

7th Annual Bison Worker Safety & Herd Health Roundtable

July 30-31, 2025

Mayetta, Kansas



AgHealth
Central States
Center for Agricultural
Safety and Health

Roundtable Participants

Mary Adame-Wood, Mary Adame-Wood
Scott Allen, Prairie Band Potawatomi Land Department
Andrew Anderson, The Grand Portage Band of Lake Superior Chippewa
Joseph Andrews, Kalispel Tribe
Jaime Anguiano, Pit River Tribe
Elinor Bowen-Keyes, UNMC CS-CASH
Brandon Cobb, The Nature Conservancy
Delbert Davenport, Meskwaki
Ellen Duysen, UNMC CS-CASH
Jessica Sunny Evans, Jessica Evans/Pawnee
Roy Finley, Kalispel Tribe
Jordan Grindol, Prairie Band Potawatomi
Irona Howe, CRST Buffalo Company
Ben Janis, Lower Brule Sioux Tribe
Earl LaRoche, Earl LaRoche
Charles Lytle, CSKT Bison Range
Miriam McCann, UNMC
Karena Miller, Sisseton-Wahpeton Oyate Buffalo Farm
Stacey Miller, Sisseton Wahpeton Oyate Buffalo Farm
Timothy Monoessy, Pawnee Nation
Alex Moran, CSKT Bison Range
Jewel Parker, Winnebago Tribe of Nebraska
Thomas Peters, Shakopee Mdewankanton Sioux Community
Tim Porter, HICAS
Jessica Post, UNMC
Jason Powers, Yankton Sioux Tribe Buffalo Program
Augusta Rattling Hawk, Intertribal Buffalo Council
Risto Rautiainen, UNMC CS-CASH
Mikiya Reuther, Intertribal Buffalo Council
Mystera Samuelson, UNMC CS-CASH
Tsakuru Shawnee, Pawnee
Randy Smith, Prairie Band Potawatomi Land Department
Lattona Spotted Eagle, Blackfeet Nation
Jared Swader, Grand Portage Band of Lake Superior Chippewa
William Thompson, Standing Rock Sioux Tribe
Avery Uffelmann, UNMC CS-CASH
Bo Vocu, Intertribal Buffalo Council
Lyle Washington, Iowa Tribe of Oklahoma
Alexandrea Welch, UNMC
Ariel Williams, SWO Buffalo Farm
Mathias Winters, Picuris Pueblo
Joseph Wright, Ponca Tribe of Nebraska
Larry Wright Sr., Ponca Tribe of Nebraska

Roundtable Agenda



2025 Bison Worker Safety & Herd Health Roundtable Agenda

Prairie Band Casino & Resort, Mayetta, KS

Day 1: Wednesday July 30, 2025

Time	Topic/Title	Speakers
8:00 AM – 9:00 AM: Breakfast (provided)		
9:00 AM – 10:00 AM	Welcome & Introductions	Mystera Samuelson, UNMC CS-CASH Risto Rautienon, UNMC CS-CASH Mikiya Reuther, ITBC Michael “Bo” Vocu, ITBC
10:00 AM – 10:30 AM	Environmental Monitoring, Safety & Health	Augusta Rattling Hawk, ITBC
10:30 AM – 10:45 AM: Break		
10:45 AM – 11:15 AM	Mycoplasma Bovis Assessments, Detection & Mitigation	Mikiya Reuther, ITBC
11:15 AM – 11:45 AM	Highly Pathogenic Avian Influenza	Ellen Duysen, Matt Nonnenman, UNMC CS-CASH
11:45 AM – 12:15 PM	Cultural Fire and Prescribed Burn Safety	Brandon Cobb, TNC
12:15 PM – 1:15 PM: Lunch (provided)		
1:15 PM – 1:45 PM	Tick-borne Disease Exposure & Mitigation	Alex Welch, UNMC College of Public Health
1:45 PM – 2:15 PM	Context in Clinic: Providing Support for Clinicians and Patients During Intake Assessments for Zoonotic Disease Exposure	Elinor Bowen-Keyes, UNMC CS-CASH/SURP
2:15 PM – 2:30 PM: Break		
2:30 PM – 3:30 PM	Personal Protective Equipment Overview & Hands-On Demonstration	Mimi McCann, UNMC Environmental Health and Safety
3:30 PM – 3:45 PM	Closing Remarks	Mystera Samuelson, UNMC CS-CASH

Day 2: Thursday, July 31, 2025

7:30 AM – 8:30 AM: Breakfast (provided)		
8:30 AM	Leave for Facility Tour	
9:00 AM	Facility Tour	Hosted by the Prairie Band Potawatomi Buffalo Program
11:00 PM – 12:00 PM: Lunch (provided)		
12:00 PM	Closing Remarks & Discussion	Mystera Samuelson, UNMC CS-CASH

Thank you to all who presented at and participated in the 7th Annual Bison Worker Safety and Herd Health Roundtable. During this meeting, enduring partnerships were established, and best practices that were discussed can be implemented to protect the safety and health of bison herd workers and their animals.



Roundtable Presentations and Discussions

Welcome and Introductions

Larry Wright Sr. (Ponca Tribe of Nebraska) gave the blessing to open the roundtable. This was followed by introduction of everyone in attendance and their buffalo programs. Of those who shared their goals, many are trying to expand their herds and/or get into food sovereignty, while a couple are interested in just getting their herds started.

Following the introductions were several short update talks by multiple people.

Risto Rautiainen

CS-CASH

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Enhancing the Health and Safety of Bison Herd Workers

- Safety risks with the animals but also the environment
 - Important to have a good safety plan
- Safety has a lot to do with the physical environment and what you are doing there
 - Do a safety assessment before working in the environment or with the animals
 - Check equipment and make sure everything is working properly
 - What are potential safety issues? (dust, slip/trip hazards, etc.)
- Best practices:
 - Have a good understanding of how the animals behave
 - Have good communication with the group who is working with the animals
 - Apply low stress animal handling practices
 - High stress practices may lead to animal and/or worker injuries and damaged equipment
 - Have good cooperation and understanding with the animals
 - Animals will react to how you are feeling (clam, agitated, angry, depressed, etc.)
 - Be calm and prepare yourself to work in the situation
 - Training or orientation with new people, especially those who are not used to working with the animals
- Enhancing worker safety
 - Provide functional facilities
 - Facilities should be safe for the animals and the workers
 - See what didn't work or could be improved and make improvements for the next time
 - Implement best practices for low stress handling and worker safety
 - Gathering, sorting, treating animals
 - Ready chute
 - Squeeze chute
 - Worker safety barrier fences, escape routes
 - Always have a route workers can follow to be safe or escape if needed
 - Secure gates and panels (latches in good condition)
 - Controlling dust
 - Training and managing workers and volunteers
 - Having clear roles including someone who is safety manager
- When things go smoothly, you can process more animals quickly
- Risk of injury to people and animals if things don't flow smoothly or are rushed

Mystera Samuelson

EAOH, CS-CASH

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Establishing a Community-based Training Network to Enhance the Safety of Bison Herd Workers on Tribal Land

- Aims
 - Identify and address threats to Tribal buffalo herd workers.
 - Facilitate community-led trainings and other outside trainings, as they are identified as a needed resource by the community.
 - Touch base and let us know what we can fund
 - Support the mission of buffalo restoration by supporting the people to care for them.
- Things we have learned
 - Critical training needs identified:
 - Harvest safety
 - Food safety
 - **Community as a “Workforce”**
 - Zoonotic disease training
 - Merging necropsy sampling and cultural harvests
 - The importance of cultural revitalization and ecological restoration is central to the work, and our role is to listen, support, and help where we can
- Capacity building and support
 - Continued focus on harvest trainings and zoonotic diseases as a cultural collaboration
 - Collaboration with the Intertribal Buffalo Council zoonotic disease initiative
 - Facilitated over 30 cultural harvest and food processing trainings across the country
 - Over 30 Tribal Nations have participated
 - Including children and elders
 - Design lectures for elementary school students who are getting buffalo in their lunches and getting to go out and see them
 - Increased roundtable attendance in transition to Tribal focus
 - CDC NIOSH Science Blog Post
 - Presentation & participation in annual NIOSH and CDC Food Security Committee Meetings
- Scholarships & Other Training Opportunities
 - Connect with us to discuss other opportunities you would like to see
 - We support travel for trainings with other herd management teams, in coordination with ITBC
- Data Use and Future directions
 - Data is confidential
 - We don't publish or promote anything that hasn't been reviewed and approved in writing
 - We gather information to support you and provide opportunities
 - If there is anything you want excluded, please reach out!
 - You deserve to know how your data is used and how you are being represented. We are always willing to share resources, and do not share without expressed approval.

Augusta “Gusti” Rattling Hawk

Intertribal Buffalo Council – PCSC Technical Service Provider

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**Michael “Bo” Vocu**

Intertribal Buffalo Council – Executive Director

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Intertribal Buffalo Council: Buffalo Restoration in the United States

- ITBC
 - Over 30 years of serving tribal nations, founded in 1992
 - Federally Chartered Indian Organization, 2009
 - Restoring buffalo to Indian Country to preserve historical, cultural, traditional, and spiritual relationships for future generations
 - Work with 84 Tribes across the US
 - Divided into 4 regions
 - Serving 1 million Tribal Members across 32 million acres of Tribal Land
- What does ITBC Do?
 - Provide technical assistance
 - Special programs related to:
 - Herd development
 - Surplus buffalo program
 - Food sovereignty, economic development, marketing
 - Disease mitigation and education
 - Partnerships
 - Policy work
- Special programs
 - Herd Development Grant Program
 - Provide funding to develop or establish tribal buffalo programs, or make operations sustainable
 - Surplus Buffalo Program
 - Partnerships with DOI, the Nature Conservancy, WWF, etc.
 - Can apply to receive surplus buffalo from various national parks and nature conservancy reserves
 - Advancing Markets for Producers (formally known as climate-smart) Program
 - Apprenticeship Program
 - Field Harvests/Mobile Harvest Unit
 - Buffalo Seed Keepers
 - Red Calf Cohort
 - Yellowstone internship working with Yellowstone bison
- Tribal Buffalo Program
 - Highlight the ongoing needs of Tribal buffalo programs
 - What are things people are asking for to be successful
 - A lot boils down to land – access to land, land acquisition, tribal programs, and marketing
 - Culture, education, and research – tribes want to be more intimately connected to buffalo
 - Infrastructure=stabilization, land management
 - Food sovereignty and community engagement

- Regional Conservation Partnership Program (RCPP) in the northern great plains provides a unique opportunity for tribal engagement and aid in the stabilization of tribal buffalo programs
 - Improve land management
 - Meet infrastructure needs
 - Connect communities

Questions:

Mystera Samuelson (EAOH, CS-CASH): I just wanted to chime in to say that those scholarship funds I mentioned to travel could compliment this really well, if you for example wanted to go look at someone else's chute design and system that type of thing falls under that as well. So, I think that's where, when we come together to talk about resources those kind of dovetail nicely, and ITBC is always great at when you guys come to them making those connections for you, so you don't have to run around.

Thomas Peters (Shakopee Mdewankanton Sioux Community): What you were just saying kind of raised a question for me. With that funding that you have through the CS-CASH, if a tribe is interested in hosting a training outside of what ITBC does, like how to process buffalo meat in a commercial way like actually cutting up steaks that kind of stuff, would you be able to help fund a training like that?

Mystera Samuelson (EAOH, CS-CASH): Potentially, it would depend on the scope of whether it fit in the scholarship fund type budget of it, but we could definitely talk about it for sure. We did talk to our funders and got permission to, cause originally I had been thinking like six scholarships for like two people per tribe to travel and then stay for a week or so and an honorarium for the host and all that. We did get permission to do (unintelligible). Arlo and Lisa for example where people had wanted some necropsy trainings and how that could compliment cultural harvests and we were going to fund those individual scholarships, but then we ended up finding out the places they wanted to travel to were waiting for Arlo and Lisa to come visit anyway, and we're like "well this is silly, why don't we just send them representing us" and especially if that tribe doesn't know us, doesn't feel comfortable with us being there, we're not going to insert ourselves. And so those types of situations, our funders have been historically really open. Obviously we are in an interesting climate now, so that would kind of be something you and I could talk about and we could check with Risto since he's the director of the whole program and has a lot more insight than me. He has to talk to politicians more than I do.



Augusta “Gusti” Rattling Hawk

Intertribal Buffalo Council – PCSC Technical Service Provider

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Buffalo, Land, People: Environmental Safety and Health

- What do we mean by environment?
 - Broad and dynamic topic
 - Weather → changes in weather, seasonality
 - Climate
 - Ecosystem monitoring
 - Plants, animals, insects, soil
 - Phenology
 - Water, fire
 - Pasture or Range
- Monitoring
 - Observation to evaluate the impact of operations
 - How does this relate to your goals?
 - Can range from everyday simple observation to complex monitoring with data sheets
 - Some ways of monitoring or observing are not the best and there is room to incorporate cultural relevance
 - Encourage people to incorporate cultural relevance, for example, of medicinal plants, in their monitoring
 - Range management
 - Carrying capacity of the pasture
 - Plants, plant communities, distribution,
 - Forage, food, supplemental
 - Grazing patterns that you notice
 - Herd behavior
 - Weather and climate → seasonality
 - Are you having seasonal mismatch? (ex. spring happening in May instead of early April because of a late snowstorm)
 - What is happening in your ecosystem because of seasonality, seasonal mismatch, weather patterns, etc.?
 - Determine what are key indicators as to whether your ecosystem is healthy, struggling, rebounding
 - Define where you are at in your ecosystem timeline
 - Wildlife
 - Many have noticed that when bringing buffalo back, there are other wildlife that follow
 - Might need to adjust types of fencing or habitat to help accommodate these animals too
 - Overall land assessment
 - Benefits of Monitoring
 - Can set you up to have a great plan of action should something happen (ex. disease)
 - You might find something you weren't aware of that you can now adapt to

- Importance
 - Resilience → a resilient ecosystem is a healthy ecosystem
 - Adapt to climate change or certain stressors
 - Rebound from things like floods or fires
 - Health of people, buffalo, wildlife, plants, etc.
 - Food systems
 - Our food system is very much dependent on our ecosystem
 - Know when to add supplemental feeding for the buffalo
 - Cultural connection
 - Climate change adaptability
 - Identifying stress
 - Identifying indicators for action
 - Monitoring and identifying passive stressors like the heat
 - Happy buffalo
- Monitoring for health
 - Healthy or stressed ecosystem will give indicators
 - Our health is directly linked to environmental health
 - Air quality, hazards, skin, food, water, and so much more
 - Connections to your buffalo programs
 - Do the buffalo have clean drinking water?
 - Active participation in “Stewardship” – making sure you are making the best decisions for your buffalo program and making changes
 - Adaptability – ecosystems are adaptable, and we should be adaptable to make the best decisions
 - Being safe and aware of indicators
- Examples of Indicators: These are broad examples that can vary from place to place
 - Soil health
 - Need to look at over a long period of time to determine if soil health is increasing or decreasing
 - This is the basis for ecosystem health, what plants will grow that the buffalo can graze on
 - Water
 - Active dangers to look out for (ex. Edges of riparian areas or water features)
 - Run off – what is upstream of you that could come down into your pasture/buffalo?
 - Chemical spray near your fence line
 - Amphibians and Insects
 - Great thing to look for to determine health
 - Are they present or absent? Why are they absent?
 - Amphibians are sensitive to environmental conditions and pollutants
 - Health of buffalo
 - Zoonotic diseases going around?
 - Is the herd looking a bit scrawny? Look around for causes, such as lack of optimal forage that might indicate a need for supplement
 - Ecosystem stress
 - Plant life – good indicator of stress
 - Do you have new growth or only old growth, is it a monocrop?
 - Is your ground covered?
 - Ground cover helps with keeping soil cool and water in the soil
 - What types of plant species do you have?
 - Surrounding areas

- Invasive species
 - Can be a sign of a stressed environment, especially in an area that previously had other species
- Monitoring Tools
 - Ecological Assessments
 - Ecological Site Maps and Descriptions
 - Web Soil Survey (<https://websoilsurvey.nrcs.usda.gov/app/>)
 - Online tool
 - Can enter coordinates of pasture if you know them
 - Look up Ecological Site Description (ESD) codes (<https://edit.jornada.nmsu.edu/catalogs/esd>)
 - Local/Traditional Ecological Knowledge
 - General Tools:
 - Shovels, pencils & paper, a plan
 - Write down your observations
 - What is there, what isn't there?
 - Rain and precipitation gauge – are your pastures getting enough rainwater?
 - Rainwater uptake vs. runoff
 - Weather (local and surrounding)
 - Drought Monitor
 - Rangeland Monitoring Network (<https://rangelandsgateway.org/topics/maintaining-improving-rangelands/rangeland-monitoring>)
- Example of a goal, monitoring plan, and assessment
 - Scenario: pasture, okay grazing, under carrying capacity
 - Goal: Increase biodiversity of plant communities to provide better grazing for buffalo and increase habitat for birds
 - Plan ideas:
 - Rotational grazing
 - Prescribed fire
 - Range planting
 - Setup of monitoring plan
 - Rotational grazing:
 - Want cool and warm season grasses → setup observation plots to get a good idea of what is going on in the pasture
 - Bare ground vs ground cover
 - Planning for prescribed fire
 - Observation of what you want to get rid of before and after. Did the fire kill what you wanted or just singe it?
 - Range planting
 - Soil sampling every 5 years
 - Make observations on designated plots throughout pasture of important species (birds, wildlife, plants, etc.)
 - Assessment
 - Review any documentation you have
 - Are your goals being met? More plants, more biodiversity, more ground cover, etc.
 - Baseline and long-term documentation of soil monitoring
 - Soil profile

- Key Takeaways:
 - Ecosystem resilience is sustainability
 - Health is directly linked to the land
 - Goals
 - Action and management plans
 - Active participation in the environment

Questions:

Latona Spotted Eagle (Blackfeet Buffalo Program): I think Thomas touched on it a little bit when he asked about training or something outside of ITBC. Is that something that you would do?

Gusti Rattling Hawk (ITBC): Me personally, yes. I would kind of do that, just provide any kind of knowledge or information, but that's just me personally, but my role at ITBC, I'm a technical service provider. I can write your management plans. I can help you kind of set some of these things up. As a technical service provider, I can also go out to your lands and do these types of trainings, and at ITBC we are planning to have these types of trainings where you can do plant identification, how to take proper soil samples, these types of things.

Latona Spotted Eagle (Blackfeet Buffalo Program): The reason I was asking is because there's like four tribes in Montana that have that America the Beautiful grant funding, and we need to get trained, like we have so many training hours that we have to do for the grant every year, and we're kind of at a loss, but everybody is lacking in their management plans, and so I was tasked with the responsibility of asking, or finding out from you how we could work that out to get our management plans in order, because they are very important and there is a lot more to it. We did a rangeland training a year, or no it was in January actually, and they taught us how to calculate our, you know how much land we had and how many, they didn't call it AUMs, they called it something else, but yeah. So, for example, for Blackfeet we have like 26,000 acres, I think, and we can support 1200 buffalo. Our herd is at 850 and we're comfortable there, but we need the other piece of the management plan. So maybe we could get together.

Gusti Rattling Hawk (ITBC): Yeah, definitely, I can't speak too much about my role outside of ITBC just here, but Blackfeet is a part, so I help you with your management plan, creating, writing. I know that you attended the last training that we had, but I can work more one on one to meet your unique goals and situation.

Latona Spotted Eagle (Blackfeet Buffalo Program): I think all the tribes in Montana are part of that.

Gusti Rattling Hawk (ITBC): Yeah, then that would be pretty easy, like I'm saying we have the RCCP, you don't need to go through that if you don't want. Just because at ITBC we serve the tribes, so we can just go ahead and do the management plan.

Mystera Samuelson (EAOH, CS-Cash): David Crites volunteered to do some things like that as well. With regard to, Brandon might have, I know I'm putting you on the spot, but when we were at Niobrara last, he was talking about

Brandon Cobb (The Nature Conservancy): Yeah, we have a series of herd managers around, I guess, the central plains. We have 12 herds at the Conservancy, and we have some amazing herd managers. I'm not saying we are the best at what we do, we have plenty of gaps in our own knowledge, but our organization requires us to have similar style plans or grazing management, fire management, those sorts of things. So, whether we like it or not, we've had to do it since we've started doing herd management and grazing, and our herd managers across the nation are happy to help in whatever capacity it makes sense too.

Mystera Samuelson (EAOH, CS-Cash): I'm speaking on his behalf, but he asked me too, but David Crietes at the Niobrara Preserve has expressed to me on a couple of occasions that people coming out to train on wildland fire with Brandon or other rangeland management when they have stuff going on. They're more than happy to have folks out as a standing invitation. So, Gusti, obviously, can put you in touch with him, but I will as well. He couldn't make it today.

Gusti Rattling Hawk (ITBC): If you get in contact with me, I have a lot of different connections to a lot of different organizations that can also help on things. Like that's the thing, there's First Nations Development Institute, Buffalo Nations Grassland Alliance, Grassland Coalition, all these types of things that I can help you get in touch with if you want to go with somebody else. There are resources out there, but if you need a place to start, I'd be more than happy to talk with you one on one.



Mikiya Reuther

Intertribal Buffalo Council – Technical Service Provider

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Mycoplasma Bovis Assessments, Detection & Mitigation

- USDA APHIS NADPRP Project
- What is Mycoplasma bovis?
 - Newly discussed bacterial infection
 - Keep in mind the term Mycoplasma bovis or M. bovis is used to refer to both the bacteria that causes the disease and the disease itself, which can cause some confusion
 - Recent threat determination
 - Primary bacterial pathogen
 - Primary means it can cause infection regardless of whether the individual is healthy or not.
 - Anecdotally linked to stressor events
 - Lacks a cell wall → Resistant to antibiotics
 - Typically presents as a respiratory disease but other clinical signs may be apparent
 - Coughing
 - Nasal discharge
 - Open-mouthed breathing
 - Lameness
 - Arthritis
 - Abortion
 - Weight loss
- Buffalo are very stoic and may not show signs of illness
- Transmission
 - 2 major risk factors
 - Proximity to cattle (sharing fence lines, nose to nose contact)
 - Large herd sizes
 - Chronic and asymptomatic carriers in herds
 - A chronic/asymptomatic carrier can be present in your herd for a long time
- Why Care?
 - High morbidity and mortality
 - Reports of up to nearly 45% mortality in adult cows
 - So much to learn!
 - Cause of active outbreaks
 - Management strategies
 - Transmission
 - Chronic/asymptomatic carriers
 - Improving testing
 - Specificity and sensitivity – picking up the bacteria in a reliable way
 - Types of testing available
 - And More!
 - Outbreaks in 2021 prompted more extensive research into this disease, but there are still many questions to be answered.

- Testing
 - We want different methods for testing, currently only 3 available, especially in live as opposed to postmortem animals
 - Deep vs. superficial nasopharyngeal swabs
 - DNS seems to be more effective at detecting
 - Carry at the back of the nasal cavity
 - Only seem to be effective when individual is shedding *M. bovis*
 - Serology
 - ELISA – currently needs improvement on sensitivity and specificity, but improvements ARE being made!
 - Fresh tissue
 - Culture
- National Animal Disease Preparedness and Response Program (NADPRP) Grant
 - Objectives:
 - Conduct *M. bovis* surveillance across ITBC membership in response to *M. bovis* outbreaks across the nation and investigate potential relationship between stressor events and active infection → report
 - Herd health survey, have discussions centered around biosecurity → ITBC buffalo biosecurity protocol
 - Biosecurity is very important for the prevention of *M. bovis*
 - Conduct outreach on research report and ITBC Buffalo Biosecurity Protocol
 - Resource to use when creating a management plan for your herds
 - Can't be specific to each herd, but a good starting point
 - How you can participate in *M. bovis* surveillance:
 - DNS testing during round-ups
 - Fresh lung tissue sample(s) from field harvest and necropsy
 - Reach out to Mikiya (mikiya@itbcbuffalonation.org)
- Resources used for this talk:
 - Janardhan, K. S., Hays, M., Dyer, N., Oberst, R. D., & DeBey, B. M. (2010). *Mycoplasma bovis* outbreak in a herd of North American bison (*Bison bison*). *Journal of Veterinary Diagnostic Investigation*, 22(5), 797-801.
 - Martin, K. A., Browne, A. S., & Buttke, D. E. *Mycoplasma Bovis* Outbreaks in United States Bison (*Bison Bison*) Herds: A Case-Control Survey. *Available at SSRN* 4990698.
 - Scheduled to be guest speaker at Santa Fe necropsy training the week after this roundtable
 - Good, general overview of *Mycoplasma bovis* and easy to read
 - Schwartz, K., Schwalbe, E., Buttke, D., Bragg, T., Killion, H., Sondgeroth, K. S., & Malmberg, J. L. (2024). Evaluating Two Sampling Methods for *Mycoplasma bovis* Diagnosis in American Bison (*Bison bison*). *The Journal of Wildlife Diseases*, 60(3), 584-593.

Questions:

Sunny Evans (Pawnee Nation): How confident are you that the tests that you have right now are able to be sensitive enough to pick up all the carriers? Do you feel, is there confidence right now that the deep nasopharyngeal swab is able to get all the carriers, or do we think that some of them may still be going undetected?

Mikiya Reuther (ITBC): Yeah, I think there is a lot of improvement to be done in terms of being sensitive and specific to picking up *M. bovis*. Which is why, if we're going to go out and take these samples, we're going to take several. We're going to take a lot of samples to be sure to pick up any carrier that may be present. That is a limitation to this project, but taking these samples, sending them in, is going

to further advance this testing. I will say that people who are completely dedicated to M. bovis research seem to be successful at picking up chronic carriers, but like I mentioned this is still all very new. We are pouring resources into this and learning more. You can never be 100% certain, but I think at this point in time if we were to come out and take these samples, we can be relatively sure that we're picking up these carriers.

Mystera Samuelson (EAOH, CS-Cash): Mikiya, do you know, is there variation for this particular test on whether they want the saline tubes or do they want a special culture or dry swabs?

Mikiya Reuther (ITBC): For these swabs, you have this particular media, it's like red, we order from Hardy Diagnostics and we have to put those swabs in, cut the swabs so it fits in the media tube, and then we ship it off; and this media is temperature sensitive so it needs to be room temperature or refrigerated to prevent degradation. I've been told that media is best for M. bovis swabs.

Mystera Samuelson (EAOH, CS-Cash): Awesome, because one thing Mikiya and I talked a lot about with our necropsy trainings has been, depending on which diagnostic lab you are going through and how they want their swab is going to vary depending on what equipment and reagents they have in there lab, so just make sure you know for other swabs and things that you might take, say you find some weird pustules and you're not sure and you put it in a swab, just have an idea already of which lab you're going to use and whether sometimes its saline, sometimes it's dry, and sometimes it's in media and so it'll just depend. Mikiya has put together an awesome shopping list for you for that type of thing, so with Mikiya's permission we would include that in our write-up that we distribute to you after this training as well.



Matt Nonnenman – Presentation Creator, unable to attend
CS-CASH

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Ellen Duysen – Speaker at Roundtable
CS-CASH

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H5N1 (Avian Influenza – Bird Flu) and Other Zoonotic Diseases: Potential Routes of Exposure During Bison Handling

- You are going to be the eyes, ears, and voices if you see H5N1 migrating into your herds
 - It is currently in cattle. We don't know if it will migrate into buffalo.
- Zoonotic diseases are diseases or infections that can be transmitted naturally from vertebrate animals to humans or from humans to vertebrate animals
 - More than 60% of human pathogens are zoonotic in origin
 - This includes bacteria, viruses, fungi, protozoa, parasites, and other pathogens
 - Often will mutate as it moves between species and become more virulent
- One Health: Environment → Animals → Food → People are all connected
- H5N1
 - Type of avian influenza (bird flu)
 - First identified in the US in 1996 in birds
 - High death rate in birds and some humans
 - Can spread rapidly in bird populations
 - In 2024 H5N1 virus was found in cattle
 - So far mild in humans when spread from cattle to humans
 - Has not yet been detected in buffalo
 - Rare, but serious when it infects people
 - Potential to mutate and spread more easily. Monitoring is needed!
 - Pandemic potential
- Pandemic Influenza
 - Four Pandemics in the last 100 years
 - 1918 – Spanish Flu
 - 1957 – Asian Flu
 - 1968 – Hong Kong Flu
 - 2009 – Swine Flu
- Transmission of Influenza
 - When a person coughs with an airborne transmission
 - Large infectious droplets travel 1-3 feet
 - Small infectious Droplets travel 3-5 feet
 - Infectious Droplet Nuclei travel 5-160+ feet
 - Where particles deposit in your respiratory tract depends on particle size
 - Environmental conditions also impact transmission
 - Optimal relative humidity for the virus is 20-40%
 - Cold temperatures hurt host defense
 - High temperatures harm viral proteins

- Routes of transmission
 - Direct contact: skin contact, contact with mucus membranes, “raw” milk (lactating animals shed H5N1 in milk)
 - Aerosol: tiny droplets may spray into the conjunctiva or mucus membranes of the eye, nose, or mouth during sneezing, coughing, spitting, singing, talking, etc.
- Bison Handling exposure potential
- Remove nests and food sources from around handling equipment and in areas where animals congregate (water and feed)
- Limit interaction of bison with animals known to carry the virus
 - Use caution when interacting with symptomatic animals
 - Take precautions when working with sick animals
- Examples of indirect transmission:
 - An object or material a “fomite” is contaminated with the infection agent
 - Material may be unknowingly ingested
 - Hands become contaminated and then touch face or eyes
 - Cooking or eating without hand washing
 - Contact with blood, tissues, and organs
 - Hand sanitation is important!
- Symptoms of H5N1 in Humans
 - Eye redness/irritation/tearing
 - Main thing dairy workers presented with
 - Cough
 - Sore throat
 - Runny or stuffy nose
 - Muscle or body aches
 - Headaches
 - Fatigues
 - Trouble breathing
 - Fever
 - Diarrhea
- Symptoms in Cattle
 - Lethargy
 - Diarrhea or constipation
 - Respiratory discharge
 - Fever
 - Reduction of milk in dairy cattle
- Prevention
 - Vaccination Bovine H5N1 vaccine in development
 - Reduce exposure to outside animals
 - Use ventilation (easy when working outdoors)
 - Shielding to reduce contamination from “splashing”
 - Equipment and hand washing station
 - Washing clothes in hot, soapy water
 - Don’t wear work clothes home
 - PPE
 - Barrier clothing, face shield/safety glasses, gloves, respirator
 - Store safety equipment nearby in a clean location

Questions:

Sunny Evans (Pawnee Nation): My question, couple of them. One, how much have we sampled in bison to be able to tell is there H5N1? And two would be, in cattle, going back, how often, so you talked about this in terms of what we see, how often is there, do we have an idea of how many subclinical ones there might be where we don't know?

Ellen Duysen (CS-Cash): And that is exactly what Dr. Nonnenmann is doing, because all we know is these dairy's that report, the first thing, obviously, the dairy. If you have a cow go down from 30 gallons a day to 4, you know there's a problem. What do you see in your bison? You already told me today that they're a lethargic animal, not lethargic – stoic. They're stoic animals. So, what do you look for? What would you look for?

Sunny Evans (Pawnee Nation): Off their feed maybe, not grouping, same behaviors, I don't know.

Ellen Duysen (CS-Cash): You know, and off their feed, if they're on pasture, that's a hard thing.

Sunny Evans (Pawnee Nation): Exactly

Ellen Duysen (CS-Cash): They're going to hang with the gang, right? I've seen them. They don't like to be alone. So, what do you look for? When you go out and look at your herds, how would we know that they didn't feel good?

Tim Porter (HICAS): They'd probably be off by themselves.

Ellen Duysen (CS-Cash): Off by themselves

Irona Howe (CRST Buffalo Company): Their coat, their hair

Ellen Duysen (CS-Cash): Their coats, very good. So, you're going to see some differences in the way their coat appears.

Irona Howe (CRST Buffalo Company): Respiratory

Ellen Duysen (CS-Cash): Respiratory, yeah.

Sunny Evans (Pawnee Nation): Maybe posture, ears, or eyes

Ellen Duysen (CS-Cash): So, what is your assumption, when you see an animal off by themselves?

Speaker Unknown: It's a bull

Ellen Duysen (CS-Cash): Any certain diseases pop into your mind?

Speakers Unknown: He's mad. I just think it's a bull.

Ellen Duysen (CS-Cash): We heard this morning about checking your ranges, doing that walk around, that awareness. I think if you can, it seems depressing, but if you think of all the things these animals could be affected with, that's a great thing to have pop into your head. And what I hope you think is "oh gosh, I hope this ain't H5," but your vets need to also be thinking about this. And it would be great if these buffalo are never. And I don't know how much surveillance has been done.

Mystera Samuelson (EAOH, CS-Cash): There's a couple of manuscripts out of a veterinary school in northern Mexico in particular that didn't show up in my original searches, but the vets that I consulted did look at that, and for those I can find that literature and provide it if you'd like to look at it, but they specifically looked for antibodies but also DNA from the virus in muscle tissue they had access to. I think some meat off the sternum that they tested, and they did find it but to my knowledge that is the only peer reviewed manuscript that I've come across and I keep looking, that doesn't mean something didn't sneak past me but to my knowledge, it sounds like they can get it. Whether or not it's deleterious, does it cause them to, is it going to be a major concern? We don't know, it's still too early, but I think something to think about too, that fatigue, that stiff gait, the redness in the eyes, those are all things that if you do necropsy training with Mikiya or me or whoever, those are things that you would look at too for the other respiratory infections. So I think the big takeaway too, to think about for these lung infections is if you are monitoring your animals when they are alive, but then also if you are doing a cultural harvest and you get into this lung tissue, then you know maybe we need to screen this if you are going to dry the lung tissue and eat it, things like that. Maybe we want to sample it first or if you do eat it first then at least we can go back to our community and say hey, it looks like there was

this, so if anyone starts to get sick, we can address it. I don't know if anyone has seen Thomas or Arlo do their trick of blowing up the lungs, I think, is probably why you were laughing earlier. I also love that trick, I don't have the lung capacity to emulate it, so I'm not saying...don't stop doing that, but if you see puss in the trachea and we have a swollen tongue and red sclera round the eyes, obviously given the age of the animal it's going a little brownish, but if you see bright red eyes then we see a swollen tongue and goo coming out that doesn't look quite right, then that time definitely don't do it and/or make sure you find out what the results are of the tests once you get that lung opened. These are things that again, especially when it comes to cultural harvests, and traditional food preparation, we're not by any means trying to tell you not to do those things, we're just trying to arm you with the knowledge so when something's off you recognize it and can protect yourself with that knowledge either by submitting for testing or just communicating with your community and herd managers and all that. One thing too, especially for butchering, is a lot of these respiratory diseases will impact, especially like brucellosis, will impact the fluid in the joints and the fluid around the heart. So, if you get in there and you get some cottage cheesy joints, and you'd be surprised the animals can behave pretty normally, then you get in there. Once you spot that, you're going to want to culture that, and that's a good indicator also that you have one of these respiratory diseases, so pictures of it and a swab if you can get it or in a whirl pack so that a vet can see it and hopefully culture it and narrow it down to which one of these. But I worry as well, because it is a respiratory disease, and most of what we are worried about with buffalo are respiratory diseases, I also worry about, we're so used to thinking brucellosis and bovine tuberculosis first, how many things aren't getting shared with vets so that we can report it and monitor for *Mycoplasma bovis* and influenza too. I think it's also good to take advantage of the ITBC opportunities to get your animals tested and to have guidance filling out those pathology forms, because they can be pretty intimidating. Mikiya is really good about helping people fill those out and not being intimidated so that we can, if you think it's brucellosis, confirm that, just to make, then we know it's not this. Every little bit of information we get about buffalo health is significant because there is so little.



Brandon Cobb

The Nature Conservancy

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Cultural Burning, NWCG Fire, and Prairie Management

- Why use fire?
 - Misnomer that fire is a bad thing or doesn't have a place in our ecosystem
 - Fire has always had a place
 - Prairies exist because of disturbance
 - They have been maintained by humans for thousands of years
 - Without regular disturbance, prairie landscapes can be overgrown with trees and shrubs in a few decades
 - Disturbance can include fire, grazing, and drought
 - Some disturbance is considered management (fire, grazing)
 - Burning creates a shifting mosaic of habitat patches
- How do we burn safely?
 - How TNC does it (pros and cons to their method)
 - Wildland Fire Qualification System Guide (https://uas.nifc.gov/sites/default/files/sites/default/files/inline-files/IFUAS_NIMS_%20Wildland%20Fire%20Qualification%20System%20Guide.pdf)
 - TNC Fire Management Manual (<https://www.tncfiremanual.org/>)
 - Only qualified personnel may participate in wildland fire management
 - Can take a decade to become a Burn Boss
 - NWCB burns can take years to plan, months to prepare for, and a day to implement
 - Identify Burn Project: locations, parties involved, role of organization
 - Conduct Consequence Analysis: for each location in project
 - Values at risk, smoke, highways, wildfire hazard, Wildland Urban Interface (WUI), public sensitivity
 - Ranking from low to very high – different approvers needed depending on ranking
 - Complete Prescribed Burn Activity Approval: based on ranking from consequence analysis
 - Completed Prescribed Burn Plan
 - Implement Burn
 - Most important thing you can do: Take a step back and take a look at what is going on
 - Prairie fires – lots of intense heat and tall flames, but fast-moving and short-lasting
 - Can't separate fire from people. Some "natural" fires caused by lightning, but people are and have been the major source.
 - Let animals out on freshly burned patches to graze on nutrient packed plants still trying to come up after burning
 - Burn followed by animal grazing removed most, not all, competitor species leaving diverse, dense area
 - Tall and flowery isn't the only indicator of success or health
- Prescribed fire in prairies
 - Removes thatch
 - Warms soil, speeds growth
 - Helps early bloomers
 - Alters habitat structure
 - Suppress trees
 - Suppress some invasive plants – not all

- One place where this method doesn't work well is sumac
- Burning and grazing are tools for prairie management!
 - Fire is important for the ecosystem and the animals
 - The animals, the medicines, the plants, the people, the fire – all these work in tandem to create the prairie
- More than one Fire System!
 - The dominant fire system is mobile and transferable. It uses shared training and universal standards to enable people from many places to mobilize and work together temporarily, wherever the need is greatest
 - Fast, quick response, standard across the nation, can work with teams without meeting them before burn day
 - Indigenous fires systems are fundamentally place-based. They enable centuries of accumulated knowledge about each ancestral environment. Burning practices are deeply rooted, nuanced, and guided by attention to eco-cultural indicators.
 - Passed down, generational, everything is integrated
 - Seasoned cultural fire practitioners
 - Knowledge and skills passed down personally from generation to generation, learned through traditional stories, intensive training, and supervised practice
 - Everything is tied to everything and can't be separated from the whole
 - Depending on culture, responsibilities can be inherited, assigned, or earned
 - Responsibility is not taken lightly
 - Room for both systems:
 - Firefighting and fire prevention are important, supporting cultural burning won't change that
- Fire has its own spirit

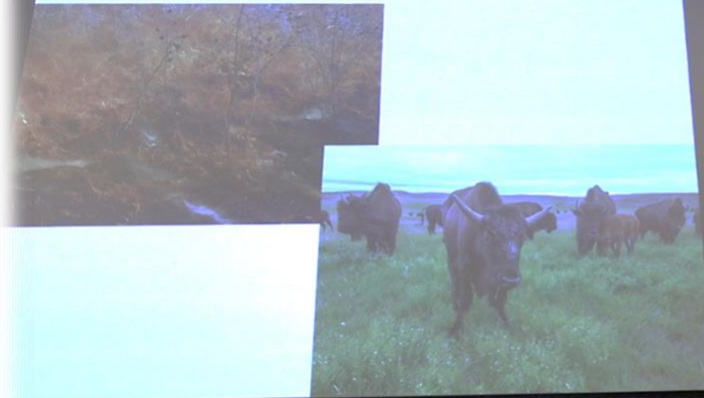
Questions:

Mystera Samuelson (EAOH, CS-Cash): We have some folks who have been asking us, and I haven't given them your information, so they never reached out, so bear with me. I had a couple folks asking about assessing poison ivy and poison oak and whether or not additional respirators are needed in those cases, and also controlling fescue, if you have guidance for that in particular?

Brandon Cobb (The Nature Conservancy): Thinking generally about smoke management and the effects smoke has on our lungs, currently there is no requirement yet for any type of respirator. And a lot of people go 'well, why the heck isn't there?' and I'll put it in context for you. When you're at roundup in October, and the dust is blowing, it's usually kind of cold outside, you know, putting that mask over your face isn't too big of a deal, if it is July/August in an area that is already dry and hot and fire prone, and you're wearing all this other stuff, and you're carrying that pack up the hill, dragging torch, the last thing I want is something covering my face. I don't care what is in the air, I just want it to go into my lungs. That said, the Canadian provincial government has decided to go the route of more of your kind of structural fire style respirators where they have the big filters on them. Word is still kind of out on that, jury's still out, on how much people actually like it. Personally, I do not wear. Do as I say, not as I do. I don't wear anything. It's a game of tradeoffs, right, and there have been times where I think the smarter option is just to say, can I move myself physically to an area where I'm not going to be sucking smoke the whole time? Usually, you can find that on a fire. That's kind of the smoke side of things. They do a ton of burning in Northern California with Margo's crew, they have a ton of poison oak. They just burn it up. Granted, their crew has some sort of superhuman ability, I swear, because they don't get it anywhere, even if they rub against it. In terms of thinking about fescue or really kind of any invasive, or non-native plant that you're dealing with, we have really found that burning and grazing stresses those plants out enough that it provides an opportunity for everything else to grow up past it.

In these same prairies, in these same pastures, there's still smooth rowan, there's still Kentucky blue grass, there's still all the things we don't really want, but we're keeping it at bay, and I think you can all understand as herd managers and stewards and land managers, that you can probably spend all day every day for the next six months trying to knock out an invasive, and you might actually have success with it, but by next spring it's just going to come back, because your neighbors aren't doing it, the people across the road aren't doing it. So, in our neck of the woods we're always thinking about not how we get rid of things but how we balance them, how do we mitigate them, while making sure that we're not just killing ourselves in the process.

Burning and grazing are tools for prairie management!



Characteristics of Indigenous Fire Systems



Prairie Fire, Artist: Bryan Haynes

In many Native American cultures, fire is much more than a tool. Fire is a relative. It has agency. It has its own spirit.

Alex Welch

UNMC College of Public Health

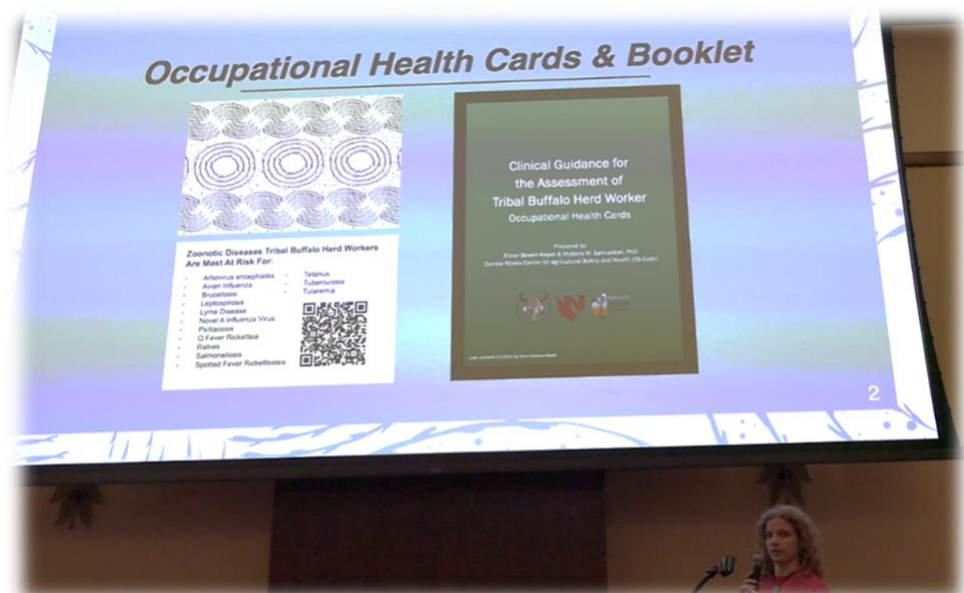
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Tick-borne Disease Exposure & Mitigation

- Tick-borne disease cases increasing each year
 - Very underdiagnosed
- Ticks are expanding rapidly to new areas in part due to climate change
- Medically important ticks:
 - American Dog Tick
 - Lone Star Tick
 - Blacklegged Tick
 - These are the three most common types and carry the most pathogens
 - Tick bites are more likely to occur in warm months, specifically May & June, however the blacklegged tick is more active in the fall
- Tick life cycle
 - Ticks can live 2-3 years
 - Egg → larva → nymph → adult
 - Ticks look the same in all stages, except that larva only has 6 legs
 - If you see a live tick, it has had a blood meal
 - Blood is how it transmits and carries pathogens
- American Dog Tick
 - Diseases transmitted: Rocky Mountain Spotted Fever, Tularemia
- Lone Star Tick
 - Diseases transmitted: Tularemia, Ehrlichiosis, Heartland virus, Bourbon virus, STARI, Alpha-Gal
- Blacklegged Tick
 - Diseases transmitted: Ehrlichiosis, Anaplasmosis, Babesiosis, Powassan virus, Lyme Disease
- Alpha Gal
 - Lone star tick, ongoing research into whether it can be transmitted from other ticks
 - Triggers the immune system to react to red meat and animal by-products
 - Can cause issues if someone comes in contact with products such as medications or makeup with animal by-products in them and not just from ingesting red meat or other foods like dairy or gelatin that have animal by-products
 - Just being around animals such as bison or cattle can cause issues, especially if helping with the birthing process, which is a concern for bison herd workers and ranch workers
- Buffalo known to get at least one tick-borne disease: Anaplasmosis
 - Causes anemia due to reduction of blood cells
 - Also fatigue, tiredness, weight loss, problems with reproduction
 - Animals older than 3 years are more susceptible
 - Theileria, which can cause Bovine Theileriosis, is transmitted by the Asian Longhorned tick, and can impact buffalo as this species moves toward the Midwest
- Prevention Methods
 - Repellents (DEET, picaridin, etc.)
 - Tuck pants into socks
 - Check yourself, children, and pets
 - Take a shower and throw clothes in dryer on high for 30 minutes
 - Remove ticks by using tweezers to grasp as close to the skin as possible and pull straight out
 - Remove as soon as possible to reduce risk of getting a pathogen

- Project
 - Two parts:
 - What ticks are found on and around buffalo? and What tickborne diseases can we detect?
 - What risk factors do buffalo workers have for acquiring tickborne diseases? and Are workers appropriately educated regarding tickborne diseases?
 - Field collection from one buffalo pasture was 100% dog ticks
 - Opportunistically sampled 6 tribal bison for tick-borne pathogens
 - Preliminary results: 1/6 had anaplasmosis (this animal was in Montana) → suggests potential bites by American Dog Tick
 - Test used can only detect active illness, not if the animals had a disease in the past (this work in development)
 - Opportunistically sampled 50 bison on Konza Prairie for tick-borne pathogens
 - 17/50 animals had Lyme disease → suggests animals being bitten by blacklegged ticks
 - 0 animals had anaplasmosis despite prior reports of 10-30% infection rate
 - Nebraska Tick Testing Program
 - If you find a tick, we will screen it for free
 - Contact NebraskaTickTesting@unmc.edu



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Context in Clinic: Providing Support for Clinicians and Patients During Intake Assessments for Zoonotic Disease Exposure

- Occupational Health Cards and Booklet
 - Cards are the size of a business card and lists zoonotic diseases buffalo herd workers are most likely at risk for.
 - Not a diagnostic tool, meant to help doctors understand the exposure risks and what diseases buffalo herd workers are most likely to be exposed to.
 - Collected geographical data by county and disease occurrence data by state using USGS and CDC resources to find what would be most impactful to buffalo herd workers
 - Not all states, tribes, or diseases are well represented due to differences in surveillance and reporting systems
 - Tick-borne diseases seem to be most prevalent
 - Increased precipitation in the spring and winter is associated with a greater overall occurrence of zoonotic diseases
 - Increased winter temperatures and decreased fall temperatures are predictive of increased disease occurrence in humans and animals
 - Those at greatest risk of zoonotic diseases appear to be those who live and work near an ecotype boundary or work across ecotypes
 - Provide you with background knowledge to help you advocate for yourselves
 - Once complete cards will be available digitally and to print
 - Booklets
 - Accessed via QR code included on the card
 - Not a diagnostic tool – meant to help healthcare providers understand your occupation better
 - Each disease includes:
 - Mechanism of transmission
 - Animal Hosts
 - Symptoms
 - Recommended assessment questions specific to the occupation
 - Exposure risk
 - Resources and Reporting
 - This is a living document, if there are changes you would like made to this document, we will make those changes
 - This is meant to be representative of the tribes, so please reach out if any diseases are missing, or cultural references should be added/removed, or any other changes that should be made
-

Mimi McCann

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Personal Protective Equipment Overview & Demonstration

- This is meant to show options that exist. Some things are more appropriate for certain situations than for others
- Hierarchy of controls
 - PPE is the last line of defense for safety
 - In the field, sometimes PPE is the only thing you have for protection
- Think about why you are wearing it and what you need protection from
- PPE keeps chemicals, pathogens, other potential hazards out of our bodies
 - Respiratory System – protect from inhalation hazards
 - Lungs, nose, mouth, throat, voice
 - Skin – protect from chemical absorption, exposure to pathogens via cuts, scrapes, torn cuticles (any broken skin)
 - Mucus Membranes – protect from splash, spray, and aerosols
 - Eyes, nose, mouth
- Types of PPE
 - Torso and skin protection: Tyvek (Tyvek is a brand name, but basic cover-all's), lab coats, etc.
 - When getting Tyvek (or similar), order for your largest/tallest person so everyone is protected, smaller people can make it work with larger suits, but Tyvek doesn't stretch!
 - Eye and face (mucus membrane protection): face shields, eyeglasses/goggles, masks, anything that covers mouth, nose, and eyes
 - Hand and skin protection: gloves, long sleeves, Tyvek sleeves (sleeve covers/extendors)
 - Respiratory protection:
 - Mask – anything that goes on your face, such as bandanas, surgical masks, dust masks, your t-shirt, etc.
 - Respirators – intended to seal around your mouth and nose and lots of regulations around them for fit and safety
 - Hearing protection: earplugs, earmuffs
- Respiratory protection – What do you need protection from?
 - Dust/particulates
 - Chemicals (splash, vapor, gas)
 - Airborne pathogens (splashes)
 - A combination of things?
- Respirators
 - NIOSH approved will have a lot of information somewhere on the respirator
 - Medical review and fit testing are required/highly recommended if you want to wear a respirator
 - Not all respirators fit all people – it depends on face shape
 - The better the fit, the better the protection
 - Not all people are fit to wear respirators
 - Breathing strain, impacts to blood pressure and heart rate, claustrophobia
 - Air purifying respirators – filter the air before you breath it in
 - N-95, elastomeric, powered air purifying respirators (PAPR)
- Link to resources about protective equipment from CS-CASH: https://go.unmc.edu/cs-cash_resources

Mimi and Mystera did demonstrations on how to appropriately don and doff different pieces of PPE as well as go over the order in which pieces should be removed to avoid contamination from the dirty PPE. After this, participants were encouraged to create their own PPE kits from a variety of PPE provided, as well as look at the examples brought by Mimi and ask additional questions if they had any.

Questions:

There was a slight misunderstanding, thinking that Mimi was suggesting all this PPE for rounding up buffalo where only a mask or respirator might be more appropriate, that was later cleared up.

Mimi McCann (UNMC Environmental Health and Safety): This might be helpful more in situations where you have to do a necropsy, where you're not really working with live animals, or in a barn or an enclosure situation where you need some chemical protection, you're going to clean something. Like you said, maybe not helpful anywhere near a live animal other than the respirators that offer particulate protection, if you have to.

Mystera Samuelson (EAOH, CS-Cash): This comes a little bit from stuff that people have asked us about, I wish Mikaya was here too, because I feel like I'm speaking for her, but she and I have had a lot of folks asking about these types of PPE, to have on hand in case there is an outbreak or something going on with your herd, so that it's something you know how to use, you have, in case you need it. But by no means are we saying you know for a roundup or you should be having to wear these for a cultural harvest.

Mimi McCann (UNMC Environmental Health and Safety): Not pushing this at all, just options.

Mystera Samuelson (EAOH, CS-Cash): Yeah, and a good example of a time in necropsy where you may wish that you had something like this on. Brucellosis, brucella in general, brucella being the group of diseases and there's several different brucella's depending on what species you are working with at the time. So, it could be you're hunting, it could be you're finding animals on your land that have died or are sick, but it also could be, dolphins have it too. The joint fluid, for example, is one of the bodily fluids you can get it from. So, think about when you're disarticulating that shoulder joint, and you're cutting meat, things like that. That synovial fluid in that joint can often splash into your face. I've seen board certified veterinary pathologists get a little, I was there too, I was also lazy, not in the PPE, and then we get into a shoulder joint and it's just cottage cheese and splattering right in your face and really wishing that we had already put some stuff on. Once you get in there, and you're like 'oh no, that doesn't look right' we just want you to know how to use these and arm yourself with knowledge to assess the risk on your own.

Lattona Spotted Eagle (Blackfeet Buffalo Program): I was just going to give an example of when we had to because we have somebody trained in our area for the necropsy and we had like, I think, five buffalo calves come up dead in a field in one of our pastures, just out of nowhere. We didn't know what was going on with them. So she, because she's the one who's trained to do it, she brings the equipment and stuff, and the guys actually wore the suits because we didn't know what was going on. So I think it's good to have them available, and then for people that don't want to use them, I guess that's their risk that they're taking. But it does happen, it did happen for us.

Mystera Samuelson (EAOH, CS-Cash): Yeah, cuz you don't want to have to wait to do the necropsy to have the stuff on hand and you also don't want to have to rely on the state or feds or whoever is coming to help you, you don't want to have to rely on them to bring stuff. So that way, you have your PPE ready to go. I'm going to be in this necropsy helping you, I have the stuff on. But I also think too, in the necropsy trainings we've talked a lot about how to recognize that saw-horse pattern if you have anthrax, things like that, and in order to report those to a veterinarian, we have some guidance on pictures you can take. Again, that could be airborne, and that can be in the dust, so if I'm going to even go take those pictures to prove my point before I reach out to vets, honestly, for anthrax, I'm going to be in this even just driving up cuz the dust and everything, I'm not risking it. That's the kind of thing

where if a vet told me, if we suspect anthrax, we only want other pathologists doing this, I would listen in that case as well. But it pays to have this in your toolbox in your truck or something and that way you can at least safely get those photos and go back and report it without infecting yourself. Because those anthrax spores can disperse pretty quickly in the soil and they can last over thirty years so a veterinary pathologist or trained biologist who works with a veterinary pathologist will come out, sample, cover it in this disinfectant foam, bury it, and then help you monitor that site for years to come to make sure that anthrax isn't growing there. So it's stuff like that you want to make sure you have that PPE available, so that if something bad happens, you're not caught on your heels, but then you can also advocate for yourself when people come on site. You can be like 'I have all the PPE ready to go, I know how to use it, you're going to have to deal with me today whether you like it or not.' Hopefully they're not like that, but I like to err on the side of caution and assume they're going to and if they're not.



Facility Tour

Hosted by the Prairie Band Potawatomi Buffalo Program

The Prairie Band Potawatomi Buffalo Program graciously welcomed our team and meeting participants to view their herds and tour their facility. Randy Smith and Scott Allen spoke about their experiences and improvements they have made to their corral and chute system based on their observations of herd behavior and the needs of their program. They offered advice, based on their experiences, for working with the herd and land as well as making similar improvements to other chute systems.

