

Cassiar Stone's Sheep Project – Health Assessment and Habitat Use – Year 3 December 2020 Update

2020 Accomplishments and Goals:

Research team continues to conduct analyses, summarize health conditions, write-up findings, and communicate research

January

✓ Oral presentation at the SCI - Northern Alberta Chapter Horn Scoring Event in Edmonton, AB

February

✓ Collaboration with University of Alberta USchool to create a workshop for elementary school students in the Edmonton Area

March

✓ Oral presentation at R.E. Peter Conference in Edmonton, Alberta
✓ Oral presentation by Bill Jex at the Wild Sheep Society of BC
✓ Oral presentations for BCTWS and ACTWS 2020 Conferences
*March events were cancelled due to COVID19 pandemic

April

✓ Poster presentation for the Northern Wild Sheep & Goat Council Symposium 2020 in Canmore, AB
*Postponed due to COVID19 pandemic
✓ First project update of Year 3

May

✓ Estimate lambing events by analyzing movement behaviours of GPS-collared ewes

June

✓ Lamb survey fieldwork cancelled to comply with COVID19 prevention
✓ Continue lambing estimations

July

✓ Field work to retrieve trail cameras and GPS-collars in mortality

August

✓ Analyze trail camera pictures
✓ Dr. Caeley Thacker Veterinary M.Sc. defense and thesis completion

September

✓ Field work to retrieve remaining GPS-collars

October-December

✓ Enns, Thacker and Schwantje present findings at the Northern Wild Sheep & Goat Council Symposium 2020

March 2021

Grace Enns anticipated M.Sc. defense and thesis completion

We are heading into the third winter of our Cassiar Stone's Sheep Project. Although our team faced challenges this year because of the COVID19 pandemic, we are happy to report that our project continues to move forward and reach the goals we have set out to achieve.

In August, Dr. Caeley Thacker (University of Calgary, Veterinary M.Sc.) delivered a terrific virtual defense presentation for her M.Sc. thesis titled "Health Surveillance of Thinhorn Sheep (*Ovis dalli*) Herds in British Columbia and Alaska". Congratulations Dr. Thacker!

2020 Fieldwork

As of September 2020, we have completed all fieldwork for the Cassiar Stone's Sheep Project. September fieldwork included dropping and retrieving the remaining 12 GPS-collars. A big thanks to the field crew who successfully retrieved these GPS collars, Bill Jex (Provincial Wild Sheep & Mountain Goat Specialist), Jordan Martens, and Jamie Tate (pilot).

Our project has collected relocation data from Cassiar Stone's sheep every one or two hours over a period of 30 months – now that's a lot of sheep location data! These data are being used by the research team to better understand habitat use by Stone's sheep ewes during various seasons in the Cassiar Mountains.

Northern Wild Sheep and Goat Council Symposium

Three members of our research team, Dr. Helen Schwantje (Provincial Wildlife Veterinarian), Grace Enns (University of Alberta, M.Sc. student), and Dr. Thacker, presented findings at the virtual Northern Wild Sheep and Goat Council Symposium on November 10-12, 2020.

Dr. Schwantje provided an update on the health and research of bighorn and thinhorn herds within British Columbia, the health status and research of domestic sheep, and the actions the province is taking to protect BC wild sheep and their habitat.

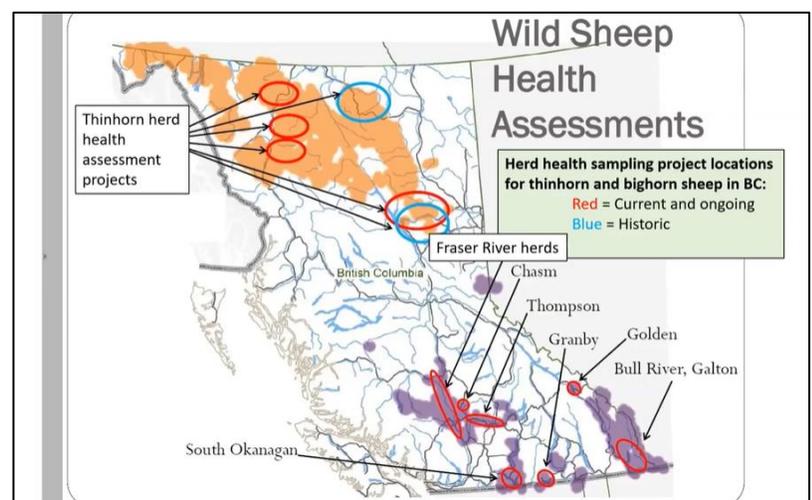


Figure 1. A slide from Dr. Helen Schwantje's presentation at the NWSGCS in November 2020 illustrating the locations of herd health sampling project locations for bighorn and thinhorn sheep in BC.

Enns has analysed ewe movement behaviours using GPS radio-collars, VIT data, and trail cameras deployed on high-trafficked sheep trails in 2019-2020, to estimate Stone's sheep parturition dates in 2018-2020 (Figure 2). We have learned that the timing and synchronicity of Stone's sheep parturition varies annually. In 2019 lambing occurred early with a mean parturition date of May 14th and was highly synchronous. However, in 2018 & 2020 we observed longer and less synchronous lambing periods with mean parturition dates of May 30th and May 31st, respectively.

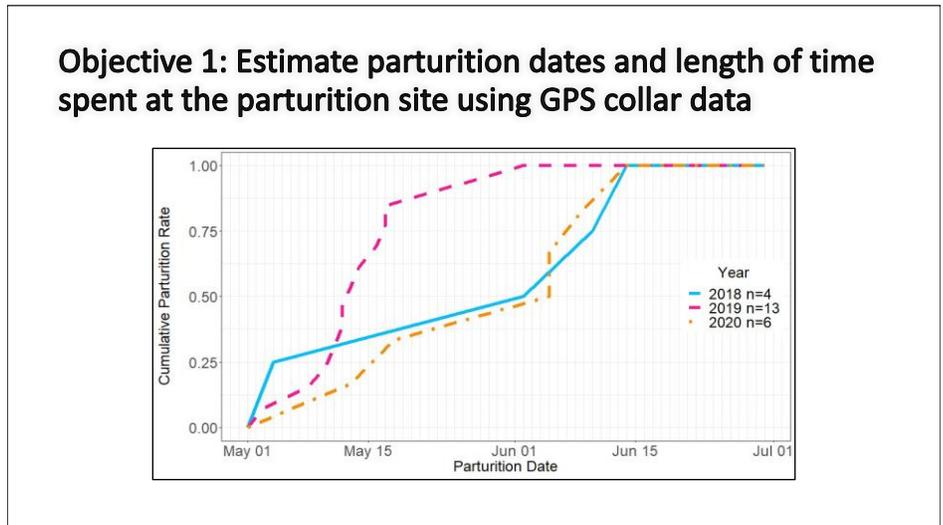


Figure 2. A slide from Grace Enns' presentation at the NWSGCS in November 2020 illustrating the cumulative rate of parturition events in 2018, 2019 and 2020.

Dr. Thacker presented on the research findings of her M.Sc. thesis project, a comprehensive health survey of thinhorn sheep in BC and Alaska. From 2017 to 2020 the team captured and collected health samples from 46 Stone's sheep in the Skeena and Peace regions of BC, and 67 Dall's sheep in the Talkeetna and Chugach mountains of Alaska.

During this study, *M. ovi* infections or exposure in live-captured Stone's sheep in BC were not detected. There was

also little evidence of exposure to most bacterial and viral respiratory pathogens common to domestic small ruminants such as domestic sheep and goats, in Stone's sheep in BC. Findings suggest that Stone's sheep are relatively naïve to diseases carried by domestic ruminants and other wildlife species. Dr. Thacker's research provides a baseline for continued health monitoring to allow for early detection of disease introductions, chronic stress, or other population-limiting factors.

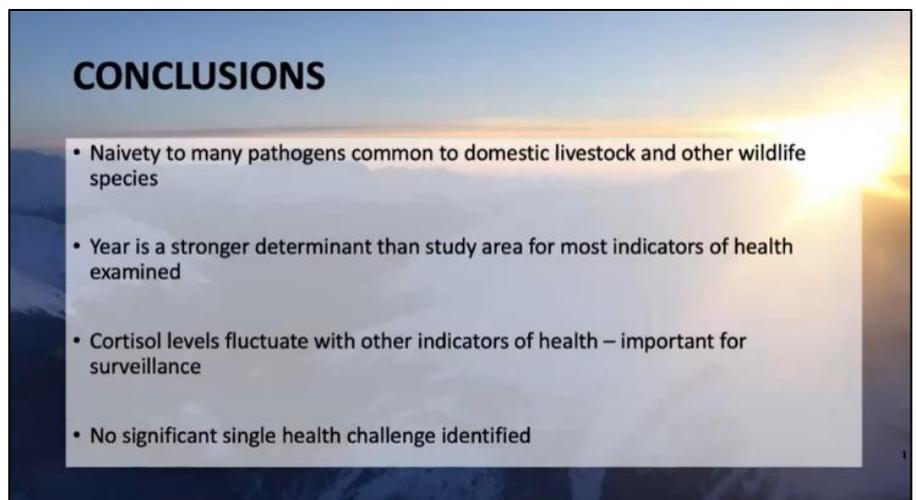


Figure 3. A slide from Dr. Caeley Thacker's presentation at the NWSGCS in November 2020 addressing a few key conclusions of her research.

Working Remotely

As we move into 2021, our lead researchers, Enns, Dr. Thacker, Dr. Schantje, and Jex, will continue to work remotely on data analyses, writing up research findings, and organizing project outreach. We anticipate Enns will be delivering her M.Sc. thesis defense in March 2021. Stay tuned for online viewing details!

On behalf of our team, I would like to extend a huge thank you to our partners; the Wild Sheep Society of BC & the Jurassic Classic fundraiser, Wild Sheep Foundation & Outer Circle Bunch, Abbotsford Rod & Gun Club, Safari Club International Northern Alberta Chapter, BC Habitat Conservation Trust Fund, University of Alberta, Northwest Guide Outfitter Association, Tahltan Guide Outfitters Association, the Province; and the Dease River First Nation people and Good Hope community. Without your continued support, interest and encouragement, this project would not be possible - thank you!

*Written by Grace Enns,
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