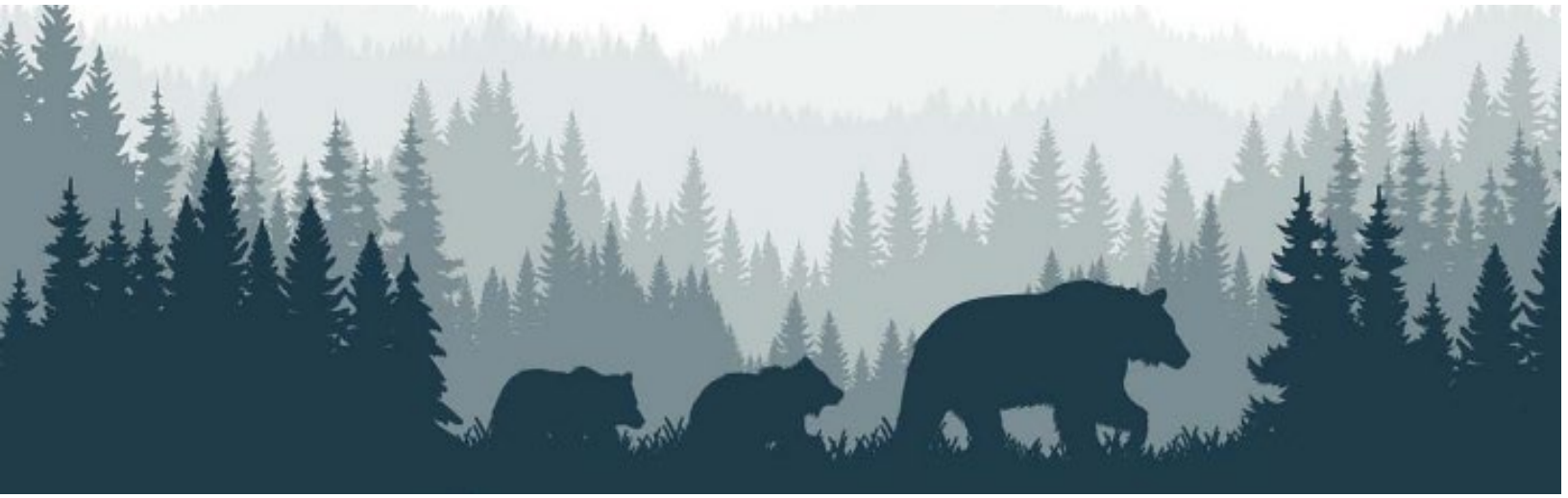

7TH INTERNATIONAL
Human-Bear Conflicts
WORKSHOP
KALISPELL, MT, USA

Changing the Narrative around Human-Bear Conflicts

October 5-9, 2025

HumanBearConflicts.org

7TH INTERNATIONAL
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KALISPELL, MT, USA

Brand new workshop. Same great look.

2025 Executive Committee

Jay Honeyman, Alberta Fish and Wildlife (retired)

Lori Roberts, Montana Fish Wildlife and Parks

Carl Lackey, Nevada Department of Wildlife

Rich Beausoleil, Washington Department of Fish & Wildlife

Geoff York, Polar Bears International

Dana Dodd, Appalachian Bear Rescue (retired)

Hosted by:

MONTANA FISH, WILDLIFE & PARKS

POLAR BEARS INTERNATIONAL

2025 Organizing Committee (alphabetical)

Rich Beausoleil, Washington Department of Fish and Wildlife

Rebecca Carniello, Nevada Department of Wildlife

Hilary Cooley, U.S. Fish and Wildlife Service

Ali Davis, Virginia Department of Wildlife Resources

Dana Dodd, Appalachian Bear Rescue (retired)

Jay Honeyman, Alberta Fish and Wildlife (retired)

Bob Hansen, WildSafeBC (retired)

Ralph Krenz, Bear Scare LTD

Carl Lackey, Nevada Department of Wildlife

Jenn McMillan, Polar Bears International

Craig Perham, Bureau of Land Management

Chris Servheen, U.S. Fish and Wildlife Service (retired)

Sarah Peltier, Virginia Department of Wildlife Resources

Tori Reibel, Appalachian Bear Rescue

Lori Roberts, Montana Fish Wildlife and Parks

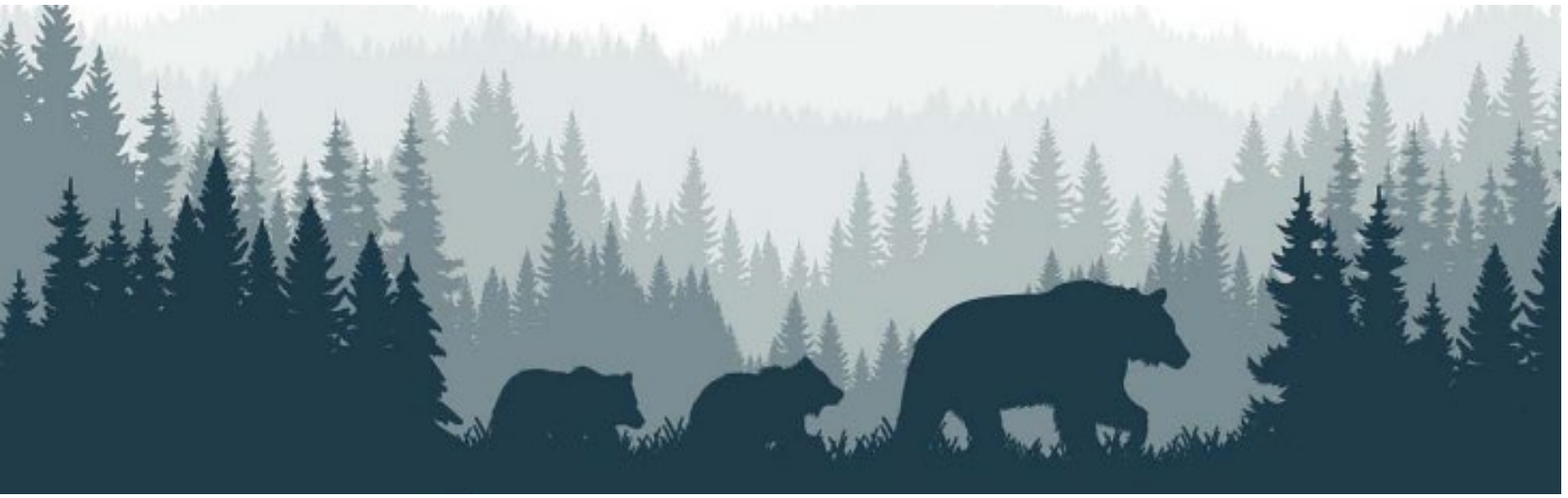
Sonia Nicholl, Coast to Cascades Grizzly Bear Initiative

Dick Shideler, Aklaq Services, AK Dept. of Fish & Game

Chad White, Montana Fish Wildlife and Parks

Krista Wright, Polar Bears International

Geoff York, Polar Bears International



7TH INTERNATIONAL
Human-Bear Conflicts
WORKSHOP
KALISPELL, MT, USA

Welcome….

To the 7th International Human-Bear Conflicts Workshop (IHBCW)

Since 1987, this international workshop has grown and evolved into a gathering that attracts an incredible diversity of people from around the world who are dedicated to better understanding, resolving and preventing human conflicts with bears.

The 2025 Organizing Committee has worked so hard to make this workshop a success is very happy to welcome you to Kalispell, Montana. We encourage you to make the most of this unique opportunity to share ideas, explore solutions, expand your network and participate in all the spirited discussions that lead to real forward progress.

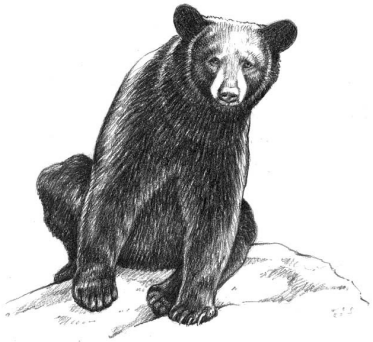
The program for the 7th IHBCW consists of presentations by people from 20 countries, covering 7 of the 8 bear species worldwide. We would like to thank everyone who submitted an abstract and we are confident that the IHBCW program will a great success! We have no doubt that we are furthering the conversation and completing our theme of….

Changing the Narrative around Human-Bear Conflicts

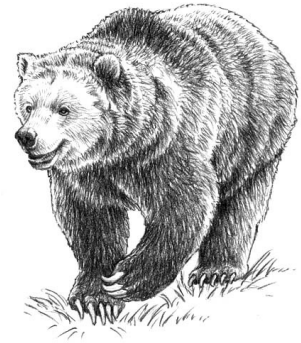
October 5-9, 2025
Kalispell, Montana

History of the International Human-Bear Conflicts Workshop
1st IHBCW – 1987 – Yellowknife, Northwest Territories
2nd IHBCW – 1997 – Canmore, Alberta
3rd IHBCW – 2009 – Canmore, Alberta
4th IHBCW – 2012 – Missoula, Montana
5th IHBCW – 2018 – Gatlinburg, Tennessee
6th IHBCW – 2022 – Lake Tahoe, Nevada
7th IHBCW – 2025 – Kalispell, Montana

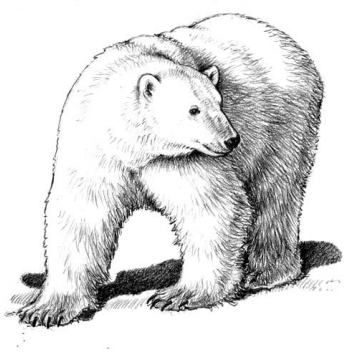
Bears of the World



American Black Bear
Ursus americanus

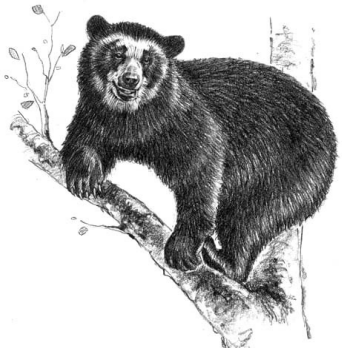


Brown (grizzly) Bear
Ursus arctos

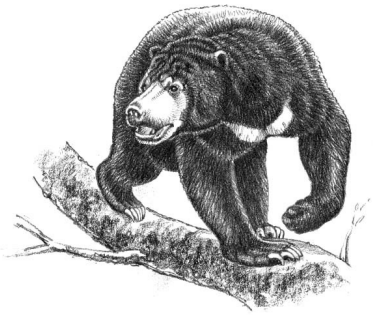


Polar Bear
Ursus maritimus

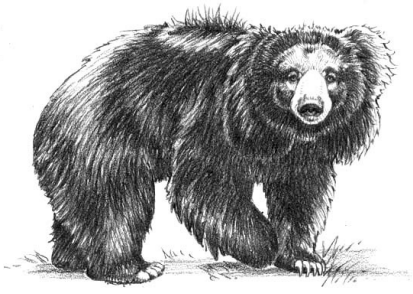
Asiatic Black Bear
Ursus thibetanus



Andean Bear
Tremarctos ornatus



Sun Bear
Helarctos malayanus



Sloth Bear
Melursus ursinus

Giant Panda
Ailuropoda melanoleuca

Illustrations courtesy of Evelyn Kirkaldy (evelynkirkaldyart.com)

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7TH INTERNATIONAL
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KALISPELL, MT, USA

Keynote Speaker

Jenny Anne Glikman

Dr. Jenny Anne Glikman is a senior researcher at the Instituto de Estudios Sociales Avanzados (IESA-CSIC, Spain), within the Human Dimensions area. Her research focuses on deepening our understanding of the relationships between humans, nature, and wildlife to address conflicts that threaten biodiversity conservation and human activities. Her work aims to develop shared solutions and actions that support conservation efforts and build local capacity to achieve human-wildlife coexistence.

Jenny serves as a member of the International Union for Nature Conservation (IUCN), Species Survival Commission, Bear Specialist Group, Human-Bear Conflict Expert Team and as a steering committee member of the Human-Wildlife Conflict & Coexistence Specialist Group. In addition, she is one of the Editors-in-Chief of the Human Dimensions of Wildlife Journal.

Previously, she spent six years as Associate Director of the Community Engagement Team at the San Diego Zoo's Institute for Conservation Research (SDZWA) in California. She continues to collaborate with SDZWA on some of the international programs in South America, Africa, and Southeast Asia, focusing on human-wildlife interactions and illegal wildlife trade. Earlier in her career, she was a professor and researcher in the Department of Human Ecology at the National Center for Research and Advanced Studies (CINVESTAV-Mérida) in Mexico, where her work explored the historical and cultural foundations of marine and terrestrial protected areas.

Dr. Glikman holds two MSc degrees: one in Applied Animal Behaviour and Animal Welfare from the University of Edinburgh (UK) and another in Conservation of Biodiversity and Management of Protected Areas from La Sapienza University of Rome (Italy). She earned her Ph.D. in Human Dimensions of Wildlife from Memorial University in Newfoundland, Canada.

7TH INTERNATIONAL
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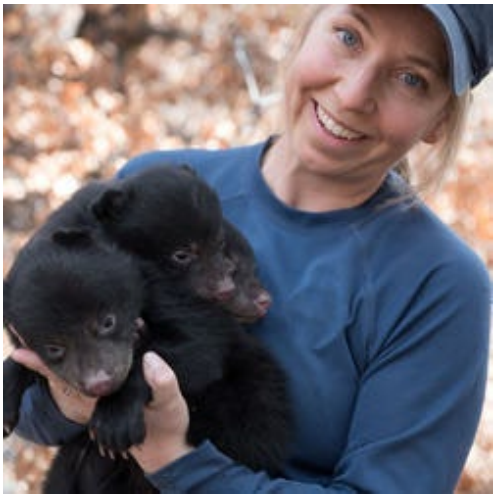
Featured Speaker

Heather Johnson



Heather Johnson is a Research Wildlife Biologist at the USGS Alaska Science Center in Anchorage, Alaska. Her research generally focuses on understanding how climate- and anthropogenic-driven changes in habitat conditions influence the behavior and demography of large mammals, and the effectiveness of management strategies for minimizing their impacts. In particular, she has conducted research on factors associated with human-black bear conflicts and solutions that promote coexistence.

Heather serves as a member of the International Union for Nature Conservation (IUCN), Species Survival Commission, North American Bears Expert Team. She has a PhD in Wildlife Biology from the University of Montana, a MS in Wildlife Science from the University of Arizona, and a BS in Ecology from the University of California, San Diego.

Prior to working for the USGS, Heather conducted research for Colorado Parks and Wildlife and California Department of Fish and Wildlife. Outside of work, you are likely to find her hiking, running or biking along a trail, trying to keep up with her kiddo and dog.

7TH INTERNATIONAL
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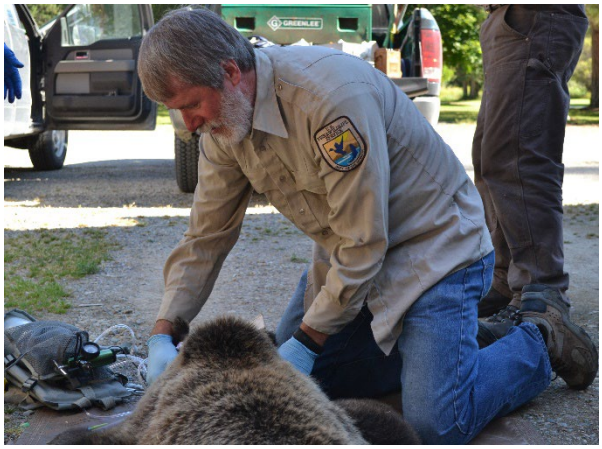
KALISPELL, MT, USA

Featured Speaker

Wayne Kasworm



Wayne Kasworm is a wildlife biologist with the U.S. Fish and Wildlife Service and has served in that role since 1989; prior he worked for Montana Fish Wildlife and Parks. He is the Project Biologist for Grizzly Bear and Black Bear Research and Monitoring in the Cabinet-Yaak and Selkirk Mountains Recovery Zones of northwest Montana, northern Idaho, and Northeast Washington.

Wayne assists in development and implementation of the grizzly bear recovery plan, he plans and performs grizzly bear population augmentations in the Cabinet Mountains, assists in preparation of the EIS for reintroduction of grizzly bears to the Bitterroot, is science advisor to the North Cascades and Selkirk/Cabinet-Yaak grizzly bear subcommittees of the Interagency Grizzly Bear Committee, is the US representative on British Columbia North Cascades grizzly bear recovery team, and assists in preparation of the EIS for reintroduction of grizzly bears to the North Cascades.

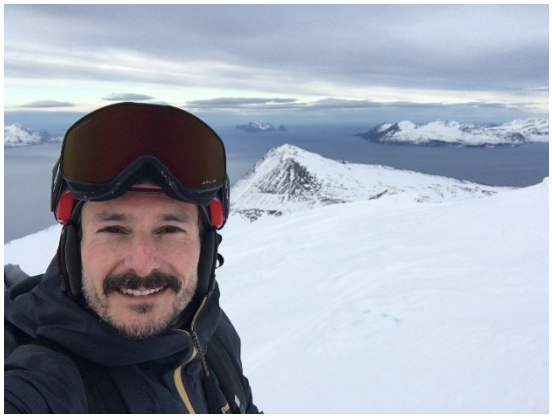
He studies grizzly bear and black bear population dynamics, food habits, habitat use, behavioral interactions, and relations to human activities. Grizzly bear population augmentation and genetic detections of reproductive success.

Wayne has a B.S. in Wildlife and Fisheries Resources from the University of Idaho, and M.S. in Fish and Wildlife Management from Montana State University.

7TH INTERNATIONAL Human-Bear Conflicts WORKSHOP
KALISPELL, MT, USA

Featured Speaker

Matteo Zeni



Matteo Zeni has been a Forestry Corps officer with the Autonomous Province of Trento (Italian Alps) since 2017. He works in the Large Carnivores Division of the Wildlife Service, where he focuses on the prevention and management of conflicts between humans and brown bears/wolves. He is part of the Emergency Team and the Capture Team. From 2002 to 2016 he was a Park Ranger at the Adamello Brenta Nature Park (Trento, Italy), the protected area that reintroduced the brown bear in the Central Alps (EU Project Life Ursus, 1999-2004), mainly focusing on monitoring bears in the field and communication. In 2016 he published the book "In nome dell'orso" (In the Name of the Bear) which tells the story of the decline and return of the brown bear in the Alps and analyzes the following conflicts and challenges. The book was reprinted in 2024, in an updated version with a new title, "L'orso e noi" (The Bear and Us). He lives in a village at the foot of the Brenta Dolomites with Linda and his children Rebecca and Martin. When he's not dealing with people who are somehow angry at bears and wolves, he's outdoors with his kids, playing with backcountry skis, bicycles or trail running shoes, searching for signs of bear presence in the woods or reading good books.

7TH INTERNATIONAL
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Featured Speaker

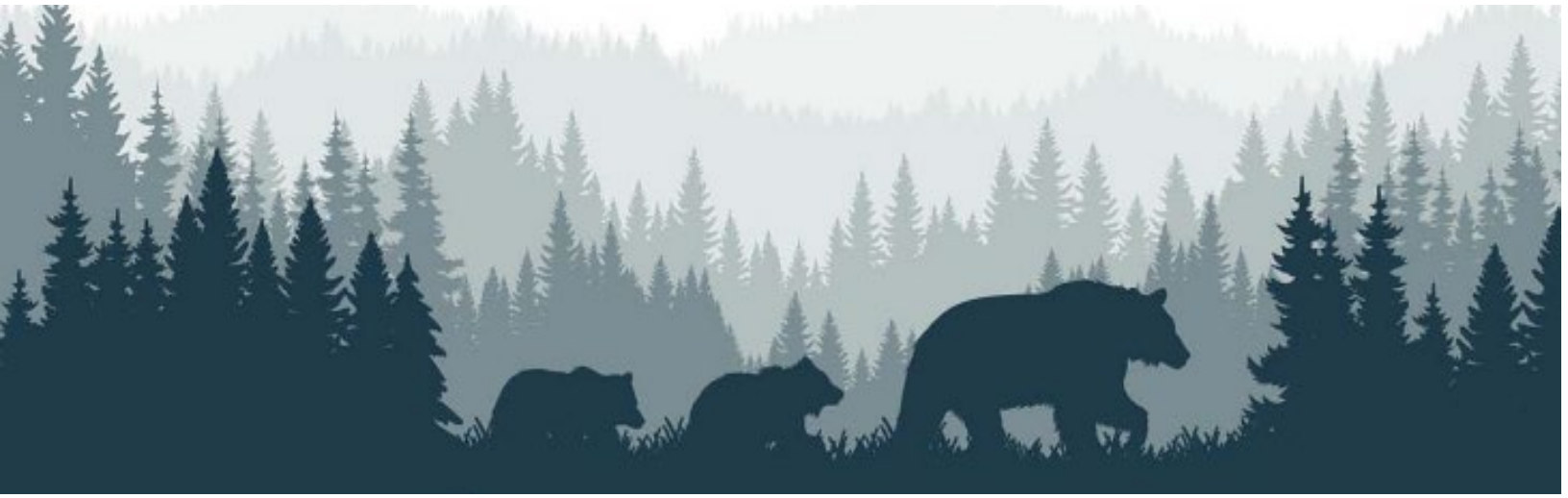
Douglas H. Chadwick

Douglas H. Chadwick is a wildlife biologist who conducted field research on mountain goats for seven years and has assisted with studies of harlequin ducks, wolverines, grizzly bears, and whales, among other species.

Often on assignment for the National Geographic Society, he has authored 16 books and hundreds of magazine stories on natural history and conservation subjects around the globe.

In 1990, Doug helped establish The Vital Ground Foundation, a regional land trust whose symbol is the grizzly bear, and he has remained on the board for 35 years. He also served 12 years on the Advisory Board of the Liz Claiborne Art Ortenberg Foundation, which supports community-based nature protection programs worldwide, and he is currently on the Board of Directors of the Cinnabar Foundation, which funds an array of grassroots conservation groups in Montana and the Greater Yellowstone Ecosystem.

Doug lives in northwestern Montana with his wife Karen Reeves, a graduate of the University of Montana School of Forestry.



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Silent Auction will end on Wednesday, October 8th at 8 PM

Payment must be made before Thursday by close of conference

Payment must be made by check, credit card, or Apple/Android Pay (NO CASH)

60+ Items - YOU MUST BE PRESENT TO WIN!

Small & Larger Items - recipients are responsible for shipping items upon receipt

Changing the Narrative around Human-Bear Conflicts

INTERNATIONAL Human-Bear Conflicts WORKSHOP
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7th International Human-Bear Conflicts Workshop

Changing the Narrative Around Human-Bear Conflicts

October 5 – 9, 2025 Kalispell, Montana, USA

PROGRAM AGENDA

Sunday

9:00 am **Field Trip / Training** (optional - additional fee required, see IHBCW website)

12:00 pm **Registration** opens 12-5 pm, then daily 7:30am – 5:00pm

Loading Oral Presentations - mandatory for all Monday presenters and optional for Tuesday through Thursday presenters – in the Grand Ballroom

6:30 pm **Welcome Social**

Monday

8:00 am **Welcome / Housekeeping –** Grand Ballroom

Welcome to Kalispell, MT - Christy Clark, Director, Montana Fish, Wildlife & Parks

IHBCW Welcome Address, Jay Honeyman, Alberta Fish and Wildlife (retired)

Keynote & Invited Speaker Introductions

Rich Beausoleil, Washington Department of Fish & Wildlife, IUCN SSC, Bear Specialist Group, Co-Chair, North American Bears Expert Team

KEYNOTE ADDRESS: BEAR WITH ME: COEXISTING PERSPECTIVES ON HUMAN-BEAR INTERACTIONS, by Dr. Jenny Glikman, Instituto de Estudios Sociales Avanzados, Spain

INTERNATIONAL Human-Bear Conflicts WORKSHOP
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INVITED SPEAKER: THE INTERNATIONAL HUMAN-BEAR CONFLICTS WORKSHOP: A LOOK BACK AS AN ATTENDEE OF ALL OF THEM, by Dick Shideler, Aklaq Services, Alaska Department of Fish & Game (retired)

10:15 am 20-minute break

10:35 am **SESSION 1. SUCCESSES AND CHALLENGES OF MANAGING HUMAN-BEAR CONFLICT: PART 1**

Moderator, Becca Carniello, Nevada Department of Wildlife, Co-Chair IBA Management Committee

1. **American Black Bear Management Across the United States and Canada: Results of a Comprehensive Jurisdictional Survey**, by Shelby Shiver, Florida Fish and Wildlife Conservation Commission
2. **Efficacy of Deterrents for Mitigating Human-Polar Bear Conflict in Northern Alaska**, by Lindsey Mangipane, U.S. Fish and Wildlife Service
3. **Perspectives on Human-Polar Bear Conflict in Svalbard With Data from 1987-2019**, by Dag Vongraven, Norwegian Polar Institute
4. **Efficacy of Black Bear Relocation as a Conflict Mitigation Tool**, by Kristin J. Botzet, University of Tennessee, Defenders of Wildlife
5. **Conflict at the Forest's Edge: Understanding Human–Asiatic Black Bear Interactions and Their Consequences in Northern Pakistan**, by Muhammad Naeem Awan, Member, IUCN, World Commission on Protected Areas and Species Survival Commission

12:00 pm Lunch - 90-minutes (on your own)

1:30 pm **WORKSHOP – REPLACING FEAR -BASED PERSPECTIVES WITH EVIDENCE-BASED TO IMPROVE ENGAGEMENT**

Moderators, Geoff York, Polar Bears International & Chad White, Montana Fish Wildlife and Parks

3:00 pm 20-minute break

3:20 pm **SESSION 1. SUCCESSES AND CHALLENGES OF MANAGING HUMAN-BEAR CONFLICT: PART 2**

Moderator, Craig Perham, US Bureau of Land Management

6. **Encroached and Endangered: Mapping Human–Sloth Bear Conflict Across a Decade of LULC Change in Odisha**, by Janmejay Sethy, Amity University

7. **Navigating Tahoe Challenges: Interagency Media Training and Conflict Communication**, by Sarinah Simons, California State Parks

8. **Aspen CO, Where Are We Now? After Over 30 Years of Human-Bear Conflict The Bears Keep Pointing Out Our Weaknesses**, by Lara Xaiz, City of Aspen Parks Department

9. **Targeted Black Bear Management: Pros and Cons**, by Alexia Ronning, California Department of Fish and Wildlife

10. **Non-invasive Genetic Tracking of Habituated Black Bears in the Tahoe Basin**, by Jillian Adkins, California Department of Fish and Wildlife

11. **Enhancing Human-Bear Conflict Management: A Review of Global Plans and Recommendations for Effective Coexistence**, by Özgün Emre Can, Ankara University

5:00 pm Announcements, Evening Presentation Details & Adjourn

6:30 pm **EVENING PRESENTATION (free of charge & open to the public)**

12. & 13. **A Comparison of Brown Bear Management Challenges in Italy & the United States** –by Matteo Zeni (PADT, Trentino, Italy) & Wayne Kasworm (USFWS, Montana, USA).

Presentation will be held at the Art & Technology Building, Flathead Valley Community College, 777 Grandview Drive (2.7 miles north of IHBCW venue)

INTERNATIONAL Human-Bear Conflicts WORKSHOP
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Tuesday

7:30 am **Loading Oral Presentations** - mandatory for all Tuesday presenters and optional for Wednesday through Thursday presenters – in the Grand Ballroom

8:00 am **Announcements**

8:15 am **PANEL DISCUSSION: THE PROS & CONS OF BEAR VIEWING PROGRAMS**

Moderator, John Hechtel, Alaska Game and Fish (retired), President, International Association for Bear Research & Management

9:45 am 20-minute break

10:05 am **SESSION 2. HUMAN-BEAR CONFLICT EDUCATION, OUTREACH & MESSAGING**

Moderator, Chris Servheen, US Fish and Wildlife Service (retired), IUCN Bear Specialist Group, Co-Chair, North American Bears Expert Team

14. **Integrating Emotional Affect Into Bear Viewing Management and Bear Safety Education**, by John Nettles, Clemson University

15. **Bridging the Gap: The Role of Non-Governmental and Academic Sectors in Improving Human-Bear Coexistence in Slovakia**, by Michal Haring, PhD Candidate, Comenius University

16. **Adapting Bear Smart Community Initiatives in the US**, by Kim Johnston, People and Carnivores

17. **Changing the Narrative on Human–Bear Conflicts by Standardizing Bear Management Terms**, by Carl Lackey, Nevada Department of Wildlife

18. **Want to Change the Narrative? Change the Dictionary**, by Linda Masterson, Communications Director, BearWise®, Author, Living with Bears Handbook

19. **BearWise®; An Interagency & Community Partnership Program Focused on Standardized, Science-Based Messaging and Preventing Human-Bear Conflict**, by Rich Beausoleil, Washington Department of Fish and Wildlife and Rebecca Carniello, Nevada Department of Wildlife

12:00 pm Lunch - 90-minutes (on your own)

1:30 pm **INVITED SPEAKER:**

20. **FROM CONFLICT TO COEXISTENCE: LESSONS LEARNED FROM RESEARCH ON BEARS AND PEOPLE**, by Heather Johnson, US Geological Survey, Alaska Science Center

3:00 pm 20-minute break

3:20 pm **SESSION 3. HUMAN-BEAR CONFLICT MITIGATION TOOLS & PRACTICES: PART 1**

Moderator, Hilary Cooley, US Fish and Wildlife Service

21. **Developing Effective Communication Strategies and Tools for Human-Sloth Bear Conflict Mitigation in India**, by Nishith Dharaiya, Bhakta Kavi Narsinh Mehta University

22. **Human–Sloth Bear Conflict: Case Studies in the Mahasamund Division, Chhattisgarh, India**, by Swaminathan Shanmugavelu, Wildlife SOS

23. **Exploring Socioeconomic and Ecological Dimensions of Human-Andean Bear Interactions**, by Russel Van Horn, San Diego Zoo, Wildlife Alliance

24. **Using the Presence-Tolerance Model to Understand and Manage Human-Andean Bear Coexistence**, by Isaac Goldstein, Andean Bear Conservation Alliance, Cleveland Metroparks Zoo

25. **A Predictive Modeling Approach for Andean Bear Movement in Northern Ecuador: Insights for Conservation Strategies in a Changing Landscape**, by Javier Torres-Jiménez, Universidad Central del Ecuador

5:00 pm Announcements, Evening Poster Session, & Tomorrow's Agenda

6:00 pm **POSTER SESSION** – This catered event will take place in the Fireside Room. Please come socialize with colleagues, learn about the important work being done, and meet the poster presenters.

Wednesday

7:30 am **Loading Oral Presentations** - mandatory for all Wednesday presenters and optional for Thursday presenters – in the Grand Ballroom

8:00 am **Announcements**

8:15 am **INVITE SPEAKER: WHAT'S REALLY GREAT ABOUT THE GREAT BEAR: THOUGHTS ON HOW WE DEFINE THE GRIZZLY BEAR, CONFLICTS, AND CONSERVATION**, by Douglas Chadwick, biologist, author, and photographer

Introduction - Rich Beausoleil, Washington Department of Fish & Wildlife, IUCN Bear Specialist Group, Co-Chair, North American Bears Expert Team

8:45 am **SESSION 3. HUMAN-BEAR CONFLICT MITIGATION TOOLS & PRACTICES: PART 2**

Moderator, Ali Davis, Virginia Department of Wildlife Resources

26. **From Conflict to Coexistence Across the Y2Y: Working at the Scale of the Wild**, by Caitlin Jacobs, Yellowstone to Yukon Conservation Initiative

27. **Grizzly Bear Habitat Selection and Use of Grain Bins in Agricultural Prairie Landscapes of Montana, USA**, by Milan A. Vinks, University of Montana

28. **Assessing Drone-Based Aversive Conditioning on Grizzly Bears in Kananaskis Country, Alberta**, by Kayla Doucette, University of Alberta

29. **South Greenland Polar Bear Awareness Program – NANORAAQ: Is it Possible to Coexist with Polar Bears?**, by Ulrik Vedel, Arctic Unlimited

10:00 am 20-minute break

10:20 am **SESSION 3. HUMAN-BEAR CONFLICT MITIGATION TOOLS & PRACTICES: PART 2 "CONTINUED"**

Moderator, Sarah Peltier, Virginia Department of Wildlife Resources

30. **Providing Multifaceted Human-Bear Management and Safety Services to Large Industrial Operations in Bear Habitat Across Western and Northern Canada**, by Dan LeGrandeur, Bear Scare

31. **Understanding the Interactions Between Human Communities and the Mexican Black Bear in the South of Nuevo León, Mexico**, by Carlos Fabian Terrazas Tzontecomani, National Autonomous University of Mexico

32. **Spatiotemporal Analysis of Human-Black Bear Interactions in Monterrey Metropolitan Area, Nuevo Leon, Mexico**, by Katya Lizeth Ortiz Morales, Nuevo Leon's Autonomous University

33. **From Poison to Coexistence: How a Crisis Fueled an Innovative Model of Human-Bear Conflict Management in the Andes of Ecuador**, by Fabricio Narváez, Executive Director, Fundación Condor Andino

34. **Assessing and Managing Incidents of Bear Attacks in Canadian National Parks**, by Steve Michel, Parks Canada Agency

12:00 pm Lunch - 90-minutes (on your own)

1:30 pm **WORKSHOP - STANDARDIZING DATA COLLECTION ACROSS JURISDICTIONS**

Moderators, Carl Lackey, Nevada Department of Wildlife, IUCN Bear Specialist Group, Member, North American Bears Expert Team, & Sonia Nicholl, Coast to Cascades Grizzly Bear Initiative

3:00 pm **SESSION 4. COMMUNITY-BASED HUMAN-BEAR CONFLICT MITIGATION: PART 1**

Moderator, Ralph Krenz, Bear Scare Ltd.

35. **The Missoula Bear Smart Working Group: The Challenge of Human-Bear Conflict Management in an Urban Environment**, by Christopher Servheen, Montana Wildlife Federation

36. **Reducing Bear Conflicts Through Attractant Prioritization**, by Anna L. Baize, University of Montana

37. **North Bay Bear Collaborative- How Stakeholders are Coming Together Re-Member a Bear Culture in San Francisco's North Bay**, by Meghan Walla-Murphy, North Bay Bear Collaborative

38. **Implementation of Bear-Resistant Residential Waste Carts, How Bears are Breaking Them and Next Steps**, by Bob Hansen, WildSafeBC

4:00 pm Evening Banquet Announcement, Tomorrow's Agenda, Adjourn

6:30 pm **DINNER BANQUET** (included with registration) – in the Grand Ballroom

Thursday

7:30 am **Loading Oral Presentations** - mandatory for all Thursday presenters – in the Grand Ballroom

8:00 am **Announcements**

INTERNATIONAL Human-Bear Conflicts WORKSHOP
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8:15 am **SESSION 4. COMMUNITY-BASED HUMAN-BEAR CONFLICT MITIGATION: PART 2**

Moderator, Bob Hansen, WildSafeBC Regional Coordinator (retired)

39. **Twelve Years of Studying & Preventing Human-Andean Bear Conflict in the Northern Andes of Ecuador, Imbabura Province**, by Andres Laguna, Fundación Cóndor Andino

40. **Achieving Coexistence With the Sun Bear in Northeastern India: The provision of Practical Co-Benefits to Communities is Critical to Achieving Long-Term Outreach Impact**, by Sushanto Gouda, Mizoram University

41. **How a Celebrity Bear Spurred a Community into Action**, by Kristin Combs, Wyoming Wildlife Advocates/Jackson Hole Bear Solutions

42. **People Living in Harmony with Bears: A Community-Centered Model from Lake Tahoe**, by Devon Barone, BEAR League Lake Tahoe

43. **A Cooperative Approach to Managing Human/Bear Coexistence in an Urban Environment**, by Holly Reisner, North Shore Black Bear Society

44. **An Apple a Day Keeps the Bear Away**, by Kristina Boyd, Pink Bench Distilling

45. **Education is Not Enough: Empowering Community Organizations for More, A Case Study from Girdwood, Alaska**, by Alayna DuPont, Girdwood Bear Aware

10:15 am 20-minute break

10:35 am **SESSION 4. COMMUNITY-BASED HUMAN-BEAR CONFLICT MITIGATION: PART 3**

Moderator, Greg Grieco, Appalachian Bear Rescue

46. **Sloth Bear-Human Conflict and Local Communities' Perception in the Tadoba Landscape, India**, by Sandeep Sharma, Freelance Consultant

47. **Bears of Nepal: Current Status and Human-Wildlife Conflict Dynamics**, by Rishi Baral, Hokkaido University

48. **Killing the "Human-Eating Bear": Building Bidirectional Fear Between Tibetans and Tibetan Brown Bears in Eastern Tibetan Plateau**, by Yuqiu Li, MS Candidate, Yale School of the Environment

49. **Human-Bear Conflict in Bhutan: A Conservation and Livelihood Challenge**, by Sonam Wangchuk

50. **Monitoring Brown Bear Activity in Conflict-Prone Villages in Armenia**, by Astghik Markosyan, The German Nature Protection Union

51. **Asiatic Black Bear Attacks in Kashmir and Community Engagements: A Way Forward**, by Aaliya Mir, Wildlife SOS

12:30 pm Lunch - 90-minutes (on your own)

2:00 pm **Panel Discussion - Eurasia, North America & South America – Can We Leverage Data from Well-Studied Bear Species to Those Less Studied?**

Moderator & Panel Members TBD

3:00 pm **Exit Survey**

3:15 pm **Interactive Discussion**

Where do we go from here? 8th IHBCW – Volunteers?

4:00 pm Adjourn

Friday

8:30 am **Field Trips / Trainings** (optional - additional fee required, see IHBCW website)

1.American Black Bear Management Across the United States and Canada: Results of a Comprehensive Jurisdictional Survey

Shelby Shiver, Florida Fish and Wildlife Conservation Commission

Additional Authors: Dave Telesco, Carl Lackey, and Vanessa Hull

Populations of American black bear (*Ursus americanus*) have increased both numerically and in distribution throughout the past few decades. These increases have led to ongoing challenges in managing bears throughout human-developed landscapes. Black bears are managed by individual jurisdictions (i.e., states, provinces, territories), which do not have efficient means of sharing management data. This has resulted in an absence of a comprehensive summary of management trends and patterns across the entire North American range, which in turn has hindered the ability of bear managers to compare the prevalence and effectiveness of management actions. We fill that gap by compiling information from a comprehensive survey of wildlife managers on black bear population trends, management strategies, and human-bear interactions throughout the United States and Canada conducted in 2022. Compared to the most recently published jurisdictional survey (Spencer et al. 2007), our results reveal an estimated 25.5% increase in the American black bear population. There was a 98.4% increase in the number of human-bear interactions. Regulated hunting was the leading cause of bear mortality, with vehicle strikes being the second highest mortality source. Twenty-five jurisdictions reported increasing populations, 45 jurisdictions have regulated hunting seasons, and 35 have bear management plans. Our findings highlight management similarities and differences between jurisdictions, creating potential opportunities for more coordinated management initiatives on topics such as artificial feeding, regulations and resources for use of bear-resistant garbage cans, and multi-method monitoring programs.

2. Efficacy of Deterrents for Mitigating Human-Polar Bear Conflict in Northern Alaska

Lindsey Mangipane, U.S. Fish and Wildlife Service, Polar Bear Program

Additional Authors: Miller, S., R.R. Wilson, D. Bjornlie, N. Gordon II, A.L. Von Duyke, and C. Sims-Kayotuk

A warming climate is negatively affecting Arctic species that rely on sea ice to perform their life history activities. Changing sea ice dynamics have led polar bears (*Ursus maritimus*) in many subpopulations to spend more time on land, increasing the potential for human-polar bear interactions. In Alaska, high polar bear densities have been observed at Barter Island, where subsistence whaling by the community of Kaktovik attracts polar bears during the open water period. Community-based polar bear patrols have been established to respond to polar bears that enter or attempt to enter the community, conducting hundreds of hazing events annually. Information on the polar bears involved, deterrents used, and incident outcomes are recorded. Given the limited information on efficacy of deterrence methods for polar bears, our goal was to use incident records from 2018 to 2019 to quantify polar bear responses to hazing. We also evaluated whether factors such as deterrent type, time of year, social class, body condition, and feeding would affect 1) the probability that a polar bear would move away, and 2) the amount of effort required to move a polar bear. We found that 96% of incidents where deterrents were used resulted in successful outcomes (polar bear moved away), indicating that polar bear patrols are an effective means for deterring polar bears. Deterrent type and time of year were the factors that most affected the probability of a successful outcome. All-terrain vehicles were the most effective deterrent used and were 4–5 times more effective than cracker shells or beanbags. Use of cracker shells and beanbags did not significantly improve the probability of a successful outcome. Polar bears in average and above average body condition took 15% less effort to move compared to bears in below average body condition. Similarly, less effort was required to move polar bears later in the season, with a 6% decrease in effort for each additional day in autumn that an incident occurred. Our study provides insights about factors that may affect human-polar bear interactions involving the use of deterrents in developed areas, hopefully benefiting both human safety and polar bear conservation in the future.

3. Perspectives on Human-Bear Conflict in Svalbard With Data from 1987-2019

Dag Vongraven, Norwegian Polar Institute

Conflicts between humans and polar bears (*Ursus maritimus*) have been predicted to increase as polar bear prime habitat and sea ice is decreasing. In Svalbard, Norway strict protection and control schemes have secured near complete records of all known bear moralities since 1987. We analyzed the trend in the number of kills and related this to human visitation to the archipelago. We found a slight decrease in the number of kills in the period 1987-2019, and a decrease in per capita number of kills when monthly kills were compared to the monthly number of visitors disembarking in the main settlement. We then used a discrete choice resource selection model to assess whether polar bear kill events are related to attributes of the kill sites and environmental conditions at the time. We divided Svalbard in four sectors, North, East, South, and West, and monthly average ice cover was calculated in 25-km rings around Svalbard, rings that were further delineated by the four sectors. We found that the odds of a kill was greater along the shoreline, and that the odds would be reduced by 50% when moving only 900 m from the shoreline when all sectors were included. Distance from other covariates like settlements, trapper's cabins, and landing sites for tourists did for the most part does not have a significant impact on the odds of a kill. Using the defined sectors, ice cover had no significant impact on the odds for a kill. The decreasing trend in kills of polar bears might partly be explained by the success of strict protection and management regimes of Svalbard wilderness.

4. Efficacy of Black Bear Relocation as a Conflict Mitigation Tool

Kristin J. Botzet, University of Tennessee, Defenders of Wildlife

Additional Authors: Jessica L. Braunstein, Joseph D. Clark, Ryan H. Williamson, William H. Stiver

Great Smoky Mountains National Park (GRSM) in Tennessee and North Carolina, USA, has a high-density American black bear (*Ursus americanus*) population and frequent human-bear conflicts (HBCs). Previous HBC research at GRSM utilizing VHF telemetry and tag returns found that the fates of most bears relocated were unknown, thereby leaving unanswered questions about the efficacy of relocation as a mitigation tool. For this project, we fitted 50 bears involved in HBCs within GRSM with GPS-radio collars and relocated them to Cherokee National Forest, Tennessee, for release. Additionally, as a control, we captured and collared 37 resident bears, not involved in HBCs, near 2 of the release sites and used data from a previous study that collared 39 bears involved in HBCs that remained within GRSM. We used the GPS location data from all groups to evaluate survival and movements, and for relocated bears, recurrence of HBC, homing rate, and settling rate. Known-fate models indicated that the mean annual survival probability for relocated bears was 0.102 (95% CI = 0.000–0.356) when we censored lost signals (n=4). Survival of relocated bears was lower than that of bears involved in HBC that remained in GRSM (0.869, 95% CI=0.863–0.875) and resident bears not involved in HBCs at the release sites (0.836, 95% CI=0.659–1.000). Harvest was the greatest mortality risk for both relocated (0.482, 95% CI =0.326–0.638) and resident bears (0.136, 95% CI=0.000–0.280), but relocated bears were at greater risk of harvest (=2.407, 85% CI=0.948–3.866). The annual probability of relocated bears returning to their original capture locations (i.e., homing) decreased with distance relocated (=-0.025, 85% CI=-0.046–-0.004) and averaged 0.615 (95% CI=0.341–0.889) for adults and 0.111 (95% CI=0.000–0.318) for subadults. The likelihood of relocated bears remaining at their release site (i.e., settling) decreased with months post relocation (=-0.611, 85% CI=-1.066-0.156) with subadult males being most likely to exhibit monthly settling with an average probability of 0.728 (95% CI=0.169–0.972) whereas subadult females were 0.051 (95% CI = 0.000–0.952) and adult males and females were both 0.000 (95% CI=0.000–0.121 and 0.000–0.042, respectively). The annual probability of relocated bears being involved in HBCs, defined as a report to agency officials by landowners, was 0.445 (95% CI=0.225–0.666). This likelihood increased with food conditioning (=0.274, 85% CI=0.036–0.511), as determined by stable isotope analysis, and decreased with distance from the release-site to the nearest urban area (=-0.0921, 85% CI=-

0.1842–0.0002). Our results suggest that previous studies using VHF telemetry and tag returns may have overestimated the efficacy of relocation as a management tool. Public education and proactive management approaches (e.g., securement of attractants, better waste management) are paramount to avoid human-bear conflicts before they begin, as relocation and other bear-centered options may have only limited efficacy.

5. Conflict at the Forest's Edge: Understanding Human–Asiatic Black Bear Interactions and Their Consequences in Northern Pakistan

Muhammad Naeem Awan, Member, IUCN, World Commission on Protected Areas and Species Survival Commission, Bear Specialist Group, Asiatic Black Bear Expert Team

Human–Asiatic black bear (*Ursus thibetanus*) conflicts have escalated in Pakistan's northern regions, particularly in Azad Jammu and Kashmir (AJK), Gilgit-Baltistan, and Khyber Pakhtunkhwa, largely due to increasing human encroachment into forested habitats. These interactions have led to significant socio-economic and ecological repercussions. From 2015 to 2023, black bears damaged an estimated 28 acres of maize fields in AJK, causing financial losses exceeding PKR 3.8 million, with approximately 49% of the damage concentrated in the Neelum District alone. Similarly, in Mansehra District, 30 conflict incidents, including livestock depredation and human injuries, were reported over a five-year period, frequently resulting in retaliatory killings of bears. Between 1998 and 2023, an estimated 50 to 100 Asiatic black bears were killed in Pakistan because of human–bear conflict. These killings, often underreported, were largely driven by bear incursions into agricultural lands and human settlements. In parallel, the species' geographical range in Pakistan has experienced a marked contraction, declining from approximately 11,807 km^2 in the 1950s to 7,925 km^2 by 2014. Current estimates suggest that fewer than 2,500 mature individuals persist in the wild within Pakistan. Anthropogenic pressures are compounded by illegal practices such as bear-baiting and the capture of cubs for entertainment and trade, further intensifying the species' conservation challenges. Local responses to conflict are often limited to rudimentary deterrents, with minimal awareness or access to effective mitigation strategies. This paper synthesizes the ecological and socio-economic drivers of human–bear conflict in northern Pakistan, evaluates recent trends, and emphasizes the urgent need for integrated conservation responses. Recommended measures include community-based conflict mitigation programs, implementation of financial compensation schemes for affected stakeholders, strict enforcement against illegal practices, and targeted habitat restoration efforts to promote long-term human–bear coexistence and the survival of *Ursus thibetanus* in Pakistan.

6. Encroached and Endangered: Mapping Human–Sloth Bear Conflict Across a Decade of LULC Change in Odisha

Janmejay Sethy, Amity Institute of Forestry and Wildlife, Amity University, Gautam Budhha Nagar, Sector-125, Noida

Additional Authors: Rajkishore Mohanta

Sloth bears (*Melursus ursinus*) are among the most conflict-prone large mammals in India, with rising encounters reported from forest-agriculture interfaces. Odisha, an eastern Indian state with extensive tribal and agrarian populations, has emerged as a critical conflict zone. This study presents a decadal (2014–2024) analysis of 327 human–sloth bear conflict incidents, integrating statistical modeling and remote sensing-based land use and land cover (LULC) change assessments to understand conflict drivers, spatiotemporal trends, and conservation implications. Conflict data were compiled from field surveys, forest department records, and community reports across 12 districts, with the highest incidents reported from Keonjhar (74), Sundargarh (59), and Mayurbhanj (46). Temporal analysis revealed an upward trend, with conflict cases rising from 22 in 2014 to 41 in 2023, averaging 32.7 incidents per year. Monthly frequency peaked between August and November, coinciding with agricultural harvesting and increased human activity near forest edges. Demographic profiling indicated that 87% of the victims were adult males engaged in farming, firewood collection, or NTFP harvesting, often during early morning or late evening hours. Most attacks were unprovoked defensive responses, often occurring within 1–2 km of forest boundaries, with a significant proportion near fragmented Sal (*Shorea robusta*) forests and hill slopes. Statistical analyses using chi-square tests and logistic regression models identified season (χ = 24.6, $p < 0.01$), occupation (χ = 18.3, $p < 0.05$), and distance from forest edge ($p < 0.01$) as significant predictors of conflict frequency. Spatial mapping using QGIS and Kernel Density Estimation (KDE) revealed concentrated hotspots in southern Keonjhar, northern Sundargarh, and parts of the Similipal landscape, indicating priority zones for intervention. To evaluate ecological drivers, LULC changes were assessed using Landsat imagery for 2014 and 2023. Supervised classification showed a 7.4% decline in dense forest, 11.2% increase in agricultural expansion, and 9.5% growth in rural built-up areas across conflict-prone zones. Patch analysis using FRAGSTATS highlighted increased landscape fragmentation, reduced core forest areas, and expanded edge habitats, exacerbating the risk of human–bear overlap. The cumulative findings suggest that anthropogenic pressure and habitat degradation are key contributors to the intensification of human–sloth bear conflict in Odisha. Community

interviews further indicated growing fear, livelihood disruption, and a rising trend of retaliatory attitudes toward bears. The study advocates a multi-scale approach to conflict mitigation: (i) enhancing compensation schemes and reporting mechanisms; (ii) implementing bear-sensitive land use planning; (iii) promoting agroforestry buffers near conflict hotspots; and (iv) launching targeted awareness campaigns in tribal communities. In addition, the integration of LULC dynamics into state wildlife action plans is vital for predictive risk modeling and proactive intervention. This work highlights the urgency of addressing human–sloth bear conflict through science-based, community-inclusive strategies and underscores the utility of long-term ecological and spatial monitoring in safeguarding both rural livelihoods and sloth bear populations.

7. Navigating Tahoe Challenges: Interagency Media Training and Conflict Communication

Sarinah Simons, California State Parks

Additional Authors: Shelly Blair and Carly White

The Lake Tahoe Basin is home to a robust American black bear (*Ursus americanus*) population and simultaneously serves as a high-use recreation destination for millions of people annually. This intense overlap between human activity and wildlife habitat presents consistent challenges for land and wildlife managers. As in many regions, effectively addressing human-bear conflict here requires not only on-the-ground management but also accurate, science-informed communication with the public, much of which is shaped by the media. To help meet this need, the Tahoe Interagency Bear Team (TIBT), a multi-agency coalition of local, state, and federal partners, developed and implemented a targeted media engagement and training initiative designed to improve the quality, accuracy, and tone of bear-related reporting in the region. Recognizing the outsized influence that social media, print, and television outlets play in shaping public perception and behavior, TIBT provided journalists with direct access to wildlife biologists and natural resource professionals, timely information on bear behavior and conflict prevention, and specific guidance on responsible reporting. The training emphasized the importance of avoiding anthropomorphism, explosivity, outdated language such as “nuisance bear” or “problem bear” as well as misinformed narratives that portray bears as villains, pests, or pets. Instead, reporters were encouraged to accurately convey the ecological context of bear behavior, the anthropogenic causes of most conflict, and the unpredictability and wildness of these animals. Topics ranged from foraging behavior and denning ecology to attractant management and the importance of bear-resistant infrastructure. Because bear management often attracts intense public scrutiny and emotional reactions, a key component of this work has been building trust, both with the media and the community at large. By fostering relationships rooted in transparency and mutual respect, TIBT aimed to ensure that media narratives reflect the complexity of managing bears in a landscape where people and wildlife intersect daily and shift the tenor of bear coverage away from sensationalism and toward informed, solutions-oriented storytelling This presentation will share TIBT’s experience developing and delivering this media training program, with a focus on its practical applications for other agencies navigating similar challenges. We will outline our methodology, key lessons learned, and the metrics we’re using to evaluate its effectiveness. Attendees will gain insight into how proactive media engagement can serve as a valuable tool in advancing bear conservation, reducing conflict, and promoting coexistence—not only in Tahoe, but in human-bear interfaces around the world.

8. Aspen CO, where are we now? After Over 30 Years of Human-Bear Conflict the Bears Keep Pointing Out Our Weaknesses

Lara Xaiz, City of Aspen Parks Department

The city of Aspen, CO has experienced human-black bear (*Ursus americanus*) conflict for over 30 years. Municipal codes have been adopted and revised over the years. Initially Aspen had a reactive response, only addressing code violations in response to a complaint. In the past 5 years Aspen adopted a proactive approach, patrolling alleys daily and looking for containers that are not latched or are in violation of other parts of the municipal code. Aspen's current code language has some strong points: (a) waste haulers must provide only wildlife resistant containers in Aspen; (b) waste haulers must label each container with the address or name of the business; (c) contact information must be given out to city officials when requested, (d) all trash and compost must be stored in wildlife resistant containers, e) all short-term rentals are required to be registered with the city and are responsible for all violations on behalf of their renter. After years of implementing the codes, the following weaknesses have become apparent: (1) recycling is not considered an attractant and is not required to be in a latchable container, (2) the code says you cannot take trash to the curb until the day of pick up, but it doesn't specify where trash is to be stored the rest of the time, leaving wildlife resistant poly-carts outdoors 24/7, (3) these poly-carts are failing frequently. Last summer bears experienced a near food-failure and went to great lengths to gain access to trash. In addition to breaking into poly-carts in residential areas, bears began breaking into metal dumpsters. I believe we saw this because our community members have done a great job securing their trash. It's only after trash is secured that we see the next level of weakness in our codes. While we have used enforcement throughout the years, and issued citations, enforcement alone does not work. The fear of citations, combined with the fear of a bear being euthanized, prevent our community members from reporting problems. Staff have had to work on community relations to build trust and work on shared goals with citizens, visitors, property managers, waste haulers and local businesses. To meet these shared goals of reducing human/bear conflict we will need to engineer our solutions through infrastructure improvements. We have realized that we cannot latch our way out of this. We will need to amend current codes and likely establish new codes to ensure that trash, recycling and compost is secured inside approved enclosures or inside metal containers. I will recommend that all enclosures be built using concrete and metal, without openings that would allow wildlife access. I would love to share these success stories as well as failures so that other communities can pick and choose their next steps carefully.

9. Targeted Black Bear Management: Pros and Cons

Alexia Ronning, California Department of Fish and Wildlife

The California Department of Fish and Wildlife estimates the statewide American black bear (*Ursus americanus*) population at approximately 60,000. The Lake Tahoe Basin contains high quality bear habitat and has the 3rd highest density in the state at 84 bears per 100km^2. The Tahoe Basin is also one of the most sought-after vacation destinations for outdoor recreationists in the nation, receiving 15 million visitors a year. The combination of a high-density bear population and an ever-increasing number of visitors recreating in prime bear habitat generates a high rate of human-bear conflict. The California Department of Fish and Wildlife requires DNA verification before any individual bear is lethally removed in the Tahoe Basin. This requirement began in 2022 with the implementation of the updated Statewide Black Bear Policy. Prior to the updated policy, CDFW had been receiving public push-back regarding its issuance of depredation permits in the Tahoe Basin, and in response halted the issuance of permits in the basin between 2018-2022. The updated DNA requirement only applies to the Tahoe Basin and ensures the correct animal is being removed when lethal action is taken. Requiring DNA verification has created an opportunity for data collection and allows managers to investigate conflict incidents at a granular level. After 3 years of consistent DNA collection efforts, there are over 300 individual bears in the DNA database, allowing managers to prioritize efforts on individuals that participate in more human-bear conflict than others. This targeted removal strategy allows for fewer lethal removals while still reducing conflict. Though many more years of this targeted management strategy are needed to determine its efficacy, short-term case studies can be conducted. From 2020-2023 the community of the Tahoe Keys experienced 28 home-invasions according to the Tahoe Basin DNA Database. Using the database, CDFW was able to identify 5 out of 10 individual bears that had collectively 23 home-invasions, making up over 80% of the conflict in this community. By focusing efforts on these individuals, CDFW was able to significantly reduce conflict and remove fewer bears. In 2024, the Tahoe Keys experienced 3 home-invasions. Based on the drastic decrease in conflict in 2024, targeted management was proven successful within this community. While this may be an advantageous management strategy for other agencies as well, resource allocation will likely be a limitation. DNA verification requires significantly increased funds, staff time, homeowner participation, and consistent access to a forensics laboratory. Finally, CDFW recognizes that lethal removal is not the solution to human-bear conflict. Field biologists engage in various outreach and education efforts and promote non-lethal strategies.

10. Non-invasive Genetic Tracking of Habituated Black Bears in the Tahoe Basin

Jillian Adkins, Wildlife Forensic Lab, California Department of Fish and Wildlife

Since 2020, the California Department of Fish and Wildlife (CDFW) Law Enforcement Division's Wildlife Forensic Laboratory (WFL) has utilized genetic methods to detect individual black bears (*Ursus americanus*) involved in human-wildlife conflict incidents resulting in property damage and public safety concerns in the Tahoe Basin. The collection of DNA samples from home and vehicle invasions has provided a novel and unique opportunity to non-invasively track black bears through their genetic profiles in near real time. Samples are analyzed using forensically validated methods to ensure accuracy of results and to provide statistical significance when an individual profile is detected multiple times. Turn-around time from raw sample to DNA profile ranges from 4 to 12 hours depending on the sample type, and the profiles generated enable historic and near real time geographic tracking of bears without the use of a radio tracking collar. The combination of field and genetic investigation has given insight into the behavioral patterns of habituated bears. To date, close to 600 different investigations have been submitted for analysis and 351 different bears have been identified and counting.

11. Enhancing Human-Bear Conflict Management: A Review of Global Plans and Recommendations for Effective Coexistence

Özgün Emre Can, Faculty of Science, Department of Biology, Ankara University

An innumerable number of human-bear interactions occur every day across the globe in areas where the ranges of humans and bear species overlap. Most of those interactions are conflict-free. However, it is not the peaceful encounters but those resulting in property damage, injuries, and loss of human life that define the status of the human-bear relationship. As a result, people persecute bears due to actual or perceived threats. Conflicts that involve threatened bear populations are of particular concern. As human activities expand into wildlife habitats and bears venture into human-dominated areas, encounters between humans and bears are expected to increase, leading to more conflicts. Effective conflict management requires complex operations, and complex operations require operational plans. Conflict management plans are operational plans that should guide practitioners in the decision-making process when confronted with conflicts. However, there are currently no global standards or principles for these plans. This lack of clarity has resulted in a variety of plan styles, each shaped by the knowledge, experience, and perspectives of its creators, which vary significantly across countries. Surprisingly, limited research has been conducted on the development of optimal conflict management plans. Therefore, in this study, I reviewed a selection of conflict management plans focusing on carnivores including brown bear (*Ursus arctos*), leopard (*Panthera pardus*), lion (*Panthera leo*), snow leopard (*Uncia uncia*), tiger (*Panthera tigris*), and gray wolf (*Canis lupus*). Next, I identified the key factors and elements that optimize conflict management plans. Finally, based on insights from this review, I propose recommendations for designing more effective human-bear conflict management plans. Improved plans could enhance management effectiveness, promote cross-cultural exchange of lessons learned from conflict management across countries, and support the long-term sustainability of human-bear coexistence worldwide.

A COMPARISON OF BROWN BEAR MANAGEMENT CHALLENGES IN THE UNITED STATES AND ITALY

12. Grizzly Bear Recovery in the Cabinet-Yaak Ecosystem of Northwest Montana and north Idaho

Wayne Kasworm, US Fish and Wildlife Service

Additional authors: Justin Teisberg, Thomas Radandt, Tyler Vent, Hilary Cooley, Michael Proctor, Tim Manley, Kim Annis, Garrett Tovey, Chris Servheen

The Cabinet-Yaak (CYE) grizzly bear population in north Idaho and northwest Montana is small and until recently has been isolated from other grizzly bear populations. This population is transboundary in nature with British Columbia and less than 100 individuals. Specific recovery actions have been implemented in the form of human caused mortality reductions and habitat security improvements through motorized access management. The Cabinet Mountains has been the subject of population augmentation with bears from the Northen Continental Divide Ecosystem (NCDE) population around Glacier National Park since 1990 with the addition of 22 bears. The Cabinets population has subsequently increased from a low of approximately a half dozen bears in 1990 to about 30-35 bears today with another 30-35 bears to the north in the Yaak River. The augmentation effort is the principal reason that bears remain in the Cabinet Mountains today. Human caused mortality is being addressed through the addition of conflict prevention personnel and black bear hunter education efforts to reduce mistaken identity mortality. Motorized access management has been accomplished through Forest plans that limit the number of roads open to the public in bear habitat and increase the amount of secure habitat with no open motorized routes. This area is multiple use forest that lacks large wilderness areas or National Parks such as the NCDE or Yellowstone. An extensive monitoring and research effort has been used to track success of the augmentation program, monitor population trend, and measure gene flow from adjacent populations though hair collection and radio collared individuals.

A COMPARISON OF BROWN BEAR MANAGEMENT CHALLENGES IN THE UNITED STATES AND ITALY

13. From Reintroduction to Conflict, to Coexistence? Lessons Learned After the Return of the Brown Bear in the Alps

Matteo Zeni - Trento Autonomous Province (Italy), Wildlife Service, Large Carnivores Division

The Italian Central Alps are home to one of Italy's two genetically isolated brown bear (Ursus arctos) populations. After being considered functionally extinct in the late 90's, a reintroduction project was initiated in 1997, which introduced 10 bears from Slovenia to Trentino. This reintroduction, which followed a comprehensive feasibility study to assess its ecological and socio-economic viability, aimed to establish a minimum viable population of 40–60 bears in the medium term, and to re-establish a meta-population genetically connected with near populations in the long term. Although the population is experiencing a growth trend higher than expected, it has also likely reached its highest level of conflict with humans with a bear-caused fatality in 2023. This incident, which is the seventh of the nine bear attacks recorded in the central Alps so far, sparked an already ongoing and increasingly heated debate over bear management, the meaning of coexistence, and the compromises that comes with the reintroduction of such species in a highly human-dominated area such as the Alps, where people had forgotten how to coexist with large carnivores. Brown bears in Italy are fully protected by national and international laws, with removals being possible in case of serious damages, risk for public safety and other severe conflicts. An action plan has been collaboratively developed and adopted in 2010 by all the local administrations, which provides guidelines for effective bear conservation and conflict mitigation, including prevention and reaction strategies to adopt in case of conflicts, such as protection of human properties, communication, aversive conditioning and bear removal in extreme cases. Although prevention strategies are crucial, conflicts may still occur. Bears impacts on human activities range from damage to properties (i.e. livestock, beehives and agriculture), to habituated bears approaching and entering towns in search of food, to the most severe impact on human safety represented by attacks on humans. Lack of knowledge and conflicts, especially attacks on humans, led to negative impacts on local communities also because of an intense instrumentalization of fear. Implementation of lethal removals of dangerous bears has been hindered by animal rights associations, further exacerbating social conflicts. Surveys commissioned by PAT in 1997, 2003, 2011, and 2024 reveal a sharp decline in public support for bears over time. The latest survey shows that only 23% of residents now favor the bears' presence, with escalated fear for personal safety. Low human tolerance for bears as well as lower trust in management authorities may lead to negative consequences on bear population survival in the medium and long term as well. Raise demands for legal removal and general opposition to bear presence have been documented, and increased poaching might occur, eventually undermining conservation goals and exacerbating existing threats to the local bear population survival. Enhancing knowledge of

bears, reducing risk of attacks and addressing social conflicts will be a win-win strategy which will benefit both human society and the bear population. To this aim it is crucial that current issues are faced by increasing awareness and inclusion of the most affected categories and implementing the existing legal tools foreseen by the action plan, including lethal removal, with rigor and professionalism and avoiding unnecessary alarmism.

14. Integrating Emotional Affect Into Bear Viewing Management and Bear Safety Education

John Nettles, Department of Parks, Recreation, and Tourism Management, Department of Forestry and Environmental Conservation, Clemson University

The popularity of viewing wildlife, specifically brown bears (*Ursus arctos*), is increasing rapidly throughout North America. In addition, population distributions of both humans and brown bears are expanding, creating larger areas of overlap and an increased possibility of human-bear interactions. To prevent negative encounters and injury to either species, park managers must continue to work to encourage appropriate behavior among local citizens as well as park visitors. Human behavior, however, is a result of many complex factors, including emotion and cognition. Despite this, the effects of emotions on human-wildlife conflict remain unstudied and therefore may limit success of any mitigation efforts. In this study we employed a quantitative self-assessment questionnaire, distributed online to a representative sample of the general U.S. public, to understand the relationship between emotion and behavior within the context of human encounters with bears. Questionnaires used video clips as visual methods to illustrate a variety of brown bear encounter scenarios based on setting, the bear's age or sex class, and bear behavior. Following each video, respondents were asked to rate the intensity of their affective responses using the Positive and Negative Affect Schedule and then rate the likelihood of performing several listed actions as well as the perceived appropriateness of each action. Results demonstrate significant variation in negative affect (e.g., distressed, hostile, jittery) and relative consistency in positive affect (e.g., excited, interested, attentive) across brown bear encounter scenarios. In general, respondents seemed to be aware of appropriate behavior during encounters with brown bears, but affective responses may limit their ability to behave accordingly. Further, feelings of fear and hostility increased the impact of current emotion on in-the-moment decisions, therefore minimizing the use of prior education in these more stressful encounters. These results, and suggestions provided by respondents, were then used to create a set of meaningful recommendations to improve the efficacy of current bear management and safety education.

15. Bridging the Gap: The Role of Non-Governmental and Academic Sectors in Improving Human-Bear Coexistence in Slovakia

Michal Haring, PhD Candidate, Comenius University

After the September 2023 elections, Slovakia's governance shifted towards autocracy, with hunters replacing conservation experts in key roles. Brown bears (*Ursus arctos*) were the first species to be affected. The dramatic rise in bear removals, from 29 cases between 2019 and 2023 to 94 in 2024, demonstrates a shift away from non-lethal conflict mitigation, raising concerns about long-term species conservation and legal compliance with the EU Habitats Directive. State institutions responsible for wildlife management have been weakened by political interference, with conservation professionals being replaced by individuals lacking expertise in nature protection. As a result, the non-governmental sector and academic community must step in to fill the void, ensuring that science-based strategies drive conservation efforts. NGOs play a crucial role in raising public awareness, promoting coexistence measures, and pressuring policymakers to adopt sustainable wildlife management. Meanwhile, researchers provide data-driven solutions and developing non-lethal conflict prevention strategies. Key mitigation measures include securing waste to reduce bear attraction to human settlements, promoting electric fencing, and educating communities on coexistence practices. Misinformation and fear-driven policies further escalate conflicts, making transparent communication and public education essential. By countering media sensationalism with scientific facts, NGOs and academic sector can help shift public perception towards a more balanced approach. International cooperation can amplify these efforts, ensuring that conservation policies align with ethical and ecological principles. In conclusion, with state-led conservation efforts in decline, NGOs and academic field must assume leadership in mitigating human-bear conflicts. Their proactive involvement is crucial in fostering coexistence while ensuring the conservation status of brown bears in Slovakia

16. Adapting Bear Smart Community Initiatives in the US

Kim Johnston, People and Carnivores,

As human-bear conflict prevention has evolved, different frameworks have been developed to help towns, communities, and municipalities address human-bear conflicts as a collective. Bear Smart Community (BSC) initiatives provide a process for local groups to develop conflict prevention on a community scale and were pioneered in British Columbia, eventually becoming a government certification program in Canada. Over the past decade-plus, practitioners and community leaders in other countries have applied the Bear Smart model in different forms. In the US, the Interagency Grizzly Bear Committee (IGBC) developed and endorsed a BSC framework like the Canadian model. The framework entails establishing a committee, completing a community assessment, developing a community plan, and implementing the plan. Before the IGBC endorsement, communities in Colorado, Montana, Florida, and others had been applying variations of the BSC model or some aspect of community-level bear conflict prevention work. In the Northern Rockies, the IGBC program catalyzed numerous community initiatives, some engaging with the Bear Smart framework and others working towards community conflict prevention by focusing on one attractant, such as solid waste. People and Carnivores has worked with various communities on their BSC initiatives. Anecdotal reports and observations from these early Bear Smart efforts suggest that there are some commonalities in the challenges groups experience. For example, individuals and working groups may struggle with how to begin or move the effort forward, and in some cases sustain initial interest. Lack of community engagement or difficulty implementing projects can slow efforts. The label "Bear Smart Community" can help build momentum, but it can also create skepticism. Of course, fundraising and having resources at needed times can be difficult. As expected, communities address challenges with different approaches. While these are early impressions, working groups will benefit from tailoring the process to existing levels of interest in the community, while also cultivating interest. Especially in areas of socio-economic, political, and cultural diversity, the framework and its components may be most valuable seen not as a set of steps but rather as a set of general concepts. For some community leaders, starting with project implementation, simplifying goals, or working on parallel tracks of the process simultaneously are promising adaptations of the framework. There can be a notable knowledge gap for community members organizing human-bear conflict prevention work. Many leaders may need resources, consultation, capacity or extra guidance to help understand the nuances and complexities of conflict prevention especially at a community scale. A framework can be a blueprint or structure,

or it can serve as a foundation or set of references. In BSC initiatives, the challenges of background activities such as group formation/dynamics and sustaining a project may be underestimated. Over time, we will learn much more about undercurrents and how to address them, improving future program strategies. Practitioners can support initiatives by providing resources and guidance to help communities navigate common challenges and gain momentum in their human-bear conflict prevention efforts.

17. Changing the Narrative on Human–Bear Conflicts by Standardizing Bear Management Terms

Carl Lackey, Nevada Department of Wildlife

Additional Authors: Dave Telesco, Kim Annis, Dave Battle, Hilary Cooley, Paul Frame, Lindsey Mangipane, Colleen Olfenbuttel, Mark Vieira, and Tammy Waldrop

Human–wildlife interactions and conflicts are increasing in many parts of the world. The ability of North American wildlife agencies to accurately record information about human–wildlife conflict and then share and compare that data is important for agency conservation efforts, interagency communications, and public messaging. Agency bear managers and researchers record human–bear conflict data and depend upon that information for making management decisions, determining whether those decisions were effective, and for developing public education messaging. To successfully manage human–bear conflict, it is essential that interagency communication, recording of data, and public messaging be consistent. Yet, defining human–bear conflicts in a consistent manner, even within jurisdictions can be difficult and the application of common bear management terms is often inconsistent and therefore, may be unreliable. Even when these terms are clearly defined, there is often no uniformity in application, nor is there a defined entity to collect, store, and disseminate the information. Additionally, some commonly used terms used in agency messaging and often repeated by the public are subjective and can have negative connotations for bears. The International Association for Bear Research and Management's (IBA) Management Committee (MC), with members representing 9 jurisdictions and all 3 bear species in North America, reviewed literature that list terms and definitions used in bear management and bear research with the goal of: (1) identifying terms and definitions that were clear, concise, and used consistently among jurisdictions; (2) defining or modifying those terms and definitions that are commonly used, yet are used inconsistently, incorrectly, or interchangeably; and (3) identifying terms that should be removed from written and verbal agency messaging that lead to mischaracterization of bears. Here we present 12 terms and definitions that will help facilitate clear and consistent inter and intra-agency communications and allow jurisdictions to better compare information across databases. We also identify 5 terms that should be removed from professional wildlife management vernacular and publications. Finally, we propose that the IBA adopt these terms and definitions for use within their publications and request the use of these terms and definitions by other governing and publication entities.

18. Want to Change the Narrative? Change the Dictionary

Linda Masterson, Communications Director, BearWise®, Author, Living with Bears Handbook

BearWise® is a national education and outreach program of the Association of Fish & Wildlife Agencies supported and funded by US state wildlife agencies. The BearWise mission is helping people live responsibly with bears. Changing the way people talk, write and think about bears and human-bear conflicts is key to fulfilling that mission. BearWise is managed by a team of state wildlife agency bear biologists, bear managers and outreach and education specialists and a communications and marketing team from the private sector. This unique combination helps ensure that BearWise provides sound, science-based information people can understand and trust, and proven, practical resources that work in the real world. BearWise member states have worked together to adopt universal messaging guidelines to ensure they're all on the same page, delivering the same consistent message about living responsibly with bears. We created our new BearWise Communicator's Guide to share those messaging guidelines with the influential universe of people beyond agencies who write, talk and communicate about people and bears. This presentation will review the guidelines and highlight key messaging dos and don'ts, including why the Big Five bear-blaming terms have been tagged for lethal removal and recommending preferred terms to use instead. Auditing daily news stories from across the country has helped us identify additional deeply rooted language baggage, including terms, myths and misperceptions that make it hard to change the narrative…and critical to do so. Change seldom comes quickly or easily. Back at the third conflicts workshop in 2009 we were still talking about bear-human conflicts. Since then, the language endorsed and being promoted in the professional community has evolved and changed for the better. BearWise wants to get that message out into the world to help change the way the media, educators, community groups, government, law enforcement and the public writes, talks and thinks about the complex world of human-bear relations. The lessons we've learned are universal. Anyone and any agency, group or organization can adopt the basics of BearWise messaging and put BearWise to work for them. The Communicators Guide is available as a free download at BearWise.org. When we all work together, we have the power to change the narrative out there in the real world where the real story gets written and rewritten every day. And changing the narrative has the power to change the world for the better for people and bears.

19. BearWise® ; An Interagency & Community Partnership Program Focused on Standardized, Science-Based Messaging and Preventing Human-Bear Conflict

Rich Beausoleil, Washington Department of Fish and Wildlife

Rebecca Carniello, Nevada Department of Wildlife

BearWise is a nationwide, science-based education and outreach program aimed at preventing and reducing human-bear conflicts in the US. It is sanctioned by the Association of Fish and Wildlife Agencies (AFWA) and a Working Group under the Wildlife Resource Policy Group of AFWA. In the lower 48 states of the U.S., as of April 2025, 44 State wildlife agencies were members of this program, as are numerous private organizations within each of these jurisdictions. The program is managed by a national team of state agency bear biologists and communications professionals from the private sector, working together to ensure that no matter where people live, play or travel, they get the same consistent, science-based information about living responsibly with black bears (*Ursus americanus*) and grizzly bears (*Ursus arctos*). This is accomplished using a wide array of media and products, including fact sheets, checklists, bulletins, rack cards, door hangers, banners, signs, magnets, stickers and much more. Products are designed in a way that ensures messaging is scientifically accurate and applicable regardless of geographic location, thus standardizing messaging across the country. Each product is easily customized for individual or co-branded use within specific jurisdictions. Content can also be easily modified or customized for region-specific and/or within-jurisdictional needs, which is crucial to address ongoing and arising issues that need immediate attention. BearWise also maintains a growing nationwide email distribution list and produces relevant, seasonal informational articles that agencies, NGO, HOAs, schools, and many others can use for outreach. One of the most important aspects of the BearWise program is its ability to build bridges between government agencies and members/organizations of the public in ways wildlife agencies cannot. Utilizing BearWise resources empowers these entities to develop or enhance their own programs using the same messaging and products that are developed by member agencies. It also serves as a clearinghouse for all material and products needed regardless of affiliation. In this presentation, we will highlight some case studies showing how BearWise products can and are being used on the ground in various areas of the US. Also, how these practices can be adapted to other areas throughout the world and with all bear species.

20. From Conflict to Coexistence: Lessons Learned from Research on Bears and People

Heather Johnson, USGS Alaska Science Center

When I was first tasked with researching strategies to reduce human-black bear conflicts in Colorado, wildlife agencies were primarily focused on options for managing bear behavior and populations. It was assumed that once a bear consumed human food it would become a persistent 'problem bear,' and that increasing harvest rates would reduce conflicts. Like many other research teams, we initially approached this issue by studying the bears themselves (after all, that's how we were trained!) - capturing and collaring individuals to track habitat-use and demographic rates, conducting hair-snare studies to estimate density, surveying mast production, etc. Our key findings echoed those of so many other bear researchers: conflicts were primarily related to bears accessing human foods and escalated when natural foods were scarce, they had significant consequences for bear populations, and they were expected to increase given changes in climate, land-use, and human densities. Indeed, these patterns have been demonstrated to be largely universal across bear species, geographies, and human contexts. Importantly, we also found that conflicts were unrelated to bear abundance, and we realized that strategies to change bear behavior (like hazing or removing individuals) or population size (like harvest), would have limited success if human foods remained accessible. So, in addition to researching bears we began researching people - investigating how human behavior contributed to conflicts and how it could be changed. This transition, from focusing on changing the bears to changing the people, allowed us to move from addressing 'conflict' to promoting 'coexistence'. We found that human-centered solutions, such as urban bear-proofing, had significant benefits for both bears and people and were strongly supported by the community. As bear-proofing was more widely implemented in our Durango study area and in other Colorado communities, we observed several key factors that contributed to its adoption: data demonstrating effectiveness, compelling public messaging, grassroots momentum, support from local leaders, engagement from a diversity of people, and, admittedly, a bit of luck. Our work has showed that addressing the root causes of human-bear conflict can successfully promote coexistence, especially when there is a sense of shared responsibility with the local community.

21. Developing Effective Communication Strategies and Tools for Human-Sloth Bear Conflict Mitigation in India

Nishith Dharaiya, Bhakta Kavi Narsinh Mehta (BKNM) University

Additional Authors: Pratikkumar Desai

Human-wildlife conflict is a global conservation challenge that nearly affects all wildlife species and regions of the world. Such conflicts lead to economic loss, livestock casualties, and human injuries, which often resulting in increased hostility towards wildlife. This hostility poses a significant challenge to species conservation and management efforts. The sloth bear (*Melursus ursinus*) is one of the large mammals that interacts with humans in In India and second largest mammal behind the leopard in the sloth bear landscape of Gujarat. As the human population rises, there has been a resultant increase in humans using the same resources as sloth bears in the region. The rising conflict between humans and sloth bears is likely to be detrimental to sloth bear conservation, and lead to a shift towards negative community perspectives over time. The government and other organizations have launched several awareness campaigns, however, most of them have been ineffective in changing people's attitudes about sloth bears. Based on the findings of our research study on sloth bear attacks, most awareness campaigns employ reading materials, picture books, and audiovisuals as awareness tools; however, they rarely result in concrete action. To address this challenge, we have developed species specific education tools, including documentary film, comic booklet, mime, flyers and bear safety education and outreach activities which can be appreciated by the locals. We have conducted over 50 such outreach and awareness programs in 56 villages in central Gujarat, coinciding with a significant recent surge in sloth bear populations and human attacks. We started action-based conservation programs in 2023, including bear safety education demonstrations, invented a bear deterrent stick and distributed among the forest dwellers, field staff and farmers, we constructed water accumulation points, planted fruit trees in adjoining waste lands, and developed a standard operating procedure (SOP) for handling conflict situations. As a follow up, we have carried out evaluation of our outreach and conservation action programs through interviewing more than 100 respondents from the same villages and we found that, these initiatives have significantly improved community attitudes toward sloth bears, fostering greater tolerance and coexistence between human and sloth bears in Gujarat. Such encouraging results have motivated us to employ the same model in the state of Rajasthan this year.

22. Human–Sloth Bear Conflict: Case Studies in the Mahasamund Division, Chhattisgarh, India

Swaminathan Shanmugavelu, Wildlife SOS

Additional Authors: Yogaraj Pannerselvam, Reagan Puspanathan

The sloth bear (*Melursus ursinus*) is distributed widely on the Indian subcontinent and often involved in human conflicts. This study interpreted the human sloth bear conflicts within a single division in the state of Chhattisgarh. Data was collected through interviews with victims living in fringe villages, and data collected from the forest department office in the Mahasamund division. A total of 123 cases of conflict were reported during a ten-year period (2013 to 2023). Attacks made up 81% (n=100) of the cases, and the remaining 19% (n=23) of the cases were made up of crop damage and property loss. The data shows the human-sloth bear conflict is rapidly increasing. The highest number of sloth bear attacks were observed in Pithora Range, 38 cases (30.9%), followed by Mahasamund Range, 35 cases (28.55%), Bagbahara Range, 30 cases (24.4%), and 20 cases reported in Saraipalli and Basna Ranges (16.15%). Over half (52%, n=64) of the incidents were reported during the monsoon season (June to October). During the monsoon season people are often in the forests searching for mushrooms and sloth bears are often in the agricultural areas foraging. The summer season, March through the end of May is the mahua (*Madhuca longifolia*) and tendu (*Diospyros melanoxylon*) collecting season, during which time 27% (n=33) of the conflicts took place. In Chhattisgarh, the collection of tendu leaves & fruits is a significant livelihood activity, particularly for tribal communities. The state is a major producer of tendu leaves, which are used for making bidis (Indian smoking tobacco).

23. Exploring Socioeconomic and Ecological Dimensions of Human-Andean Bear Interactions

Russell C Van Horn, San Diego Zoo, Wildlife Alliance

Additional Authors: Roxana Rojas Vera-Pinto, Manuela González-Suárez, Denisse Mateo Chero, and Rebecca Zug

Coexistence is a main challenge in wildlife conservation due to the complexity and dynamics of interactions, where land-use change pushes people and animals to share resources. Understanding how social and ecological factors shape human-wildlife interaction is crucial to providing integrated management actions. This understanding is missing for human interactions with the Andean bear (*Tremarctos ornatus*), whose habitat is threatened by human activities and climate change, while encounters with human resource use are increasing, leading to conflict. Thus, a deeper understanding of the drivers of these conflicts will be increasingly important for this bear's conservation. With this project, we aim to explore socioeconomic and ecological dimensions of human-Andean bear interactions in Peru. First, we reviewed the scientific and gray literature in Spanish and English to describe the national state of knowledge of livestock interaction and crop consumption events, the main reported causes of conflict in which Andean bears were involved. We mapped and identified the focus of each report as related to either human or ecological factors. From 30 documents, we identified 265 reported events from 56 political units (districts), which represent <13% of the bear's estimated distribution. The most common reports (>90%) were bovine attack and maize consumption. Half of the documents collected focused on human-wildlife interaction studies (N=15). From these, we identified human factors as the most recurrent focus in 87% of studies, which used interviews, surveys and focus groups to describe the event, beliefs and perceptions. Only two studies explored ecological variables to identify the probability of conflict and described bear activity patterns in maize fields. No study integrated both sets of variables. Given the lack of ecological data to complement the socioeconomic data, we propose an assessment integrating ecological and social variables to better understand and predict conflict events. To test this assessment, we're developing case studies in different ecosystems (e.g., humid mountain forest, dry tropical forest). We've identified feasible variables to assess their association with the probability of bear visits to crops and pastures: bear refuge (altitude, slope, distance to forest cover), availability of food resources (seasonality, precipitation, bear body condition), and bear behavior in human-

dominated landscapes (temporal pattern of visitation). We've also identified a complementary set of socioeconomic variables: economic activity management (stochastic or frequency of human visits to pasture and crops, cattle management, distance from houses, use of bear deterrents), and tolerance of bears and other wildlife. We will collect data through coordinated interviews, camera trap monitoring, and fine-scale spatial data analysis. Questions we aim to explore include: Is tolerance to bears influenced by landscape and other environmental conditions? Is bear incursion into human-dominated landscapes influenced by the lack of natural resources? Do ecological or physiological factors interact with human factors to affect the probability of bear incursion, or damage? Do these same factors affect human tolerance of bears? The result of this work will be a clearer understanding of how socioeconomic and ecological factors produce human-Andean bear conflicts, informing actions to promote coexistence between Andean bears and people in Peru.

24. Using the Presence-Tolerance Model to Understand and Manage Human-Andean Bear Coexistence

Isaac Goldstein, Andean Bear Conservation Alliance, Cleveland Metroparks Zoo

Additional Authors: Robert Marquez

Humans and large carnivores have coexisted, interacted, and co-evolved for millennia, often competing for resources and acting as both predators and prey. Negative interactions between people and large carnivores are increasing globally and pose a major threat to conservation efforts. The prevailing view sees coexistence as a socio-ecological system composed of ecological and human dimensions, often represented as a continuum from conflict to coexistence. Interactions between people and large carnivores, and among people themselves, can be negative, neutral, or positive, influencing where each fall on this continuum. The Presence-Tolerance Model (PTM) conceptualizes human-carnivore coexistence as a dynamic socio-ecological system with two key components (presence and tolerance) and shaped by the status of four key attributes: habitat, security, value, and accord. These attributes interact across spatial and temporal scales, influencing a continuum of population states - from dominance to coexistence. Ensuring the long-term viability of carnivore populations requires management of all attributes within the system. Presence represents the ecological dimension, with attributes related to habitat and security. The habitat attribute refers to the species' ecological niche, and is influenced by factors such as land cover, land use, and prey abundance. The security attribute pertains to interactions with other species, including competition and predator-prey relationships, which affect distribution and population levels. Tolerance is the socio-psychological dimension, with attributes related to value and accord. The value attribute reflects the psychological relationship between humans and the carnivore species, while accord pertains to social dynamics among human actors regarding the species' presence. The PTM is applied using the four stages of adaptive management: Problem Analysis, Design, Implementation, and Evaluation. The problem analysis phase involves assessing ecological and socio-political factors that influence coexistence within the target landscape. Based on current conditions, a system model is constructed, and hypotheses are developed to guide management strategies. Implementing interventions follow this design, and an evaluation phase measure results to refine future strategies. Due to challenges in assessing Andean bear (*Tremarctos ornatus*) abundance and human attitudes in areas of human-bear interaction, discrete models were used to analyze presence and tolerance. Occupancy models examined species’ presence in relation to

land cover, land use, and interactions with humans. To evaluate tolerance, a modified planned behavior model was used, incorporating attitudes toward bears, perceived value, equity, and social norms. The PTM framework has been utilized in Colombian and Peruvian landscapes, with management objectives established by governmental organizations based on environmental conditions and socio-political factors. Across all landscapes, Andean bear occupancy was consistently high (0.74 – 0.93). Key influences on bear occupancy included habitat conditions within each sampling unit, the presence of free-ranging cattle, and proximity to human settlements. Tolerance indicators, such as the likelihood of bear hunting, were affected by trust in governmental organizations, economic dependence on cattle, formal regulations, and perceived or actual livestock losses. Attitudes toward Andean bears were shaped by perceptions of bear-related damage, social norms, economic reliance on cattle, and formal policies. Management interventions were tailored to each landscape based on habitat conditions, damage prevalence, and the significance of various tolerance factors.

25. A Predictive Modeling Approach for Andean Bear Movement in Northern Ecuador: Insights for Conservation Strategies in a Changing Landscape

Javier Torres-Jiménez, Universidad Central del Ecuador, UCLouvain, Belgium, Fundación Cóndor Andino

The Andes of Ecuador is a highly biodiverse yet increasingly human-impacted region which reports an important number of human-Andean bear (*Tremarctos ornatus*) conflicts every year. One of the most affected areas in this region is the northern Andes, a complex socio-ecological landscape composed of agricultural lands, rural settlements, and fragmented forests, which are habitats that are still crossed by Andean bears. These bears are adapting to shifting conditions exacerbated by climate change and intensified human activity. This study aims to understand the movement patterns of Andean bears using a combination of GPS collar tracking and information from camera traps. This will help us to mitigate human-wildlife conflicts by identifying and predicting future interactions between Andean bears and local people in the Ecuadorian Andes, applying local measures in the red zones of conflicts. An integrated methodological approach has been designed, combining movement ecology tools and Agent-Based Modeling (ABM) to assess how landscape structure, vegetation, water availability, and anthropogenic pressures shaped bear movement and habitat use. Fieldwork included the deployment of camera traps across sampling stations and the use of GPS collars on selected Andean bears covering an area of approximately 500 km^2. Preliminary results highlight the influence of ecological, environmental and human-related factors on bear behavior. Analyses using Generalized Linear and Additive Models (GLMs, GAMs), and multi-species occupancy models revealed that bear movements are closely associated with topography, resource distribution (water and food), and proximity to human infrastructure. Additionally, home range analyses, Capture-Mark-Recapture (CMR) and Random Encounter Models (REM) were used to estimate population parameters and movement steps and frequency. Areas with high bear presence did not show a proportional increase in conflict incidence, suggesting that spatial overlap alone is not a reliable predictor of conflict. There is still a significant knowledge gap regarding the spatial ecology of Andean bears, especially in mountainous regions where steep terrain, fragmented habitats, and human activities converge. Gaining insight into their movement patterns is critical for designing evidence-based interventions in areas of increasing conflict. The project also involved geofencing systems to trigger alerts when bears approached or entered zones of potential conflict, such as agricultural fields or community areas. These alerts enabled the rapid implementation of several actions as preventative measures, including

early-warning communications and community-based deterrence strategies, helping to reduce the likelihood of livestock predation. A long-term biodiversity monitoring network was also promoted within the implementation of this project, providing a framework for sustained conflict mitigation efforts. Analyses as mentioned above will help in the future to identify high-risk corridors and seasonal movement patterns. These findings will support the development of an Agent-Based Model simulating individual bear behavior under various environmental and socio-ecological scenarios, with the goal of predicting conflict-red areas and designing targeted conservation interventions in selected areas. We are confident that these insights will support more informed decisions and contribute to redirect our path toward human–bear coexistence.

26. From Conflict to Coexistence Across the Y2Y: Working at the Scale of the Wild

Caitlin Jacobs, Yellowstone to Yukon Conservation Initiative

Additional Authors: Nadine Raynolds, Brynn McLellan, Nikki Heim

The Yellowstone to Yukon Conservation Initiative (Y2Y) is an international, transboundary effort that aims to connect and protect habitats along the 3,200-kilometer corridor stretching from Yellowstone National Park in the United States to Canada's Yukon Territory. As such, Y2Y seeks conservation solutions that consider the impacts on people, and we recognize that when both people and wildlife have what they need to thrive, coexistence becomes possible. The Y2Y Communities and Conservation program is dedicated to making that vision a reality across the landscape, with reducing human-bear conflict a central focus. Our goal is that human-wildlife coexistence practices are normalized and funded across Y2Y communities - ensuring grizzly populations are genetically and demographically connected, and humans can live, work, and play safely. But how, may you ask, can Y2Y move the needle away from conflict and towards coexistence at such a large scale? Where do you start when hundreds of communities must shift from potential conflict zones to models of coexistence? This presentation will provide an overview of how Y2Y tackles these challenges. We will discuss our approach to working with communities, partners, and policymakers to ensure lasting capacity and resources for the successful implementation of coexistence programs. We will also share successful examples of coexistence from community to at-scale efforts in the Yellowstone to Yukon region.

27. Grizzly Bear Habitat Selection and Use of Grain Bins in Agricultural Prairie Landscapes of Montana, USA

Milan A. Vinks, Montana Fish, Wildlife and Parks. Montana Cooperative Wildlife Research Unit, Wildlife Biology Program, University of Montana

Additional Authors: Cecily M. Costello, Wesley M. Sarmento, and Lori L. Roberts

Harvested grain stores can be a highly attractive food resource to grizzly bears (*Ursus arctos*), and grizzly bears are known to feed on spillage around grain bins, occasionally damaging bin doors when attempting to access stored grain. This behavior creates human safety concerns due to increased potential for human-bear encounters, especially when grain bins are located near occupied homes or farm outbuildings. Minimizing grizzly bear-human interactions and conflicts is essential for successful bear management, but remains a challenge given the vast number of grain bin sites on agricultural prairie landscapes. Here, we mapped availability of grain bins and employed GPS data from 42 individual grizzly bears on the eastern extent of the Northern Continental Divide Ecosystem between 2004 to 2023 to evaluate three main objectives addressing grizzly bear use of grain bins: (1) document the frequency of grizzly bear visits to grain bin sites by season and time of day; (2) evaluate habitat selection between grizzly bears that did and did not visit grain bins to determine if grain bin visitation is opportunistic or if bears are seeking out this food resource; and (3) compare visited versus available grain bins to identify grain bin site characteristics associated with higher use by bears. Bear visits were observed at only 8% of the 1,584 grain bin sites (encompassing 8,645 total bins). Use of bin sites was generally infrequent (<5% of bear-days), but we observed repeated use by some individuals. Most observed visits (87%) occurred at night and visits were more frequent during the late season coinciding with grain harvest (7% of bear-days). Grizzly bears that visited bins displayed similar habitat selection patterns to grizzly bears that did not visit bins. Use of grain bin sites increased at sites with more bins, located away from human development and activity, and with more access to cover. Generally, more bins were found in areas of lower predicted habitat use, while higher proportional visitation was observed in areas of higher habitat use. With our improved understanding of grizzly bear habitat selection in prairie landscapes, we conclude that grizzly bear use of grain bins is largely opportunistic. Our findings provide valuable information to help prioritize areas for implementation of human-bear conflict prevention measures, thus improving human safety, increasing social tolerance, and supporting grizzly bear conservation.

28. Assessing Drone-Based Aversive Conditioning on Grizzly Bears in Kananaskis Country, Alberta

Kayla Doucette, University of Alberta & Alberta Parks

Additional Authors: John Paczkowski and Colleen St. Clair

Managing and mitigating human-wildlife conflict is an ongoing challenge in protected areas, especially as visitation increases and wildlife becomes habituated to frequent "bear jams" or heavy recreational use throughout their habitat. In Kananaskis Country, Alberta, wildlife managers have mitigated potential conflict with grizzly bears (*Ursus arctos*) and black bears (*Ursus americanus*) over the last 25 years by using a highly successful aversive conditioning program when bears overlap with humans on golf courses, at facilities, in campgrounds, and along roadsides. Aversive conditioning exposes bears to increasingly negative stimuli (approach, noise, projectiles, and pursuits) to increase and reinforce their wariness around humans. However, the proximity to bears that these conventional conditioning methods require can pose inherent risks to both technicians and bears. My research explores the potential of drones as a safer alternative to these conventional conditioning methods. Between May and September 2025, I will apply both drone-based and conventional conditioning on bears throughout Kananaskis Country and compare bear responses before, during, and after each treatment. Drones will approach bears and subject them to auditory and visual stimuli without requiring close proximity of bears and people. GPS and VHF collars will measure the frequency and latency with which bears return to sites after conditioning. We expect to present preliminary results at the IHBCW meeting in October. My research aims to enhance the safety and efficacy of bear management, promote human-wildlife coexistence, and support healthy grizzly bear populations in critical habitats. This study will build on decades of successful bear management in Kananaskis and may inform coexistence strategies in other regions where humans and bears share space.

29. South Greenland Polar Bear Awareness Program – NANORAAQ: Is It Possible to Coexist with Polar Bears?

Ulrik Vedel, Owner, Arctic Unlimited

A recent study has documented a previously unknown subpopulation of polar bears (*Ursus maritimus*) living in Southeast Greenland where the polar bears sustain life with only seasonal access to the moving sea ice. In the spring and summertime, the polar bears occupy secluded fjords with its own ecosystem of seals, but the bears can often be found on the populated Southwest coast, as they follow the pack ice along the coast. The last couple of years, polar bears have been more and more frequent visitors in towns and at sheep farms. In the spring of 2024, a significant increase of sightings and human-bear conflicts has been documented and unfortunately also the number of polar bears killed. The approach by officials to address polar bear encounters and mitigation is rigid and outdated. Practical workshops, awareness and community programs are our first step to mitigate and assist our communities and sheep farms as they are clearly becoming hunting grounds for the polar bears. NANORAAQ is a grass root project developed by small business owners, subsistence hunters, sheep farmers and other representatives. Our initial focus areas are patrols and monitoring, maintaining a hotline for information collection and analysis, maintaining a webpage to inform the public, development of educational materials to be shared at schools, organizations, and the authorities, mitigation strategies and practical workshops, develop corporation with international organizations.

30. Providing Multifaceted Human-Bear Management and Safety Services to Large Industrial Operations in Bear Habitat Across Western and Northern Canada

Dan LeGrandeur – President, Bear Scare Ltd.

Founded in 2002, headquartered in Western Canada, Bearscare Ltd. is in its 23rd year of operation as a company with a mission to educate industrial workers on wildlife, human wildlife conflicts and how to stay safe while working in their habitat. Service delivery is primarily to large industrial resource extraction operations and includes wildlife monitoring, site patrol, bear response, site inspection/assessments, human- wildlife conflict prevention, attractant management and worker safety training. Bear Scare helps industry meet their regulatory and worker safety requirements in remote industrial working environments. This is accomplished by the work of Wildlife Patrol Specialists and Monitors, many being former agency officers, military and police officers with significant human/bear conflict expertise. Wildlife Patrol Specialists are stationed on these large industrial footprints providing patrol response when bears are present in industrial work areas. Specialists are equipped with a variety of tools and ordinance such as non-lethal contact rounds (authorized under strict government protocol requirements) which may be used in a comprehensive hazing/aversive conditioning program to discourage bears from frequenting these areas. These activities are regulated by provincial wildlife agencies with associated permits and reporting out requirements. Our wildlife monitors provide wildlife overwatch of field crews as they work in remote bear country and again possess a variety of tools and ordinance to conduct hazing activities associated to bear presence in survey/study areas. Bear Scare invests significant resources in the annual requalification and ongoing training of is Wildlife Specialists and Monitors. In addition to the expertise required in managing bears on these industrial sites, there are numerous industrial processes and facilities that pose an added dimension of risk to the workers, our specialists/monitors and to the bear itself, that need to be managed for desired outcomes. This requires a comprehensive and specialized safety program for our employees to meet our industrial clients needs to be authorized to enter these areas with specialized personal protective equipment. We bridge a gap between what Industry can do for themselves and what Government agencies are willing or capable of doing. Bear Scare works collaboratively with both industry and government. As a result of this, the workload of Alberta Fish & Wildlife in human wildlife conflict work has significantly been reduced, worker safety has increased and there has been a major reduction of bears being destroyed or relocated because of human wildlife conflicts associated to industrial sites. It has been

commented by several wildlife management professionals the work we do is in a niche and would be of interest to this workshop and conversely several of our staff are planning to attend this workshop to see what is being done at the international level that may be incorporated to improve outcomes in our work endeavors.

31. Understanding the Interactions Between Human Communities and the Mexican Black Bear in the South of Nuevo León, Mexico

Carlos Fabian Terrazas Tzontecomani, Wildlife Management Laboratory, at the Ecosystems Sustainability Institute Research (IIES) at the National Autonomous University of Mexico (UNAM).

Additional Authors: Juan Luis Peña Mondragón and Alicia Castillo Álvarez

Human population growth, the need for spaces for cities and agricultural fields, and resource exploitation have increased the interactions between people and wildlife. This situation has promoted interactions where wildlife would be threatened by the reduction and alteration of natural habitats, environmental deterioration, and the increase of conflicts between humans and carnivores, such as bears; on the other hand, it has increase the threat to the well-being of the human societies, such as the emergence of zoonotic diseases, economic losses caused by livestock predation, the destruction of agricultural fields or damage to property by wildlife. In communities from the South of Nuevo León, Mexico, people live in the black bear range, so human-bear conflicts are common. In this sense, our project is proposed within the socio-ecological framework to understand and document the interactions between inhabitants and the Mexican black bear (*Ursus americanus eremicus*) in this region. Through semi-structured interviews and participant observation, we characterized crop and cattle management, we estimated the perceived economic losses caused by bears and other carnivores on livestock and agricultural production; we constructed people's perceptions about the human-bear conflict; we documented knowledge of farmers and ranchers about bears and carnivores. And we determine Mexican black bear's diet in this region through excrement analysis. Also, we intend to develop community workshops with interviewees, stakeholders, and authorities. These workshops would be used both as a triangulation process to claim that we really understand and document the main factors and actors involved in the human-bear conflict, and for future approximations to develop and discuss strategies to mitigate the conflict. Finally, we intend to design and distribute handbooks, flyers, or comics about the human-bear conflict in this region of Mexico. Also, we will publish a thesis, and we will publish a scientific article in one international journal such as Human-Wildlife Interactions, Journal of Wildlife Management, or Human-Wildlife Conflicts. And we will publish an article in a science magazine, such as Cómo Ves by UNAM or Ciencia y Desarrollo by CONAHCYT.

32. Spatiotemporal Analysis of Human-Black Bear Interactions in Monterrey Metropolitan Area, Nuevo Leon, Mexico

Katya Lizeth Ortiz Morales, Nuevo Leon's Autonomous University (UANL) and Institute for Ecosystem and Sustainability Research (IIES) of the National Autonomous University of Mexico (UNAM)

Additional Authors: Antonio-Flores, Ana Elizabeth; Peña-Mondragón, Juan Luis; Cruz-Acevedo, Edgar; García-Salas, Juan Antonio

Alongside human population growth, interactions with wildlife are becoming increasingly frequent. The American black bear (*Ursus americanus*), in contrast with other big carnivores, displays a behavioral plasticity that enables it to adapt to urban environments. Due to its proximity to important natural areas, the Monterrey Metropolitan Area (MMA) experiences frequent and close interactions with this species, which, if not effectively managed, can escalate into conflict, risking both humans and bears. Identifying spatial and seasonal patterns along with "hotspots" through spatial association analyses is a valuable tool for predicting potential events. In this study, data on black bear interaction events in the MMA from 2008 to 2024 was retrieved from Nuevo Leon's Parks and Wildlife Department. The Getis-Ord Gi* methodology was used to identify the areas with the highest likelihood of interactions within the MMA. Additionally, a Multiple Correspondence Analysis (MCA) and a Fisher's exact test were conducted to explore associations between biological variables such as gender, age, and bear seasonality; along with characteristics such as type of interaction and land use. Of the 396 total interactions recorded, 54.5% were sightings, while 42.9% required direct capture and non-lethal management of the bear. Regarding the seasonality, a total of 73.7% occurred during the hyperphagia period, and 26.3% during the pre-hyperphagia period. Seasonality yielded significant results through Fisher's exact test regarding the type of interaction (p= 0.027) and land use (p=0.009) when interactions occurred. Through the MCA analysis, we found that the most strongly associated types of interactions involved sightings of female bears in recreative areas; and subadult bears in residential areas during pre-hyperphagia season. The Getis-Ord Gi* analysis yielded z-scores ranging from 2.29 (p=0.022) to -2.08 (p=0.036), with the highest concentration of interactions located in the southwestern part of the MMA. This area borders the Cumbres de Monterrey National Park, a Federally Protected Area, which is densely populated with residential developments in its influence zone. These findings suggest that both the seasonality and the proximity of human settlements to high-quality bear habitat directly influence the occurrence of humanâ€"bear interactions. Recognizing these spatial patterns, along with analyzing the social dimensions that contribute to such interactions, is crucial for the effective allocation of resources toward conflict prevention and mitigation.

33. From Poison to Coexistence: How a Crisis Fueled an Innovative Model of Human-Bear Conflict Management in the Andes of Ecuador

Fabricio Narváez, Executive Director, Fundación Condor Andino

Additional authors: Paul Monar, Evelyn Araujo, Esteban Montalvo, Jaime Culebras, Juan Sebastián Restrepo, and Sebastián Kohn

What began as an unprecedented environmental tragedy, the mass poisoning of 20 Andean condors (*Vultur gryphus*), more than 13% of the estimated national population. This triggered an institutional response that transformed the approach to human-wildlife conflicts in Ecuador and led to the formation of a technical team within the Andean Condor Foundation (FCA), which led the first systematic national diagnosis of human-wildlife conflicts, registering 867 events between 2004 and 2022. The Andean bear (*Tremarctos ornatus*) emerged as the species with the highest number of confirmed (n=292) and perceived conflict events, highlighting the urgency of a comprehensive response. Faced with this scenario, FCA implemented an interdisciplinary strategy that combined applied science, community action and territorial governance. Forensic protocols were developed for the evaluation of attacks on livestock, surveys were conducted with more than 300 rural actors, and participatory processes of diagnosis and conflict resolution were promoted. In the ecological component, camera trap networks were deployed to monitor presence and behavior, and wild individuals were tagged with satellite telemetry, including specimens involved in conflicts, which generated key information on the use of space, mobility and patterns of interaction with human activities. These inputs allowed the design of a Management Model for Human-Wildlife Coexistence, structured in seven strategic processes and implemented by local governments in different territories. In parallel, the Information and Early Warning System (SIAT) was developed and implemented, which has managed more than 12 human-wildlife conflict events through community brigades, rapid response protocols and the application of dissuasive measures adapted to local conditions. This experience not only seeks to reduce the recurrence of events, but also to transform the narrative of the Andean bear in Ecuador: from a symbol of conflict to an emblem of territorial and inter-institutional cooperation. We propose this model as a replicable strategy in other mountain landscapes with large carnivores, aligned with the workshop's vision of changing the narrative of human-bear conflicts.

34. Assessing and Managing Incidents of Bear Attacks in Canadian National Parks

Steve Michel, Parks Canada Agency

Additional authors: David Gummer and Claire Edwards

Incidents of bear attacks causing human injuries are infrequent in Canadian National Parks (n=156; n=187 total human victims). From 1900-2024, human fatalities were caused by grizzly bears (*Ursus arctos*, n=10) and black bears (*U. americanus*, n=1). Additional non-fatal injuries (n=176) were caused by grizzly bears (n=74), black bears (n=94), polar bears (*U. maritimus,* n=4) and unidentified bear species (n=4). Bear attacks in Canada's national parks are extremely rare (approximately 1 per 13.8 million visits since 2008). In recent decades, the frequency of bear attacks has declined from approx. 5.4 attacks/year (1970-79) to <1 attack/year (present). Before garbage management measures were fully enacted (mid 1980s), human food and garbage were freely accessible to bears. Most attacks during this time were from black bears in front-country areas (n=55), that were predominantly food conditioned. Since 1985, bear attacks have more commonly involved grizzly bears in backcountry locations (n=21), including all recorded human fatalities (n=4). Many of these incidents were attributed to defense of offspring (n=32) whereas predatory behavior was less common (n=11). Parks Canada employs emergency procedures to respond to incidents, prevent further escalation and evaluate contributing factors. Responses ensure: 1. Personnel safety; 2. Exclusion of people from the incident area; 3. Rapid evacuation and treatment of victims; 4. Determination of the circumstances of the attack; 5. Appropriate management of animals involved; 6. Collection and documentation of evidence and response actions; and 7. Accurate and timely information for agency communications. We rely on staff expertise, supporting agencies, the private sector, and internal cross-functional coordination to ensure emergency response objectives are achieved. Staff are trained in Incident Command System (ICS) wildlife attack response procedures via multi-agency training courses, regional skill development sessions, and tactical response training scenarios. We are also in the process of developing a new national human-wildlife coexistence policy to formalize standard procedures and capacity for emergency responses to wildlife attacks.

35. The Missoula Bear Smart Working Group: The Challenge of Human-Bear Conflict Management in an Urban Environment

Christopher Servheen, Montana Wildlife Federation, IUCN Bear Specialist Group - Co-Chair, North American Bears Expert Team

Additional authors: James Jonkel and Erin Edge

When human populations and settlements expanded into places where bears live and find food and shelter, an extensive history of human-bear conflicts (HBCs) developed. This is what is happening In Missoula, Montana and in many areas where bears and humans overlap. Many people think that the increasing numbers of bears and HBCs are the result of increasing bear populations, but that is only partially correct. Both American black bears (*Ursus americanus*) and grizzly bears (*Ursus arctos*) have been involved in HBCs in the Missoula area. To apply the concepts of the Bear Smart Community Program to the Missoula area, a group of concerned citizens, local government officials, several non-governmental organizations, bear biologists, agency bear managers, and private individuals formed the Missoula Bear Smart Working Group. When applying the Bear Smart Community Program in the Missoula area, the Missoula Bear Smart Working Group focused on human-bear conflicts that are related to urban/suburban human-related foods. From 2003 to 2021, Montana Fish, Wildlife and park (FWP) averaged about 500 human-bear conflict complaint calls each year in the Missoula Valley. During that 19-year period, 73 black bears were killed for management reasons or killed by homeowners during conflicts, 150 black bears were trapped and relocated and 72 died in vehicle-related incidents. Approximately 50% of the conflicts were due to garbage, followed by birdfeeders, fruit trees, livestock and pet feed, and human foods including freezers in garages. To address these issues, we developed a detailed hazard assessment that describes in detail where, when and why human-bear conflicts occurred. This hazard assessment was the foundation on which we built a separate conflict management plan. We worked with the city and county to identify existing City and County policies and efforts related to human-bear conflict management. We then enhanced these policies using city and county ordinances, and public outreach and education to reduce the availability of bear attractants in the Missoula area. We received unanimous support to implement ordinances and regulations to control human food availability to bears from city and county governments and from almost all residents of Missoula. The process of making Missoula a Bear Smart Community is an adaptive management process and requires continual monitoring, regulatory and non-regulatory actions, and revision of decisions based on monitoring results.

36. Reducing Bear Conflicts Through Attractant Prioritization

Anna L. Baize, Human Dimensions Lab, Montana Cooperative Wildlife Research Unit, Wildlife Biology Program, University of Montana

Additional Authors: Brianna P. Lipp, Alexander L. Metcalf, and Sarah N. Sells

As human populations grow and expand into bear habitat, conflicts between people and bears are becoming more frequent. A primary driver of these conflicts are unsecured attractants, such as garbage, fruit trees, and livestock carcasses. Prioritizing how to mitigate attractants is challenging given the diverse array of attractants, unique aspects of each community, and variation in people's motives and constraints. Decisions based on informal observations or broad strategies that address all attractants simultaneously may be less effective than measures targeted at specific attractants. We adapted a Community-Based Social Marketing model and techniques from Structured Decision Making to assess which attractants have the greatest potential to reduce conflicts and piloted this framework in the Bitterroot Valley of Western Montana with a survey of local bear conflict mitigation experts. The framework considered three main factors: (1) the relative contribution of each attractant to human-bear conflicts, (2) current rates of securement, and (3) the likelihood of behavioral change among residents. By simultaneously considering these factors, our framework provides a structured, data-driven method for setting effective attractant management goals. We discuss how this framework offers conservationists and communities a practical tool to allocate resources more effectively, reduce human-bear interactions, and improve long-term bear management strategies.

37. North Bay Bear Collaborative- How Stakeholders are Coming Together Re-Member a Bear Culture in San Francisco's North Bay

Meghan Walla-Murphy, North Bay Bear Collaborative

In 2016, a CA State Park biologist caught a mother black bear (*Ursus americanus*) and two cubs on camera in Sonoma County. While Sonoma County and surrounding areas once had a robust grizzly bear (*Ursus arctos*) population, due to extirpation, much of San Francisco's North Bay has been devoid of a bear presence for over 100 years. The confirmation of residential black bears in Sonoma County inspired a meeting between agency members, NGO's and biologists to discuss the significance of a colonizing black bear population near dense human neighborhoods. With nearly a million people living in Sonoma, Napa, and Marin Counties, the potential for human bear conflict is high. In 2019, to proactively mitigate these challenges, a group of 15-20 stakeholders gathered to create the North Bay Bear Collaborative (NBBC). Our diverse collaborative consists of local Tribes, vineyard owners, ranchers, private landowners, and county, state and federal agencies who have come together under the mission of "re-membering a bear culture in the North Bay." This presentation will share the multiple bear coexistence projects that NBBC has initiated. It will also demonstrate how our shared values and collaborative nature allows us to leverage resources, capacity, and funding. Our projects include two different Tribal Youth Bear Projects both in year five with no foreseeable end in sight. In addition to prioritizing youth and creating a legacy of bear advocates, we offer community presentations and outreach programs to educate the public on living with bears. We also have a robust wildlife camera project over all three counties. With some data sets beginning as early as 2013, we can see how, when and where bears are colonizing. These long temporal data sets also reveal pre and post wildfire behavior. Adding to our camera data, we are currently in year six of an ongoing bear DNA project working with UC Davis, local biologists, and over 100 volunteers. To help us analyze our large data sets and ensure that this information reaches land managers and the public we recently began working with a group of graduate students from UC Santa Barbara's Bren School. A guiding premise of NBBC, as written in our MOU, is to learn from bears and their habitat. We view bears as our teachers. This principle informs our actions and allows NBBC to grow organically and at a pace that suits bears, humans, agencies, and our more than human relations. In this current political era, we feel that NBBC is a model of conservation to be shared and emulated.

38. Implementation of Bear-Resistant Residential Waste Carts, How Bears are Breaking Them and Next Steps

Bob Hansen, WildSafeBC

The 2023 introduction of a new bear-resistant residential cart system for trash and organics raised expectations of significantly reducing human-bear conflicts. Local bears though, have shown their abilities to find and exploit cart vulnerabilities. This presentation describes the on-going journey with the system, black bears (*Ursus americanus*) brown bears (*Ursus arctos*) and organizations to meet the human-bear conflicts challenges that have arisen. The setting is the Alberni-Clayoquot Regional District (ACRD) on the west coast of Vancouver Island, B.C. Canada. In the years prior to the carts roll-out, many residents stored unseparated trash, organics and recycling in rubber-maid style plastic barrels. These containers were in way bear-resistant and were often stored in backyard sheds until pickup day. In 2021-2022, bears broke into over 100 sheds and 24 food-conditioned bears were destroyed. The ACRD then invested in the new system to reduce human-bear conflicts. Residents now have two certified bear-resistant carts for trash and organics. Each have brass carabiners and metal reinforcing for keeping the lids secured. A third non-bear-resistant cart was provided for clean recycling. Every effort was made to inform residents on best practices for managing their new carts. Education was delivered via door-to-door canvassing, public events, townhall sessions, local radio, the local newspaper and on social media. The ACRD created a video featuring WildSafeBC Pacific Rim community coordinators illustrating how to minimize the risk of bears accessing carts. The ACRD created a smartphone app providing a portal to comprehensive human-bear conflict prevention resource. The core message was and is that bear-resistant carts are not bear-proof. If bears can drag away carts to someplace like adjacent forest, where they can spend significant time, they can learn how to break into the carts. New provisions have been added in local bylaws requiring residents, with outdoor trash and organics carts, to keep their carts secured against wildlife. Outdoor carts must be secured with carabiners and anchored to something solid to prevent bears dragging the carts away. Despite these initiatives evidence suggests a significant proportion of residents are not taking these necessary actions. Significant levels of human-bear conflicts have resulted. In 2023 and 2024, many bears dragged away carts from residences. They discovered the vulnerability of the brass carabiners securing the trash and organic cart lids. There were 66 cart access incidents in 2023 and close to 200 in 2024. Seven bears were destroyed. There is an ACRD cart repair team. Since 2023 they have has been replacing broken

brass carabiners on damaged carts with stronger steel carabiners. Many carts with brass carabiners remain in service though. Many if not most residents, still do not anchor their carts. WildSafeBC Pacific Rim developed an action plan supported by the ACRD, the Districts of Tofino and Ucluelet, Ucluelet First Nation and Clayoquot Biosphere Trust to work collectively to mitigate this cycle of human-bear conflicts. Key elements include continuing education, replacing brass carabiners with steel ones and subsidizing cart anchoring supplies. In addition, there will be a move into using compliance and law enforcement tools to help change human behaviors.

39. Twelve Years of Studying & Preventing Human-Andean Bear Conflict in the Northern Andes of Ecuador, Imbabura Province

Andres Laguna, Prefectura de Imbabura, Big Mammals Conservation, Fundación Cóndor Andino

Additional Authors: Javier Torres, Fabricio Narváez, Dora Cuamacás, Sonia Narváez, Antonio Rodríguez & Lupe Mena

In the province of Imbabura, Ecuador, studies on the interaction between people and wildlife have shown a significant increase in conflicts over the last decade. Since the first study conducted in 2013, attacks on farm animals were recorded in 20 communities in two rural parishes. As of 2023, 291 incidents related to attacks on farm animals and 107 attacks on crops have been identified in 60 communities in 20 rural parishes and two urban parishes. The most frequent attacks on livestock have been caused by the Andean bear (*Tremarctos ornatus*; 83%), followed by the puma (*Puma concolor*; 16%), and, to a lesser extent, the jaguar (Panthera onca; 1%). Regarding crop loss, most is caused by the Andean bear (86%) and the white-tailed deer (14%). These interactions significantly affect the rural economy, especially livestock activities (cows, sheep, goats, pigs, alpacas) and crops (avocado, corn, passion fruit, mango, and mandarin), impacting 61% of the parishes in Imbabura. Two hundred Andean bears were identified through camera trapping in both mountain ranges, 10 of which were monitored using satellite tracking collars in the eastern mountain range. Two bears were relocated within Cayambe-Coca National Park, one bear was relocated using a helicopter and another bear is in a reeducated aversive process (in this case local people use an early warning system) to reduce conflict. Information has been generated on population status, feeding habits, displacement, and threats to their conservation. Regarding community participation, 23 communities and 1,260 students were raised with the ongoing "Coexistence is the Key" campaign and 129 families affected by Andean Bear livestock directly benefited from the KITs (electric fence, recycled material posts, automatic waterers, and organic fertilizer to improve pastures).

40. Achieving Coexistence With the Sun Bear in Northeastern India: The provision of Practical Co-Benefits to Communities is Critical to Achieving Long-Term Outreach Impact

Sushanto Gouda, Department of Zoology, Mizoram University, Aizawl, India

Additional Authors: Anthony J. Giordano

Most global bear populations are declining. Building public support for bear conservation, however, and overcoming community intolerance of human-bear conflict, often requires continuous and adaptive efforts. Whenever possible, such efforts could also innovatively address local needs. Here, we attempted to first identify those factors most influencing the attitudes of communities toward the sun bear (*Helarctos malayanus*) around Dampa Tiger Reserve (DTR), Mizoram, India. We then sought to understand if our outreach about sun bear ecology, methods for mitigating conflict, and improved livelihood options, had any long-term impact on community perceptions, local behavior, and livelihood practices. We interviewed a total of 950 locals over 5 years at three different intervals relating to our conservation programming: before activities, immediately upon concluding activities, and even several years later. Overall, we found a slight increase in community support for sun bear conservation efforts between our initial (77.05%) and final interviews (82.2%). However, we observed a significantly greater increase in support among younger (<40 years) respondents exposed to our outreach activities (from 72% to 88.5%) between our first and final interviews ($\chi 2=0.31$, $df=2$, $p<.050$). We also saw a >20% increase in support for sun bear and general conservation action among respondents lacking a formal education ($R2=0.71$, $p<.05$). Finally, we found that 56.58% of total respondents had ultimately adopted alternative livelihood options that we promoted, discussed, or shared with them during our outreach programs. Furthermore, these changes were concomitant with a measurable decrease in unsustainable agricultural practices, and an increase in forest cover, around DTR. Despite our net positive impacts, serious threats to biodiversity in the region remain, including commercial poaching, and planned expansion of crop monocultures; such threats underscore the continued need for effective enforcement tools and action, policies and practices that incentivize sustainability, and use of innovative outreach approaches.

41. How a Celebrity Bear Spurred a Community into Action

Kristin Combs, Wyoming Wildlife Advocates/Jackson Hole Bear Solutions

The increasing encroachment of humans into grizzly bear (*Ursus arctos*) habitat has led to escalating human-bear conflicts across the Greater Yellowstone Ecosystem. In Teton County, Wyoming, the highly visible presence of Grizzly bear 399 and her offspring in developed areas catalyzed a significant shift in public attitudes toward bear conflict mitigation. This presentation examines how 399's behavior highlighted systemic vulnerabilities, particularly unsecured anthropogenic food attractants, and spurred the formation of Jackson Hole Bear Solutions (JHBS), a community initiative aimed at reducing human-bear conflicts. Through investigation of previous community engagement and policy advocacy efforts, volunteer actions, and philanthropic support, JHBS effectively mobilized resources to address the primary cause of bear mortality in human-occupied landscapes: access to unsecured garbage. Key strategies included the deployment of bear-resistant waste containers, targeted public education campaigns, and advocacy for regulatory changes to require bear-proofing measures. Strategic philanthropic investments accelerated these efforts, enabling JHBS to subsidize and support citizen compliance with new regulations enacted by Teton County and the Town of Jackson. Since its founding, JHBS has helped distribute over 1,300 bear-resistant containers and has played a vital role in decreasing bear-human conflicts in the region. Data collected by local government demonstrates a measurable increase in compliance with bear-resistant garbage can ownership since the program's inception. The case of JHBS offers critical insights into the efficacy of community-driven conservation models, highlighting the importance of volunteer leadership, strategic philanthropy, and resident ease of access to resources in promoting human-wildlife coexistence. Lessons from the Teton County experience suggest that early intervention, community ownership of solutions, and the use of charismatic megafauna as focal points for engagement can significantly enhance the effectiveness of conflict mitigation strategies. This model provides a replicable framework for other regions facing increasing human-carnivore interactions due to habitat fragmentation and climate-driven range shifts.

42. People Living in Harmony with Bears: A Community-Centered Model from Lake Tahoe

Devon Barone, BEAR League Lake Tahoe

The BEAR League is a nearly 30-year-old grassroots nonprofit based in the Lake Tahoe Basin, supported by 2000 members. We've created a community-centered model for mitigating human-black bear (*Ursus americanus*) conflicts. Our mission, People Living in Harmony with Bears, drives everything we do, and it's grounded in the understanding that coexisting with bears is a collective effort. Community-based conflict mitigation is essential because it sends a unified message to bears. When everyone in a community communicates the same boundaries, such as ensuring garbage is secured, homes are closed off, and bears are made to feel uncomfortable in human spaces, bears learn to avoid us. Mixed messages only lead to comfort around humans, which can cause bears to break into houses or behave in ways that put them at risk. In a tourism-based economy, including visitors in our outreach is essential. At the core of our work is a 24/7 live hotline, staffed by trained employees and volunteers who offer immediate assistance to residents and visitors facing bear-related issues. This service provides the guidance and support people need at any hour, fostering a sense of security and reassurance that we're here when the community needs us most. Our extensive network of 150 trained active volunteers, embedded in nearly every neighborhood around the Tahoe Basin, serves as the backbone of our organization. These dedicated individuals not only respond to calls but also engage in local outreach, education, and hands-on aversion techniques. Their presence reinforces the idea that effective conflict mitigation is a shared responsibility rooted in community involvement and stewardship. Education is the foundation of our approach. Alongside the hotline, we conduct outreach events, distribute educational materials, and maintain an active online presence to spread knowledge about bear behavior and best practices for coexistence. By demystifying bears and promoting understanding, we aim to reduce fear and encourage respectful interactions with these incredible animals. The strategies we teach and implement are designed to deter bears from human-populated areas without causing harm. Techniques include bear-proof garbage containers, electric fencing, and helping people understand bear body language to respond appropriately. When necessary, we respond in person to help evict a bear from a house or crawl space, or to set up an electric "unwelcome mat" that discourages bears from entering homes. By positioning bears as essential members of our shared environment, we foster a culture of empathy and responsibility. Our work

demonstrates that when communities are equipped with knowledge, resources, and support, living harmoniously with wildlife is not only possible but sustainable. The BEAR League's community-based model offers a replicable framework for human-wildlife conflict mitigation, and so far as we know, is unique in its around-the-clock availability, neighborhood-level volunteer integration, and hands-on, compassionate response. Through these strategies, along with education and proactive aversion techniques, we're building a resilient community capable of coexisting with its native black bear population. Our experience shows the importance of community involvement and consistent messaging in addressing the challenges of human-bear interactions.

43. A Cooperative Approach to Managing Human/Bear Coexistence in an Urban Environment

Holly Reisner, Executive Director, North Shore Black Bear Society

The North Shore Black Bear Society (NSBBS) has existed since 1999 when 39 bears were shot on the north shore of Vancouver alone. Since that time, NSBBS has developed an approach to keeping bears and other wildlife safe that relies strongly on relationships. The presentation will outline the history of NSBBS, structure, funding model, and the various organizations that NSBBS partners with and exchanges information with. It will outline our supportive approach to helping residents with attractant management and fear reduction through education and outreach in many forms, such as school and community group presentations, door to door neighborhood outreach, wildlife signage, responses to wildlife sighting and attractant sighting reports, bear safety and bear spray training, media and social media, amongst others. A key part of NSBBS's outreach is to help mentor and support other fledgling groups in communities across BC and beyond by promoting our cooperative model. We are proud of the trust that we have built with our residents and agencies, and largely attribute the reduction in behavior-related bear deaths to two per year for the past two years to these relationships. We continue to strive for that number to come down to zero.

44. An Apple a Day Keeps the Bear Away

Kristina Boyd, Pink Bench Distilling

Additional Authors: Shawna Kelsey

One of the most challenging aspects of building long-term community-based conservation initiatives is ensuring financial and social sustainability. This challenge is exacerbated in small rural communities, where per-capita impacts of initiatives are not competitive for grant funding, and where social values around natural resources are predominantly utilitarian. Troy, Montana, in the center of the Cabinet-Yaak Grizzly Bear Recovery Zone, is such a community. This presentation explores a 10-year case study of community-driven efforts in Troy to foster conflict prevention in financially creative and culturally compatible ways. Federal and state conflict managers have worked for decades in the Cabinet-Yaak to promote community bear safety, often alone against the prevailing social climate. Their efforts are gaining more acceptance through increased community-based bear aware initiatives focused on culturally compatible program development. In 2015, grassroots community-based efforts started with an Apple Festival funded through a federal Farmers Market development grant and hosted in partnership with the local Farmers Market. The event continues today with bear education activities, an apple pie contest and volunteers pressing over 3 tons of local landowner apples each year. In 2020, Troy's bear-aware effort evolved to include a bear ranger position funded through various grants and administered in partnership with Kootenai National Forest. This position roamed popular backcountry trails and frontcountry campgrounds within the Cabinet-Yaak, engaging the public in one-on-one bear spray trainings and conversations about bear biology and safety, and collecting data on demographics associated with bear spray and firearm use. In 2023, a fruit gleaning-focused distillery began operations and created the Kootenai Fruit Gleaning Program funded through a Vital Ground Conservation Partners Grant and administered through the Kootenai River Development Council. The distillery also engaged 94 small local investors, few of whom invested because of the business' conservation focus but all of whom enabled the business to launch its fruit gleaning and apple brandy program. To date, the distillery has used over 5 tons of gleaned fruit for brandy production, with eventual sales profits to support bear conservation in the Cabinet-Yaak. Today, Troy's efforts have grown to include city park bear-resistant food storage and garbage management, as well as a bear-safe home and business composting program and hands-on demonstration site. Grant funding remains difficult to secure, so efforts remain focused on culturally compatible value propositions that can lead to

self-sustaining programs. Troy's bear-aware efforts are an example of a long-term community-based conflict prevention initiative that is seeing success through consistent engagement, culturally compatible programs, flexible funding partnerships, innovative risk-taking, and integrative problem solving.

45. Education is Not Enough: Empowering Community Organizations for More, A Case Study from Girdwood, Alaska

Alayna DuPont, Founder, Girdwood Bear Aware

In 2018, Girdwood Bear Aware (GBA) was created to address high levels of human-bear conflict with both black bears (*Ursus americanus*) and brown bears (*Ursus arctos*). Girdwood residents had come to accept bears inside of dumpsters and inside of homes as commonplace. A municipal ordinance requiring bear-resistant trash storage was passed in 2019. Since then, GBA volunteers have worked to educate the community and implement proactive solutions. GBA began active hazing of bears by volunteers in 2019 and brought Wind River Bear Institute in on contract in 2020 and 2021, working under Alaska Department of Fish and Game permits each season. We have found that actively responding to conflicts and attractant issues has been a huge driver of success in the program. As a case study, the arc of change in Girdwood offers lessons learned and ongoing challenges for communities interested in implementing similar programs. Girdwood is representative of small, rural communities facing conflicts with either brown bears (*Ursus arctos*) or black bears (*Ursus americanus*) and lacking localized state or local law enforcement. Even in communities that have localized state or federal wildlife agencies, due to budgetary and staffing constraints, agencies do not have the capacity to provide the programs needed for success. We can all agree that collaboration is the key, but there is less agreement about what programs each entity might provide. Rather than simply provide education, GBA has found success serving as the first responder when human-bear conflict occurs. In a short time-period, GBA was able to reshape community discourse around bears by showing up and building trust around non-lethal management options. We will discuss the immediate increase in conflict following the implementation of the requirement for bear resistant trash storage as well as our 24-hour first response and proactive programs that have worked to create a culture of bear awareness in Girdwood. GBAs programs offer an example of what short-term intensive support from community organizations and bear resistant infrastructure can accomplish. We will also discuss some of the challenges we have faced and continue to face as we look ahead. GBA was successful in building relationships with state wildlife management personnel, however, there was mistrust on both sides. As staff have turned over, maintaining relationships is a challenge. The capacity to set time aside for collaboration is low on both sides. Additionally, it has been difficult to find funding to ensure that our programs are staffed beyond volunteer contributions. Much of our success is because of the commitment of key individuals. Without that critical buy-in, these community programs would be difficult to sustain.

46. Sloth Bear-Human Conflict and Local Communities' Perception in the Tadoba Landscape, India

Sandeep Sharma, Freelance Consultant

Additional Authors: Prajakta Hushangabadkar, Priya Jadhav, Nandkishor Kale, Sachin Shinde, Shahebaj Shekh, and Jitendra Ramgaokar

Human-wildlife conflict, particularly involving large carnivores, presents a growing conservation challenge across human-dominated landscapes. In India, this issue is intensified by the high dependence of rural communities on forest resources for their livelihoods. The central Indian landscape, particularly the Greater Tadoba region in Maharashtra, exemplifies this strain, where increasing interactions between large carnivores, including sloth bears (*Melursus ursinus*), leopards (*Panthera pardus fusca*), and tigers (*Panthera tigris*) and humans have led to a sharp rise in conflict cases, economic losses, and fatalities. Our study investigates the socio-ecological dynamics of human-bear conflict in the Tadoba-Andhari Tiger Reserve (TATR) and its adjoining corridor, with a focus on understanding community perceptions, spatial-temporal conflict patterns, and the roles of socio-economic factors and institutional stakeholders. We conducted semi-structured questionnaire surveys in the Tadoba landscape, where we interviewed over 300 respondents from 55 villages in 2022-2024, asking questions about local communities' knowledge and perception about large carnivores including sloth bears. We also collated and analyzed human-conflict data for a period of 12 years (2010-2022) and reported 441 incidents of large carnivore-human conflict incidents. Out of these about 1/5th of the incidents were related to sloth bears. Our findings reveal that despite their negative interactions with sloth bear, the local community still think that the bears are important for the forests and most of the attacks are circumstantial. These negative encounters frequently occur during activities like fuelwood or non-timber forest product collection. Fragmentation of corridors, unsustainable resource use, and increasing human encroachment exacerbate competition and interaction-interface between people and carnivores. Despite these challenges, local communities play a pivotal role in conservation outcomes. Our study emphasizes the importance of community-based conflict mitigation strategies, including awareness programs, timely compensation schemes, and collaborative efforts between governmental and non-governmental institutions. By integrating community insights with spatial conflict mapping and connectivity models, our work aims to inform practical conservation strategies that foster coexistence. Our study highlights the urgent need to preserve functional corridors and support local livelihoods to reduce conflict and promote tolerance, ultimately contributing to the long-term viability of large carnivores like sloth bears in the human-influenced landscapes of central India.

47. Bears of Nepal: Current Status and Human-Wildlife Conflict Dynamics

Rishi Baral, Laboratory of Wildlife Biology and Medicine, Hokkaido University

Additional Authors: Rajan Prasad Paudel, Rabin Kadariya, Naresh Subedi, Michito Shimozuru, and Toshio Tsubota

This study investigates the status of bear species in Nepal, their distribution across different ecological zones, and the dynamics of human-wildlife conflict associated with them. Nepal is home to three bear species: the brown bear (*Ursus arctos*), the Asiatic black bear (*Ursus thibetanus*), and the sloth bear (*Melursus ursinus*), each occupying unique habitats ranging from tropical lowlands to high Himalayan landscapes. Data for this study were collected through field surveys, camera trap footage, scat analysis, and documented cases of conflict, supplemented with national park reports and scientific publications. The brown bear is mainly found above the tree line (4,000–6,000 meters), preying on small mammals such as pikas and marmots. The Asiatic black bear inhabits temperate forests up to 4,000 meters and feeds on wild fruits, acorns, and agricultural crops, depending heavily on seasonal availability. The sloth bear resides in the tropical and subtropical lowlands and primarily feeds on insects such as termites and ants, which constitute over 90% of its diet. Human-bear conflicts are most associated with the Asiatic black bear, which often kills crops and livestock, causing significant economic losses. Sloth bears are also frequently involved in conflict, particularly in the Terai region. The study emphasizes the need for effective conflict mitigation strategies, community awareness, and habitat management to reduce conflict and promote bear conservation. These findings contribute valuable insights for policymakers and conservation practitioners working to ensure human-bear coexistence in Nepal.

48. Killing the "Human-Eating Bear": Building Bidirectional Fear between Tibetans and Tibetan Brown Bears in Eastern Tibetan Plateau

Yuqiu Li, MS Candidate, Yale School of the Environment

The human and Tibetan brown bear (*Ursus arctos pruinosus)* relationship on the Tibetan Plateau has been at the center of attention as one of the main human-wildlife conflicts in China. While conservationists usually cite the recent changes of indigenous practice of storing food and continual building of houses in bear habitat as causes of conflicts, local Tibetans say "fear" is the root of the problem. The diminishing fear in Tibetan brown bears towards humans was created by the banning of guns in 1996. The saying "དྲེད་མོ་མྱི་སྐྲག།རང་སྐྲག།" (dhre mon ni dhra ran dhra) is found in many Kham regions of Tibetan plateau. It translates as "bears fear humans and humans fear bears" to describe the situation when the two encounter. In Yushu, local Tibetans add the belief that bears are afraid of human faces, inferred from empirical evidence of all local bear attacks aimed at human faces. This presentation decodes a specific story of the "human-eating-bear" as the end of an era—when human can still defend themselves before the powerful bear. Utilizing ethnographic materials, this presentation sheds light on Tibetan perspectives on human and bear coexistence. Tibetans are aware of the fear bears have towards human, and it is actively maintained and built as a key means for biosecurity as well as to dwell on the Tibetan Plateau. The bidirectional fear between Tibetans and Tibetan brown bears is a key actant in maintaining human livelihoods. When fear is being un-built because of gun banning, the ability to dwell also diminishes. As human activities change in the last several decades, so did the spatial expansion of human and bear conflicts.

49. Human-Bear Conflict in Bhutan: A Conservation and Livelihood Challenge

Sonam Wangchuk

Bhutan, one of the world's recognized biological hotspots, is a unique landscape where humans and rich biodiversity coexist in close proximity. Among its diverse wildlife, Bhutan is home to two species of bears: the Asiatic black bear (*Ursus thibetanus*), also known as the Himalayan black bear, and the sloth bear (*Melursus ursinus*), although the presence of the latter still requires final scientific validation. Reports of human-bear conflict have emerged from 14 of the country's 20 districts (personal communication), with increasing incidents particularly in rural and forest adjacent areas. These regions experience overlapping spaces between human settlements and natural bear habitats, leading to frequent and sometimes dangerous encounters. Although bears are protected under Bhutan's Forest and Nature Conservation Act of 1995, the growing number of conflicts poses serious challenges to both wildlife conservation and rural livelihoods. Bears often cause crop damage, particularly to maize and potatoes which is a staple agricultural product in rural Bhutan, property damage to isolated tshamkhangs (retreat centers), kill livestock, and occasionally injure or even fatally attack humans. These conflicts not only endanger people and property but also jeopardize bear populations, as retaliatory killings by affected farmers have been reported. This presentation highlights the increasing scale of human-bear conflict in Bhutan. Records from Jigme Dorji Wangchuck National Referral Hospital (JDWNRH) documented 34 bear mauling cases from 2015 to 2019, while the year 2020 alone saw over 30 incidents with escalating trends in eastern and central regions. One particularly alarming incident occurred in April 2025, when a potter in broad daylight was attacked while transporting food for tourists to Kabji Hokotsho, a sacred and popular destination in western Bhutan (personal communication). While such incidents are not common, they underscore the mounting risks and the need for proactive, sustainable solutions. In response, the Royal Government in collaboration with Desuung – Guardian of Peace, has introduced several initiatives to reduce bear-human encounters. A flagship initiative is His Majesty's "Million Fruit Trees Plantation" project, launched in March 2022 engages thousands of Desuung volunteers, many of them unemployed youth, to plant high-value fruit trees on fallow private lands and along forest peripheries for creating buffer zones that can redirect bear activity away from human settlements. Complementing this, the Government has implemented wildlife-friendly farming techniques, established compensation schemes to offset farmer losses, and launched public awareness campaigns. These efforts aim to ease the financial strain on affected communities, promote sustainable agricultural practices, and encourage coexistence with wildlife. Together, these strategies reflect Bhutan's holistic approach to balancing biodiversity conservation with the well-being of its rural citizens, striving to maintain harmony between people and nature in a rapidly changing environment.

50. Human-Bear Conflict in Bhutan: A Conservation and Livelihood Challenge

Astghik Markosyan, The German Nature Protection Union (NABU)

Additional Authors: Mark Gudkov

In recent years, the frequency of brown bear (*Ursus arctos*) activity in rural areas of Armenia has significantly increased, particularly in the Vayots Dzor region. This is driven by the high activity of people in the wild habitats and poor management of anthropogenic attractants. These visits often result in significant damage to orchards, poultry coops, and property, driving fear and resentment among local residents. To better understand the movement patterns of these bears and the seasonal dynamics of these conflicts, we launched a community-based monitoring project in 2025. Camera traps were installed in high-conflict villages in collaboration with local community members. The goal was to collect baseline data on bear presence, frequency of entering human settlements, and behavior around them. The camera traps are placed in areas such as orchards, poultry yards, and near livestock shelters, locations frequently targeted by bears during food-scarce periods. From May through December 2025, over 1,200 images and videos of bears were recorded. Preliminary results show that bear activity peaks in August and September, which overlap with fruit harvest season and increased attractions in village gardens. The footage identified patterns of nocturnal activity and repeated visits of at least seven individual bears to the area. While data collection is ongoing, the initial data from camera traps has enabled us to identify and map conflict hotspots, recognize recurring individuals, and track the frequency of their presence in the villages. As a next step, we recently launched a pilot initiative. Two real-time camera traps integrated with AI-powered deterrent devices (light and sound boxes) were deployed to test rapid response interventions. While the impact measurement is still ongoing, these tools offer a strong potential for providing early warnings and reducing conflict without harming either bears or people. All results are regularly shared with local communities, whose feedback is actively incorporated into the project's design and adaptation. This project is an important step linking community knowledge and new technologies to address human-wildlife conflict and help inform national policies.

51. Asiatic Black Bear Attacks in Kashmir and Community Engagements: A Way Forward

Aaliya Mir, Wildlife SOS

Additional Authors: Swaminathan Shanmugavelu, Thomas Sharp

The Asiatic black bear (*Ursus thibetanus*) is not considered a frequent aggressor across much of its global range, which spans 18 countries. However, the Kashmir Valley in India presents a contrasting scenario, where human-bear interactions, particularly attacks, are relatively common. Between 2000 and 2020, a total of 2,357 black bear attacks were documented in the valley, with the South and North Divisions being the most affected. Notably, the South Division recorded the highest number of incidents. Here we present a 15-year study of the conflict situation in the South Division of the Kashmir valley between 2010 and 2024. The data is divided into three five-year intervals 2010–2014, 2015–2019 and 2020–2024. During this 15-year period, a total of 554 black bear attacks were documented. Males made up 428 (77.25%) of the victims, while the rest of the victims 126 (22.75%) were female. There was a significant decline in black bear attack frequency in recent years, 327 (59%) attacks from 2010–2014, to 151 (35%) from 2015–2019, and 76 (17%) from 2020–2024. Correspondingly, fatalities (total n=30; 22 males and 8 females) decreased from 15 (2010–2014) to 8 (2015–2019) and 7 (2020–2024). Similarly, injury cases dropped from 314 to 141 and then to 69 over the same periods. This downward trend is largely attributed to proactive community engagement initiatives spearheaded by the Wildlife Protection Department and Wildlife SOS, the establishment of rapid response teams, the creation of wildlife control rooms, and the enhanced training and equipping of frontline staff to effectively manage human-bear conflicts. This study highlights the pivotal role of community involvement and institutional preparedness in mitigating human-wildlife conflict in the region.

Poster Session Abstracts

1.On Bracketing the Bear: Field Notes on Developing a Relational Ontology for Predator Microhistory

Caroline Abbott, PhD Student, University of Cambridge

Additional Authors: Jessica DeWitt

Though Timothy Mitchell's "Can the Mosquito Speak" established the historiographic precedent for 'listening' for nonhuman historical agency across time, history has long redacted animals from our sources and analysis, and so, written the ways historians engage with, or are not equipped to engage with, animal history. As with human histories, those of bears (*Ursidae*) and other predators 'say' more when they are put into conversation with other historical actors relevant to their lives. What if the tools we used to explore their histories were as advanced as those we use to study our own? To this challenge, we have developed the Predator Microhistory Network (PMN), a fledgling GIS project which deconstructs narrative to geolocate, categorize and provide tools for engaging the common threads in predator microhistory. Our project aims to build a relational ontology capable of re-articulating the often-fragmented details in such sources to improve understanding of the descriptive interlinkages relevant to the historical experiences of predator populations. Its code is constructed to accommodate the multi-modal aggregation of individual stories otherwise isolated in archive and place them in conversation with geospatial, and thematic relationships to engage the entanglements of relevant details between them. Following scholars whose work demonstrates how the confluence of biology and predator microhistory can describe social themes and geospatial relationships (including Wilder et al.'s Polar Bear (*Ursus maritimus*)–Human Information Management System (PBHIMS) and Robert Marks's *Tigers, Rice, Silt and Silk*), PMN approaches the physical, thematic, and spatial relationships between predators, prey, livestock, domestic animals, humans, and environment to historicize human-predator relationships for scholars and the public. Engagement with biological and ecological context is increasingly relevant to many animal historians. As Susan Nance has observed, scientific inquiries offer insight on animals which historians must otherwise extract from archives designed to center human history. as Foote and Gunnels establish, understanding modern populations of predators provides contextual grounding as to what can and cannot read in historical sources, as well as how to frame research questions based on relevant dialogue with the other agencies to which predators relate. Alongside categories which approach the details of involved human actors such as names and locations, we are working to expand our implementation of animal-centered categories to promote scientific literacy on

Bear-relevant details in the history community including age, sex, dental health, cutaneous disease, maternal status, den site details, and habituation in concert with our goal to reframe archival typicalities. As the project continues to develop through its beta-launch focus on the histories of Bears, this abstract proposes a case study which both captures the unique dynamics of human-Bear conflict and brings the project's successes, challenges, and questions into conversation in advance of its eventual expansion towards inclusion of the histories of other species in future phases to which the entangled, multispecies archival recovery it attempts will attend. Towards advancing social and scholarly understanding, we must expand on earlier questions: are we allowing archival animals to "talk to" one other? Are we listening?

2. An Evaluation of Novel Hazing and Deterrent Methods for Polar Bears

Kyle Garrett, Graduate Student, Brigham Young University

Additional Authors: Tom Smith, Geoff York. Gordon Stenhouse, Joseph Northrup, and Lyle Walton

Climate change is driving polar bears (*Ursus maritimus*) to abandon sea ice and occupy areas near human settlements in the Arctic (Fischbach et al. 2007, Wiig et al. 2008, Amstrup et al. 2011). This shift has led to a rise in human-bear conflicts (Wilder et al. 2017, Smith et al. 2023), necessitating innovative strategies to ensure the safety of both humans and polar bears. The primary goal of this project is to develop methods that protect human interests while minimizing risks to bears and reducing the need for removals, thereby contributing to conservation efforts. We focus on four areas of aversive treatment innovation: drones, ultrasonics, alternatives to capsaicin-based bear sprays, and conductive fabrics for bear deterrence. Recent advances in drone technology have enhanced their capabilities, including longer flights, larger payloads, and ease of operation (Chan et al. 2018, Emimi et al. 2023). Drones show promise as tools for hazing wildlife (Brinkman 2020, Howell et al. 2022, Ranglak et al. 2024), and have been successfully tested on grizzly bears (*Ursus arctos*) (Sarmento 2025). New drone features like active tracking allow drones to pursue targets autonomously (Hansen and de Figueiredo 2024). Drone-hazing offers advantages such as reduced injury risk to bears, bear dogs, and humans as well as lower treatment costs over time. We aim to gather data on the effectiveness of drones for aversive conditioning/hazing of bears. Aversive conditioning methods exploit the senses of target species, including olfaction, vision, tactile, and audition (Conover 2001, Appleby et al. 2017, Keken et al. 2024, Blackwell and Fernandez-Juricic 2013, Seamans et al. 2013, Smith et al. 2018, Bowles 1995, Singh et al. 2024, Terrade et al. 2024). However, minimal research has explored sound as an aversive treatment for bears (Wooldridge and Belton 1980, Green 1982). Preliminary work by T. Smith (pers. communication) showed promising results with grizzly bears in Alaska. We seek to explore ultrasonic sound as a tool for alerting bears to human presence and hazing them from specific areas. Capsaicin-based bear sprays, introduced in the mid-1980s, have proven effective in protecting people from aggressive bears (Herrero and Higgins 1998, Smith et al. 2008, Wilder et al. 2023). However, some countries have banned these sprays due to their potential use as weapons against humans (C. Groff, pers. communications). This has hindered brown bear population restoration in Europe. Additionally, some US National Parks have also prohibited bear spray, citing low attack rates (NPS 2021). To

address these issues, we propose testing chemical sprays that deter bears without incapacitating humans, such as citronella and skunk odors. Electricity has proven effective for protecting resources from bears (Wooldridge 1983, Davies and Rockwell 1986, Breck et al. 2006, Smith et al. 2018). However, proper installation of electric fencing can be challenging. We propose testing electrically conductive fabrics, which incorporate conductive materials into textiles (Knittel and Schollmeyer 2009). These fabrics could protect tents, kayaks, inflatables, food, and game meat more effectively and with less human error than traditional methods.

3. Human-Bear Conflict in North America: An Analysis of Patterns and Outcomes

Tom Smith, Brigham Young University

Human-bear (*Ursus spp.)* conflict (HBC) is an increasingly significant concern facing wildlife managers across North America. These HBC incidents may result in injury, loss of life, and negatively impact bear conservation efforts. It is essential that we understand the factors associated with human-bear conflict in North America so that wildlife managers can make appropriate, science-based recommendations about how to assess risk, and prevent and/or survive such incidents. To that end, we present this comprehensive analysis of > 2,100 HBCs in the United States and Canada, ranging from 1880 to the present. This analysis includes the three native North American bear species: black bears (*Ursus americanus),* grizzly bears (*U. arctos),* and polar bears (*U. maritimus)* and assesses the role that twelve key variables play in HBCs. We collected data from various sources, including newspapers, official government reports, and verified personal accounts. These sources were summarized and recorded in our North American human-bear conflict database by graduate and undergraduate students in the plant and wildlife sciences department at Brigham Young University. The data was then analyzed for patterns relevant to the outcomes of human-bear conflict encounters. Statistical significance of variables was established using the Akaike's Information Criterion (AIC) with a significance threshold of $p \leq 0.05$. Our results found that grizzly bears are involved in HBC much more often than black or polar bears, but the latter two species may be more likely to engage in predatory behavior. Most HBCs were classified as surprise encounters, and the most common activity people were engaged in when an incident began was hiking or walking, followed by hunting and camping. In cases where a firearm was used, it was successful in deterring a bear in 78% of cases, and bear spray was successful 90% of the time. There was a clear, steady correlation between increasing group size and decreasing odds of human injury. Our results indicate that remaining in a group, having a deterrent and being proficient with it, and avoiding surprising a bear are important steps that should be taken to reduce human-bear conflict.

4. The Canine Conundrum: Is a Dog a Help or Hindrance in Bear Country?

Fern Luttrell, Student, Brigham Young University

Additional authors: Dr. Tom Smith, Stephen Herrero, Lana Ciarniello, Hank Hristienko, Erin Jacoway, Fern Luttrell, Linda Wiggins

In 2023, a tragic incident occurred in Canada's Banff National Park where two people and their dog died because of a grizzly bear (*Ursus arctos*) attack (Reuters, 2023). This occurrence revived discussions first reported by Hristienko and Herrero (2014) as to the potential dangers and benefits of bringing one's dog(s) into areas inhabited by bears. To address these questions, we analyzed 326 human-bear conflicts, between 1901 and 2023, that involved dogs, and the three main bear species found in North America: American black bears (*Ursus americanus) brown bears (Ursus arctos*), and polar bears (*Ursus maritimus*). Results show that most of the time (54%), the dog triggered the attack. Nearly 2% of dog owners died in these confrontations, whereas ten times more dogs died (23%) than people in dog-bear confrontations. It was considered that dogs could act as an alarm system in bear country and alert their owners to the presence of bears (Herrero, 2018). The limiting factor of this study is the newspaper article sources, and we acknowledge that the full details of every account are likely not present. However, we found that dogs only warn their owner of the bear's presence in 9% of cases. Incidents involving unleashed dogs outnumber those involving leashed dogs nearly six to one. While the data on leashed vs unleashed dog injuries is not significant, due to insufficient numbers, only unleashed dogs are capable of a specific pattern we noticed. 8% of dogs would encounter a bear and then immediately run back to their owner, bringing the bear chasing behind them. In those cases, humans were injured 70% of the time. While some dogs (33%) engaged with the bear, there were still a fair number of dogs that ran away (16%). The most surprising of results, however, was the humans' response to the bear conflict. We found that there was a significant portion of dog owners that risked their safety to protect their dog (29%), of which 16% physically fought the bear. Upon further analysis we discovered that women are nearly twice as likely as men to physically fight the bear to protect their dog; 40% of men fought while 77% of women did. By highlighting the complexity of human decision-making and the role of dogs in shaping bear encounters, this research contributes to changing the narrative around human-bear conflict, from one of unpredictable wildlife attacks to one of human behavior, responsibility, and informed coexistence. It is our hope that finding these behavioral responses to human-dog-bear conflict will educate dog owners on safe practice in bear country and help bear country managers draft data-based guidelines regarding domestic dogs in bear country.

5. Change For the Better

Tracey Halladay, Elkford Urban Wildlife Committee

For the last several years, there has been concerns raised by several groups regarding the increasing number of bears being destroyed in BC because of human-bear conflicts. In our community, we have previously had a very good track record for keeping attractants secured and bears moving safely in and around the community. That all changed several years ago when our commercial garbage containers were changed to a rubber style one with 2 small clips on the top. The bins allowed continuous access to attractants by wildlife. Creating a growing concern from both our Urban Wildlife Committee and citizens of the community. As we operate as a committee under the District of Elkford and make recommendations for improved ways of dealing with solid waste in the community, we recommended that the District commit to becoming a Bear Smart community and replace the existing bins, that were not working, with steel self-latching wildlife resistant ones. There was discussion about this, however, until Conservation issued an order in August of 2024, the co-operation from the District was very slow at happening. Finally in October of 2024, it was agreed that the best solution was to move to replace the commercial bins, starting with apartment complexes in town, with the steel ones. This did not happen quickly as being a community at the end of the road, there were no exiting contractors that wanted to provide this service. Bears (*Ursus arctos* and *Ursus americanus*) were active in the community until early January and were out again in February. Finally in March of 2025, the roll out happened. Most of the apartments have now been replaced with self-latching wildlife resistant bins. We also recommended that 2 community bins be placed in a central location for easy 24/7 access for people who cannot drive to the Transfer Station. Finally, the solid wasty bylaw was rewritten stating that any commercial customer who did not want to immediately switch to steel bins had 1 occurrence of a human-bear conflict before they were forced to adhere to the proposed replacement. Additionally, all residential bins are scheduled to be replaced with clipped bins in June of 2025 and the push will continue to eliminate individual residential pick up and install all community bins by 2030.

6. Saving Bears, One Trash Can at A Time

Daniela Kohl, Founder, Roaring Fork Valley Bear Coalition

As an organization, our goals are simple: work with residents and educate everyone to be more aware of their behaviors. We are proud of our "boots-on-the-ground" actions to help "NeighBEARhood" secure trash lures, bird feeders, and other attractants. We have also found success posting yard signs and banners after sightings, as they work as Bear Alerts. We will highlight our solution-based community outreach. Roaring Fork Valley Bear Coalition (RFVBC) hosts weekly "Bear Info Booths" at farmers' and community markets throughout summer and fall. At these, we focus on several points: RFVBC works alongside Colorado Parks & Wildlife, supporting their mission of keeping wildlife wild. We recognize and respect CPW as the experts in black bear (*Ursus americanus*) wildlife management and provide information to the public about their work. RFVBC focuses on creating organic relationships that benefit humans and bears. It aims to improve coexistence and keep bears out of town and wild while prioritizing human safety and well-being. We encourage visitors to work with local governments and agencies/HOAs to enact ordinances that promote trash control. Kodiak BRCs, electrified bear deterrent mats, blaster sirens, and bear spray are available for sale, loan, or free to those in need. RFVBC provides Bear Care Kits with information and helpful items: English/Spanish bilingual bear-aware educational fliers; stickers; BearWise® magnet, whistle, backpack; and bear straps.

7. Local Youth Collaborations

Daniela Kohl, Founder, Roaring Fork Valley Bear Coalition

Roaring Fork Valley Bear Coalition (RFVBC) partners with local youth organizations and RFVBC educates youth to be more aware of the habits and actions of wildlife. We post on our website BearWise® tips on Attracting Birds, Not Bears! This information encouraged us to initiate a proposal to the Cub Scout program, replacing the crafting of wooden bird feeders with nesting boxes. RFVBC encourages residents to plant bird-friendly colorful flowers without attracting deer and to put out water fountains and water basins for birds, especially since we live in a dry climate. RFVBC works with youth organizations to make, distribute, and install the 4-Strap Design (see IBA Spring Newsletter 2023, vol.32 no.1). Residents in Montana, Tennessee, and New Hampshire have asked for and have started using RFVBC straps. We continue to stress that these straps are a first-step deterrent for many people before investing in BRCs. RFVBC has worked with local teens to make Rocky Mountain Black Bear Exhibits to help younger children see and understand more about our local bears in a visual display that sparks questions and interest in learning more.

8. Raising Awareness Through Media to Prevent Human-Bear Conflict

Liliya Kuzmina, inDEX Consulting Company

Our work is devoted to the analysis of information in the media on conflicts between humans and bears in populated areas and in areas near the location of nature reserves and other categories of Protected Natural Areas (PNA) inhabited where does he live by the Tien-Shan Brown Bear (*Ursus arctos Linnaeus*, 1758, ssp. *Ursus arctos isabellinus,* Horsfield, 1826). Only one subspecies lives in the Republic of Uzbekistan: the Tien Shan brown bear. It is listed in the Red Book as vulnerable, a widely but mosaically distributed subspecies. Status 2(VU:R): It lives in protected natural areas on the spurs of the Western Tien Shan and Western Pamir-Alai. After collecting information published in the social, print and television media and on the information channels of the Ministry of Ecology for the period from 2020 to 2025, it was noted that every year, conflicts occur between bears and residents of settlements located near PNA or directly to PNA in settlements of historically established residence of the indigenous population. Such conflicts are related to the fact that brown bears enter populated areas in search of food or because they are young bears and as a rule, bears become victims of humans as a result of misunderstanding or lack of awareness of the conservation status and vulnerability of this subspecies of brown bears, and also due to the lack of educational information about the rules of conduct when encountering a bear and legally established liability for the capture or destruction of species with protected status. According to the information collected, in most cases such conflicts between bears and humans end in cruel treatment and the death of the animal. The social, print and television media widely covers cases of human-bear conflicts for the purpose of conducting educational work and the formation of an understanding of human responsibility to nature and its inhabitants.

9. Behavioral Reactions of Non-Denning Polar Bears to Industry Activities on the North Slope of Alaska, 2009–2023

Kate Lomac-MacNair, Owl Ridge Natural Resource Consultants

Additional Authors: Justin Blank, Megan Blees, Sheyna Wisdon, Craif Perham, Justin Crawford, and Lori Quackenbush

Evaluating wildlife reactions to human activities is an essential component of wildlife management. Polar bears (*Ursus maritimus*) from the Southern Beaufort Sea subpopulation overlap with oil and gas industry activities along the northern coast of Alaska (the North Slope). The U.S. Fish and Wildlife Service (USFWS) has promulgated incidental take regulations (ITRs) under the Marine Mammal Protection Act (MMPA), that authorize the nonlethal, incidental, and unintentional take of small numbers of polar bears, by Level B harassment, during industry activities since 1991. To estimate incidental Level B take of non-denning polar bears as part of the MMPA authorization process, USFWS defines an impact area, 1,600 meters (m) from industry activity, in which harassment is predicted to occur. The impact area is input into a predictive model to compute a forecast of take. USFWS's requirement that industry record and report polar bear observations in the vicinity of operations has resulted in a large dataset of polar bear behavioral reactions to industry activities. Polar bear observation reports (PORs), for non-denning bears, spanning 15 years (2009–2023) were examined and data including, group composition (e.g. cubs), season, type of nearest industry activity, whether a bear reaction occurred, and the distance at which a reaction occurred were evaluated. Overall, polar bear reaction to industrial activity was found to be variable and minimal. The probability of a reaction was affected by distance and type of nearest industrial activity but not by season or group composition. The probability of a reaction decreased significantly with farther distances and mobile activities had a higher probability of response than stationary activities. From 2009 to 2023, PORs were recorded for 3,539 groups of polar bears. Records that were incomplete, unconfirmed, non-industry related, resightings, and hazing events were removed, leaving records for 2,058 groups for analysis. Of these groups, 7% (140) exhibited a behavioral reaction to industry activities and 93% (1,918) did not react. Of the 140 groups that exhibited reactions 25% walked away, 47% swam away, and 28% ran away. To assess reactions relative to distance, 1,762 groups with reported distance were analyzed, of which 93% (1,636) did not react and 7% (126) reacted. Groups that reacted were significantly closer to industry activity (mean = 248 m, SD = 384.5 m) than groups that did not react (mean = 534 m, SD = 846.8 m; $t = 7.1149$, $df = 233.36$, $p < 0.01$). A probit regression model was used to estimate distances at which polar bears would react to industry activities, given specific reaction levels (10% to 1%), and showed that approximately 1.7% of polar bears would react to industry activities at the current 1,600 m impact distance, and approximately 4.6% would react at an 800 m impact distance (i.e., 50% distance reduction). Overall results indicated that the distance at which most polar bears react is less than 1,600 m, therefore the current impact area is conservative and could be reduced.

10. Emerging Attractant Issues Require Adaptive Coexistence Planning in Jasper National Park

James McCormick, Parks Canada

In Jasper National Park (JNP) in Alberta, Canada, most cases of historical human-bear conflict involved access to human food and garbage. During the 1970s through the 1980s, relocations and management destructions provided a temporary solution for dealing with management bears, but human-bear conflict persisted until the 1990s, when the landfill was fenced and bear-proof garbage bins became standard. As a national park with federal jurisdiction, JNP was able to enact and enforce policies to secure garbage and other human food attractants to a higher level than many other communities located in bear habitat. Subsequently, black bear (*Ursus americanus*) and grizzly bear (*Ursus arctos*) incidents remained relatively low for several years. Since 2015, incidents involving both black bears and grizzly bears have been steadily increasing in number, corresponding with an increased presence of black and grizzly bears in the Athabasca River valley near the town of Jasper. Incidents in recent years are attributed to attractants that were not historically important. Although the Jasper golf course has been present since 1925, and Jasper residents have grown fruit trees in their yards for decades, these attractants were not significant contributors to human-bear conflicts in the past. However, during the last 10 years, the golf course greens and non-native fruit trees in the townsite are responsible for 41% and 30% of attractant-related incidents, respectively. Emerging attractant issues require adaptive human-bear coexistence planning. Since 2021, the human-wildlife coexistence (HWC) team in JNP has been working on detailed coexistence strategies for different regions of the park, providing specific achievable actions and timelines to work towards stakeholder engagement and attractant management. Current strategies include a free tree removal and replacement program for non-native fruit trees in the townsite, a pro-active collaring and management program for bears in high human use areas, and an electric fencing plan for the golf course. Initial results show that the fruit tree removal and replacement program has made significant progress in reducing attractants in the townsite. The effectiveness of coexistence strategies is reviewed each year, and an adaptive management approach will allow JNP to deal with emerging attractant issues in the future.

11. Seasonal Trail Restrictions to Reduce Grizzly Bear-Human Conflict in Banff, Yoho and Kootenay National Parks

Steve Michel, Parks Canada

Additional authors: Kimo Rogala, Brianna Burley, Hal Morrison, Derek Petersen

During a two-decade period (1985-2005) in Banff and Yoho National Parks of Canada, numerous serious conflict encounters between grizzly bears (*Ursus arctos*) and park visitors occurred on popular backcountry trails in four specific areas. These incidents included eight grizzly bear attacks that resulted in grievous injuries to park visitors. Six of them involved female grizzly bears with cubs during the hyperphagic (berry) feeding season. Initial reactive management of these incidents resulted in lengthy area closures that precluded visitors from accessing popular trails. Visitors and park managers sought alternatives to trail closures that would: allow for continued visitor use and improve the overall visitor experience, reduce serious human-bear conflicts, minimize disturbance of grizzly bears, particularly females with offspring. Park managers trialed a variety of seasonal trail restrictions over 18 years (1994-2011) in four different areas. The main visitor activity in these areas is hiking, with the higher-speed activity of mountain biking contributing several conflicts in two of the areas. Annual fixed restriction dates and specific seasonal trail restrictions have varied depending on the area but have included: hikers must travel in tight groups of 4 or more, hiking groups must carry bear spray, mountain biking is not permitted, dogs are not permitted, backcountry campgrounds in some of the restricted areas are closed. Widespread public outreach and education, paired with extensive visitor informational signage was instrumental for achieving visitor compliance and reduction in conflict. To assess management effectiveness, we evaluated bear sightings and incidents and monitored visitor compliance (directly and via remote technology) for pre and post seasonal trail restriction periods. Following implementation of seasonal trail restrictions, non-conflict grizzly bear sightings increased, aggressive conflict incidents declined, total visitor disturbance events declined, and no contact encounters occurred. Monitoring indicated broad visitor acceptance of the seasonal trail restrictions, with higher rates of compliance during legally enforced trials versus periods where only voluntary restrictions were recommended. After public consultation and review, these management trials have been adjusted to longer-term seasonal trail restrictions and this approach are being applied to other bear-human conflict areas in Canada's National Parks, such as the Kindersley-Sinclair Trail within Kootenay National Park.

12. Effects of Environmental Conditions on the Use of Forward-Looking Infrared on Bear Den Detection in the Alaska Arctic

Nils Pedersen, Wind River Bear Institute

Additional authors: Todd J. Brinkman, Richard T. Shideler, Craig J. Perham

Industrial off-road activity in winter overlaps denning habitat of polar bear (*Ursus maritimus*) and grizzly bear (*Ursus arctos*) in the North Slope oilfields of Alaska, US. To prevent disturbance of dens, managers have used forward-looking infrared (FLIR) cameras to detect dens, but the effectiveness of FLIR under different environmental conditions is unresolved. Our objective was to evaluate the effects of environmental variables on FLIR-based techniques for arctic bear den detection. Using a FLIR-equipped unmanned aircraft system (UAS), we conducted observations of artificial polar bear (APD) and grizzly bear (AGD) dens from horizontal and vertical perspectives between December 2016 and April 2017. We recorded physical characteristics of artificial dens and weather conditions present during each observation. We captured 291 images and classified each as detection or nondetection based on the number of pixels representative of a den “hot spot.” We used logistic regression to model the effects of four weather variables on the odds of detection. We found that UAS-FLIR detects APDs two times better than AGDs, and that for both species detections are four times more likely from the vertical than horizontal perspective. Lower air temperature and wind speed, and the absence of precipitation and sunlight increased detection for APDs. A 1°C increase in air temperature lowered detection by 12% for APDs and by 8% for AGDs. We recommend that UAS-FLIR surveys be conducted early in the denning season, on cold, clear days, with calm winds, in the absence of sunlight (e.g., civil twilight). Our study further refines the application of FLIR techniques for arctic bear den detection and offers practical recommendations for optimizing detection. Putative den locations should be confirmed by a secondary method to minimize disturbance as anthropogenic activity continues in the Arctic.

13. Application of New Technology and Modern Use of an Old One to Locate Bear Dens on Alaska's North Slope

Craig Perham, U.S. Bureau of Land Management

Richard Shideler, Alaska Department of Fish and Game (retired)

On the North Slope of Alaska, off-road construction, transportation, and geophysical exploration activities by the oil and gas industry and others are primarily in winter to minimize adverse effects on migratory wildlife and damage to the tundra, and provide a stable work platform. One drawback to this timing is that it occurs during grizzly bear (*Ursus arctos)* and maternal polar bear (*Ursus maritimus)* denning. To minimize disturbance to denning bears, state and federal regulations require operators to avoid known dens. However, the actual location of dens is not *a priori* known. Therefore, methods to detect active dens were developed. We evaluated three techniques for detecting dens, two of which we present here. One technique used Forward Looking Infrared (FLIR) imagers mounted on fixed-wing or helicopter aircraft. The second was a re-application of an ancient technology: use of trained scent dogs. We present the results from our research on these techniques and discuss guidelines and potential ways to optimize their use.

14. Application of Hand-Held Infrared Camera System for Detecting Bear Dens

Craig Perham, U.S. Bureau of Land Management

Richard Shideler, Alaska Department of Fish and Game (retired)

On the North Slope of Alaska off-road transportation, exploration, and maintenance activities are conducted in winter, when tundra damage and disturbance to migrating wildlife can be minimized. However, this coincides with denning by grizzly bears (*Ursus arctos*) and maternal polar bears (*Ursus maritimus*). Industry activities are required to avoid known dens; however, the location of dens must be obtained. One potential detection technique was use of hand-held infrared imaging cameras (HH IR) to locate the den. Procedures for detecting dens using HH IR thermal imagery camera system were developed to avoid and mitigate disturbance impacts to denned bears. These procedures were created in conjunction with the testing of aerial IR platforms (i.e., helicopter and fixed-wing aircraft) and trained scent dogs to detect bear dens. We documented factors to consider when using a HH IR system to increase the success of detecting a den. These included environmental conditions, camera system limitations and advantages, ease of operation, and its use for various types of industrial activities. Hand-held infrared camera systems can be used for initial den detection as well as assessing current den occupancy and regularly monitoring den sites. Hand-held IR camera systems are inexpensive, readily available, and easy to use. These systems also allow operators to use them from multiple platforms. Hand-held IR camera systems also have the potential for detecting denned bears in temperate habitats as well.

15. Challenges and Successes of Managing Rapidly Increasing Human-Bear Interactions in Blaine County, Idaho

Clint Rogers, Idaho Department of Fish and Game

Additional Authors: Mike McDonald

Idaho is one of the fastest growing states in the U.S. This growth along with an expanding human footprint has resulted in an increase in human-wildlife conflicts throughout many parts of the state. In 2024, the number of reported black bear (*Ursus americanus*) incidents in Idaho's Blaine County, located in southcentral Idaho, increased five-fold from previous years. Blaine County includes the popular resort communities of Sun Valley, Ketchum, and Hailey. Using a wide range of tactics, including proactive public education and training and when necessary direct intervention, the Idaho Department of Fish and Game (IDFG) is proactively working with local communities to reduce human-black bear conflicts. Perhaps the greatest success we have experienced was the development of a community led wildlife coalition. The Wood River Valley Wildlife Smart Communities Coalition came about after a meeting in January 2020 that included officials representing four communities in the Wood River Valley, Blaine County Commissioners, state and federal partners, and NGO's. The purpose of the meeting was to discuss the uptick in human-wildlife conflicts in the Wood River Valley that included sightings, encounters, and attacks. The meeting provided an opportunity to have a focused discussion about the potential for community-sponsored efforts to reduce human-wildlife conflicts by implementing, encouraging, and enforcing best management practices when living near wildlife. An outcome from the stakeholder meeting was the creation of the Wood River Valley Wildlife Smart Communities Coalition. This group strives to reduce human-wildlife conflicts in the Wood River Valley by providing guidance, recommendations and education, and technical assistance in implementing best practices for the safety of Wood River Valley residents and visitors, with the goal of keeping wildlife, wild. IDFG continues to provide information for the coalition webpage. IDFG partnered with the coalition to provide bear safety training which included the deployment of inert bear spray. Participants were given a free canister of bear spray for their attendance. The same communities contribute to the challenges of developing county ordinances to deter the feeding and availability of human food resources. IDFG assisted in the development of a proposal to require bear proof garbage containers to assist in the reduction of human-bear conflicts. This proposal was unsuccessful due to many factors. The significant increase in human-bear interactions in Blaine County is of great concern to IDFG. The agency is proactive in education, responding to public safety concerns, and continues to be creative in developing strategies to reduce negative wildlife interactions.

16. Modeling Species Distribution and Human-Bear Conflict for *Ursus americanus* in the North San Francisco Bay Area

Lauren Puffer, University of California Santa Barbara

Black bears (*Ursus americanus*) play a crucial ecological role, contributing to biodiversity and ecosystem health through services such as seed dispersal, scavenging, and nutrient cycling (Enders and Vander Wall 2012). Black bears occur in wild, rural, and residential areas and rely on a wide variety of food sources making them the perfect umbrella species for conservation (Simberloff 1999). In recent years, black bears have been expanding their range into California's North Bay Area, which includes Marin, Napa, and Sonoma counties where this work is focused. As the landscape of this area becomes more developed and urbanized, bears are likely to experience increased habitat fragmentation (Hooker et al. 2021). Their gradual movement through a rapidly changing ecosystem inevitably results in increased conflict with humans in urban areas (Berkowitz et al. 2025). Incidents of conflict can include property damage, getting into trash, vehicle collisions, and pet or livestock predation (Lewis et al. 2015). Preliminary mapping of scat data has revealed a possible correlation between black bear presence and areas of low population density, private lands, and vegetation type. If black bears and humans are likely to coexist in the North Bay, efforts to identify and address human-bear conflicts must be considered. To identify areas with a high likelihood of bear occurrence and human-bear conflict, this student-led poster project will model species distribution and human-bear conflicts across all three counties. Maximum entropy modeling will be used with existing scat data and wildlife incidence reporting (WIR) data from California Department of Fish and Wildlife, and black bear observation data from Global Biodiversity Information Facility (GBIF). This work will help us to better understand what is driving bear presence in certain areas of North Bay and what steps can be taken to mitigate human-bear conflicts. By comparing black bear distribution models with human-bear conflict models, we hope to identify which parameters are most positively associated with bear presence and human-bear conflict to inform land management practices that will reduce conflict and improve human-bear interactions.

17. Epidemiological Surveillance in American Black Bears from Nuevo Leon, Mexico

David Carrera

In Mexico, only one species of bear is found: the American black bear (*Ursus americanus*), which is classified as an endangered species according to the official Mexican standard NOM-059-SEMARNAT-2010. For this reason, it is considered a priority species in the country's conservation efforts, cannot be harvested (its hunting is illegal), and its management is overseen by both state and federal authorities. In recent years, human-bear conflict has increased significantly, and Monterrey, the capital of the state of Nuevo Leon, a city of over 7 million people, surrounded by mountains that are the natural habitat of the American black bear, is not exempt from this issue. For the past 16 years, the state agency Parques y Vida Silvestre de Nuevo Leon has been actively responding to these human-bear conflicts. More recently, with the goal of implementing epidemiological surveillance to generate information about the black bear populations inhabiting northeastern Mexico, we have conducted studies to detect the presence of pathogenic microorganisms with zoonotic or epizootic potential that could affect this and other wildlife species. To do this, we have analyzed biological samples using RT-PCR techniques to identify the following pathogens: *Anaplasma* spp., *Babesia* spp., *Bartonella* spp., *Borrelia* spp., *Ehrlichia* spp., *Leptospira* spp., *Rickettsia* spp., *Toxoplasma gondii*, *Trypanosoma cruzi* and Canine Distemper Virus. These tests have been conducted on all bears that, once anesthetized (since 2023), as part of their management, allow us to collect blood samples, swabs, and feces for direct microscopic coprological analysis; in individuals presenting dermatological lesions, skin scrapings have also been performed. To date, we have identified bears that tested positive by RT-PCR for *Ehrlichia* spp., *Leptospira* spp., *Borrelia* spp., *Cheyletiella* spp., and by direct microscopy for *Sarcoptes scabiei*, *Ancylostoma* spp., and *Strongylus* spp. Additionally, we have records of two bears: one positive for *Adenovirus* spp. and another for *Anaplasma* spp. Through ongoing epidemiological surveillance of other wild carnivore species, we have also detected Canine Distemper Virus in gray foxes (*Urocyon cinereoargenteus*) and raccoons (*Procyon lotor*), which raises particular concern about whether this serious disease may also be affecting black bears. In the state of Nuevo Leon, most reports of human-bear conflict have been recorded within the metropolitan area of Monterrey, a highly urbanized region. Consequently, most of the studies we have conducted thus far have focused on bears involved in these urban conflicts. This situation highlights the importance of expanding epidemiological surveillance to include

individuals living in more natural, non-urbanized areas and not currently involved in conflict with humans. Doing so will allow us to gain a more complete and comprehensive understanding of the health status of black bear populations in the region.

18. The Rehabilitation of Hank the Tank's Kids

Doris Duncan, Sonoma County Wildlife Rescue

The Lake Tahoe Basin is considered the capital of human-bear conflict in California by wildlife professionals, and many may remember the 500-lb black bear (*Ursus americanus*) "Hank the Tank" that once lived in the Tahoe Basin. Through DNA testing and field work done by the California Department of Fish and Wildlife (CDFW), this black bear, originally believed to be a large boar, was ultimately confirmed to be a sow with 3 male cubs. Sows teach their offspring how to survive and over the course of a few months, CDFW using DNA tools, confirmed that this bear was responsible for home break-ins in the South Lake Tahoe area. CDFW's human-bear conflict specialists were concerned that this sow was teaching her cubs these human-bear conflict behaviors. With much media attention focused on this black bear family, CDFW officials, in collaboration with a sanctuary in Colorado and a wildlife rehabilitation facility in California decided to capture the entire family group, to rehabilitate and release the cubs back to the wild and permanently place the sow in a sanctuary. Sonoma County Wildlife Rescue is a wildlife rehabilitation and education center, based in Northern California and licensed by the Department of Fish and Wildlife to rehabilitate native wildlife including black bear cubs. With the experience of 44 years working in the community, helping to solve human-wildlife conflict issues, we have become a go-to for our partners in the Department. It was decided to place the 3 cubs in our care, and begin using some of our tried and proven methods for human-wildlife conflict resolution. We came up with a seclusion and hands-off approach to rehabilitate and help these cubs learn the survival skills they would need to return to the wild. Through remote camera placement in the enclosure, we could see how they foraged, when they came out of their den to explore their environment, how they reacted when they heard human activity and so forth. With consistent communication with CDFW veterinarians, biologists and human dimensions partners, the cubs were ear-tagged, microchipped and GPS collared before being released back to the California wild in a remote location. Telemetry collars remained on for approximately 9 months and confirmed the cubs survived through their first winter denning in the wild and remained out of human-bear conflict. They were able to successfully establish home ranges in the wild. Our long-term, successful partnership and bilateral trust with our state wildlife officials, have helped us support conservation efforts and conflict mitigation in our state. We think it is possible to have this same experience again in the future, on a case-by-case basis with other potential human-bear conflict cubs.

19. Forest Mushrooms as Shared Resources: Overlap Between Sloth Bears and Indigenous Communities in the Western Ghats of India

Apoorva Kulkarni, University of Oxford

Human–wildlife interactions in tropical forests are shaped by overlapping dependencies on shared resources. This study examines the intersection of sloth bear (Melursus ursinus) foraging and indigenous community livelihoods in the Central Western Ghats of India, focusing on forest mushrooms as a seasonally significant non-timber forest product (NTFP). While mushrooms provide essential nutrition and income for local households, they also form part of the sloth bear diet during the monsoon, generating spatial and temporal overlap in resource use. This dual dependence generates an interface of potential interaction, with implications for both conservation and livelihoods. We employed a participatory approach including ethnographic interviews, focus groups, and participatory mapping to identify hotspots where mushroom harvesting zones and sloth bear foraging sightings coincided. Findings reveal strong seasonal convergence as mushroom fruiting peaks during heightened sloth bear foraging, increasing the risk of encounters, not only for men but also for women and children engaged in collection and small-scale trade. Community narratives reflect bears as ambivalent stating them both as dangerous competitors and as legitimate forest dwellers. Traditional ecological knowledge, including avoidance practices, seasonal taboos and species-specific harvesting norms, functions to reduce risk and enable coexistence. Forest mushrooms emerge as socio-ecological connectors that mediate human–bear interactions, revealing how shared resource ecologies both generate risks and sustain cultural knowledge. Conservation interventions should therefore recognize indigenous stewardship and incorporate traditional ecological knowledge into management planning and provisioning of alternative livelihoods. By situating sloth bear–human relations within the dynamics of shared resource use, this study advances theoretical and applied understandings of coexistence in contested forest landscapes.

7TH INTERNATIONAL Human-Bear Conflicts WORKSHOP
KALISPELL, MT, USA

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4th IHBCW – 2012 – Missoula, Montana
5th IHBCW – 2018 – Gatlinburg, Tennessee
6th IHBCW – 2022 – Lake Tahoe, Nevada
7th IHBCW – 2025 – Kalispell, Montana

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