



WAFWA Wild Sheep Working Group Summer Meeting Notes
Virtual Zoom Webinar through Pathable Platform
Associated with Summer Virtual WAFWA Meeting
July 13, 9 am – 1 pm MDT



1. Welcome, WSWG roster update, attendance sign-in, announcements, introductions, URL for attendance sheet: <https://bit.ly/2QCjJHs>

Mike Cox - Lead

Cathy Campbell – WAFWA host manager

Virtual Meeting Logistics

STAY MUTED but use SPACE BAR to speak (option in Zoom Audio Settings that temporarily unmutes you)

CHAT: must click browser to **Pathable** website to display Chat window; quick comment/notes - not competing conversations

To speak raise virtual hand at the bottom of “Participants” list

WSWG Members in Attendance: Kimberlee Beckman for AK, Anne Hubbs AB, Amber Muning AZ, Helen Schwantje BC, Tom Stephenson CA, Andy Holland CO, Hollie Miyasaki ID, Todd Nordeen NE, Eric Rominger NM, Don Whittaker OR, Froylan Hernandez TX, Jace Taylor UT, Doug McWhirter and Daryl Lutz WY; Josh Chapman, Brian Logan, John Shivik, Lucretia Smith USFS, Frank Quamen BLM, Jenny Powers, Nathan Galloway, and Melanie Woolever NPS.

Wild & Wool Film Link

<https://vimeo.com/407324346/7762e305c0>

2. Review the changes to our Mission/Charter made in January 2020

Mike – Revised Mission Statement. #3 and thoughts on the use of version A or B.

Frank – looks good for B

Don – needs more discussion

Anne – Add commercial producers

Clay – Are you trying to include all or perhaps just use and others

Amber – recommends engaging with producers, etc...

Kimberlee – Agrees;

Helen – Agrees and best to use term of “domestic livestock” to be inclusive of all domestics

Anne – agrees with Clay’s comments

Revised Statement Below

Revised Wild Sheep Working Group Mission Statement

1. Identify priority topics and management challenges to wild sheep in western North America.
2. Collaboratively develop solutions to those challenges; and
3. Foster strong relationships among state/provincial/territorial jurisdictions, federal land management agencies, indigenous groups, and wild sheep advocates
4. Engage with domestic livestock owners and operators that share the same landscapes inhabited by wild sheep

Wild Sheep Disease Management Venture (DMV) –

• Review Kezia Manlove’s FAQ Documents on M.ovi and managing domestic/wild sheep transmission risk

Kezia – collaborating with Helen and BC Ministry to share information on a series of FAQ/Fact document “Review of M. ovi Management Strategies”. Main Topics covered:

- Approaches and best practices for eradicating M. ovi from domestic sheep and goat operations
- History and performance of diagnostic testing for M. ovi
- Host Range and potential role of non-caprinae species (like llamas) in epidemiology of M. ovi
- Relative risk of M. ovi transmission for domestic goats as compared to domestic sheep
- Cost and benefits of fencing strategies to limit risk of M. ovi transmission
- Likely risk and consequences of M. ovi transmission into mountain goats and thinhorns
- Utility of M. ovi strain typing and variation in virulence of particular strains

- See slide show

Google Form to fill out if you have information/data to share on these topics:

<https://forms.gle/KHMgcu2kjyfcWqbz8>

- Questions:

Helen – this will be for public use in the future. Timeline is end of this summer

Kezia – Mid to late August timeline

Mike – Many questions we cannot really answer. Diagnostics for testing M. ovi and the jargon used amongst labs.

Helen – it will be included

Kezia – has reached out to others like Maggie Highland for this information as well and have received additional information to add to the FAQ sheet

• Any new information on other species harboring M.ovi.

Mike – any new information out there on wildlife species with confirmed M. ovi?

Kimberlee – Caribou, Moose, and Dall sheep; M. ovi. in Moose was new but only 1 sample tested positive

Tom B – asked which lab was this test result from because during recent conversation with Dan at WADDL he didn’t acknowledge any Moose test.

Tom B – White-tailed deer found positive at WADDL but not at liberty to say where it was from.

Kimberlee – she had archived nasal swabs back to 2004 from Caribou and Dall sheep and M ovi was definitely present throughout the state from these past samples back in mid 2000s

• Mycoplasma ovipneumoniae West-wide Strain Virulence Project Committee

- Kezia – started working in Mojave-SW region with Utah, Nevada, and Arizona looking at demographics with known M. ovi strains - a ton of noise exists with this data of varied population responses to the same M. ovi strain

- She shifted to trying to look at demographic responses from serological antibody positive tests

- Looked into study at Zion, real slow antibody “expansion” in the herd to this low virulent strain, looks different from what she has seen elsewhere

- Reviewed all of Nevada’s serological M. ovi data and the cut-off that WADDL uses to determine positive antibody response; it seems that the test is a bit high in her opinion and that there likely are some herds that have seen M. ovi but the test results show they haven’t based on the WADDL level set

- Kezia also looking at serology data at well-studied herds and animals with multiple tests over time to help determine the appropriate cut-off.

- Covid-19 has impacted the work on much of her work

• Test and Removal Project Updates

Helen – West side of South Fraser River in BC – one of the original California bighorn herds; captured, sampled and tested animal side using Biomeme Unit (40 ewes and 2 rams), euthanized 11 of them but a couple of them were false positive that we shouldn’t have removed due to the lack of sensitivity of

the Biomeme Unit relative to the results sent to WADDL and Abbotsford, BC labs later received.

Happy with the results. Had a great group conducting the work including First Nations, and 2 film crews documenting the work. Optimistic about what they did and seeing some positive results already with lamb production from ewe groups that previously had poor production.

Mike – What ages of sheep that tested positive and were removed?

Helen – Can't remember exactly, but generally older ewes tested positive; had a learning curve with Biomeme unit even with support from Biomeme company; 2nd capture went much better than first

Helen – South Fraser River effort is a large group of people working well together

Hollie – In Idaho, we are moving the Test and Cull program from Hells Canyon to the Lower Salmon River area. Much different than Hells Canyon where we can't capture all the sheep. So they will focus on subherds where M. ovi may be more prevalent or where larger concentrations of sheep exist. Start this fall and expand it over time. They held a Tri-State meeting with OR and WA to expand Test and Removal efforts, collaborate and share information and protocols beyond Hells Canyon.

Don – will start in OR this winter in Lookout Mtn herd to test and test them using animal side Biomeme unit. Working with grad student and improving the reagents and accuracy of the Biomeme unit.

Mike – bad news in Nevada, our 5-year test and removal project in the Snowstorm Mtn California bighorn herd had poor production in most of the subherds this year; had positive PCR for M. ovi on a lamb found dead in June.

Jace – Asking Helen – were you slinging animals to a processing site?

Helen – netgun captured animals slung them to a base camp; sedated and kept for 1 hour while Biomeme unit ran the PCR test and euthanized the animals on the single positive test result.

Jace – Shared Rocky Mtn bighorn herd with Nevada (Leppy Hills/Pilot Mtn/Silver Island), has struggled since dieoff event in 2010, but not able to remove the adjacent likely source of infection; so UWDR and NDOW agreed to try a minimal effort Test and Removal effort (all tired of seeing lambs die every year) to try to observe symptomatic animals or target older age ewes, remove 1 or 2 animals (only 30-35 left), test them and monitor lamb survival.

Kezia – Program called “Working Dogs for Conservation” out of Bozeman, Montana; they are interested to train dogs to sniff M. ovi infected sheep. Project underway with domestic sheep and working on getting fecal samples from known positives. Logistics still being worked out. Their staff scientist thinks that they can successfully train dogs to sniff out animals that are M. ovi carriers. Looking at WSF for support.

Todd – Nebraska is 2nd year of test and removal. Lots of predation on lambs both years; still had 1 lamb test PCR positive last year and this year.

Kurt – spoke with Pete Kockala(sp?) with Working Dogs for Conservation associated with Bridger's experimental reintroduction

Tom – yes, been involved with Mark Judala at MSU; trying to develop clean domestic sheep herd

Kezia – another researcher at MSU Dianne B? is going to expose clean domestic lambs with infected lambs and have the Working Dogs for Conservation sniff both and see if they can tell the difference.

Tom – he had heard the dogs could tell individual ewes apart but couldn't detect M. ovi carriers

Kevin – results from Walla Walla Prison M. ovi. free domestic sheep herd project

Tom - they are on their 2nd phase of reclearing the herd of M. ovi; due mainly from not following standard protocols the herd got reinfected

Tom – He spoke with Dan Bradway at WADDL just now and he confirmed WADDL has never had a positive PCR for M. ovi in moose

William – took over for Rich Harris and he is getting up to speed on the prison sheep flock project

Other Tools/Methods to consider (domestic sheep flock management?)

- **Any updates on use of Baytril**

Mike – Bayer not willing to recommend for domestic sheep

Hollie – hope to test Tetracycline in domestic flocks for clearing domestic sheep associated; Univ of Idaho is leading project funded by Idaho Fish and Game.

Tom – Project is moving ahead

- **Status of Biomeme Unit for sheep-side M.ovi testing**

Helen – Covid-19 testing demands on Biomeme company has slowed their work on the M. ovi PCR unit; working with company on improving unit's sensitivity; there are best mgmt. practices when using the unit

Helen recommends using Oxytetracycline – long acting one, has shown clinical improvement but not sure about clearing M.ovi

- Kezia – CO may be doing some work on Tetracycline,
- Tom – oxytetracycline, some of the pharmaceutical kinetics seem less favorable compared to other antibiotics we have used; does seem worthwhile to conduct trials with it.
- Mary – we have had some luck with sustained/prolonged treatment of tetracycline in captive bighorn lambs; put for a free ranging domestic or bighorn sheep it's not practical; took months of treatment to clear in lambs.

Wild Sheep Capture/Handling Guidelines

Overview of Process and Updates by Chair/Leads of each Committee

Mike – overview and committee chairs for the 8 committees

- **Drop-net Capture**

Vern – 2 zoom meetings, text being edited to bullet form. Use surveys to gather information.

Mike – overarching goal of the guidelines is to be a quick reference with photos and video clips, living document, divided into sections, reference rich.

- **Chemical Immobilization Capture**

Todd – 4 zoom calls, document includes newer available drugs for sheep and goats, includes capture methods, capture site selection, Projectile and delivery systems, ground vs. helo darting concerns, animal health and vital sign monitoring

Vern – suggestion for all chairs to provide literature used

- **Helicopter Net-gun Capture**

Eric – 2 zoom meetings, lots of good input with a variety of professionals, working with federal folks to who have provide a lot of enthusiasm and good input. Had long-time capture pilot and gunner/muggers Gary Brennen, Wes Livingston and Mike Schlegel participate in one of the meeting and contribute a great deal of their expertise and will continue to be help with the guidelines. Using surveys as well. Still looking for mortality data sets from many jurisdictions.

- **Neonate Capture**

Marcus – 2 zoom meeting, good outline, study design, handling techniques/procedures, equipment needs, good group.

Kevin – do you envision a bound document; can you update sections regularly (3-ring binder type)

Mike – we'll discuss more but it should continue to be a live document on the internet

- **Basecamp Operations**

Mike – long list of topics with 6 major sections: Planning/Coordination/Capture Plans, Site Selection/Previsit, Key personnel/Organizational Structure, Volunteers & Media; Animal Processing & Sampling, Day of Capture Considerations. Each section farmed out to individuals to work on their own time.

- capture plans are under basecamp group.

- **Translocation/Release/Monitoring**

Mike – same and above; Major Sections: Release Site Habitat Evaluation & Other Concerns, Source Stock Considerations, Release Complement Considerations, Capture Day and Transport, Release, Post-Release Monitoring

Holly – general comment about capture guideline committees she is on: things going well, liked the living document as long as someone can stay on top of the updates. Interesting discussions in all the meetings.

- Collaring and Marking – not covered during the meeting but since then Major Sections identified are: Collar Purpose, Fit/Design/Animal Welfare, Technical Specs, Data Viewing & Management, Collar Bid Process, Communication with Companies, Applying Visual Marks
- **Animal and Herd Health**

Anne – looking at what Peri, Helen and Lisa. Pulled the relevant health sections from their efforts Set up some sections to add to and looking to have another zoom meeting soon. Disease testing and health management will be main focus. Include animal welfare concerns and what capture teams should be looking at when conducting captures related to animal health.

Mike – timeline is January 2021 for a good solid draft.

Viewing and Discussing Distribution and Use of Wild & Wool Documentary with virtual cameo from film producer

Kevin – 23-minute film, WSF partnered with Sitka Gear; total cost of film was \$140,000; biggest film WSF has ever taken on. Phill Baribeau and Implement Productions were the film producers. With Covid, its distribution has been slowed; premiered at the International Wildlife Film Festival in Missoula and then at the Telluride Film Festival this spring and summer with both being virtual formats. To date about 4,500 views of the film; Due to show at 10 more festivals coming up. Intent was to help educate the public on respiratory pneumonia. Sent to ASI but never heard back. Some feedback received felt it was a balanced story. Many of our colleagues are in the film.

Mike – hats off to WSF for developing this.

Kevin – ran it by WSF staff who felt it was very educating to them and others.

Film watched by everyone from link on Pathable platform

Allen with Alaska Board of Game - is this video available yet for others

Mike – not yet, agreement is to run through the film festivals first then will be available after that.

Kevin – can show it discretely to agencies etc... for now.

Mike – hoping to have Charles on with his filming but he was not available

Kezia - thinks film came out well. Folks she have spoken to who have watched feel good about it.

Helen - Agrees, it was done well. Good feed back

Kezia – after first cut, they fixed everything she commented on.

Melanie – how long with link be available on this pathable site.

Mike – Will be available today

Tom – They did a phenomenal job on a complex problem.

Terry – Well done, good message. Had a couple questions regarding approach. Like to have seen a solution discussed more such as allotment retirements.

Mike – was involved with wild horse documentary last year, which was done well. Need to educate first and move towards solutions.

Kevin – Echoed Mike's comments. Need to have further conversation about allotments, treatments, etc... Did not want a hard-hitting message.

Cathy – can continue to view video through WAFWA meeting.

Review Issue (not Position) Statement on South American Camelid Disease Risk to Wild Sheep and discuss developing Pack Goat Position Statement –

Mike – calls from lama producers over past several years arguing there is no empirical data on llamas transmitting or ability to transmit virulent pathogens to wild sheep. Two years ago, got a certified letter from ad hoc group of pack llama owners questioning why WSWG posted on their website, the recent

completed Risk Assessment on SAC for back country trekking in British Columbia; spoke with the gentlemen/lead of pack llama group on risk assessment and WSWG stance on the topic (we didn't have one at the time). Pulled the risk assessment from webpage. Asked WSF staff who had previous experience with collaborating with pack goat owners on disease risk issues to help me draft an "Issue" (what we know and don't know but not a "Position") statement. Sent it out to WSWG for comments a couple months ago. WY, CO, BC, ID, and UT provided edits. Strategy is to have Wildlife Health Committee (WHC) work with WSWG to come up with a collaborative Issue statement

Helen- All the past Risk Assessments were written to assess and protect thinhorn sheep; not applicable to bighorn. Llama folks neglect to understand that. Helen sent edits this morning on Issue Statement.

Jim H – seems reasonable to now have a document that is all-encompassing wild sheep

Tom S. – Why only meant for thinhorn?

Helen – was associated with backcountry tracking in British Columbia. The original assessment many years ago and the recent 2017 one were focused mainly on risk to Stone sheep, a subspecies that is relatively pristine in relation to pathogens commonly found in bighorn sheep herds.

Hollie – provided some edits but something may have happened to those. Thinks statement could be shorter and directed to what situation is. Mike will double check Google drive.

Mike – in January, we indicated we didn't have enough information for a "Position" Statement. Will need more information to address all wild sheep

Don – Agree with Hollie, condense it a bit more. Isn't a lot of published science on the issues. Need to be cautious on this since we don't know much about camelids.

Mike – Has concerns about recent assessment being used out of context by land management agencies with bighorn sheep, similar issues that Kevin saw with the Pack goats in core wild sheep areas. Other state and federal agencies may soon be wrestling with this topic and looking at WSWG as the leader for guidance and are waiting for us to come up with something. Hoping the outcome of the issue statement will help with that.

Mike M – The WHC is certainly happy to help and will approach it as was done with CWD and MD working group. Edits so far are a bit lengthier and to have some folks in the committee interested in helping with this. The context with interpreting and applying information is important. Many diseases involve other livestock like cattle but this group has had concerns about entering into that issue.

Mike – Need to look at ourselves at what we are not doing with domestic sheep and cattle. We do not have a position statement on the use of Pack goats either. We have leap-frogged into Lamas. SAC groups will continue to be a player.

Jenny – As land management agency, please don't tie our hands with an overall statement could be difficult for some entities

Mike – Agrees, may look different in each jurisdictions

John Shivik – Echoes that and agrees

Kevin – Pack goat meeting for 8 hours, learned about each other. Good meeting with better understanding amongst all. Concerned about the Camelid groups wanting to participate and come to the table. Camelid groups do not want more testing, just use data from 90s.

Mike – will work on getting them to the table

Becky – Consider liability, regardless of what is recommended. In some cases, there could be liability for damages

Don – would like to reiterate that without data it may force us to be more cautious in evaluating the risk to bighorn sheep. Discussion with groups is a reasonable approach. Some will come to the table with pre-conceived notions.

Mike – will taking volunteers from WSWG to help with this effort

Rocky Crate Chair Search Update

Vern - WSF has been actively involved. Some on search committee met last Monday

Tom B – Search is on, Covid related hiring freeze had been on but it is now open to the search. Have interviewed with 4 applicants in the past but no recommendation. Last week's meeting discussed

direction to fill the position; keep standards high but may have exhausted current level of applicants. Going to broaden the job description to others that may not have as much sheep experience, ecologists, etc. Now reaching out to new candidates.

Eric – was the position offered to the 4 on the top list?

Tom B – Yes, sticking points were family moving, other personal concerns, etc

Vern – social skills is a much-desired quality in need for this position.

Whatever happened to Risk of Contact Model?

Mike - Seems to be a lot of interest in using updated model. A number of folks participated in the recent call

Frank – Payment to Josh needs to be completed before sharing the new model

Melanie/Kevin – WFS offered help facilitate that payment

Mike – Lots of things to update such as habitat layers – summer/winter. Hopes this new model is much less hassle.

John – Supportive of BLM helping with this model. Still works with older versions of ARCGIS

Lucretia Smith – will be able to continue helping with domestic work as well

Mike – no longer going to produce occupied bighorn habitat maps as pdf file. Will simply have live updated GIS shapefile/layer; need domestic sheep allotment updates; can use the GIS files for story mapping

Frank – Are the land mgmt. agencies still providing the domestic sheep geodata with WSWG?

Mike - Yes

Wild Sheep Genomics Group – Initiating California Bighorn Genetic Strategy

Josh Jahner– generating a large genome data set. Need to better understand genetics of California bighorns; typically have shown to have low genetic diversity. How different are the California and Rocky species? Should they be mixed or separated? Looking to sequence this fall from the samples collected from various states followed by analysis of the diversity with management suggestions. Have lots of California samples from BC, Nevada, Utah, and looking for more from other jurisdictions. Working with other states on Rocky samples. Need continued support with these samples over the next couple of months.

- Clint – had some shutdowns that slowed things down but open and going again. Will reach out to Mike Miller for CO data. Still also looking for financial support from anyone interested.

West-wide GIS Wild and Domestic Sheep GIS Shapefiles –

- Attribute Table of occupied wild sheep polygon GIS shapefiles – herd name, hunt unit (GMU), subspecies(s), origin, current pop size, comments

Mike – Survey-supporting maintaining west wide mapping, etc. All said yes

- All said yes to share herd data and information
- use of data was determined to be valuable to all
- Use of Risk of Contact Model. 60% said yes they did
- Use of Risk of Contact model in future – most said yes
- Updating model was recently revised and not constrained by ESRI showed example on screen that WY provided with spreadsheet data (herd information) and map

- BLM and USFS will continue to update active domestic sheep allotments and trailing routes

Use of WAFWA’s new cloud-based server for all our data and development of ESRI Story Maps to share WSWG stories/messages/successes

Chanda – WAFWA’s next cloud, wanted to have something that would house data

- Set up a server with a platform called Next-Cloud
- being reviewed by attorneys
- has a Microsoft interface
- has Outlook capabilities
- has similarities to Google docs

- has webinar features
- can store personal data with an account
- can share documents outside as well
- has users guide

Kezia – does it have an integration for code or script? Like Bitbucket?

Chanda – Yes, does not see why not. May not pull data from an external site.

Mike – will try to have a zoom training session later this summer with this new system

West-wide GPS Collar Failure/Performance Survey in cooperation with MDWG

Mike – Have not distributed the survey and ask agencies to fill it out.

Jim – Mule Deer Working Group did not put on their agenda. May be good to consider it for all big game species. Can talk about with other working groups to participate.

Don – Still worth pursuing. Now adding more criteria into performance to bidders. Holding vendors accountable. Have open discussion with vendors, etc...

Mike – included John Roth on committee meeting for design

- Ken Hershey (Utah) showed results with ATS collars recently
- Hold vendors accountable for failures.

Don – Had to also understand that there will be some failures and accepted that (15%). In addition, takes more time and effort to follow up on collar status.

Tom S. – Thinks it is worthwhile to pursue with WSWG. Value in sharing information like this with group. California is now applying more criteria to collar purchases.

Mike – comparing ATS and Telonics collars deployed last year

Mike – will try to put a brief “How to complete Survey” on the Next-Cloud along with the actual survey

Froy – Clarify failures and complete or component failure, etc? Have all the collar companies at the table

Mike – John Roth is not on the committee. Plan is to share results of the survey with all the companies and go from there

Don – included various failures of components, etc

Jim – Will this involve more species and all groups?

Mike – Should involve all

Upcoming Wild Sheep related events and meetings

- Northern Wild Sheep and Goat Council Symposium – Canmore, Alberta 2 – 5 November 2020

Anne H – Border closures and Covid concerns and looking at about 5 different options now

1. Cancel outright
2. Move to spring
3. Merge with Thinhorn
4. Move to later, perhaps fall 2021
5. Keep November date this year but make virtual

Kevin – conference call after first of August to discuss those options.

- Reno – Jan 13 – 16 is still approach

Mike – Zoom cocktail hour this evening.

- Others?

Froy – DBC meeting is looking like it will be virtual. Will send a poll out regarding potential travel to Texas

Adjourn