



5th American Bison Society Meeting and Workshop

Banff, Alberta
September 26-29, 2016



AMERICAN BISON SOCIETY



Cover photos: Bison photos: © Kent Redford; Treaty signing: © Stephen Legault



Message from the Governor General



THE GOVERNOR GENERAL · LE GOUVERNEUR GÉNÉRAL

I am delighted to extend my warmest regards to all those gathered for the 2016 American Bison Society Meeting.

Over a century ago, long before the advent of ‘green’ living, a passionate group of individuals banded together to revitalize the dwindling North American bison population. These magnificent animals had been ravaged by human greed, almost to the point of extinction. Yet, through the efforts of the American Bison Society, the bison have returned to the wild in great numbers.

The Society continues to play an important role in ensuring the survival of the bison. Its members have adopted the values of preservation and conservation, and are sharing this knowledge with the next generation, so that they may carry on this essential task.

I commend the Society on its achievements and I wish everyone a most enjoyable celebration.

David Johnston

September 2016





THE BUFFALO: A TREATY OF COOPERATION, RENEWAL AND RESTORATION

2014

RELATIONSHIP TO BUFFALO

Since time immemorial, hundreds of generations of the first peoples of the FIRST NATIONS of North America have come and gone since before and after the melting of the glaciers that covered North America. For all those generations BUFFALO has been our relative. BUFFALO is part of us and WE are part of BUFFALO culturally, materially, and spiritually. Our on-going relationship is so close and so embodied in us that BUFFALO is the essence of our holistic eco-cultural life-ways.

PURPOSE AND OBJECTIVE OF THE TREATY

To honor, recognize, and revitalize the time immemorial relationship we have with BUFFALO, it is the collective intention of WE, the undersigned NATIONS, to welcome BUFFALO to once again live among us as CREATOR intended by doing everything within our means so WE and BUFFALO will once again live together to nurture each other culturally and spiritually. It is our collective intention to recognize BUFFALO as a wild free-ranging animal and as an important part of the ecological system; to provide a safe space and environment across our historic homelands, on both sides of the United States and the Canadian border, so together WE can have our brother, the BUFFALO, lead us in nurturing our land, plants and other animals to once again realize THE BUFFALO WAYS for our future generations.

PARTIES TO THE TREATY

WE, the undersigned, include but not limited to BLACKFEET NATION, BLOOD TRIBE, SIKSIKA NATION, PIKANI NATION, THE ASSINIBOINE AND GROS VENTRE TRIBES OF FORT BELNAP INDIAN RESERVATION, THE ASSINIBOINE AND SIOUX TRIBES OF FORT PECK INDIAN RESERVATION, THE SALISH AND KOOTENAI TRIBES OF THE CONFEDERATED SALISH AND KOOTENAI INDIAN RESERVATION, TSUU T'INA NATION along with other nations.

ARTICLE I - CONSERVATION

Recognizing BUFFALO as a practitioner of conservation, We, collectively, agree to: perpetuate conservation by respecting the interrelationships between us and 'all our relations' including animals, plants, and mother earth; to perpetuate and continue our spiritual ceremonies, sacred societies, sacred languages, and sacred bundles to perpetuate and practice as a means to embody the thoughts and beliefs of ecological balance.

ARTICLE II - CULTURE

Realizing BUFFALO Ways as a foundation of our ways of life, We, collectively, agree to perpetuate all aspects of our respective cultures related to BUFFALO including customs, practices, harvesting, beliefs, songs, and ceremonies.

ARTICLE III - ECONOMICS

Recognizing BUFFALO as the centerpiece of our traditional and modern economies, We, collectively, agree to perpetuate economic development revolving around BUFFALO in an environmentally responsible manner including food, crafts, eco-tourism, and other beneficial by-products arising out of BUFFALO's gifts to us.

ARTICLE IV - HEALTH

Taking into consideration all the social and health benefits of BUFFALO ecology, We, collectively, agree to perpetuate the health benefits of BUFFALO.

ARTICLE V - EDUCATION

Recognizing and continuing to embody all the teachings we have received from Buffalo, We, collectively, agree to develop programs revolving around BUFFALO as a means of transferring intergenerational knowledge to the younger and future generations and sharing knowledge amongst our respective NATIONS.

ARTICLE VI - RESEARCH

Realizing that learning is a life-long process, We, collectively, agree to perpetuate knowledge-gathering and knowledge-sharing according to our customs and inherent authorities revolving around BUFFALO that do not violate our traditional ethical standards as a means to expand our knowledge base regarding the environment, wildlife, plant life, water, and the role BUFFALO played in the history, spiritual, economic, and social life of our NATIONS.

ARTICLE VII - ADHESIONS

North American Tribes and First Nations, and NATIONS, STATES, AND PROVINCES may become signatories to this treaty providing they agree to the terms of this treaty.

ARTICLE VIII - PARTNERSHIPS AND SUPPORTERS

WE, collectively, invited Non-Governmental organizations, Corporations and others of the business and commercial community, to form partnerships with the signatories to bring about the manifestation of the intent of this treaty. Organizations and Individuals may become signatories to this treaty as partners and supporters providing they perpetuate the spirit and intent of this treaty.

ARTICLE VIII - AMENDMENTS

This treaty may be amended from time-to-time by a simple majority of the signatories.



Welcome from WCS

Dear colleagues,

Welcome to the fifth bi-annual American Bison Society meeting and workshop. For the first time, we are hosting this meeting of bison enthusiasts, managers, producers, advocates, philanthropists, and artists in Canada. Not only is Banff a beautiful setting, it also plays a crucial role in the history of bison in North America.

Over the next three days we will come together to share stories, learn about our work across North America and, finally, celebrate the second anniversary of the Buffalo Treaty. Some highlights throughout the week include celebrating our Report Card, learning about the status of the bison across North America and in Europe, the launch of *Last of the Buffalo: Return to the Wild*, and exchanging ideas with Canadian First Nations and American Tribes about the cultural and social importance of the buffalo.

This meeting represents over 100 years since the American Bison Society was founded, and 10 years since it was re-established in 2006. In that time, we have accomplished some remarkable things together, not the least of which includes the reintroduction of wood bison to Alaska, establishing a new herd in Utah, and another in Mexico. In the past year alone, we have seen bison honoured as the National Mammal in the United States; the return of a group of bison from Elk Island National Park in Alberta to their ancestral home in Montana; and new partnerships with zoos, conservation organizations and universities in both Canada and the United States. We have truly seen an international effort to bring bison back.

Some of you came all the way from Australia, from the Netherlands and everywhere from Mexico to Alaska from Ottawa to California. We're looking forward to working with you over this meeting to learn even more about bison, your conservation efforts, and what the next 100 years could look like for bison conservation in North America.

Sincerely,

Keith Aune
Bison Program Director
Wildlife Conservation Society

Justina Ray
President and Senior Scientist
Wildlife Conservation Society Canada

THE AMERICAN BISON SOCIETY

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Stay up to the minute with conference happenings. Follow the hashtag **#BisonMeeting** and check our twitter feeds: @theWCS and @WCS_Canada



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Conference agenda

September 26, 2016 – Monday Night Reception

Time: 5:30 - 7 p.m.

Location: Elder Tom Crane Bear Room

September 27, 2016 (Tuesday) – Day 1 Meeting

Location: Max Bell Auditorium all day (lunch & evening events at Kinnear Centre Room 303)

8:00 a.m. – Welcome to the American Bison Society (ABS)

8:10 - 9:40 a.m. – Bison Bison Bison Where Are We?

- **ABS 10-year Report Card** by Keith Aune, Wildlife Conservation Society (WCS)
- **Status of the American Bison** with moderator Justina Ray, WCS Canada
 - **The Status of Bison in Canada** by Greg Wilson, Environment Canada
 - **Species Conservation Action Plan (PACE) for the Bison in Mexico** by José Bernal Stoopan, National Commission for Protected Areas (CONANP)
 - **The U. S. Department of Interior's Bison Conservation Working Group Beginning and Future Actions** by Steve Torbitt, U.S. Fish and Wildlife Service
 - **IUCN Red List Assessment** by Keith Aune, WCS; and Dennis Jorgensen, WWF
 - **Informing and Inspiring Collaborative Bison Conservation Strategies Using Population Viability Analyses for Department of the Interior Bison Herds** by Amanda Hardy, WCS and U.S. National Parks Service
 - **Steps Forward in the Genetic Conservation of North American Bison** by Peter Dratch, U.S. National Wildlife Refuge System
 - **Closing Remarks**

9:40 - 10:00 a.m. – Refreshment Break

10:00 a.m. - 12:00 p.m. – The Social Dimensions of Bison Restoration

with moderator Bill Weber, Yale School of Forestry and Environmental Studies

- **Rewilding European Landscapes with the European Bison as a Flagship Species** by Yvonne Kemp, Rewilding Europe
- **The Importance of Social Science in Understanding and Engaging Communities in North American Bison Recovery** by Rebecca Garvoille, Denver Zoo; and Douglas Clark, University of Saskatchewan



- **Social Surveys of Bison Acceptance: What They Do and Don't Tell Us About Restoration Potential** by Steve Forrest, Defenders of Wildlife
- **Snapshots in Time: Bison Conservation in the National Wildlife Refuge System** by Lee Jones, U.S. Fish and Wildlife Service
- **Surveying Values, Needs and Aspirations of Tribal Communities for the Return of Buffalo to Indian Country** by Dennis Jorgenson, WWF; Leona Tracey, Iinii Initiative; and Robbie Magnan, Fort Peck Tribe Fish and Wildlife Department
- **Closing Remarks**

12:00 - 1:05 p.m. – Lunch Talk – Wanuskewin: Restoring Ancestral Societies
by Wes Olson, Bison Expert, Consultant and Artist
Location: Kinnear Centre Room 303

1:10 - 3:00 p.m. – Integrating Culture into Bison Restoration with moderator
Leona Tracey, Iinii Initiative

- **Future Role of Tribal Bison Conservation Efforts** by Ervin Carlson, Inter Tribal Buffalo Council
- **The Buffalo Treaty: Returning to the Original and Natural Ecology of the Northern Plains** by Leroy Little Bear, Blood Tribe Elder, Blackfoot Confederacy
- **Biocultural Diversity in Large Landscape Conservation on the Great Northern Plains: A Niitsitapi Applied Perspective** by Paulette Fox, Harmony Walkers Inc., Blood Tribe
- **Bison with Benefits: Rancher Perceptions of Bison and a Potential Way Forward** by Dustin Ranglak, University of Nebraska – Kearney
- **Bison Ranching with a Conscience: Harnessing Private Enterprise to Aid in Conservation** by Cody Spencer, Sweetgrass Bison
- **Closing Remarks**

3:00 - 3:20 p.m. – Refreshment Break

3:20 - 5:10 p.m. – Public Narratives for Bison Restoration with moderator
Dave McDonough, Banff National Park

- **Ecological Bison Restoration Is Easy Compared to Cultural and Social Restoration of Bison** by Tom Jung, Government of Yukon; Tom Seaton, Alaska Department of Fish and Game; and Bill Bates, Utah Division of Wildlife Resources
- **Public Narratives for Bison Restoration: The NGO Experience** by Jennifer Barfield, Colorado State University; Kyran Kunkel, American Prairie Reserve; Antonio Esquer PROFAUNA; and Laura Paulson, The Nature Conservancy
- **Bringing Back Bison to Banff National Park** by Marie-Eve Marchand, Bison Belong; and Karsten Heuer, Banff National Park
- **How the Beaver Saved the Bison: Parks Canada's Role and Social Narratives in North American Bison Restoration** by Todd Shury, Parks Canada

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- **Bison Conservation and the U.S. National Park Service: Looking Forward – Together!** by Glenn Plumb, U.S. National Park Service
 - **Closing Remarks**

5:30 - 6:30 p.m. – Poster Session: Hosts Justina Ray and Amanda Hardy

Drinks and hors d'oeuvres

Location: Max Bell Room 252

7:00 p.m. – Banquet Feature Talk – The Last of the Buffalo: Return to the Wild by Harvey Locke, Eleanor Luxton Historical Foundation, with great music by the Banff Wardens

Location: Kinnear Centre Room 101

September 28, 2016 (Wednesday) – Day 2 Workshop

Location: Max Bell Auditorium all day (lunch at Kinnear Centre)

8:00 - 8:10 a.m. – Welcome

8:10 - 9:00 a.m. – Panel 1: The Importance of Social Science in Understanding and Engaging Communities in North American Bison Recovery

Moderator: Rebecca Garvoille, Denver Zoo. **Panelists:** Lowell Yellowhorn, Piikani Nation; Tom Seaton, Alaska Department of Fish and Game; Steve Forrest, Defenders of Wildlife; Douglas Clark, University of Saskatchewan; and Peter Metcalf, University of Montana

9:00 - 9:50 a.m. – Panel 2: Are Bison Wildlife or Not? A Discussion of Law and Politics

Moderator: Harvey Locke, Yellowstone to Yukon Conservation Initiative. **Panelists:** Terry Kremeniuk, Canadian Bison Association; Majel Russel, Elk River Law Office; and Arnie Dood, Retired Biologist

9:50 - 10 a.m. – Refreshment Break

10:00 - 10:50 a.m. – Panel 3: Bison Ecological Restoration: Examining Different Cultural and Stakeholder Perspectives

Moderators: Leroy Littlebear, Blood Tribe; and Angela Grier, SAIT, Piikani Nation. **Panelists:** Paulette Fox, Harmony Walkers Inc., Blood Tribe; Bruce Cutknife, Samson Cree First Nation; Gord Vaadeland, CPAWS; Jim Posewitz, Retired Biologist; Peter Haase, Buffalo Horn Ranch; and William Snow, Stoney Tribal Administration

10:50 a.m. - 12:00 p.m. – Voices for Bison Conservation

Session 1: Museums, Zoos and Poetry with moderator Anne Ewen, Whyte Museum of the Canadian Rockies

- **The Fine Art of Bison Restoration in Museums** by Adam Duncan Harris, National Museum of Wildlife Art; and Danielle Booroff, Glenbow Museum
- **Role of Zoological Institutions in Supporting Conservation and Social Engagement in Bison Restoration** by Pat Thomas, Bronx Zoo-WCS; Darren Minier, Oakland Zoo; and Luis Ramirez, Denver Zoo
- **Creating Transformation Through the Language of Conservation** by Sandra Alcosser, Poet House
- **Closing Remarks**

12:00 - 1:20 p.m. – Lunch Talk – Bison Coming Back Home from Elk Island National Park, Alberta, to the Blackfeet Reservation in Montana by Harry Barnes, Blackfeet Tribal Business Council; and Daniel Watson, Parks Canada

Location: Kinnear Centre Room 105

1:20 - 2:45 p.m. – Voices for Bison Conservation

Session 2: Stories in Film and TV with moderator Tanya Harnett, University of Alberta, Carry the Kettle Nation

- **Documentaries Can Make a Difference: Two Films as Case Studies** by Ian Toews, Filmmaker
- **Wild Bison: The Long Trail Back** by Douglas Lazarus, Artist and Filmmaker
- **Calling Back the Buffalo: Filming Indigenous Buffalo Restoration** by Tasha Hubbard, University of Saskatchewan, Peepeekisis First Nation
- **Elder in the Making: Bringing Together Multiple Disciplines in Film** by Chris Hsuing, Filmmaker; and Cowboy Smithx, Filmmaker and Curator REDx, Piikani and Kainai Tribes
- **Closing Remarks**

2:45 - 3:00 p.m. – Refreshment Break

3:00 - 4:25 p.m. – Communicating Bison Restoration with moderator Dennis Jorgenson, WWF

- **The 10,000 Year Significance of Bison: The Collaborative Design and Implementation of a Bison-Themed Curriculum as a Public Education and Outreach Strategy** by Mario Battaglio, Nez Perce Tribe Cultural Resource Program; and John Murray, Blackfeet Tribal Council
- **The Bison Story Map** by Danielle LaBruna, WCS; Amanda Hardy, WCS and

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- **The Bison Story Map** by Danielle LaBruna, WCS; Amanda Hardy, WCS and National Park Service; and Keith Aune, WCS
 - **Bison Bellows: Stories Celebrating Our Connections to Bison** by Amanda Hardy , WCS and National Park Service
 - **From Lost Species to U.S. National Mammal: The North American Bison by** by Julie Randall, American Bison Coalition
 - **Closing Remarks**

4:25 - 4:45 p.m. – ABS Conclusion: Lessons Learned and What's Next by Keith Aune, WCS

Other Activities

Wednesday, September 28:

1-5 p.m. Inter Tribal Community Fusion at the Buffalo Nations Museum

5-9 p.m. Buffalo dinner and cultural event at the Buffalo Nations Museum. Return shuttle service provided from the Banff Centre.

Thursday, September 29:

7:30 a.m - 2:30 p.m. Banff National Park field trip. Shuttle pick up in front of the PDC building at the Banff Centre

8:00 a.m. -10:15 a.m. Continental breakfast and tobacco ceremony for bison re-introduction at Minnewanka Day Use area (free).
(Complimentary bus service leaves for Minnewanka at 8:00 a.m. from Banff Centre – in front of Professional Development Centre – and from the Juniper Hotel at 8:15 a.m., with return shuttles after the ceremony.)

9 a.m. Departure from Banff for Head-Smashed-In Buffalo Jumps with linii Initiative leader

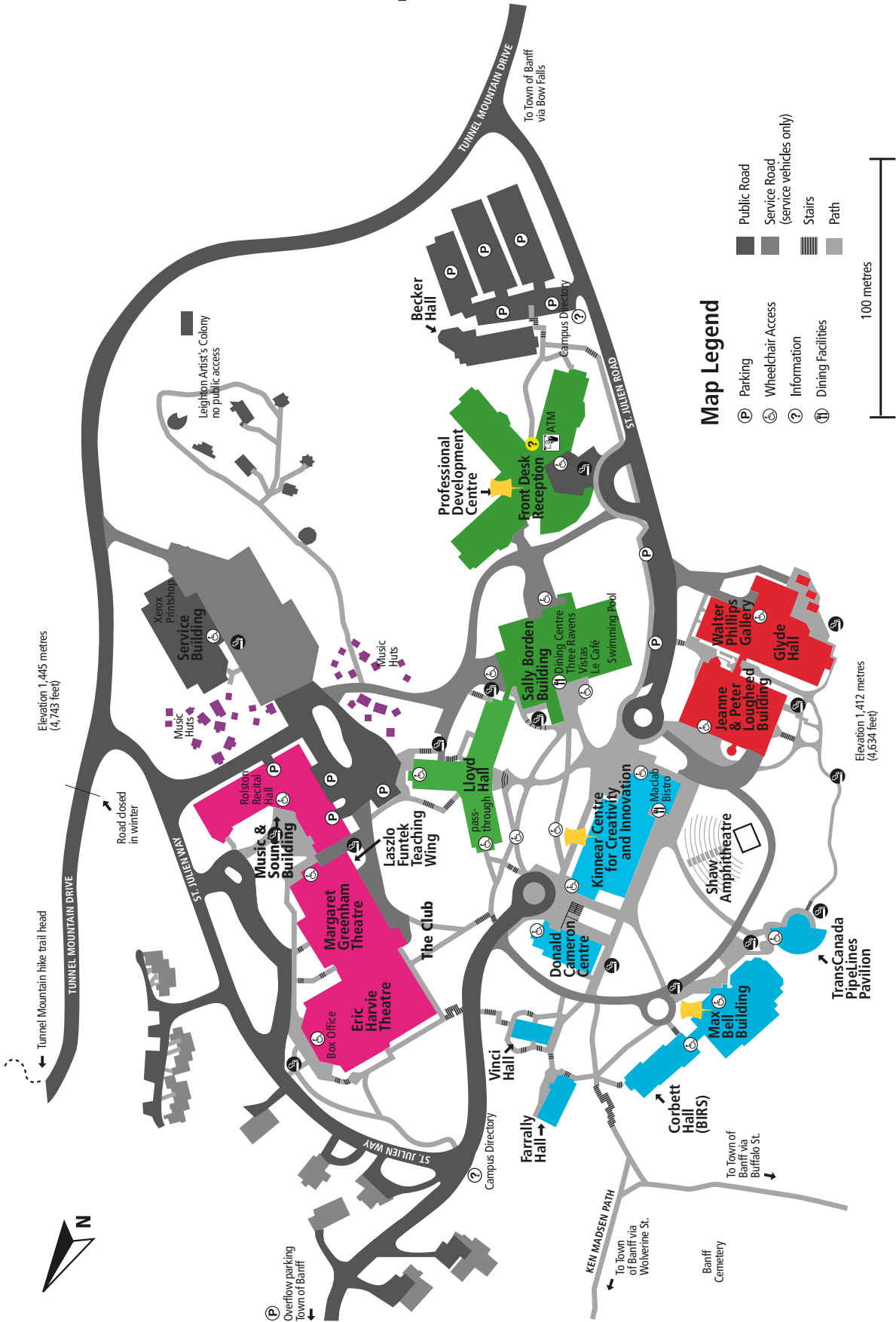
10 - 11:30 a.m. REDx talk on the Buffalo Treaty at the Buffalo Nations Museum (ticket required)

10 a.m. -12:00 p.m. Breakfast reception with artist Dwayne Harty at the Willock and Sax Gallery

11:30 a.m. - 1 p.m. Buffalo Treaty lunch at the Whyte Museum grounds on the river side (free)

1 - 4:30 p.m. Buffalo Treaty ceremony and new signatories

Banff Centre Map



Town of Banff Area Map





Return to the Wild

THE LAST OF THE BUFFALO RETURN TO THE WILD, a beautifully presented hardcover book, is a commemoration of Banff National Park's role in early successful efforts to preserve the last of the buffalo as a species and a celebration of today's efforts to restore bison as an ecologically functioning and culturally important species on its native range both here and elsewhere in North America. Included in a pocket inside the backcover is an exact reproduction of a 1909 booklet created by Norman Luxton that tells the story of the Pablo-Allard buffalo herd roundup through his own lively writing and magnificent panoramic images. **THE LAST OF THE BUFFALO RETURN TO THE WILD** includes the following essays:

- ⇒ the story of the present day Buffalo Treaty as told by Leroy Little Bear
- ⇒ the causes of the near complete disappearance of the plains bison by historian George Colpitts
- ⇒ discussion of archival records related to Norman Luxton's links to the Pablo-Allard herd by Jennifer Rutkair
- ⇒ the story of saving plains bison from extinction and the evolution of thinking that has led to the imminent restoration of plains bison to Banff National Park by author and conservationist Harvey Locke.

The Last of the Buffalo Return to the Wild / Hard cover / Harvey Locke (editor)
ISBN: 978-1-926983-22-6 / October 2016 / \$49.95 / 96 pages / 8 x 11 inches

www.summerthought.com · info@summerthought.com

Conference Presenters



Keith Aune is the Bison Program Director for the Wildlife Conservation Society (WCS). Keith received his Master's Degree in Fish and Wildlife Management from Montana State University and came to WCS from the Montana Department of Fish, Wildlife and Parks (MFWP), where he served for 31 years in various capacities including on the research and management of Yellowstone bison for 10 years. While at his last post with MFWP, he served as the Chief of Wildlife Research, directing multiple research projects throughout Montana. He joined the WCS North America Program in 2008 and became Director for the WCS-North American Bison Program and American Bison Society initiative in 2011. He is currently Chair of the IUCN Bison Specialist Group for North America. He is the WCS liaison with the Blackfeet Confederacy on the "linnii Initiative," and is conducting conservation outreach among tribes and First Nations across U.S. and Canada.



Sandra Alcosser's poems have appeared in New Yorker, New York Times and Paris Review. Her books of poetry, *A FISH TO FEED ALL HUNGER* and *EXCEPT BY NATURE* received the highest awards in her discipline. She designed the Language of Conservation for WCS and Poets House, a series of installations and programs in six cities supported by leadership grants from IMLS and NEA. Alcosser served as Montana's first poet laureate and recipient of the Merriam Award for Distinguished Contribution to Montana Literature. She founded and directs SDSU's MFA each fall and serves on the graduate faculty of Pacific University.



Dr. Jennifer Barfield is a Special Assistant Professor in the College of Veterinary Medicine and Biomedical Sciences at Colorado State University where her research focuses on assisted reproduction in domestic and exotic species. Her work with bison focuses on the use of assisted reproductive technologies to mitigate disease in bison and preserve valuable genetics. This work resulted in the establishment of a new conservation of herd of bison with Yellowstone genetics in northern Colorado in 2015. She has also co-founded a professional Master's program in assisted reproductive technologies, which began in August 2013.

Harry R. Barnes, Blackfoot Name “Iss tsee tsee mahn” “One who carries the flame”. Harry is Chairman of the Blackfeet Tribal Business Council and was raised on the Blackfeet Indian Reservation. Harry spent one year in college before being drafted into the U.S. Army where he served for three years before being Honorably Discharged. Harry married Jana in 1970 and from this union they were blessed with four sons. Harry and Jana returned to Browning in 1995 where he started Barnes Construction, an electrical company and later opened Blackfeet Construction Supply, which remained open until 2014. Harry has served on several boards and committees, which include the DeLaSalle Blackfeet School Board (Chair), Holy Family Mission Board, Little Flower Men’s Group, and the 3 Rivers Communications Board. In June 2014 Harry successfully ran for the Blackfeet Tribal Business Council and was elected. At the Inauguration ceremony, Harry was elected Chairman of the Council by his fellow Council Members.



Bill Bates has B.S. and M.S. degrees from Utah State University in wildlife science. For his Master’s thesis, he studied desert bighorn sheep habitat utilization in Canyonlands National Park. He has been employed by the Utah Division of Wildlife Resources for the past 34 years, serving as a Furbearer Biologist, Regional Non-Game Manager, Habitat Manager, Wildlife Manager, Mammals Program Coordinator, and Regional Supervisor. He currently is the Wildlife Section Chief. In his capacity as the Southeastern Region Wildlife Manager, he managed the Henry Mountains bison herd.



Mario Battaglia, M.A., earned a Bachelor of Arts degree in Anthropology from the University of Oregon in 2008. After graduation, he served in the Peace Corps as an environment and agriculture volunteer in Mali, West Africa. In 2015, he received a Master’s of Arts degree in Applied Archaeology from the University of Arizona. During his Master’s work, Mario collaborated with the Blackfeet Tribal Historic Preservation Office, and the Blackfeet Middle School to develop bison-themed curricula. He currently works for the Nez Perce Tribe Cultural Resource Program as the Tribal Ethnographer.



Danielle Booroff, Acting Manager & School Education Coordinator at Glenbow, is a leader in innovative educational programming. She joined Glenbow in 2007 and now leads an impressive team of 14 educators who engage over 65,000 school children with Glenbow’s amazing resources. Danielle has a B.A. from the Alberta College of Art and Design and is a practicing artist.





Ervin Carlson has been the President of the Inter Tribal Buffalo Council (ITBC) for over 10 years and is a member of the Blackfeet Tribe in Montana. ITBC is a national organization comprised of 56 Tribes across 19 states. For over 20 years, ITBC has worked to restore buffalo to Indian lands to re-establish the sacred relationship between the buffalo and Indigenous people. ITBC collectively has the largest number of buffalo in the U.S. ITBC serves as the Indian voice on buffalo protection, management and conservation issues.



Dr. Douglas Clark is an Associate Professor and holds the Centennial Chair in Human Dimensions of Environment & Sustainability at the University of Saskatchewan's School of Environment & Sustainability. His research program focuses on integrating human dignity with biological conservation, and his research towards this goal involves long-term collaboration with northern and Indigenous communities in the southwest Yukon and western Hudson Bay. Before becoming an academic he was a National Park Warden for over a decade in six national parks, including serving as the first Chief Warden of Wapusk National Park, Manitoba. He has twice been awarded Park's Canada's Award of Excellence, for ecological integrity training program design and mountain rescue.



Bruce Cutknife is a member of the Samson Cree First Nation in Hobbema, Alberta. Bruce was born and raised on the Bear Hills Maskwacis community with Cree as his first language. He attended the Ermineskin Residential School up until grade 9 and then moved to Edmonton to attend high school. After working a few years Bruce went back to school at the newly established Maskwacis Cultural College in 1976. Bruce started working in the Living History Program of the Maskwacis Cultural College for a number of years. His duties included audio and video recording of Elders talking about local history. Bruce went back to school to complete his undergraduate studies. He received his B.A. in History/ Native Studies from the Augustana University College in Camrose, Alberta. After graduation Bruce worked local radio and television, taught Cree Language, Cree Studies and History courses at the Maskwacis Cultural College. Bruce was also the Director of Education for the Samson Cree Nation and is now the Indigenous Education Coordinator for the Nipisihkopahk Education Authority.

Arnie Dood received his degrees in Fish and Wildlife Management from Montana State University. He worked for Montana Fish, Wildlife and Parks for over 40 years. The majority of his career was spent as the Threatened and Endangered Species Recovery Coordinator for the agency. Programs he was involved with included: recovery of gray wolves, grizzly bears, peregrine falcons, bald eagles, black-footed ferrets, and other listed and sensitive species. For the last five years of his career, he worked on laying the groundwork for the restoration of a population of wild bison in Montana. These efforts included a review of the historic status of bison in Montana and documenting the legal status and ecology of the species among other issues. Prior to his retirement in July 2015, he was developing a state management plan for bison.



Peter Dratch is the Lead Biologist for the Inventory and Monitoring Program of the National Wildlife Refuge System. While with the National Park Service, helped draft the Department of Interior 2008 Bison Conservation Initiative. Before his decade with the Park Service, Peter was one of the scientists who started the National Fish and Wildlife Forensics Laboratory. His career has focused on the genetics and management of small populations. Peter has an undergraduate degree from the Evergreen State College and a Ph.D. from the University of Edinburgh in Scotland.



Antonio Esquer is the Coordinator of Conservation Projects of Protección de la Fauna Mexicana AC (PROFAUNA) in Sonora and a specialist in bison management for northern Mexico. From 2010 to 2016 he was the Program Manager at El Uno Ecological Preserve owned by The Nature Conservancy, managing the first reproductive bison herd in Mexico. From 2007 to 2010 he was Coordinator of Conservation Area Planning for The Nature Conservancy's Mexico Program, supporting TNC's regional teams and Mexican park service management in developing planning processes as well as training staff in the conservation area planning methodology. Before joining TNC, he was a founding partner of the non-profit organization Biodiversidad y Desarrollo Armónico, A.C. (BIDA) in 2004, acting as Executive Director and Coordinator of Private Lands Conservation and Restoration. His work with BIDA also focused on community involvement.



Anne Ewen has worked with multiple art institutions, corporations, museums and municipalities in the capacity of Curator, Project Lead or Director including the Alberta Historic Resources Foundation, The Art Gallery of Calgary, Fort Calgary, the Glenbow Museum, The Military Museums, the Cities of Lethbridge and Calgary as well as private corporations. She has curated numerous art and heritage exhibitions, consulted for many national non-profit organizations providing community consultation, direction, funding initiatives and vision planning and has also chaired numerous boards. Among her many achievements, Anne is the recipient of the prestigious Alberta Centennial Medal. Currently Anne is the Curator of Art and Heritage at the Whyte Museum in Banff.





Steve Forrest holds a B.S. in Forestry from Oregon State University, an M.S. in Environmental Studies from the Yale University School of Forestry, and a J.D. from the University of Washington School of Law. He has published some 30 scientific articles on black-footed ferrets, prairie dogs and bison, as well as Antarctic penguins. Steve serves as member of the IUCN Bison Specialist Group and helped found the non-profit American Prairie Reserve, which aims to be the largest grassland reserve in North America. Steve currently serves as Senior Representative for Defenders of Wildlife Rockies and Plains Program focusing on grassland species restoration.



Paulette Fox is a member of the Blackfoot Confederacy from the Blood Tribe in southern Alberta. Her role as Scientist and Indigenous Knowledge Practitioner bring a unique perspective to Harmony Walkers Inc., a joint venture environmental consulting company. Ms. Fox has recently become Partner and President of HWI and is looking to enhance existing services while maintaining the vision and philosophy of its founders. Along with her husband and three children, she participates deeply in the traditional ways of the Blackfoot People, Niitsitapi. Her name is Holy Walking Woman and she is a member of the sacred Horns Society and is a Beaver Bundle holder. By extension, her work in the community is best expressed in the recent accomplishments of the linnii Initiative that witnessed 87 buffalo calves from Elk Island National Park return to the Blackfeet Reservation in Montana.



Dr. Rebecca Garvoille is Conservation Social Scientist in Denver Zoo's Department of Conservation and Research. Dr. Garvoille uses social science theories, methods and approaches to maximize the effectiveness of Denver Zoo's ecosystem-based conservation programs across the globe. She leads research, programmatic and fundraising initiatives to create culturally appropriate and socially responsive conservation strategies in Mongolia's Gobi steppe, Botswana's Central Kalahari region and the Southern Rockies. Trained as an environmental anthropologist, Dr. Garvoille specializes in survey, interview and participatory research focused on the human dimensions of bison recovery and ecological restoration across large landscapes. Currently she is examining the connections between urban publics, conservation bison herds and grassland stewardship along Colorado's Front Range to encourage greater public support for continental-scale bison recovery and grassland restoration across North America.

Angela Grier (Piiohksoopanskii - Singing Loudly Far Away) received her Master's of Education in Counselling Psychology at the University of Lethbridge and is a Certified Canadian Counsellor, currently in the process of registering as a Psychologist in Alberta. Her graduate thesis work encompasses how Blackfoot traditional and spiritual knowledge provide the basis for wellness for the Blackfoot and Indigenous peoples, and provides cultural competency for therapists helping Indigenous people. In her leadership capacities, Piiohksoopanskii served on the previous Piikani Nation Chief and Council; currently she is the Chairperson for Calgary Region Institute of Public Administration Canada and a Council Member of the Aboriginal Women's Economic Security Council, Government of Alberta, Cross-Ministry.



Peter Haase and his wife Judy own and operate Buffalo Horn Ranch, a commercial bison ranch they established in 1994. Since they began, their goal was to raise pure plains bison, for both breeding stock and meat. Putting bison back on the menu after an absence of over a century was one of their main objectives. They have marketed about 1,000 bison as meat to local markets. Peter has been Director for the Bison Producers of Alberta and on the marketing committee for the Canadian Bison Association. Currently, Peter is acting as a Consultant for the Bison reintroduction project in Banff National Park.



Amanda Hardy recently migrated from her position as a Bison Scientist at the Wildlife Conservation Society to a Wildlife Biologist position for the National Park Service (NPS). Amanda is currently organizing Department of the Interior bison conservation stakeholders to assess individual herd and potential meta-population management strategies using population viability analyses; additionally, she will focus on climate change adaptation issues across the NPS system. Amanda worked in Yellowstone National Park for a decade in fire and resource management, environmental planning and wildlife research and management. Amanda established the Road Ecology Program at the Western Transportation Institute at Montana State University (MSU). Amanda earned her B.S. and M.S. degrees in Fish and Wildlife Management at MSU and a Ph.D. in Ecology at Colorado State University.



Tanya Harnett is a member of the Carry-The-Kettle First Nations in Saskatchewan. She is an Artist and an Associate Professor at the University of Alberta in a joint appointment with the Department of Art and Design and the Faculty of Native Studies. She works in various media including photography, drawing, printmaking and fiber. Harnett's studio practice engages notions of politics, identity, history, spirituality and place. She has exhibited nationally and internationally. She is included in several collections such as the Alberta Foundation for the Arts, the Glenbow Museum, Moscow's Puskin Museum of Fine Arts and Oxford University's Pitt Rivers Museum.





Adam Duncan Harris, Ph.D., is the Petersen Curator of Art and Research at the National Museum of Wildlife Art in Jackson Hole, Wyoming. He is the author of *Wildlife in American Art: Masterworks from the National Museum of Wildlife Art* and editor of the award-winning *Bob Kuhn: Drawing on Instinct*, both published by the University of Oklahoma Press. He has written numerous essays for exhibit catalogues and magazines. Harris co-curated the traveling exhibit, *Yellowstone to Yukon: The Journey of Wildlife and Art* and curated the Smithsonian American Art Museum's touring exhibit, *George Catlin's American Buffalo*.



Karsten Heuer is the Bison Reintroduction Project Manager for Banff National Park. He has worked for Parks Canada for over 20 years in Banff, Jasper and the Yukon's Ivvavik National Park and has taken several leaves of absence to work on conservation projects, including *Being Caribou* and the *Yellowstone to Yukon Conservation Initiative*.



Chris Hsiung is an Engineer-turned-Documentary Filmmaker. He started Hidden Story Productions with the goal of using documentary storytelling to nurture a more compassionate, just, and intelligent society. Chris has recently produced his first feature-length documentary, *Elder in the Making*, a film that follows a Chinese-Canadian and a Blackfoot on a journey across traditional Blackfoot territory. *Elder in the Making* combines archival history, cinematic landscapes, and conversations with modern day Elders to convey the story of two unlikely travellers. The film has since been awarded "Best Documentary over 30 minutes" and "Best Original Score" at the Alberta Film and TV Awards.



Dr. Tasha Hubbard is a Filmmaker and Assistant Professor. Her first solo writing/directing project, *Two Worlds Colliding*, won the Canada Award at the 2005 Gemini. Her animated short film, *Buffalo Calling*, screened as part of the Ga Ni Tha exhibit held on the occasion of the 2015 Venice Biennale. Her latest short, *7 Minutes*, won Best Short Nonfiction at the Golden Sheaf Awards. She is also in post-production on a feature documentary about the '60s Scoop and in development on a feature documentary on efforts to bring the buffalo back to Indigenous territories. As part of her academic work, Tasha does research on Indigenous film and on the relationship between Indigenous peoples and the buffalo.

Lee C. Jones: After obtaining her education at Occidental College and Montana State University, Lee worked as a Wildlife Biologist with the USGS Rocky Mountain Science Center on brucellosis research in the Greater Yellowstone Area. Bitten by the bison bug, she became the supervisory Wildlife Biologist at the National Bison Range before serving as the Branch Chief of Wildlife Health in the Mountain-Prairie Region Division of Biological Resources for the U.S. Fish and Wildlife Service. Lee currently serves as the Bison Conservation Coordinator for the Service's Natural Resource Program Center Wildlife Health office.



Dennis Jorgensen is the Bison Initiative Coordinator of World Wildlife Fund's Northern Great Plains Program. Dennis has been working with WWF partners to restore bison in the Great Plains since 2007. Over the past several years WWF has been working closely with Tribal leaders and communities to identify and pursue desired paths to culturally, ecologically, and economically sustainable tribal bison restoration.



Thomas Jung has been the Senior Wildlife Biologist for the Government of Yukon since 2001, where he conducts collaborative wildlife research, advises government on wildlife management and policy, assesses and monitors the status of species-at-risk, and leads cooperative planning initiatives. Currently, he is Co-Chair of the National Bison Technical Committee, the Yukon Bison Technical Team, and the Yukon Grizzly Bear Conservation and Management Planning Committee. Tom is Adjunct Professor at the University of Alberta and the University of Alaska Fairbanks, where he teaches and co-supervises students. In 2002, he began a long-term, multi-disciplinary study of reintroduced bison in the Yukon.



Yvonne Kemp started her professional career working at the Dutch nature organization ARK Nature after finalizing studies in B.Sc. Animal Husbandry and M.Sc. Ecology. As Project Coordinator of the European bison project 'Kraansvlak' she leads management and research in this natural grazing project. Yvonne is also affiliated with the other two bison projects in the Netherlands, and coordinated international bison translocations on multiple occasions. In addition, Yvonne works at Rewilding Europe as Coordinator of the European Rewilding Network, a network of (currently 50) rewilding initiatives located all over Europe, which aims to ease the exchange of knowledge, supporting rewilding as a conservation tool.





Terry Kremenik received his B.Sc. in Agriculture from the University of Alberta in 1971 and his Master's in Business Administration from the University of British Columbia in 1976. After retiring from a successful career in the financial services industry, in September 2003 Terry began working with the Canadian Bison Association (CBA). Terry is a strong believer in partnerships and working together to achieve common goals. During his 13 years with the CBA and with the support of the board and membership, he has provided leadership to increase the profile of the bison industry domestically and globally, has ensured that the interests of the bison industry are reflected in domestic and international policy discussions whether it be trade, marketing, or bison conservation. He has improved data collection process to support industry decision-making.



Dr. Kyran Kunkel is American Prairie Reserve's Lead Scientist. Kyran has spent more than a decade in the building of the Reserve and the region's wildlife populations. He works with a wide range of collaborators to restore the natural abundance of the Northern Plains, creating the largest wildlife reserve and wildlife restoration project in the contiguous U.S. Kyran worked to initiate the APR bison restoration program through collaborative efforts with World Wildlife Fund, where he served as a Senior Fellow. He has led a wide range of efforts including cougar conservation, swift fox reintroduction, wolf research, bighorn sheep reintroduction, and tracking pronghorn migration routes. Kyran also serves as a Research Associate at the Smithsonian Institution and is an Affiliate Professor in the Wildlife Biology Program at the University of Montana and Clemson University.

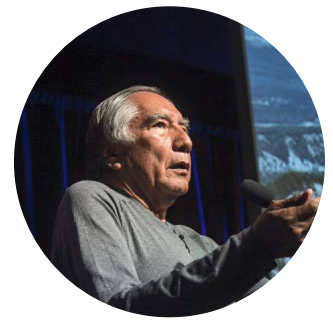


Danielle LaBruna has been working at the Wildlife Conservation Society for 12 years on projects ranging from the Bronx's historical ecology to curbing suburban sprawl to agricultural expansion in Tanzania. She is a Spatial Analyst for the Global Conservation Program where she conducts geographic analyses, creates maps, and interprets satellite imagery in support of WCS's zoos and field conservation projects around the world.



Douglas Lazarus, a widely respected Artist, is a native of New York City. He worked there as an Art Director in the audio-visual field and produced multimedia histories including: a multimedia history of Central Park, a multimedia history of The Brooklyn Botanical Garden, and another on E. A. Poe at Fordham University. In 2015 he and his partner Steve Murphy completed a documentary "The Fighting Breed" on the role of Morgan horses in the Civil War. Earlier this year they created a video "Keeper of The Buffalo Dream" for The Indian Land Tenure Foundation.

Leroy Little Bear was born and raised on the Blood Indian Reserve (Kainai First Nation). Little Bear was one of the first Native students to graduate from the University of Lethbridge in 1971 and graduated with a Juris Doctor degree from University of Utah in 1975. Little Bear was the founder of Native American Studies at the University of Lethbridge and was also a Director of the Harvard University Native American Program from 1998 to 1999. Little Bear was the recipient of the prestigious National Aboriginal Achievement Award in Education in 2003 and recognized as an Eminent Scholar by the Blood Tribe. Little Bear has written many articles and contributed to a number of published books in science, philosophy, and law.



Harvey Locke is a Trustee of the Eleanor Luxton Historical Foundation in Banff. He is a Conservationist, Writer, Photographer and recognized Global Leader in the field of parks, wilderness, and large landscape conservation. Co-founder of the Yellowstone to Yukon Conservation Initiative and the global Nature Needs Half Movement, he was named one of Canada's leaders for the 21st century by Time Magazine. Harvey has been awarded the Fred M. Packard International Parks Merit Award by the IUCN, the J.B. Harkin Award for Conservation by CPAWS, the Gold Leaf Award by the Canadian Council on Ecological Areas, and the Queen Elizabeth II Diamond Jubilee Medal. He is Editor and Co-author of *The Last of the Buffalo: Return to the Wild* (2016).



Robbie Magnan is the Director of Fort Peck Tribes' Fish and Wildlife Department. He leads efforts to conserve and restore Yellowstone bison at Fort Peck. In the long run Robbie hopes that their Tribal buffalo program can share Yellowstone buffalo with all Tribes by hosting the first Tribal quarantine facility at Fort Peck.



Marie-Eve Marchand has been working with First Nations, governments and stakeholders to bring the plains bison back to Banff National Park since 2009, as well as on the Buffalo Treaty among Indigenous communities in Southern Alberta, B.C. and Montana. She works with MEC on the National Grant review committee and with WCS on the American Bison Society Meeting. She is a member of the IUCN World Commission on Protected Areas (IUCN-WPCA) and received the Canadian Golden Leaf Award for her work on protecting the last undammed river in Southern Quebec. She is a former CPAWS National Trustee and CPAWS Quebec Executive Director. She has lived, studied or worked in Jamaica, United Kingdom, Italy, Cameroon and Colorado, USA.





Dave McDonough holds a Bachelor of Science degree from Carleton University, and has more than 30 years of Parks Canada management and operational experience in a broad range of functional areas in the field, and at regional and national offices. In recent years, Dave has been the Superintendent for Waterton Lakes and the Bar U Field Unit and Superintendent for the Lake Louise/Yoho/Kootenay Field Unit. Dave is currently the Superintendent of the Banff Field Unit, the flagship park of Canada's system of protected heritage areas.



Darren Minier is the Zoological Manager and Research Program Manager at Oakland Zoo, a Research Affiliate at Sonoma State University and for the International Institute for Human-Animal Networks in the School of Veterinary Medicine at UC Davis. For almost 20 years, Mr. Minier has built and managed animal care, behavior management, and welfare programs with a large range of taxa – both captive and free-ranging – in zoos, marine parks, sanctuaries, animal-assisted therapy, and biomedical research facilities both nationally and abroad. His process utilizes the collection of accurate and reliable behavioral data that is then translated into real-world, effective behavior management solutions.



John Murray works for the Blackfeet Tribal Council in Browning, Montana, on the Blackfeet Indian Reservation. Some of highlights of John's life include being a member of the Blackfoot Societies and being married to his wife Carol for 43 years. They have 17 grandchildren and 2 great-grandchildren. He has also been an Electrical Contractor, a Wildland Firefighter, a Tribal Councilman, a College Professor, a rancher and currently the Tribal Historic Preservation Officer where he has been spearheading the struggle to keep oil and gas wells out of the Blackfeet Tradition Cultural District: the Badger Two Medicine.



Wes Olson has more than 30 years' experience working with bison in almost every habitat they occupy in Canada, and on topics ranging from ecology to behavior, genetics to subspeciation, the design and construction of world class bison handling facilities. Wes has developed an international reputation for his knowledge about both plains and wood bison. He has the unique ability to combine his extensive scientific knowledge about bison with his talents using graphite, water color, oil painting and mixed medium artwork to capture the buffalo and other wildlife in their natural environments.

Laura Paulson is the Sustainable Agriculture Lead for The Nature Conservancy's Water Security Team in Mexico and Northern Central America and has over 16 years of international conservation and rural development experience. She directs TNC's conservation agriculture and ranching strategy in Mexico. For the past seven years she has provided strategic direction and direct management oversight to the Conservancy's El Uno Ranch in Northern Chihuahua, Mexico. Prior to joining TNC, she worked as a Socio-economic Advisor for a community-based forest management concession in Indonesia and as a Consultant for the Udall Center for Studies in Public Policy and the Latin American Area Center at the University of Arizona. She has a B.A. degree in Economics and a M.A. in Latin American Studies, focused on natural resource management and agricultural economics.



Glenn E. Plumb earned degrees from West Virginia University (B.S. Forestry 1980), Texas Tech University (M.S. Range Management 1984), and the University of Wyoming (Ph.D. Range Management 1991). In the early 1980s, he helped manage day-to-day operations on a west-Texas cattle ranch while researching enhanced livestock grazing and shrub control systems. In the mid-1980s, he managed a tall-grass prairie ranch for The Nature Conservancy in South Dakota while researching the foraging ecology of cattle and bison. In 1993, he joined the National Park Service at Badlands National Park as an endangered species Wildlife Biologist, then served as Supervisory Wildlife Biologist & Chief of Natural Resources at Yellowstone NP during 1998-2010, and is now the NPS Chief Wildlife Biologist.



Jim Posewitz spent 32 years with the Montana Department of Fish, Wildlife and Parks, leading the agency's ecological program for 15 years. He then founded Orion the Hunter's Institute, a non-profit dedicated to ethical hunting and wild resources essential to that purpose. Jim published four books: *Beyond Fair Chase*; *Inherit the Hunt*; *Rifle in Hand – How Wild America was Saved*; and *Taking a Bullet for Conservation – The Bull Moose Party, a Centennial Reflection 1912-2012...* Jim also served as Executive Director of the Cinnabar Foundation, an environmental philanthropy, from its inception in 1983 through May of 2010. In 2015 the National Wildlife Federation named Jim their Conservationist of the Year.



Julie Anton Randall is National Coordinator of the American Bison Coalition (ABC), a 65-member organization led by the Wildlife Conservation Society (WCS), InterTribal Buffalo Council and National Bison Association which recently ensured House passage of the bipartisan *National Bison Legacy Act* and president's signing of the act into law in 2016, naming bison the U.S. National Mammal. In her role, Julie also advocates for bison recovery through inter-agency cooperation, genetic diversity, habitat improvement and availability, and Native American tribe and private rancher capacity to grow and manage bison herds sustainably.





Dustin Ranglack grew up watching bison in Yellowstone National Park on family vacations. He received a B.S. in Wildlife Science and a Ph.D. in Ecology from Utah State University, where he focused his research on bison ecology and bison-cattle interactions in the Henry Mountains of southern Utah. After completing his Ph.D., he worked as a post-doc at Montana State University on a project to evaluate and inform elk and elk habitat management in southwestern Montana. He is currently an Assistant Professor at the University of Nebraska – Kearney and is excited to develop a research program revolving around bison ecology, conservation, and management.



Dr. Justina Ray has been President and Senior Scientist of Wildlife Conservation Society Canada since its incorporation in 2004. In addition to overseeing the operations of WCS Canada, Justina is involved in research and policy activities associated with land-use planning and large mammal conservation in northern landscapes. She has been appointed to numerous species-at-risk related government advisory panels related to policy development for species-at-risk and land-use planning in Ontario and Canada, and is the Co-chair of the Terrestrial Mammal Subcommittee of The Committee on the Status of Endangered Wildlife in Canada (COSEWIC). She has been Editor or Author of three books and numerous peer-reviewed articles, and is Adjunct Professor at the University of Toronto (Faculty of Forestry) and Trent University (Biology Department).



Majel M. Russell was raised near Lodge Grass on the Crow Indian Reservation in Southeastern Montana and is an enrolled member of the Crow Tribe of Indians. Ms. Russell graduated from the University of Montana School of Law in 1992. Ms. Russell currently practices in numerous areas of law including, representation of Indian Tribes, Indian housing authorities, Indian businesses, school districts and other tribal entities, negotiations with federal and state entities, and civil litigation in Federal, State and Tribal Courts. In 2007 Ms. Russell took a one year leave of absence from Elk River Law Office to serve as Principal Deputy Assistant Secretary - Indian Affairs in Washington, D.C. In that position Ms. Russell gained insightful experience in federal budget priorities, working with existing policies and regulations and strategies to overcome bureaucratic obstacles.



Tom Seaton has worked for the Alaska Department of Fish and Game for 20 years with all big game species, and has been the Alaska Wood Bison Restoration Project Biologist for five years. After a 100-year absence of wild wood bison in the U.S., Tom led the return of wood bison to western Alaska in 2015.

Todd Shury has been a Wildlife Veterinarian working for the Parks Canada Agency based out of The Western College of Veterinary Medicine in Saskatoon, Saskatchewan for the past 12 years. He has been involved in bison capture, translocation, and disease testing in Elk Island, Prince Albert, Grasslands and Wood Buffalo National Parks. He is also a member of the IUCN Bison Species Specialist Group, Co-chairs the Canadian Bison Technical Committee and is involved in wildlife health-related matters involving many other wildlife species in Canada's national parks.



Cowboy Smithx is an Indigenous Filmmaker of Blackfoot Ancestry from the Piikani and Kainai Tribes of Southern Alberta, Canada. Cowboy is the Founder and Curator of the highly acclaimed International Indigenous speaker series REDx Talks. Cowboy writes, directs and produces film works in documentary, narrative, music video and experimental. He was the youngest person to ever receive a Blackfoot Arts Award for his decades of work in the performing arts. Cowboy hosts the critically acclaimed podcast "The Silent X".



Bill Snow is a member of the Stoney Nakoda Nation, Wesley First Nation, as well as a Dual Citizen of Canada / United States of America, and Stoney Nakoda / Yuma Quechan descent. Bill is involved in many consultation issues concerning the Stoney Nakoda Nation with industry, provincial and federal governments. Since 2012, Bill has been the Consultation Manager for Stoney Nakoda First Nation. This work involves the assessment of industrial resources projects within Stoney Nakoda Traditional Lands, as part of the Stoney Consultation process. The Stoney Consultation Team is located on the Stoney Indian Reserve in Morley, Alberta.



Cody Spencer is the Owner and Operator of Sweetgrass Bison, a purveyor of grass-fed bison meat based out of Lethbridge, Alberta. The core values of Sweetgrass Bison rest in providing the healthiest bison meat available, with a focus on native grasslands conservation and bison reintroduction. He manages two bison herds in the shortgrass prairie of southeastern Alberta and owns a small herd situated between Pincher Creek, Alberta and Waterton Lakes National Park. He is also employed part time by the Oldman Watershed Council, an environmental NGO focused on maintaining water quality in the Oldman and South Saskatchewan River basins.





Pat Thomas, Ph.D. is Vice President and General Curator, Wildlife Conservation Society (WCS) and Associate Director of the Bronx Zoo. Pat has worked at WCS since 1979 and has been in his present position since 2007. A Professional Fellow in AZA, Pat participates in numerous AZA conservation programs and serves on the Wildlife Conservation and Management Committee. One of his current research projects is to develop a herd of genetically pure bison to provide animals for restoration programs. In addition to his work at the zoo, Pat is an Adjunct Professor at Columbia University, Fordham University, and Manhattan College.



Dr. José Bernal Stoopen is currently the Director of Priority Wildlife Species at the National Commission for Protected Areas of the Ministry of the Environment in Mexico. He coordinates at the national level, 45 recovery programs of the most highly endangered wildlife species in Mexico. Dr. Stoopen was previously the General Director of Zoological Parks and Wildlife in Mexico City. He has published more than 40 articles and has participated in more than 100 scientific and conservation meetings of wildlife conservation in Mexico and other countries around the world. He was an Associate Researcher at the Wildlife Conservation Society and at the Denver Zoological Society. He has a Ph.D. in Wildlife Management Science from Texas A&M University and completed a Diploma in Endangered Species Management at the Jersey Wildlife Trust.



Leona Tracey comes from the Canyon de Chelly, AZ (Navajo Nation) and she currently lives in St. Mary, Blackfeet Nation. She is an active member of the Buffalo Council (BC) student organization at Fort Lewis College (Durango, CO) that promotes healthy diet by traditional harvesting and gathering. She has worked as a Glacier National Park Pro Ranger before being part of the Blackfeet Buffalo Office. She is now the linnii Initiative Field Coordinator for the Blackfoot Confederacy Bison Restoration Project working with National Parks and land owners to reintroduce bison to the landscape and to the people of the Rocky Mountain front. Leona enjoys the outdoors (hiking and especially swimming in Glacial lakes and picking berries and medicinal plants).



Ian Toews csc, has been making films and videos since 1996. His works are primarily concerned with the natural environment and often, its degradation. He is the Producer, Director, and DOP of 7 short films, more than 60 television episodes, and 6 full-length documentaries. He is a 5-time nominee of Canada's top honour (the Gemini Award), winning in 2008 for the arts and nature series, *Landscape as Muse*. Ian is a full member of the Canadian Society of Cinematographers.

Stephen Torbit earned his Ph.D. in Wildlife Ecology from Colorado State University. Later, Steve worked for the Colorado and Wyoming state wildlife agencies. In 1990, Steve moved to the U.S. Fish and Wildlife Service and served as the Ex Officio Black-Footed Ferret Coordinator. In 1993, he moved to the National Wildlife Federation where he served as the Regional Executive Director of NWF's Rocky Mountain Natural Center in Boulder, Colorado. For his work on behalf of bison restoration, Steve was presented the first annual "Friends of the Buffalo" award from the InterTribal Bison Cooperative. Steve returned to the U.S. Fish and Wildlife Service in 2011 and now serves as the Assistant Regional Director for Science Applications in Region 6 in Denver. Steve also currently serves as the Chair of the Department of Interior Bison Conservation Working Group.



Gord Vaadeland was born and raised on the family ranch near Big River, Saskatchewan along the southwest boundary of the Prince Albert National Park. The ranch happily shares this space with the wild, free-ranging plains bison in and around the Prince Albert National Park and wakes up to them in their backyard on many occasions. Gord founded Sturgeon River Ranch, an adventure tourism company that allows guests the opportunity to view wild bison while on horseback in the Prince Albert National Park. Their outback package, "Take a Ride on the Wild West Side" is a part of Destination Canada's Signature Experience Collection. Gord serves as Executive Director for CPAWS-Saskatchewan and is Co-Founder of the Sturgeon River Plains Bison Stewards (SRPBS).



Greg Wilson is a Wildlife Biologist for the Canadian Wildlife Service (Environment Canada). He is the mammal specialist for species at risk in the provinces of Alberta, Saskatchewan and Manitoba. Some of the species he is currently working on include wood bison, boreal caribou, southern mountain caribou, swift fox, Ord's kangaroo rat and western harvest mouse. However, working on the development of the national boreal caribou recovery has taken the bulk of his time during the last four years. Greg has been working with wood and plains bison since 1995, and received his Ph.D. on the population genetics of wood and plains bison in 2001 from the University of Alberta.



Dr. Bill Weber has focused on the connections between people and wildlife throughout his four-decade career as a Conservation Practitioner. His attention to the needs and values of local people was central to the success of the Mt. Gorilla Project in Rwanda, and informed the creation of nearly 20 parks in the Congo Basin. Cultural values were also at the heart of his early leadership in the ecological recovery of bison. Dr. Weber has led regional programs for the Wildlife Conservation Society in North America and Africa, written dozens of articles, and co-authored the critically acclaimed book, *In the Kingdom of Gorillas*. He currently teaches applied conservation at the Yale School of Forestry and Environmental Studies.





Steve Woodruff, Senior Policy and Communications Manager for the National Wildlife Federation's Northern Rockies & Prairies Regional Center in Missoula, MT, manages a campaign to restore wild bison to north-central Montana. Before joining NWF in 2013, Woodruff was a Strategic Communications Consultant to conservation organizations throughout the region. He was the Editorial Page Editor of the Missoulian newspaper for 20 years and was an Adjunct Professor at the University of Montana School of Journalism. Woodruff is a 1978 graduate of the Edward R. Murrow School of Communication at Washington State University.



Lowell C. Yellowhorn is a standing member of the Piikani Nation Chief and Council. Currently, Lowell is serving his first term of council for Piikani and is the youngest member of the council at age 33. He completed his Associate of Science Degree at Blackfeet Community College in Browning, Montana. His undergraduate degree was obtained from Salish Kootenai College in Pablo, Montana. Currently he is in the process of working toward completing his Master's of Science degree in Environmental and Life Science from Trent University in Peterborough, Ontario. Councilor Yellowhorn represents a long outstanding tradition of Blackfoot leadership that can be traced back to the Signing of Treaty 7. Professionally, Lowell has served in various capacities throughout his career from serving as an Infantryman in the armed forces to being a NASA Scientist. He is also a Practitioner of the Blackfoot Culture and has served in various leadership aspects ranging from Board of Directors to grassroots organizations of the Piikani Nation.

Program Abstracts

Bison Bison Bison Where Are We?

Tuesday, September 27, 8:10 - 9:40 a.m.

American Bison Society 10-year Report Card by Keith Aune, WCS

The American Bison Society (ABS) was established in 1905 and accomplished the first recovery of American bison. In 2005 WCS reestablished the ABS and re-charted the course to accomplish the ecological recovery of bison. Since the first ABS stakeholder workshop in 2006 a remarkable set of work has been accomplished to help conserve and restore the American Bison. Government agencies, Tribes/First Nations, private conservation NGOs and conservation-minded producers have launched numerous efforts to assure the future of the American bison. In this presentation I will enumerate the many successful research projects and management accomplishments that advanced the cause of bison conservation during the past 10 years. In addition, I will define shortcomings in the current portfolio of bison conservation herds based on population and landscape size and articulate the challenge of achieving ecological restoration to the fullest extent possible over the next 10 years.

Status of the American Bison

The Status of Bison in Canada by Greg Wilson, Environment Canada

There are two subspecies of bison that occur in the wild of Canada; wood bison (*Bison bison athabasca*), and plains bison (*Bison bison bison*). Both of these subspecies underwent a precipitous decline in Canada in the late 1800s. Wood bison declined to less than 250 animals, while plains bison were extirpated from Canada.

There are approximately 9,200 free-ranging wood bison in 12 populations in Canada, although approximately half of these animals (N=4,600) reside in populations affected by the introduced cattle diseases, bovine tuberculosis and brucellosis. The presence of these two diseases, along with the management actions required to reduce the likelihood of the spread of this disease, are considered the primary threats to wood bison recovery. There are also ~4,200 wood bison in nine free-ranging, disease-free local populations plus 300 individuals in one public, captive, disease-free local population managed for conservation.

There are approximately 1,500 free-ranging mature plains bison spread across five populations in Canada. Almost half of these animals occur in a population that occurs outside of the original range of this species. There are plans to introduce a herd of plains bison in Banff National Park, which will increase the range and number of plains bison in Canada.

Wood bison are considered a species of Special Concern by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), while plains bison are considered Threatened. The Government of Canada has not yet determined if the status of these two subspecies will be modified under the federal Species at Risk Act (SARA), based on COSEWIC's recommendation. As such, wood bison remain Threatened under SARA, while plains bison are not listed. As required under SARA for Threatened species, Environment Canada is developing

a federal Recovery Strategy for the Wood Bison in Canada, which was posted as proposed on the Species at Risk Public Registry in May 2016. This document contains a description of the threats to the species, and the population and distribution objectives for the survival and recovery of wood bison in Canada.

Species Conservation Action Plan (PACE) for the Bison in Mexico by José Bernal Stoopal, National Commission for Protected Areas

The National Commission for Protected Areas (CONANP) coordinates at the national level 45 recovery programs for endangered wildlife species in Mexico. Since 2011, we started conservation efforts for the bison working closely with the The Nature Conservancy (TNC) at the Janos Municipality, Chihuahua. The bison herd has been breeding successfully and currently more than 110 individuals have been registered. We hope to continue working with key organizations and private ranchers in order to increase population size for the reestablishment of the species within its historical range in Mexico.

The U.S. Department of Interior's Bison Conservation Working Group: Beginnings and Future Actions by Steve Torbitt, U.S. Fish and Wildlife Service

In October of 2008, then Secretary of Interior Dirk Kempthorne signed "Bison Conservation Initiative" (Initiative) for the U.S. Department of the Interior (DOI). This initiative provided legitimacy and momentum to guide the conservation agencies within DOI to pursue a more focused conservation effort on behalf of bison (*Bison bison* spp.). The first priority of the Initiative provided by the Secretary was the establishment of the DOI Bison Conservation and Management Working Group whose purpose was to guide management of DOI bison herds. The Working Group was designed to operate as an interagency working group composed of the National Park Service, the U.S. Fish and Wildlife Service, Bureau of Land Management, U.S. Geological Survey, and the Bureau of Indian Affairs.

The first actions established by the Secretary after completing the staffing for the Working Group were to:

- Convene Genetic Workshop
- Assist tribal bison initiatives
- Establish new herds or meta-populations of 1,000 animals for DOI
- Support development of new genetic tests
- Develop guidance for disease surveillance and health monitoring
- Seek partnership efforts to conserve bison

In 2010, the Working Group released its genetic assessment in a report titled: *Bison Conservation Genetics Workshop: Report and Recommendations*" (http://www.nature.nps.gov/biology/documents/Bison_Genetics_Report.pdf). Among the key findings of this workshop were:

The 12 DOI herds are an irreplaceable resource for the long-term conservation of North American plains bison and show low levels of cattle introgression.

- DOI herds do not show obvious effects of inbreeding. They have retained significant amounts of genetic variation by the standard measures, heterozygosity and allelic diversity.

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- DOI herds should be managed at a population or meta-population level of 1,000 animals or more, with a sex ratio that enables competition between breeding bulls.

This report has provided important guidance for the management of DOI herds since 2010 and firmly established the concept of meta-population management concepts for agency herds within the DOI. The genetic status of DOI herds and the unresolved issues of genetic composition have spurred the implementation of additional genetic assessments with emerging genetic assessment tools for DOI herds.

The DOI Working Group continues to work with the Bureau of Indian Affairs, individual tribes and the Intertribal Buffalo Council to address the bison restoration initiatives of tribes.

In 2014, the DOI Working Group produced an assessment of bison restoration opportunities on DOI lands at the request of Secretary Ken Salazar. This report, "Looking Forward" provided a catalogue of the capability of 25 DOI lands to either establish or accept additional Yellowstone origin bison from a herd that had been experimentally quarantined to eliminate brucellosis from the animals. The report described the applicability and level of complexity of restoring these Yellowstone origin bison to DOI lands. (<http://www.nationalmammal.org/pdf/DOIBisonReport-LookingForward-NPS-NRR-2014-821.pdf>)

Future projects for the Working Group will focus on incorporating the results of the new population viability assessments into the management of DOI herds at both the agency and departmental level. Further, the working group will suggest methods and processes to consider using to truly develop and participate in a meta-population management system. We will also work to devise additional mechanisms to support tribal restoration initiatives and where practicable and possible, support additional bison restoration efforts.

IUCN Red List Assessment by Keith Aune, WCS; and Dennis Jorgensen, WWF

IUCN has embarked on a major effort to update Red List Status of mammal species every 5 years. As part of that endeavor the IUCN Bison Specialist Group (BSG) completed a review of the status of American bison under the process prescribed by IUCN. The BSG executive team and Red List Authority, with input from members at large, developed a step-down process to determine the appropriate categories and classifications of bison herds established under a conservation mission (2010 Status Review and Guidelines) for status assessment. We evaluated 68 conservation bison herds in North America to determine their status as wild bison while managed by government agencies, tribes or non-profits. We did not assess the status of privately owned bison for commercial purposes. Using our categories and classification key we determined that there were just 8 wood and plains bison herds fully functioning as wild. Thirty-eight bison herds were wild but function with serious limitations in population size or range (fenced). The remaining 30 bison herds were designated for conservation purpose but cannot be maintained as wild bison because they represent very small populations (less than 200) on very limited acreages (less than 5,000) and current management emphasis is on education, grazing management or limited research. We completed a Population Viability Analysis (PVSA) for 8 wild herds with help from the IUCN Conservation Breeding Specialists Group. These 8 herds were demographically competent for up to 200 years. However, all but two of these herds will lose genetic diversity (5-8%) over the next 200 years. Exceptions were Yellowstone and Wood Buffalo National Parks. A final determination of the Red List Status is pending a report review process.

Informing and inspiring collaborative bison conservation strategies using population viability analyses for Department of the Interior bison herds by Amanda Hardy, WCS and U.S. National Parks Service

The National Park Service (NPS) is collaborating with a variety of stakeholders to develop a comprehensive, science-based strategy for the long-term conservation of the American bison. This project is analyzing plains bison herd genetics and modeling population viability of herds managed on Department of the Interior (DOI) lands, including herds in 10 NPS parks, 7 U.S. Fish and Wildlife Service refuges, and 2 Bureau of Land Management (BLM) units. Outcomes will include a portfolio of standardized, baseline demographic and genetic data for DOI bison herds; current modeled viabilities for each herd; population viability analyses to inform potential future bison management strategies; and suggested monitoring protocols to quantify, evaluate and adjust management tactics using an adaptive management approach. These products will be used to inform collaborative discussions regarding possible meta-population management and shared stewardship strategies between Tribal, interagency, and non-government entities. The project is creating a process that can be expanded to include conservation bison herds beyond the DOI, enabling managers to cooperatively protect the integrity of the species at a continental scale and to explore opportunities for the ecological restoration of new wild bison herds on large multi-jurisdictional landscapes.

Steps Forward in the Genetic Conservation of North American Bison by Peter Dratch, U.S. National Wildlife Refuge System

In the last 12 years there has been important research in the genetics of North American bison, and, with that knowledge, interest in its implications for the management of bison conservation herds. Thanks to extensive testing with a panel of molecular markers, we know the genetic diversity of most herds, the degree of historic cattle introgression and the relatedness of most herds under federal or provincial management. Population geneticists with expertise from other wildlife taxa have weighed in on how best to conserve the genetic variation that was retained at the time the bison population was decimated in the late 19th century. The work of the IUCN Bison Species Specialist Group has identified only 8 completely wild bison herds; those that are sufficient in population size, not confined by fences and subject to some predation. Two of those herds, Yellowstone and Grand Teton/Elk Refuge, occur in the United States. It will be necessary to manage the other U.S. conservation herds as meta-populations, and this will include nearly all of the herds in national parks, national wildlife refuges, and those managed by states. This strategy will require limited intentional movement of bison between sites, and deliberate monitoring to measure the genetic effects of each herd augmentation. We are ready to decide what herds will constitute a meta-population and determine what would be the best methods of immigration to keep bison conservation herds in North America healthy and wild.

The Social Dimensions of Bison Restoration

Tuesday, September 27th, 10 a.m. - 12 p.m.

Rewilding European Landscapes with the European Bison as a Flagship Species

by Yvonne Kemp, Rewilding Europe

Today's Europe shows a demographic revolution: many parts of the continent are highly urbanized, and urbanized areas are extending. At the same time the European countryside experiences large scale land abandonment. With people and their livestock leaving millions of hectares behind, biodiversity of semi-open landscapes is at risk.

Is it possible to turn this problem into an opportunity, allowing natural processes to shape landscapes once again, meanwhile providing local people a more sustainable future?

This, together with a growing demand for wildlife experiences and the recent comeback of wildlife species, was the starting point for Rewilding Europe. Launched in 2010, Rewilding Europe is a European-broad initiative working in more than 20 countries with the main objective to connect modern society with wilder nature. Rewilding Europe aims to rewild one million hectares of land by 2022, creating ten showcases, each measuring at least 100,000 hectares and located throughout the continent covering a variety of landscapes. Here, natural processes and wildlife species are given space to thrive, while people enjoy and benefit from it. Working together with local stakeholders and building partnerships is key.

Natural grazing is one of the main ecological processes that shaped the European continent, and the half-open landscapes harbour probably more than 50% of its biodiversity. With land abandoned, wild herbivores can be allowed back on the scene, showing their impact on the environment. European bison, together with species like aurochs and wild horse, are considered as the architects of the semi-open landscapes of Europe. Unlike aurochs and wild horse that vanished long ago, European bison survived, although the species went to a severe bottle neck. In the 1920s European bison became extinct in the wild. A breeding programme started with a handful of bison, and currently 3,500 bison are back in the (semi-)wild. Nevertheless, the species is still considered as 'Vulnerable' by IUCN. Most bison are living in the mid-eastern part of their natural range, which included large parts of the continent, and few areas are home to more than 100 bison. Therefore, work is still needed to give a better future to Europe's largest land mammal.

Rewilding Europe is actively aiming for the return of the bison. One of the core areas is the Southern Carpathians in Romania. After in-depth research on the potential comeback, European bison was blessed to make its appearance here, after an absence of many centuries. The involvement of local people has been key during the preparation process. In 2014, the first bison were welcomed back. Since then, bison are transported to this area every year to build up a vital bison population of at least 300 animals living free. So far, it has been a learning process but with the support of local communities, other local partners, several European zoos and a range of sponsors, a promising start is made, not only for one of Europe's largest bison populations but also for a wildlife economy that offers a new future for people in the area.

The Importance of Social Science in Understanding and Engaging Communities in North American Bison Recovery

by Dr. Rebecca Garvoille, Denver Zoo; and
Dr. Douglas A. Clark, University of Saskatchewan

Drawing upon current theory and practice, Doug Clark and Rebecca Garvoille will illustrate how the conservation social sciences can improve the practice and outcomes of bison recovery across North America. Garvoille will discuss her work on the human dimensions of bison along Colorado's rapidly urbanizing Front Range, which examines the connections between bison recovery, urban residents and advancing grassland stewardship at the mountain-plains interface. Clark will present his insights studying the reintroduction of wood bison to south-west Yukon, a reintroduction that sparked controversy by not involving First Nation communities from the beginning. Specifically, Garvoille and Clark, citing experiences from their own collaborative bison conservation projects, will demonstrate how the conservation social sciences play an important and unique role in: 1) defining and measuring what constitutes effective or successful bison recovery; 2) describing the diverse communities whose lives and livelihoods intersect with bison recovery; 3) helping managers and conservationists understand how to more successfully engage with these communities; and 4) brokering innovative participatory practices for involving communities in bison conservation project design and implementation. Ultimately, Garvoille and Clark assert that continental scale bison recovery depends on effectively understanding and engaging communities in bison conservation using social science tools and approaches in concert with other scientific approaches. The Human Dimensions of Bison Conservation panel, on Day 2 of ABS 2016, will further elaborate upon these themes and best practices for working with communities.

Social Surveys of Bison Acceptance: What They Do and Don't Tell Us about Restoration Potential

by Steve Forrest, Defenders of Wildlife

Several wildlife conservation organizations have set a goal of restoring a large herd of bison as wildlife across millions of acres of public land within the former range of the bison. In Montana, this effort has focused around the Charles M. Russell National Wildlife Refuge (CMR) in north-central Montana. Restoring wild bison to high-quality native habitat is more a social than biological challenge, so understanding and shaping public attitudes is important to the endeavor. To gauge public opinion, the National Wildlife Federation, Defenders of Wildlife and the Wildlife Conservation Society commissioned or contributed to three public-opinion surveys conducted in 2011, 2012 and 2015. These surveys of representative voters showed significant majorities of Montana voters hold favorable views of bison, support restoring wild bison to certain habitats on public and tribal lands, and support restoring wild bison in and around the CMR. Despite high polling numbers, political resistance to bison restoration has delayed meaningful progress toward establishing wild bison outside of the greater Yellowstone ecosystem in Montana. Public-opinion research suggests a reservoir of strong public support exists but has not yet been adequately harnessed and points to the need for strategies to address political divides that block efforts to restore bison.

Snapshots in Time: Bison Conservation in the National Wildlife Refuge System

by Lee C. Jones, U.S. Fish and Wildlife Service; and Kathy McPeak

From the establishment of the first National Wildlife Refuge System conservation bison herd at Wichita Mountains in Oklahoma in 1907, to the establishment of our most recent plains bison herd at the Rocky Mountain Arsenal in Colorado in 2007, the U.S. Fish and Wildlife Service National Wildlife Refuge System has supported more than a century of bison conservation success. High levels of genetic diversity provide a foundation for natural selection processes such as disease resistance, adaptation to a variety of environmental conditions and competition for breeding. Transition from a successful captive conservation program into management as wildlife will require continued commitment to preserving the successes of the past century, identifying social, cultural and economic challenges, moving forward with creative partnerships, and a willingness to explore a variety of novel management scenarios.

Surveying Values, Needs and Aspirations of Tribal Communities for the Return of Buffalo to Indian Country

by Dennis Jorgenson, WWF; Leona Tracey, linnii Initiative; and Robbie Magnan, Fort Peck Tribe Fish and Wildlife Department

Amid growing recognition that tribal communities can and will determine the shape that the return of buffalo takes on their tribal lands, grassroots groups among the Blackfeet Confederacy (linnii Initiative) and Fort Peck Tribes (the Pté Group) have spearheaded surveys of community members to better understand their values, needs, and aspirations for their future with buffalo. We will share the process and our findings to demonstrate how valuable it can be to ask the people what they want and need, making it possible to pursue the path to a better future for the buffalo people.

Lunch Talk – Wanuskewin: Restoring Ancestral Societies

by Wes Olson, Bison Expert, Consultant and Artist

Tuesday, September 27th, 12:00 - 1:20 p.m., Kinnear Centre

Wanuskewin Heritage Park protects one of the oldest known buffalo jumps and meat processing sites in Saskatchewan. Used by plains cultures for more than 8,000 years, this archaeological site has a long and intimate connection with plains bison and the people who depended upon them. Plains bison formed one part of a complex mix of ecological societies; one composed of insects, birds and mammals – each with their own unique societal structures. Wanuskewin plans to reintroduce plains bison in this part of the northern plains, and with them, bring back the ancestral relationships they had with each of the societies that once existed here.

Integreting Culture into Bison Restoration

Tuesday, September 27th, 1:10 - 3 p.m.

The Buffalo Treaty: Returning to the Original and Natural Ecology of the Northern Plains by Leroy Little Bear, Blood Tribe Elder, Blackfoot Confederacy

Different geographic areas on the earth have different ecological rhythms and states depending on the plants, animals including humans, elevation, weather and climatic patterns, and so on. These geological rhythms and states are what makes for the true essence of the ecological landscape. On the northern plains the buffalo is a keystone mammal in the ecological rhythms and states of the northern plains. The Buffalo Treaty is a giant step towards that restoration.

Biocultural Diversity in Large Landscape Conservation on the Great Northern Plains: A Niitsitapi Applied Perspective by Paulette Fox, Harmony Walkers Inc., Blood Tribe

This presentation explores the notion of Biocultural Diversity through a Niitsitapi lens and the relevance to large landscape conservation. It provides an opportunity to consider the relationships of not only Indigenous people but all of our relations to the environment. Further, it challenges everyone to become open to acknowledging the past, embracing the present, and creating a legacy for future generations.

The Blackfoot Confederacy Environmental Knowledge, Traditional Territory and Language provide a context that expands to include all Tribes and First Nations within the area of interest to the conference/workshop.

Bison with Benefits: Rancher Perceptions of Bison and a Potential Way Forward by Dustin Ranglack, University of Nebraska – Kearney

The Henry Mountains bison herd in southern Utah, which are genetically 'pure', free-ranging, and disease-free, share the rangeland with cattle that are privately owned by individual ranchers and corporations with various economic goals and environmental values. The ranchers currently derive no benefits from the bison and have concerns regarding competition between bison and cattle, often leading them to view the bison as a detriment to their ranching operations. Of particular concern is summer grazing by bison in allotments designated for winter grazing by cattle. Rancher perceptions of wildlife-cattle interactions and cattle habitat needs were recorded in a questionnaire survey and compared to data wildlife and cattle grass consumption and bison habitat use. Ranchers perceived bison as a medium-high competitor with cattle whereas lagomorphs and deer were perceived as low-level competitors. Overall, lagomorphs accounted for 34.1%, bison 13.7% and cattle 52.3% of the total grass biomass removed by all herbivores on the shared range. Annual rancher perceptions of cattle habitat needs showed only marginal correlation with bison habitat preferences ($r_s = 0.57$, $p = 0.066$). No statistically significant ($p < 0.05$) correlation was detected in any season except for fall ($r_s = 0.611$, $p = 0.045$). Additionally, no significant correlation was found between bison habitat preferences in summer and the rancher-reported habitat needs of cattle in winter ($r_s = 0.541$, $p = 0.085$). Though there is little evidence of com-

petition between bison and cattle on the Henry Mountains, there may still be spatially or temporally strong impacts from bison on cattle, leading to continued rancher concern and conflict. We used the Henry Mountains as a case study to consider if and how a community-based conservation program could be developed for a state-managed wildlife resource to benefit all stakeholders. The North American model of wildlife conservation, based on the Public Trust Doctrine, is credited for the recovery of several charismatic wildlife species including the plains bison. In that model, wildlife is a public resource from which the private sector may not profit either individually or collectively. In recent years, however, resilience thinking is pushing for changes in the traditional state-run wildlife management model to allow for integrated multi-sector approaches at the landscape scale. However, a threshold harvesting strategy with community participation could generate revenue to offset the competition concern. It could also provide benefits to the local community, increase state revenue, and increase the bison population size while securing its long-term genetic viability. Implementation would initially require facilitation by policy specialists, after which we suggest a Henry Mountains bison partnership could serve as a model for bison recovery efforts elsewhere in North America.

Bison Ranching with a Conscience: Harnessing Private Enterprise to Aid in Conservation by Cody Spencer, Sweetgrass Bison

Modern society relies on an industrialized food system – a system that a growing number of people are realizing is unsustainable. Increasing transparency is allowing consumers to make conscious choices about where we spend our money. We now have the ability to choose food systems that are better for our environment and our health. More specifically, the demand for red meats raised on pastures, abiding by the laws of nature, is growing rapidly.

Privately owned herds account for the vast majority of bison in existence today. Despite the fact that most of these operations are engaged in an unsustainable feedlot production model that gives little respect to the species, there are many opportunities for the private sector to help further the restoration of the bison in a meaningful way. To do this, however, requires a certain level of ecological enlightenment. Through education we can show bison producers that consumers are willing to pay more for the healthier product that results when bison are raised their whole lives on pasture, using ecologically sustainable stocking rates. This grass-fed movement needs to be based not solely on meat production, but emphasizing grassland biodiversity and incorporating the genetic conservation of the plains bison.

Cody Spencer presents bison ranching as an opportunity to be at the forefront of this ethically responsible “slow food” movement, while contributing to the conservation of the species itself, and the preservation of grassland habitat that might otherwise be a candidate for cultivation or other development. Helping the general public develop a connection between native species, healthy food, and large, intact ecosystems will play a crucial role in the success of the conservation movement in the coming decades.

Public Narratives for Bison Restoration

Tuesday, September 27th, 3:20 - 5:10 p.m.

Ecological Bison Restoration Is Easy Compared to Cultural and Social Restoration of Bison by Tom Jung, Government of Yukon; Tom Seaton, Alaska Department of Fish and Game; and Bill Bates, Utah Division of Wildlife Resources

We review case histories of bison restoration from Utah, Canada, and Alaska from 1940-2015. Experience has shown that ecological restoration of bison populations is less difficult than cultural and social restoration of bison into the lives of local people. This study illustrates the lessons learned in 70 years of restoration efforts concerning cultural and social restoration of bison herds. Efforts to obtain social and political license prior to release of bison were often absent in early restoration projects. This led to social and cultural issues with local people that required significant effort in years after the release of bison. Once negativity toward wild bison was socially or culturally present, it was difficult to mitigate. More recently, efforts have been made to obtain social and cultural license to restore bison before they were released, leading to increased public approval, desire and acceptance post-release. A positive social and cultural environment surrounding a bison restoration project may lead to improved restoration success.

Public Narratives for Bison Restoration: The NGO Experience by Jennifer Barfield, Colorado State University; Kyran Kunkel, American Prairie Reserve; Antonio Esquer PROFAUNA; and Laura Paulson, The Nature Conservancy

Creating an effective narrative around bison restoration that is accurate and impactful can be a challenge; sustaining that narrative and garnering continued support can be a daunting task for even the most recognized NGOs.

Despite over a decade of increased focus on bison restoration, big progress on the ground remains elusive. The primary problem remains that there are not politically acceptable big landscapes on which to restore bison. Rancher opposition to bison remains unflagging and thus government agencies remain timid and mired. The American Prairie Reserve solution has been to buy hundreds of thousands of acres of land in northeastern Montana with the goal of the conserving over 10,000 bison by 2026. While there is strong opposition in our region to bison, we overcome that through a concept and narrative that ranchers value, private property rights, we buy land and manage it for conservation. Over the last decade we have built a reputation of responsible bison management and negated concerns of neighboring ranchers with regard to disease and property damage. Our science-based monitoring strategy has been important for the agencies' approval of our experiment. Perhaps more significantly, our new conservation based approach on BLM lands has moved the BLM measurably toward conservation. We will need to continue to demonstrate clearly the economic and social value of this grand change from a livestock-centered to biodiversity-centered economy and society. We have used bison successfully as a flagship, inspiring a global base of support for our project along with the resources needed to make it happen.

The Laramie Foothills Bison Conservation herd in northern Colorado is the result of collaboration between municipal, county, state, and federal agencies. Each agency had its own

goals in the creation of the herd and blending their narratives to form a cohesive story was a key element in the successful partnership and branding of the project. Groundwork was laid with neighbors, local landowners, and agricultural stakeholders prior to the establishment of the herd. As the animals are of Yellowstone descent, clear and concise communication about disease risk was of paramount importance. We engaged the media with regard to “getting the science right” and accurately reporting the relevance of the herd. Previous and ongoing efforts to engage the public via social media and community involvement have been effectively used to sustain this public narrative.

The case of Mexico is similar but there are not public lands available. Several sites exist with bison, but only one of those is focused on conservation, EL Uno Preserve in Chihuahua. Most of the other potential sites are social lands or private. Some ranchers are interested to have bison, but the challenge is the economic incentives for this because the bison is protected in Mexico.

Bringing Bison Back to Banff National Park by Marie-Eve Marchand, Bison Belong; and Karsten Heuer, Banff National Park

Parks Canada proposes to reintroduce a small group of plains bison into the remote Panther River Valley of Banff National Park in 2017 as a five-year pilot project to assess the feasibility of longer term bison restoration in the area. Political approval and funding commitments were due, in large part, to the efforts of Bison Belong, an initiative of the Eleanor Luxton Historical Foundation who galvanized public support for the reintroduction using innovative social engagement tools described during the first third of this presentation. The rest of the talk will examine public and stakeholder sentiments about the project (as expressed through Parks Canada consultations) and how Parks Canada has incorporated them into its plans to implement the reintroduction on the ground.

How the Beaver Saved the Bison: Parks Canada’s Role and Social Narratives in North American Bison Restoration by Todd Shury, Parks Canada

The Parks Canada Agency has a long and storied history involving bison restoration in Canada and other countries in the past century. It began with the creation of the Dominion Parks Branch in 1911, the world’s first national parks service. The Government of Canada purchased one of the last free-ranging bison herds in the U.S., and created Buffalo National Park near Wainwright, Alberta. In 1922, Wood Buffalo National Park (WBNP) was created as the first national park created to protect the last free-ranging herds of wood bison. This was a period of attempting to save the last bison from extinction, manage large fenced captive herds of bison as livestock and translocation of bison into northern Canada. The social narrative of the time created unrealistic pressure to manage surplus plains bison through translocation, rather than slaughter, allowing the establishment of TB and brucellosis in free-ranging wood bison herds and mixing of the two subspecies. Following World War II, a more scientific management and less utilitarian approach was undertaken with the creation of the Canadian Wildlife Service, which ultimately found and salvaged what was believed at the time to be a sub-population of wood bison in the Nyarling River area of WBNP. These bison ultimately founded the McKenzie Bison Sanctuary in the Northwest Territories and the wood bison conservation herd at Elk Island National Park (EINP). Free-ranging and captive herds

of bison are currently found in 8 national parks and one national historic site and will soon be reintroduced into Banff National Park. The foundation conservation herds of plains and wood bison in Elk Island National Park have been instrumental in successfully restoring disease-free, wild bison herds in British Columbia, Alberta, the Northwest Territories, the Yukon, Alaska and Sakha Republic, as well as providing animals for conservation education in zoos and for research purposes. Plains bison have also been reintroduced to Grasslands National Park in the last decade, providing both important visitation opportunities as well as ecological recovery of grasslands.

Bison have elicited very differing social narratives over time, from rejection of slaughter of surplus animals, to lack of acceptance for reintroduced bison herds, to acceptance of animals for display in zoo-like settings, and eventual acceptance of slaughter and even commercial sale of surplus animals. Changes in bison management have mirrored larger societal changes and the evolution of wildlife management philosophies over the last century. Bison support the mandate of Parks Canada very well; providing significant opportunities for tourism and education while also providing a means for larger landscape conservation at a continental scale. The next century will bring many challenges and changing social narratives including adaptation to climate change, finding solutions to diseased populations and managing bison within a constantly evolving and ever increasing human footprint. Bison restoration will also provide opportunities to reconnect and reconcile Canada's Indigenous peoples and educate Canadians to achieve the vision of the Vermejo Statement.

Bison Conservation and the U.S. National Park Service: Looking Forward – Together! by Glenn Plumb, U.S. National Park Service

In 2008, the U.S. Department of the Interior (DOI) established a *Bison Conservation Initiative* to recognize a national priority for developing and nurturing partnerships to restore and manage bison populations and ecological roles in biologically suitable areas. In 2011, the National Park Service issued a "Call to Action" that prioritized bison restoration in partnership with federal, tribal, state, and non-government partners. In 2014, the *DOI Bison Report: Looking Forward* recognized that, while existing DOI bison resources are crucial to the long-term conservation of the species; the most important bison conservation tool is collaboration among federal, state, local, and tribal partners. The National Park Service is looking forward and undertaking innovative collaborative conservation through a shared stewardship ethic based upon a triad of best available science, fidelity to law and policy, and long-term public interest. Discussion will include illustrative case studies at Badlands National Park, Grand Canyon National Park, Great Sand Dunes National Park and Preserve, Wind Cave National Park, and Yellowstone National Park.

Voices for Bison Conservation

Session 1. Museums, Zoos and Poetry

Wednesday, September 28th, 10:50 a.m. - 12 p.m.

The Fine Art of Bison Restoration at the National Museum of Wildlife Art by Adam Duncan Harris, National Museum of Wildlife Art; and Danielle Booroff, Glenbow Museum

Since the inception of the National Museum of Wildlife Art in 1987, we have used artifacts, prints, paintings, and sculptures to educate visitors and school children about the place of bison in American history. Two recent collaborative exhibits, *Yellowstone to Yukon: The Journey of Wildlife and Art* and *George Catlin's American Buffalo* have brought a new level of education and advocacy to visitors across North America.

Role of Zoological Institutions in Supporting Conservation and Social Engagement in Bison Restoration by Pat Thomas, Bronx Zoo, WCS; Darren Minier, Oakland Zoo; and Luis Ramirez, Denver Zoo

Over the last century, zoos have undergone a tremendous evolution. Their origins are rooted in royal collections, menageries, and circuses where animals were displayed in cages, with little to no thought regarding animal welfare. The primary focus of today's zoos is the welfare of the animals in their care, and the improvement of their lives and natural environments. Nearly every one of the 230 Association of Zoos and Aquarium-accredited facilities dedicates resources for conservation, ecosystems, biodiversity, and in-situ research, inspiring over 183 million visitors each year. As zoos continue to evolve, the future role of zoos in conservation and species restoration is to become centers for discovery that inspire public action. The Wildlife Conservation Society, Denver Zoo, and Oakland Zoo all approach their support of bison conservation and public engagement in restoration in different ways. This presentation will discuss the multifarious efforts of these three zoos as pioneers in bison conservation and stewardship.

Zoos and aquariums represent some of the most popular cultural institutions in cities across the United States, attracting more than 150 million visitors each year. During recent decades they have become one of the most important forces in environmental education, conservation of biodiversity, animal welfare, and global sustainability.

Creating Transformation Through the Language of Conservation by Sandra Alcosser, Poet House

Sixteen years ago, with the support of an Institute of Museum and Library Services Leadership Grant, poet and scholar Sandra Alcosser collaborated with Poets House, and Wildlife Biologist Dr. Dan Wharton of the Wildlife Conservation Society, to curate a permanent installation over six acres in Central Park of twenty-six centuries of poetry that celebrated the tribes and species of the world. This installation, featured in *The New York Times* and read by a million visitors each year from all over the world – including presidents, ambassadors, television journalists, tourists, educators and school children – resulted in a 48% improvement in the understanding of the international conservation message by those who read

the poems. Because of the success of the initial collaboration, Language of Conservation received a National Endowment for the Arts grant, as well as a second IMLS Leadership grant, to expand the collaboration between poets, scientists, educators, artists and librarians to zoological centers and libraries in five additional cities: Chicago, Jacksonville, Little Rock, Milwaukee, and New Orleans, with Sandra Alcosser, Alison Hawthorne Deming, Joseph Bruchac, Pattiann Rogers and Mark Doty serving as poets-in-residence.

Poetry calls into question what it means to be human; it expands the imagination of a culture and suggests ways to become more humane and deeply engaged with the world. Alcosser will share poems selected from around the world and discuss how this collaboration with international conservation literature, science, and culture has formed an important partnership to deepen public awareness of environmental issues through poetry.

Lunch Talk – Bringing Elk Island Bison to their Blackfeet Homeland by Harry Barnes, Blackfeet Tribal Business Council; and Daniel Watson, Parks Canada

Wednesday, September 28th, 12:00 - 1:20 p.m., Kinnear Centre

Chairman Barnes will speak on successful relationships – The Blackfeet People, Innii, the land, water and air. The Blackfeet Tribe, Elk Island National Park, Wildlife Conservation Society and the Oakland Zoo. Can we match the past moving forward and will that model of past insure future success?

Session 2. Stories in Film and TV

Wednesday, September 28th, 12:00 - 1:20 p.m.

Documentaries Can Make a Difference: Two Films as Case Studies by Ian Toews, Filmmaker

The presentation will be based on two films that are companions to each other. The first, *Saskatchewan River Delta*, features the vast remote wetlands, its wildlife, its Aboriginal and Métis residents, and a simple thesis. Which was: This unprotected area is unknown to very many, therefore a film could raise awareness of its beauty and value thereby initiate conservation efforts. This is indeed happening now. The same concept was in mind for the second film, *Grasslands*. Thus far the film has been used in many public events and on national television – we are optimistic.

Wild Bison: The Long Trail Back by Douglas Lazarus, Artist and Filmmaker

The video will address the need for a new “second” ecological restoration of bison, the strategy to move beyond merely saving and managing isolated groups of captive animals in small, intensely managed landscapes to a new vision of bison thriving in significant numbers across their traditional, large scale ranges and habitats.

Calling Back the Buffalo: Filming Indigenous Buffalo Restoration by Tasha Hubbard, University of Saskatchewan, Peepeekisis First Nation

As part of her academic work, Tasha does research on Indigenous film and on the relationship between Indigenous peoples and the buffalo. Her animated short film *Buffalo Calling* screened as part of the Ga Ni Tha exhibit held on the occasion of the 2015 Venice Biennale and has followed the Buffalo Treaty since 2014.

Elder in the Making – Bringing Together Multiple Disciplines in Film by Chris Hsiung, Filmmaker; and Cowboy Smithx, Filmmaker and Curator REDx, Piikani and Kainai Tribes

Director Chris Hsiung and Co-Producer Cowboy Smithx share their experience of making the award-winning documentary *Elder in the Making*, which brought together ecology, history, and Indigenous culture in a compelling and contemporary way.

Communicating Bison Restoration

Wednesday, September 28th, 3:00 - 4:25 p.m.

The 10,000 Year Significance of Bison: The Collaborative Design and Implementation of a Bison-Themed Curriculum as a Public Education and Outreach Strategy by Mario Battaglio, Nez Perce Tribe Cultural Resource Program; and John Murray, Blackfeet Tribal Council

With stimulus and funding from the Blackfeet Tribe and the Montana Department of Transportation, respectively, the Bison Curriculum Project collaborators designed a lesson sequence on the 10,000 year significance of bison for middle school students predominately in the state of Montana. After the design of the curriculum, a trial run assessed the general efficacy of the lessons. The curriculum works to dispel misconceptions about bison, a uniquely North American past and present species with which humans have interacted intimately for millennia. It also challenges students to critically engage with the dynamic story of a species that has not always been accepted among contemporary ranchers and land users. The lessons critically examine bison's turbulent history through a multivocal lens to better connect with a diverse public and avoid educational marginalization of the shared, collective past. To accomplish this, Native perspectives are interwoven with scientific archaeological knowledge to, in essence, pluralize the past. The curriculum targets 6th-9th grade middle school students, understanding that this demographic will be the policy and decision makers of the future.

The Bison Story Map by Danielle LaBruna, WCS; Amanda Hardy, WCS; and Keith Aune, WCS

We have created a multi-media, interactive online outreach platform in the form of an ESRI story map. A story map combines maps with text, images and video to tell a narrative. The purpose of the bison story map is to help everyday people understand the importance of bison including bison's cultural significance, conservation history, ecological role, and agricultural use. This talk will "walk" attendees through the bison story map web page and provide an overview of story map construction in general.

Bison Bellows: Stories Celebrating Our Connections to Bison by Amanda Hardy, WCS and National Park Service

As part of their Centennial Year celebrations, the National Park Service is creating weekly online postings called “Bison Bellows.” Bison Bellows stories focus on three themes: meeting the herd, meeting the people, and telling the story to increase awareness of bison conservation efforts; the individuals involved in bison conservation; and the ecology and history of bison. These stories are intended to educate a broad audience about “all things bison” and to inspire comprehensive appreciation for the largest land mammal in North America and the United States’ new National Mammal. This talk will provide an overview of the series of stories and will acknowledge the myriad of people involved in developing this outreach.

From Lost Species to U.S. National Mammal: The North American Bison by Julie Anton Randall, American Bison Coalition

For four years, a cross-sector collaborative called the Vote Bison Coalition united wildlife conservationists, tribes, ranchers, zoos, recreationists, and others in a campaign to name the bison U.S. National Mammal. Coalition leadership arose from three pillars of restoration – conservation, tribal stewardship, and ranching. By 2016, they convinced a bipartisan legislature to recognize the bison’s immense role in U.S. history, the lives of Native Americans, economic opportunities for rural communities, and ecological recovery of the grasslands ecosystem. The National Bison Legacy Act was signed into law by the president in May 2016. Three American values associated with the new bison seal, “Unity, Resilience and Healthy Landscapes and Communities,” are now the foundation of efforts by the renamed “American Bison Coalition” to social-market the National Mammal to the public and secure diverse measures to return large numbers of bison to the landscape.

Poster Presentations

Author	Affiliation	Co-author	Co-author	Co-author	Poster Title
James Bailey	Retired biologist				Early Historic Distribution and Abundance of Bison in the Rocky Mountains of the USA
Ryan Dufour	Department of Natural Resource Management, South Dakota State University	Joshua L. Leonard, Department of Natural Resource Management, South Dakota State University	Jonathan A. Jenks, Department of Natural Resource Management, South Dakota State University	Duane J. Lammers, Olson's Conservation Bison Ranches	Predator Corridor Use in an Aspen-Dominated Forest
Jessica Metcalfe	The University of British Columbia				Age and Sex Differences in Wood Bison Foraging Behaviour in Elk Island National Park (Alberta, Canada)
Joshua Leonard	South Dakota State University	Lora B. Perkin, South Dakota State University	Duane J. Lammers, Olson's Conservation Bison Ranch	Jonathan A. Jenks, South Dakota State University	Determining Bison Summer Diet Selection Using the DNA Barcoding and Next-Generation Sequencing Method, Manitoba, Canada
Peter Metcalf	University of Montana, College of Forestry and Conservation	Dr. Elizabeth Covelli Metcalf, University of Montana			What are Bison? The Animals, their Social Meanings and Political Conflict in Two Gateway Communities of Yellowstone
Karsten Heuer	Parks Canada, Banff National Park	Dillion Watt, Parks Canada	David Gummer, Parks Canada	Bill Hunt, Parks Canada	Reintroduction of Plains Bison in Banff National Park of Canada
Natalka Melnycky	Alberta Environment and Parks	Lyle Fullerton, Alberta Environment and Parks		Dave Moyles, Alberta Environment and Parks	The Management of Hay-Zama Bison in Northwestern Alberta
Caroline Hedin	Banff National Park	Tracey Leblanc	Sheila Luey		Summary of Public Comment on the Conceptual Plan for Reintroduction of Plains Bison in Banff National
Lori Schroeder	University of Alberta, MSc candidate	Fiona Schmiegelow, University of Alberta	Edward Bork, University of Alberta	Tom Jung, Environment Yukon	Rare Species in Relict Grasslands: Steppe Vegetation Diversity Responses to a Reintroduced Wood Bison Herd in Yukon, Canada

Poster Presentations Continued

Author	Affiliation	Co-author	Co-author	Co-author	Poster Title
Belanger Robert	University of Alberta	Dr. Scott Nielsen, University of Alberta	Dr. Mark Edwards, Royal Alberta Museum	Dr. Ludwig Carbyn, University of Alberta	Where do the Wood Bison Roam? Habitat Selection of the Ronald Lake Herd
Gregg Adams	University of Saskatchewan	JM Palomino	MP Cervantes	M Anzar	A Germ Plasm Bio-Bank for Retaining the Genetic Diversity of Canada's Wood Bison (<i>Bison Bison Athabascae</i>)
Nicholas McMillan	Clemson University	David S. Jachowski, Clemson University	Kyran Kunkel, American Prairie Reserve		Plant Community Responses to Bison and Cattle in the Northern Great Plains
Jane Calvert	Doig River First Nation	Katelyn White, BC Ministry of Forests, Lands and Natural Resource Operations			Wildlife Management and Reconciliation: An opportunity for B.C. and Doig River First Nation to Address the Impacts of Wood Bison on Treaty Rights

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