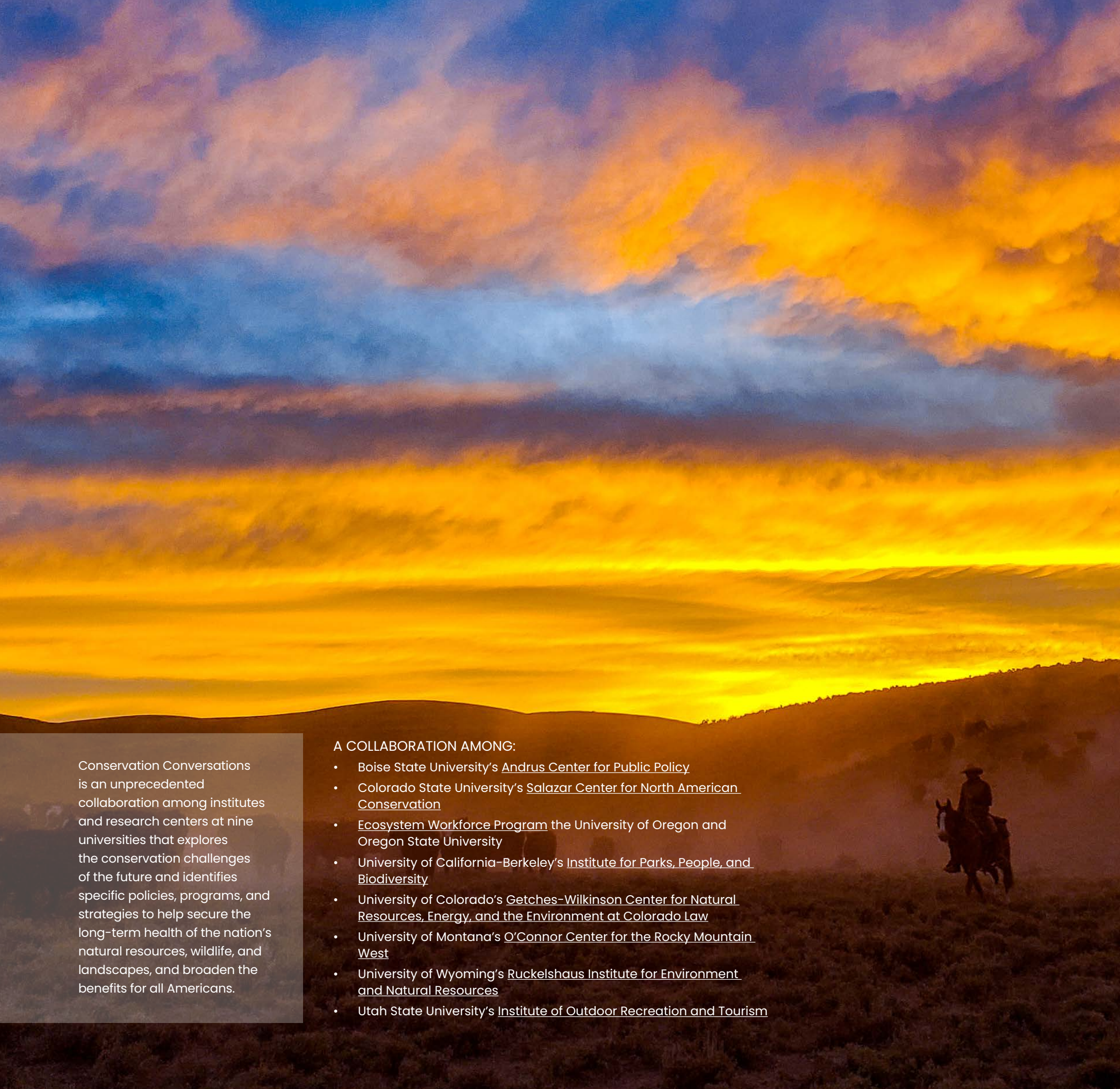


**CONSERVATION
CONVERSATIONS**

CONSERVATION CONVERSATIONS

Addressing 21st Century
Conservation Challenges to
Benefit Our People, Economy,
and Environment





Conservation Conversations is an unprecedented collaboration among institutes and research centers at nine universities that explores the conservation challenges of the future and identifies specific policies, programs, and strategies to help secure the long-term health of the nation's natural resources, wildlife, and landscapes, and broaden the benefits for all Americans.

A COLLABORATION AMONG:

- Boise State University's [Andrus Center for Public Policy](#)
- Colorado State University's [Salazar Center for North American Conservation](#)
- [Ecosystem Workforce Program](#) the University of Oregon and Oregon State University
- University of California-Berkeley's [Institute for Parks, People, and Biodiversity](#)
- University of Colorado's [Getches-Wilkinson Center for Natural Resources, Energy, and the Environment at Colorado Law](#)
- University of Montana's [O'Connor Center for the Rocky Mountain West](#)
- University of Wyoming's [Ruckelshaus Institute for Environment and Natural Resources](#)
- Utah State University's [Institute of Outdoor Recreation and Tourism](#)

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Introduction

At the beginning of the 20th century, a movement began to conserve America's lands, waters, wildlife, and other natural and cultural resources. Promoted by political leaders, scientists, emerging conservation organizations, and scholars, this movement advocated for the conservation of flora and fauna; protection of lands and waters; and the celebration of nature, our history and culture. The emerging conservation movement was the catalyst for establishing our national parks, forests, and wildlife refuges; the national wilderness, wild and scenic rivers, and trails systems; local, state, and regional park systems and land trusts; and a system of laws and regulations to guide the protection and management of our natural resources.

Two decades into the second century of American conservation, the health of our lands, waters, and wildlife, and, ultimately, ourselves and our environment, are increasingly at risk. International experts have highlighted the [impacts of climate change](#), the [accelerating loss of the world's biodiversity](#), and the [consequences of both for society and the global economy](#).

Today, American conservation confronts the climate crisis, the biodiversity crisis, a global pandemic, skeptics of these threats, a massive federal deficit, economic hardship, social injustice, and political divisions that threaten our democracy. Yet, at the same time, people continue to explore new ways to work together to use science, collaboration, and innovation to advance efforts to protect our environment, conserve our natural resource legacy, and broaden its benefits for all Americans.

To explore these issues and others toward framing a vision for 21st century conservation and ways to accelerate progress in addressing them, eight institutes affiliated with nine universities came together in the spring and summer of 2020 to convene a series of "Conservation Conversations." These conversations brought together experts to share cutting edge understanding to inform the future of conservation on a range of pressing issues including climate change and biodiversity management; co-management to reduce wildland fire risk; conservation's contribution to rural economies; transboundary conservation; carbon sequestration and climate justice in cities; inclusion and co-management for native Americans; and the increasing challenge of managing the impacts of outdoor recreation on our public lands.

The following report includes brief summaries of each of these Conservation Conversations highlighting some of the observations and recommendations that resulted. All of the conversations, including expert presentations and their responses to questions raised by audience participants, can be found at www.conservationconversations.org.



Biodiversity Conservation Effectiveness within US Protected Areas

CONVERSATION DATE: July 29, 2020

HOST: [Institute for Parks, People and Biodiversity](#), University of California, Berkeley

MODERATOR: Jon Jarvis, Chairman of the Board for the Institute for Parks, People and Biodiversity at the University of California, Berkeley and former Director of the National Park Service

BACKGROUND

The concept of protecting 30% of the planet by 2030 comes from the Campaign for Nature, supported by the Wyss Foundation and hundreds of organizations. It is expected to be featured in the upcoming Convention on Biodiversity (CBD) in 2021 hosted in China. The panelists explored the current effectiveness of biodiversity conservation, especially in light of climate change, within existing national parks, wilderness areas, national conservation areas and other legally protected federal and state public lands and discussed actions needed to meet the CBD goals of 30 by 30. The State of California recently committed to achieving the 30 by 30 goal.

CONVERSATION SUMMARY

Dr. Justin Brashares – UC Berkeley Professor, G.R. & W.M. Goertz Chair

The 30 by 30 concept has surprising bipartisan support around the world and in California. The key questions are: What are we trying to protect? Where are we protecting it? How are we protecting biodiversity and what are the benchmarks for success? Who is at the table for the decisions? The decisions must include local, state, tribal, private and international stakeholders to determine how to allocate billions of dollars. Historically, we prioritized land acquisition based on availability and affordability rather than science. New systems can

use biodiversity hotspots to prioritize and move beyond individual species to ecosystems and connectivity.

Dr. Patrick Gonzales – Associate Adjunct Professor, UC Berkeley, and Principal Climate Change Scientist, US National Park Service

Human caused climate change is contributing to species extinctions, but only 15% of global land is protected and only one-third of that has had an assessment of effectiveness. Cars, power plants, deforestation, and other human sources emit twice as much carbon dioxide into the atmosphere as ecosystems can naturally absorb. This fundamental imbalance has intensified the greenhouse effect, heating land and waters globally. Climate change has exposed the US national parks, particularly in California, to more severe increases in heat and aridity than the country as a whole. Climate change has driven the extinction of cloud forest amphibians in Costa Rica and the local loss of desert birds in California. Climate change is causing biome shifts around the world, including upslope shifts of forest in Yosemite National Park. Climate change has doubled the area burned by wildfire over natural levels in the western US. Three actions can help protect nature under climate change: (1) Reduce the pollution from fossil fuel burning that causes climate change, (2) Use climate change data to prioritize land that improves habitat connectivity for plant and animal species to move as biomes shift, (3) Conserve

Three actions can help protect nature under climate change:

1. Reduce the pollution from fossil fuel burning that causes climate change.
2. Use climate change data to prioritize land that improves habitat connectivity for plant and animal species to move as biomes shift.
3. Conserve existing refugia, places that may be more stable under climate change.

existing refugia, places that may be more stable under climate change.

Jane Rogers – Chief of Science and Resource Stewardship, Joshua Tree National Park

Joshua Tree National Park is a biodiversity hotspot with unique elevational gradients intersecting both the Mojave and Sonoran Deserts. The park lends itself to ambitious landscape management goals but is also stressed by invasive annual grasses which have increased fire frequency and intensity, as well as by drought. With scientific support, management is focused on protecting vulnerable Joshua trees. Using modeling to determine where Joshua trees would persist under various climate change scenarios, the park can focus where to take action. The park is using volunteers and fire staff to protect Joshua tree refugia from invasive species and fire, creating the equivalent to “defensible space.”

POLICY INSIGHTS

- **Support and empower small, local, organizations such as local land conservancies.**
Designation of protected areas is just the first

step in biodiversity conservation, and must be followed with effective management of the resources. Local conservation efforts, led by local and/or indigenous people can be one of the most effective strategies.

- **Meet the Paris Agreement targets for fossil fuel reduction.**

While the Paris agreement is primarily designed to reduce fossil fuel dependence, it is also key to biodiversity conservation. Just meeting the Paris agreement would reduce species extinctions by 2/3.

- **At the local park level, encourage risk taking and prioritize protection of biodiversity refugia.**

Park and protected area managers should encourage risk taking and priority actions to conserve species that are the most vulnerable to climate change.

- **Put land conservation on par with public health.**

The COVID19 pandemic has demonstrated a strong interest in the public to access parks and public lands and the relationship of health and nature.



Reframing Conservation as an Economic Driver and Stimulus to Rural Communities

CONVERSATION DATE: August 13th, 2020

HOST: [Ruckelshaus Institute](#), University of Wyoming

MODERATOR: Dr. Drew Bennett, Ruckelshaus Institute, University of Wyoming

BACKGROUND

Conserved lands are increasingly recognized as natural assets that produce significant economic benefits through the suite of ecosystem services they generate. Conservation can also help revitalize rural economies through investments in natural solutions to climate change (e.g., carbon forestry), labor for ecological restoration, and public lands designations that are a draw for visitors and new residents. This webinar examined the role of conservation in stimulating investment and diversifying local economies. Appreciating the economic contributions of conservation can help expand conservation constituencies, guide policy reforms, and inform investments to address economic declines in rural communities in the West.

CONVERSATION SUMMARY

Dr. Ray Rasker – Executive Director of Headwaters Economics

Ray outlined seven economic benefits that conservation provides to local communities:

- tourism
- commodity production
- business location
- ecosystem services
- lifestyle migration
- recruiting talent
- and attracting retirees

However, especially in isolated counties in the West with high percentages of public land, fiscal policy is critical for local governments realizing such benefits from conservation. Local government budgets can be economically pinched when conservation reduces revenues from mineral and timber extraction on federal lands, and may be unable or unwilling to raise revenue through local taxes that can capitalize on economic activity generated through conservation. Focusing on fiscal issues from federal to local levels can help identify strategies to maximize the economic benefits of conservation and foster local support.

Brent Davies – Vice President of Forests and Ecosystem Services at Ecotrust

Forest and watershed restoration can stimulate significant job creation while producing natural resource commodities. Ecotrust’s work has also shown that increasing demand for climate-smart forest products can incent conservation efforts that result in enhanced stream buffers that benefit ecosystem health and sequester 30% more carbon

A \$1 million investment in watershed restoration creates 19 to 24 jobs on average – equal to or higher than similar investments in transportation infrastructure, renewable energy, or building retrofits.

than standard forest practices. Well managed forests provide a wide range of ecosystem benefits but landowners are only compensated for small number of benefits. Incentivizing practices that support a wider range of ecosystem services will ensure forest and watershed management in ways that benefit people and the environment.

Erik Glenn – Executive Director of the Colorado Cattlemen’s Agricultural Land Trust

Erik highlighted the case of Kim, Colorado, a community of roughly 100 people in the rural eastern part of the state. Recognizing the important conservation values of the region, state and private foundation investments in conservation easements helped transition two multi-generational ranches to the next generation. The ranching families also emphasized the need to support the local community and motivated the conservation funders to invest in the Mustang Pavilion and Education Center – a community amenity that has become a regional hub of social and economic activity that hosts over 100 events a year. This example demonstrated how conservation, social, and economic goals can be jointly pursued and mutually reinforcing. Erik also described recent economic studies showing the economic impacts of incentives for conservation easements in Colorado. These studies showed that every dollar of state investment in easements resulted in \$4 to \$12 of benefits to the state and that \$80 million in federal US Farm Bill investments over 10 years generated \$176 million of new economic activity – with 80% of economic activity directed to rural economies..

POLICY INSIGHTS

Establish a federal land endowment that decouples revenue to rural communities from extractive activities on public lands. This could be done through the Forest Health for Rural Stability Act (S. 1693) introduced in 2019.

Ensuring local government fiscal policy is aligned with conservation is critical – including a focus on the structure of state and local taxes to capitalize on conservation benefits. Described in detail in [Building](#)

[a Federal Land Endowment](#), breaking long-term fiscal dependence on federal revenue-sharing payments at the county-level can help alleviate negative fiscal impacts from conservation.

Develop a forest carbon leasing program to provide access to carbon markets for non-industrial forest owners and incentivize sustainable timber practices and increased carbon sequestration.

New conservation tools are needed to allow rural land managers and landowners to capitalize on their natural assets and create new sources of revenue in rural communities while also directing conservation actions to areas of high conservation value. Described in detail in [Forest Carbon Reserve Program](#), carbon leasing programs could be modeled after the USDA’s Conservation Reserve Program and provide annual rental payments to landowners for forest management practices that sequester carbon.

Incentivize conservation easements based on ecosystem services they provide to support conservation on private lands and rural economies.

Conservation protects natural assets that provide a range of benefits to society and have substantial economic value. Yet, conservation programs often do not recognize these benefits. Pilot efforts are underway in Colorado to develop mechanisms to tie incentives for conservation easements to the ecosystem services or natural capital they protect – rather than existing methods that typically compensate based on forgone real estate development potential.



Another Way of Knowing: Indian Tribes, Collaborative Management & Public Lands

CONVERSATION DATE: August 25, 2020

HOST: [Getches-Wilkinson Center for Natural Resources, Energy, and the Environment](#), University of Colorado School of Law

MODERATOR: Alice Madden, Executive Director, GWC at Colorado Law, and Charles Wilkinson, Moses Lasky Professor of Law Emeritus and Distinguished University Professor Emeritus at Colorado Law

BACKGROUND

The Presidential Proclamation establishing the Bears Ears National Monument in December of 2016 included two unique features that would ensure these lands, and the culture and history they contain, would be protected forever. Based on negotiations with a coalition of Tribes (Hopi, Navajo, Ute Mountain Ute, Ute, and Pueblo of Zuni), Bears Ears would be managed in an entirely new way. The secretaries of the relevant agencies were directed to meaningfully engage with a commission (made up of a representative from each of the five Tribes) in developing and implementing a collaborative management plan and “shall carefully and fully consider integrating the traditional and historical knowledge and special expertise of the Commission.”

In 2017, President Trump issued a proclamation to shrink the size of Bears Ears by 85 percent and to “return certain lands to multiple use, removing them from the boundaries of the national monument.” Trump’s action is the subject of several federal lawsuits. Plaintiffs assert the reductions fall outside the scope of the president’s authority under the Antiquities Act, and are therefore illegal.

CONVERSATION SUMMARY

Panelists: Daniel Cordalis, *member of the Navajo*

Nation, practicing natural resources and Indian law attorney; Jim Enote, Zuni tribal member, CEO of the Colorado Plateau Foundation

Traditional knowledge (TK) generally refers to holistic knowledge systems embedded in the cultural traditions of indigenous communities. It is a broader sphere of knowledge based on centuries of living close to nature. TK includes deep understanding of the properties of plants and animals, the functioning of complex ecosystems, the cultural and historical significance, and detailed techniques for use and management passed down from generation to generation.

Panelists noted that the creation of the Bears Ears National Monument was an excellent example of how TK can be incorporated into land management decisions. The Proclamation highlighted the value of TK and emphasized that TK can help ensure the landscape is managed in a sustainable manner. The panelists discussed the ways that different Tribes used the resources available in Bears Ears. They articulated a vision for collaborative management in Bears Ears and beyond that would be based on landscapes as connected living systems (as opposed to a series of discrete parts), and where TK would be deeply integrated into land use decisions. The speakers emphasized that modern Tribes are sovereign governments and often have substantial

scientific capacity. Tribes and their staff scientists are working actively to improve environmental conditions and can provide knowledge and capacity to improve natural resource management. They touched on how the principles of TK and collaborative management also would be invaluable in river basin management plans, citing the Klamath River as an example.

POLICY INSIGHTS

The panelists suggested several strategies that the incoming administration could use to integrate TK into land (and water) management.

- Each federal agency with land management responsibilities should establish a position that holds explicit responsibility to ensure that all relevant Tribes have an early seat at the table wherever resource management decisions are being made.
- Collaboration between federal agencies and Tribes must be maintained throughout all planning, decision-making, and management actions where Tribal interests are involved.
- In addition to being at the table, Tribal representatives must be treated as decision-makers.
- Federal agencies should move forward with establishing collaborative management programs with Tribes that integrate TK and management practices based on western sciences.
- Federal agencies should provide funding to compensate Tribes for the time and resources that they contribute to collaborative management programs.
- Federal agency scientists should work with Tribes’ scientific staffs to share information and collaborate on management decisions.
- Administration directives should use language that requires agencies to incorporate TK into management decisions.
- The use of TK must be controlled by the Tribes, and each individual Tribe must have control over its own TK. Federal agencies must respect decisions by Tribes to preserve the confidentiality of certain information.

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Bios available at:

www.conservationconversations.org/webinar-indian-tribes-collaborative-management

ADDITIONAL RESOURCES

- **Presidential Proclamation-** Establishment of the Bears Ears National Monument, December 2016, <https://obamawhitehouse.archives.gov/the-press-office/2016/12/28/proclamation-establishment-bears-ears-national-monument>
- **Modern Native Movement-** Building on the Colorado Plateau, Colorado Plateau Foundation Report, Spring 2020, <https://coloradoplateaufoundation.org/wp-content/uploads/2020/07/Modern-Native-Movement-Building-On-The-Colorado-Plateau.pdf>
- **The Proposed Bears Ears National Monument, Grand Canyon Trust,** Winter 2016, <https://www.grandcanyontrust.org/advocatemag/fall-winter-2016/proposed-bears-ears-national-monument>
- **Bears Ears Inter-Tribal Coalition,** <https://bearscoalition.org/>

From Parallel Play to Co-Management: Conserving Landscapes at Risk of Wildfire in the American West

CONVERSATION DATE: September 9th, 2020

HOST: [Ecosystem Workforce Program](#) in collaboration between the [Institute for a Sustainable Environment](#), University of Oregon, and the [College of Forestry](#), Oregon State University; co-sponsored by the [Northwest Fire Science Consortium](#)

MODERATOR: Dr. Cassandra Moseley, Institute for a Sustainable Environment, University of Oregon

ORGANIZER: Dr. Heidi Huber-Stearns, Institute for a Sustainable Environment, University of Oregon

BACKGROUND

The frequency of large, severe wildfires has increased over the past 20 years, calling attention to the fragmented, sometimes conflicting approaches to natural resource conservation across different jurisdictions and agencies. Reducing threats and enhancing conservation benefits from wildfire will require synergistic collaboration and coordination to span these disconnects and concerted policy changes promoting and emphasizing fire risk reduction and reintroduction of fire into the landscape.

CONVERSATION SUMMARY

Dr. Tony Cheng – Director of Colorado Forest Restoration Institute; Professor at Colorado State University Department of Forest and Rangeland Stewardship

Intermixed landownership and jurisdictional boundaries in the western United States contribute to challenges around wildfire policy and management, including:

1. Wildfire poses a paradox. Wildfire is simultaneously a natural, necessary and

sometimes beneficial force, but is also a dangerous and disruptive force. Because of this paradox, policy makers are left to their own interpretations and discretion, making policy solutions ambiguous.

2. The authority and responsibility for wildfire management is distributed across different levels of government. A diffuse and fragmented institutional landscape has resulted from wildfire response and management involving multiple actors and organizations with differing missions, mandates, values, cultures, and capacities. Wildfire response and management require cooperative, coordinated, collective action, but a lack of policies and institutional frameworks make this challenging.

The past is a poor guide to the future. Knowledge about historical fire ecology and the effectiveness of past wildfire management strategies is insufficient for future management decisions

3. The past is a poor guide to the future. Knowledge about historical fire ecology and the effectiveness of past wildfire management strategies is insufficient for future management decisions, due to expansion of the wildland-urban interface, increasing length of fire seasons and severity and size of wildfires, decreasing resilience of forests to wildfire, negative feedback loops, and climate change. This leads to lack of a frame of reference for policy solutions.

Dr. Emily Jane Davis – Associate Director of Ecosystem Workforce Program; Assistant Professor and Extension Specialist at Oregon State University Department of Forest Ecosystems and Society

The vast private lands in the western United States range from large parcels owned by corporate ranchers and timber investment entities to small parcels owned by individuals and families. This ownership doesn't equitably reflect the US population, being predominantly owned by male, white, and non-Hispanic landowners. Because of differing management objectives for these parcels of land and their disparate nature, this mixed ownership landscape poses both potential conservation assets and risks when thinking about wildfire across a landscape. Opportunities for conservation and stronger interconnection across private forests and rangelands include:

1. Wildfire is a manifestation of climate change and a gateway to stewardship. Landowners are concerned about wildfire and drought, stemming from climate change, and are motivated to participate in landscape-scale, cross-boundary wildfire risk reduction projects that will increase the resilience of their land.
2. Many recognize and support fire's historic role in shaping ecosystems. Landowners recognize the natural role of fire in the landscape and want to use controlled, prescribed fire to reduce wildfire risk. However, lack of enabling conditions, including smoke permitting, liability, training, and availability of personnel to conduct and lead prescribed burns limit implementation.



Wildfire is a manifestation of climate change and a gateway to stewardship. Landowners are concerned about wildfire and drought, stemming from climate change, and are motivated to participate in landscape-scale, cross-boundary wildfire risk reduction projects

3. Wildfire galvanizes cooperation across lines. Wildfire creates the opportunity for collective action to suppress wildfires in rangeland settings, particularly through the use of rangeland fire protection agencies.

Tyson Bertone-Riggs – Policy Analyst for Rural Voices for Conservation Coalition

Scientific consensus shows that reintroduction of fire in the form of prescribed and managed fire is required to restore environmental equilibrium and reduce fire risk and severity. Current policies, practices, and cultures of federal land management agencies do not sufficiently promote this. Therefore, the challenge lies in developing policies and practices that promote the use of fire and emphasize fire risk reduction, rather than full suppression, by agencies. Not only would this result in mitigation of fire risk, it would also provide an opportunity to create jobs, particularly in rural communities.

POLICY INSIGHTS

- **Update laws to expand options for cooperative federal-state-local fire management.** Modernize wildfire suppression laws such as the Weeks Act of 1911, Clarke-McNary of 1924, and the Cooperative Forestry Act of 1978 and incentivize changes to state policy to focus more on cooperative federal-state-local

fire management. For example, on condition of receiving federal funding for their wildfire operations, states could be required to develop statewide Wildland Fire Management Action Plans (akin to state Forest Action Plans) that include specifications for wildland fire use. This also provides opportunity to advance prescribed fire performance measures for states.

- **Increase capacity of landowners and states to respond to fire, implement prescribed fire, and complete mitigation projects.** Federal agency leadership and directives must increase support for funding FEMA pre-disaster mitigation, State and Private Forestry National Fire Capacity and related support. Grants and cost-shares through the Farm Bill for training, capacity-building and qualification-building for non-federal, local-level fire services could help landowners handle larger fires to benefit future risk management, forage production, and restoration. Creating a program that uses a portion of existing suppression dollars to provide grants to local government and community-based fire services for wildland fire equipment would increase capacity to handle larger wildfires, including to manage some wildfires in mild to moderate conditions when fire has the most ecological and risk reduction value. In addition, increasing federal funding and suppression response for states and localities practicing meaningful land use planning could increase community wildfire protection, mitigation and fuels reduction work, and capacity for managed and prescribed fire.
- **Change federal land management agency staffing and increase funding to build staffing.** By examining staffing and shifting away from seasonal staffing, federal land management agencies can increase workforce capacity for prescribed and managed fire while simultaneously providing jobs for rural communities. A national review of the existing staffing model (including job classifications, 1039 positions, and appropriate versus legacy positions) should be undertaken



and reforms made within land management agencies and Office of Personnel Management guidance, as needed.

- **Prioritize large-scale, longer-term, and purposeful restoration and risk reduction.** Decouple the federal focus on the commodity production model and annual outputs, by revising the performance measures and incentives structure for the US Forest Service. Annual output targets prevent meaningful planning and implementation focused on multi-year, complex goals, including climate adaptation, and carbon management. Such revisions cannot be conducted by the Forest Service alone. Rather, it would require individuals on oversight and appropriations committees to engage in making these changes as well.
- **Explicitly incorporate wildfire risk and potential loss of forest and rangelands into any climate**

or green energy plan. Carbon markets should be more responsive to the need for some ecosystems to occasionally burn to avoid massive losses of carbon all at once. Funding to advance and scale up woody biomass energy could support markets at scale for small, nonmerchantable biomass from fire risk reduction thinning.

- **Improve conditions for forest laborers.** Much fuel reduction work is labor intensive and currently relies heavily upon a Latinx workforce facing unsafe working conditions and low wages. Unenforced labor laws and the structure of the low-bid federal contracting system exacerbate these poor working conditions. When land management agencies undertake efforts to increase the pace and scale of restoration projects and prescribed fire, they should consider who does this work, including provisions for bolstering labor law enforcement and providing resources for forest workers.

Transboundary Conservation: Migration and Fragmentation Across Conservation Landscapes

CONVERSATION DATE: September 14, 2020

HOST: [Andrus Center](#), Boise State University

MODERATOR: Dr. Emily Wakild, School of Public Service and Andrus Center, Boise State University

BACKGROUND

It is now common knowledge that species conservation must span political, jurisdictional, and cultural boundaries. But what does this look like on the ground? How might we leverage this insight to produce stable conservation outcomes? Using examples drawn from the US–Mexico and US–Canada borders as well as the High Divide, this panel examined popular strategies, such as conservation easements, and under-recognized challenges, such as border militarization, to conservation across North America. Our discussants provided a range of disciplinary perspectives with special attention to the socio-political contexts in which conservation emerges.

To achieve more effective and long-lasting wildlife conservation in the US, both physical boundaries—roads, dams, state borders, agency jurisdictions—and cultural boundaries—ideas and values about wildlife and land use—must be transcended. These two levels require different commitments. The physical boundaries require creative infrastructure to make life better for the wild. The cultural boundaries require directing resources and commitment into education, outreach, collaboration, and even diplomacy. The physical boundaries may be easier to address because immediate results can be obtained with direct investment. The cultural change is a longer project but also very public-facing and likely has transformational dividends in the long run.

CONVERSATION SUMMARY

Dr. Jodi Brandt – Associate Professor in Human-Environment Systems at Boise State University

Private lands in the western US, and in particular working lands, are very important for large landscape conservation goals in part because they have disproportionately more mesic (wetland) resources than public lands. But currently, human population growth is rapidly converting relatively open working lands to development, creating a conflict with conservation goals. Including private land protection in land-use planning would allow a more systematic and targeted implementation of habitat connectivity and strategic placement of conservation where it would have the greatest effects.

Rocky Barker – author of *Saving All the Parts: Reconciling Economics and the Endangered Species Act and Scorched Earth: How the Fires of Yellowstone Changed America*

In February of 2019 the last two caribou were taken out of Idaho and released within a northern population in Canada, marking a tragic fate for the caribou: extinction in its native range within Idaho. Large species like caribou require large areas of protected habitat across borders. While the US, via the Endangered Species Act, ended old-growth hemlock logging in caribou habitat, Canada promoted rural development and timber harvests. Lopsided measures were not enough because

To achieve more effective and long-lasting wildlife conservation in the US, both physical boundaries—roads, dams, state borders, agency jurisdictions—and cultural boundaries—ideas and values about wildlife and land use—must be transcended.

of the transboundary effects of the range across the international divide. Along with international coordination, Native American groups must be brought into this process for better outcomes.

Dr. Lisa Meierotto – Assistant Professor in the School of Public Service at Boise State University

Militarization in the border region has resulted in compromised ecosystems and high loss of human life. At the Cabeza Prieta National Wildlife Refuge, a southern Arizona reserve that abuts the US–Mexico border, a history of collaboration for endangered species changed dramatically in the 1990s with two pieces of legislation. The US Border Patrol’s Prevention through Deterrence Desert Wilderness Act (1994) shifted immigrants away from urban areas and into the desert. The Arizona Desert Wilderness Act (1990) created 1.1 million acres of wilderness. These two contradictory policies pitted human traffic against wilderness designations, compromising both people and wild species like the Sonoran pronghorn, fewer than 500 of which exist today between the US and Mexico.

Dr. Matt Williamson – Assistant Professor in Human-Environment Systems at Boise State University

Wildlife like the American plains bison need to be able to move across landscapes to access resources, find mates, and avoid climate change. Conserving wildlife connectivity requires overcoming both biophysical barriers (such as mountain ranges or roads) as well as social, economic, and institutional resistance across geographies and jurisdictions. Given the need to coordinate across boundaries, collaborative governance arrangements where authority and accountability are shared will be vital for reducing the impacts of socio-political fragmentation.



Private lands in the western US, and in particular working lands, are very important for large landscape conservation goals in part because they have disproportionately more mesic (wetland) resources than public lands.



POLICY INSIGHTS

- Design strong land use policies that consider multiple dimensions
- Utilize diverse mechanisms to support the protection of mesic (wetland) systems on private land
- Create more targeted placements of private land conservation to provide greater benefits
- Collaborate on conservation across international borders
- Support collaborative governance regimes such as the linii Initiative
- Utilize treaties to simplify operational challenges (despite difficulties of ratification)

ADDITIONAL RECOMMENDATIONS

- Identify existing borders inhibiting wildlife habitat connectivity
- Support holistic land-use planning combined with easements
- Conservation as democracy: Invest in collaborative partnerships
- Draw strategically and effectively on external expertise, including NGOs
- Provide accessible grants for public lands education
- Try Peace Parks
- Create a fast response team for conservation coordination

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RESOURCES

Academic Research:

- Rose A. Graves, Matthew A. Williamson, R. Travis Belote, Jodi S. Brandt, "Quantifying the contribution of conservation easements to large-landscape conservation," *Biological Conservation* 232(2019)83-96.
- Lisa Meierotto, *Immigration, Environment and Security on the US-Mexico Border* (Palgrave Macmillan 2020.)

Websites Mentioned:

- PAD-US Gap Analysis Project <https://www.usgs.gov/core-science-systems/science-analytics-and-synthesis/gap/science/protected-areas>
- The Conservation Easement Handbook from the Trust for Public Land. <https://www.tpl.org/conservation-easement-handbook>

Carbon Sequestration and Climate Justice in Cities

CONVERSATION DATE: October 14, 2020

HOST: [Salazar Center for North American Conservation](#), Colorado State University

MODERATOR: Dominique Gómez, Program Director, Colorado State University

BACKGROUND

US cities face a host of interrelated challenges in 2020. A nationwide history of racism in housing and environmental injustice have forced many lower wealth households and communities of color to live in more polluted, hotter neighborhoods with less tree canopy and green space. At the same time, as global greenhouse gas emissions continue to rise, cities must reduce carbon outputs while preparing for climate change impacts. Investments in urban forests and green space, particularly in historically under-resourced communities, could be an essential intersectional approach to addressing inequitable experiences of climate change in urban neighborhoods while tacking carbon drawdown.

CONVERSATION SUMMARY

Panelists: Dr. Melissa McHale, *Colorado State University*; Brett KenCairn, *Urban Drawdown Initiative Founding Director*; Leslie Jones, *American Forests*; Sean Terry, *The Trust for Public Land*

The urban tree canopy offers a host of benefits in cities. As US cities face increasing days of dangerous heat, trees can reduce urban temperatures 7–20°F¹ and energy costs for shaded structures up to 7%². Trees also reduce stormwater runoff, improve air quality, reduce effects of wind, support biodiversity, and sequester carbon. Given the range of social,

public health and environmental benefits of increased tree canopy combined with the urgent need to not only reduce greenhouse gas emissions but actively capture emissions, it is a wise investment.

Targeting tree planting efforts to low-wealth communities of color could have significant public health benefits and offer a sustained workforce and economic recovery program of tree planting and maintenance. A recent analysis conducted by the World Resources Institute projected that an annual investment of \$4–\$4.5 billion could create more than 150,000 jobs and \$6–\$12 billion in annual economic activity.³ In addition, a recent analysis conducted by the US Forest Service, urban forest ecosystems in the US are currently estimated to sequester 37 million tons of carbon annually and provide a combined value of over \$18 billion annually in ecosystem services.⁴

Investments in urban forests and green space, particularly in historically under-resourced communities, could be an essential intersectional approach to addressing inequitable experiences of climate change in urban neighborhoods while tacking carbon drawdown.



As US cities face increasing days of dangerous heat, trees can reduce urban temperatures 7–20°F and energy costs for shaded structures up to 7%

POLICY INSIGHTS

Invest in urban forests: Direct substantial public investments (>\$5 billion annually) to urban forest protection, maintenance, and expansion.

Design for equity and workforce opportunity: Design urban forest funding programs to address the historical inequities in urban forest and green infrastructure distribution and target low wealth and communities of color for initial investment. This includes provisions that ensure that the economic and workforce opportunities that are created through this funding are directed primarily to these historically underserved areas.

Leverage private investments: Encourage and support cities applying for federal funds to leverage

private investments through carbon and ecosystem services credits to maintain investments in trees (watering, tree health, maintenance) and jobs originally created through tree planting. Integrate social cost of carbon and other factors in establishing market values for the many services being provided by urban forests and green infrastructure.

Enact supporting policy: Utilize existing policy frameworks such as The Climate Stewardship Act of 2019 (S. 2452; H.R. 4269) which would support the planting of more than 15 billion trees to revive deforested landscapes and expand urban tree cover, and reestablish the Civilian Conservation Corps to offer workforce opportunities in conservation.

1. <https://www.epa.gov/heatislands/using-trees-and-vegetation-reduce-heat-islands>
2. <https://www.fs.usda.gov/treearch/pubs/53420>
3. <https://www.wri.org/publication/restoring-trees-landscape-creating-shovel-ready-jobs-across-united-states>
4. https://www.fs.fed.us/nrs/pubs/jrnl/2018/nrs_2018_Nowak_003.pdf

Environmental Justice, Equity, and Inclusion for Indigenous Americans

CONVERSATION DATE: October 21, 2020

HOST: [O'Connor Center for the Rocky Mountain West](#), University of Montana

MODERATOR: Jim Lyons, Lecturer, WA Franke College of Forestry & Conservation, University of Montana

BACKGROUND

There are 567 distinct sovereign Native American nations throughout the United States, overseeing nearly 60 million acres of land rich in natural and cultural resources. In spite of their successes, Indigenous Americans continue to struggle with inequities created by the mostly white, male conservation establishment. Most were forced to leave their ancestral lands with little or no say over future management. Even today, Native Americans are rarely consulted in management and use of natural resources or treatment of native lands. Their expertise and traditional ecological knowledge is not respected nor are they provided opportunities to secure employment in the conservation field. The conservation establishment continues to inadequately engage with Indigenous Americans seeking to improve management of tribal lands, public lands, and associated ecosystems they have occupied for generations.

CONVERSATION SUMMARY

Dr. Rosalyn La Pier – Associate Professor of Environmental Studies at University of Montana and the only enrolled Blackfeet tribal member to receive tenure at the University

La Pier reflected on how Michael Brown's murder by police in Ferguson, Missouri, the Black Lives Matter movement, the Dakota Access Pipeline protests, the "Water is Life" movement, and the murder of George Floyd in Minneapolis brought awareness to

Indigenous environmental injustices. These places and their interconnected stories of racism, white supremacy, and state-sponsored violence have catalyzed the conservation community to challenge its own history and "mythology as white saviors of the natural world." She advocated for revisiting history and recognizing how efforts to "erase Indigenous histories and peoples from the landscape" shaped the conservation movement. Noting that the Sierra Club recently decided "to try to repair the harm we've [they've] caused," La Pier asked, "What will this entail? Will they work to return lands taken from Indigenous peoples? And uphold treaty rights? Will they erase the myth of 'wilderness' and instead push forward the true story of America as a peopled landscape?"

Dr. Robin Saha – Associate Professor of Environmental and Climate Change Studies at the University of Montana

Saha highlighted several failures of productive engagement between federal land managers and Indigenous tribes and suggested that diversity, equity, and inclusion in the conservation community remains a tremendous obstacle to progress. He referenced a 2018 study of 2057 environmental NGOs which highlighted the lack of diversity in their boards and staff leading to unconscious bias, discrimination, insular recruitment, and a lackluster effort to address diversity. He emphasized that institutional discrimination in the conservation movement is a "huge problem" with serious ramifications for Native Americans, and that progress on this front is hindered

by the fact that only 14.5 percent of environmental organizations engage in diversity, equity, and inclusion activities.

Some Categories of Environmental Injustices Affecting Indigenous Americans

- Genocide, displacement, and expulsion from ancestral lands
- Treaty rights violations, threats to tribal sovereignty
- Threats to religious practices and sacred sites
- Nuclear testing, military, and hazardous waste disposal
- Failure to meaningfully involve in decision making and share power
- Inadequate compensation for extraction of natural resources
- Improper accounting and payment of royalties from trust lands

Adapted from Tom B. K. Goldtooth, "Indigenous Nations: Summary of Sovereignty and its Implications for Environmental Protection," in *Environmental Justice: Issues, Policies, and Solutions*, ed. Bunyan Bryant (Washington, DC: Island Press, 1995).

Dr. Chad Bishop – Director of the Wildlife Biology Program and Associate Professor in the Department of Ecosystem and Conservation Sciences, University of Montana

Bishop emphasized that many Native students dream of becoming biologists, especially for their Tribes, but those dreams are hard to realize. Native Americans are the most underrepresented ethnicity in wildlife biology educational programs and professions in spite of their strong connections to wildlife and natural resources and ecological knowledge that spans centuries.

Universities create opportunities for Native American students to earn undergraduate degrees, but many wildlife and natural resources jobs require a master's degree. Pathways into wildlife graduate degree programs have been largely nonexistent for Native American students. Graduate school recruitment at universities makes it extremely difficult for Native students to be admitted, as a result of cultural bias in the Graduate Record Exam. In fact, Native Americans

are the most underrepresented minority group in natural resource programs at major colleges and universities (not including tribal colleges).

The University of Montana initiated a holistic review processes that lessens reliance on GRE scores and grades and devotes faculty and staff to supporting Native students and their unique needs. Bishop emphasized that his department has gradually learned the importance of building trust and respecting cultures different than Western culture.

POLICY INSIGHTS

Issue a Presidential Proclamation and Executive Order to acknowledge stewardship of Indigenous people as the original occupants of designated "wilderness" lands. Require federal agencies to acknowledge and encourage (through collaborative agreements) use of traditional ecological knowledge (TEK) and indigenous expertise in future land management. Establish a center for training federal land managers in TEK and related native management practices (such as fire management) to improve their capacity to increase resilience of public lands.

Direct the Department of Education to work with private higher-education organizations (such as the National Association of State Land Grant Colleges and Universities) to evaluate and revise standards for universities and improve opportunities for Indigenous students to qualify for and receive advance degrees in wildlife and natural resource management.

Advance co-management and tribal management of indigenous lands. Federal and state agencies should actively work with western tribal governments to develop shared stewardship agreements through an expansion of authorities in the 2018 Omnibus and 2018 Farm bills. That authority is currently limited to collaboration with state governments.

Incentivize diversity training. Require private foundations, associations supporting conservation, and environmental NGOs to undertake diversity training as a condition of grant funding and make more funding available for that purpose. Make diversity training a prerequisite for securing government contracts for work on western natural resource issues and public lands.

Conservation and Outdoor Recreation: Keeping our Parks and Public Lands from Being Loved to Death

CONVERSATION DATE: October 28, 2020

HOST: [Institute of Outdoor Recreation and Tourism](#), Utah State University

MODERATOR: Dr. Jordan W. Smith., Director, Institute of Outdoor Recreation and Tourism, Utah State University

BACKGROUND

Americans are loving their public lands to death. Over the past 10 years, visitation to all types of National Park Service units increased by 16%, with national parks alone seeing a 28% increase. Visitation to many national parks reaches record levels every year. Visitation to national forests is up 5% over the past ten years as well, and while visitation to state parks is up nearly 11% nationwide since 2009, operating budgets have declined by over 21%. Recent research has estimated that state park systems will need \$42 billion dollars in additional appropriations and revenues to meet projected demand. These are complex resource management challenges that will require focused and coordinated policy efforts.

CONVERSATION SUMMARY

Jeff Mow – Superintendent, Glacier National Park, National Park Service

In 2020, Glacier National Park welcomed its 100 millionth visitor. Peak visitation occurs over a very short period in mid-summer. Over the past several years, the park has seen increasing visitation from the general public and less from backcountry or more experienced visitors. This past year, the park's eastern entrance through the Blackfoot Reservation was closed. Consequently, the western entrance experienced long wait times. The park considered,

but ultimately decided not to implement, a ticketed entry system in 2020, and is carefully evaluating the expectations of both local and non-local visitors when considering management decisions. Accurately portraying expectations to future park visitors will be essential to them having a high-quality experience; conveying how visitors can recreate responsibly within the park.

Michiko Martin – Director of Recreation, Heritage, & Volunteer Resources, USDA Forest Service

The Forest Service saw extraordinary visitation in July, August, and September of 2020, with visits to day-use and Wilderness areas two- and three-times more than was recorded in 2015, respectively. Notably, first-time visits increased by 150%. Consequently, national forests have had to deal with waste-disposal, parking areas exceeding capacity, graffiti and vandalism, and resource damage. One of the primary ways that the Forest Service is managing these challenges is

Over the past 10 years, visitation to all types of National Park Service units increased by 16%, with national parks alone seeing a 28% increase. Visitation to many national parks reaches record levels every year.

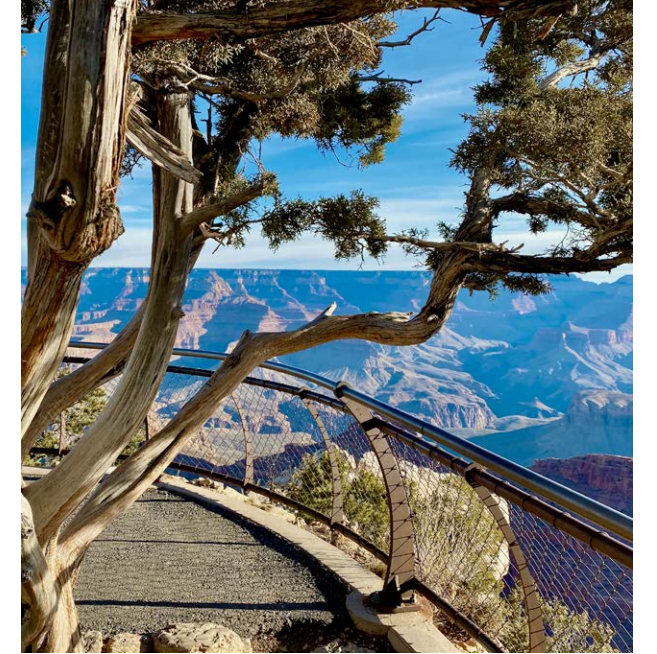
partnerships with other federal agencies, non-profit organizations, and the outdoor recreation industry. The #recreateresponsibly campaign, led by REI, Inc. is a primary example. Another solution is leveraging Recreation.gov, the system for reserving recreation settings, to help visitors better understand ways they can have desirable experiences. The final solution is Shared Stewardship Agreements, which provide strong legal precedence for partnerships between states and the Forest Service. Oregon has an exemplary shared stewardship agreement that can serve as a model for other regions and states.

Lewis Ledford – Director, National Association of State Park Directors

America's State Parks are the most visited of all public lands, with 813 million visits in 2019. With the closures of many national parks in late March of 2020, visitation to state parks increased dramatically. Twelve state park systems closed completely, and many others implemented visitation restrictions. As of late October, six state park systems were completely open, while many were open with restrictions. For many state park systems, visitation in the fall months has rebounded to levels above 2019. The parks that accommodated increased visitation the best have online reservation systems. Successful adaptation has also involved strong coordination with local and external (federal) partners to communicate ways visitors can recreate responsibly.

POLICY INSIGHTS

- **Support shared stewardship agreements.** Shared stewardship agreements provide a strong legal precedent that allows federal and state land management agencies to collaboratively identify, support, and fund the maintenance and development of outdoor recreation resources.
 - **Support coordinated communication strategies across park and protected areas management agencies.** These communication strategies should be focused on managing the expectations of visitors to parks and protected areas. This includes helping them develop not only a Plan
- **Support investments in outdoor recreation infrastructure.** The increase in use to parks and protected areas will require increased investments in outdoor recreation infrastructure. The Great American Outdoors Act provides a significant investment to meet these needs, however continued investments are needed to meet future demand. Investments should be focused in popular destinations in an effort to concentrate use and minimize the environmental impacts of dispersed use.
 - **Support the refinement of resource management frameworks that provide guidance on allowable uses of park and protected areas.** Create new or enhance existing frameworks, such as the Recreation Opportunity Spectrum, that provide an effective solution to managing conflict and mitigating the ecological impacts of outdoor recreation within parks and protected areas. Any new or refined frameworks should be collaboratively developed through the Interagency Visitor Use Management Council.



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