



Engaging Youth in the Saskatchewan Farmland Moose Project

FINAL REPORT

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Canada

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Introduction

Moose have moved from the boreal regions of Saskatchewan into the agriculturally-dominated southern region in the last few decades, and little is known about their ecology in this new environment. The University of Saskatchewan's Wildlife Ecology and Community Engagement Lab, under the supervision of Dr. Ryan Brook, is working with the Ministry of Environment and Saskatchewan Wildlife Federation to fill this knowledge gap with a research program. Using global positioning system (GPS) collars, this research will provide information on habitat and resource selection and use, as well as movement patterns of 40 female moose in the Saskatchewan farmland region. The program will address a variety of important concerns about moose in the rural landscape, such as vehicle collisions and property damage. The information gathered will also be valuable for developing moose management strategies, which will ensure long-term survival of harvestable moose populations on the prairies.

The Engagement Program is a component of the Saskatchewan Farmland Moose Project. The goal of this program is to communicate the importance of moose with youth, particularly First Nations, by bringing an interactive educational program to students within Saskatchewan farmland moose range. The program strives to engage students in ways that excite them and encourage their involvement and learning about the wildlife of Saskatchewan.

A partnership with the Treaty 4 Education Alliance and the Nature Conservancy of Canada was made to offer this program under the Learning the Land initiatives already in place in the Treaty 4 school system. The primary target audience for this youth program is the middle years level, but in some schools the program was delivered to students at a higher grade level.





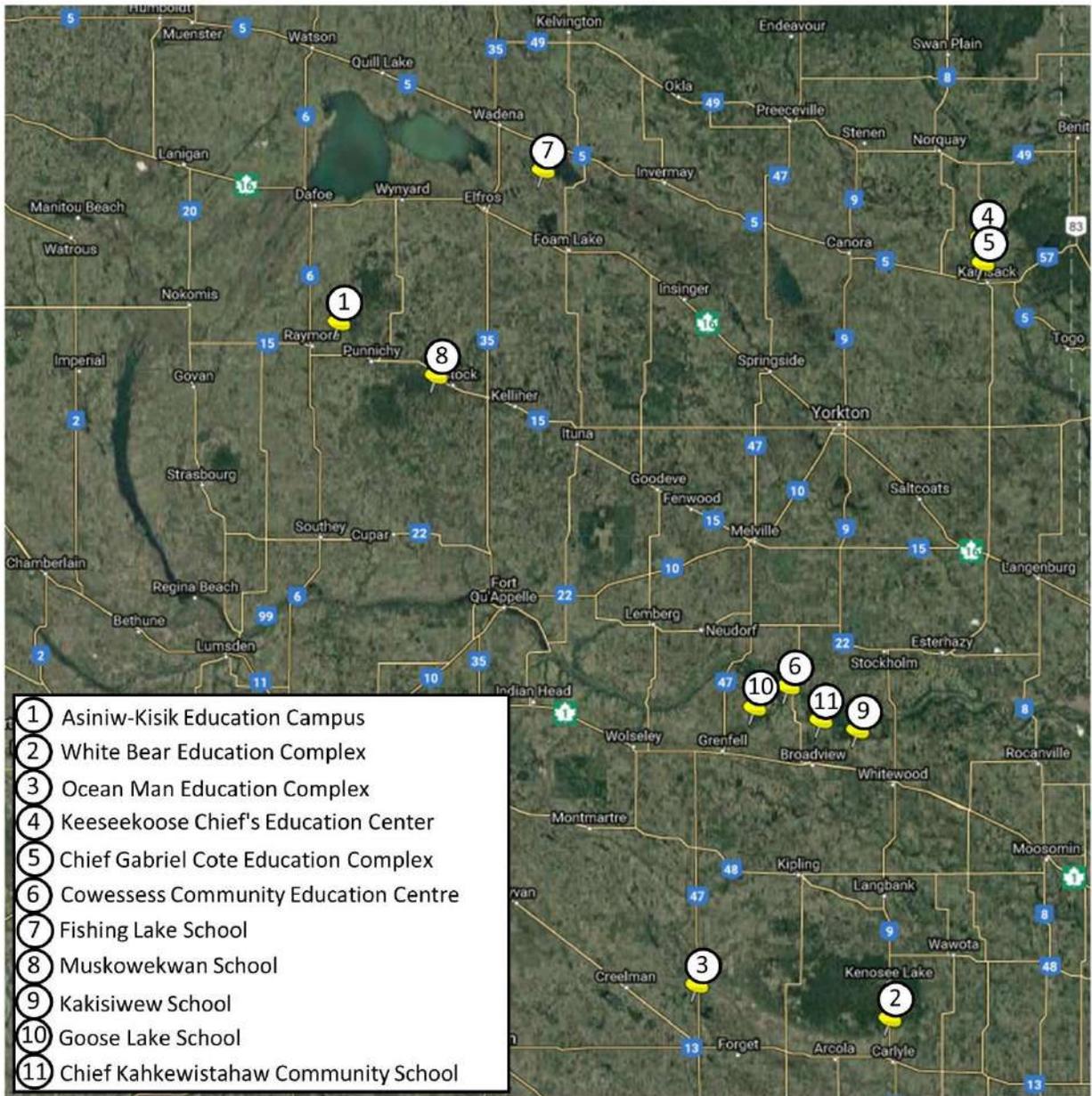
Students from Chief Gabriel Cote Education Complex enjoying an awareness and teamwork game lead by Scott Fulton.



Students look for collars using radio telemetry on a beautiful day at Keeseekoose Chief's Education Centre .

Summary of School Visits

| Date | Community | School | Grades | # of Students | Teacher |
|---------|----------------------------|--------------------------------------|---------|---------------|------------------------------------|
| Oct. 26 | Kawacatoose First Nation | Asiniw-Kisik Education Campus | 7 - 8 | 22 | Wanda Poorman and Gregory Weaver |
| Nov. 1 | White Bear First Nation | White Bear Education Complex | 7 - 9 | 16 | Stephanie Brown |
| Nov. 2 | Ocean Man First Nation | Ocean Man Education Complex | 7 - 12 | 12 | Patrick Wilson |
| Nov. 17 | Keeseekoose First Nation | Keeseekoose Chief's Education Center | 6 - 8 | 26 | Alex Tawpism and Michael Sanderson |
| Nov. 18 | Cote First Nation | Chief Gabriel Cote Education Complex | 6 - 9 | 12 | Priscilla Gamble and Elton Keshane |
| Nov. 23 | Cowessess First Nation | Cowessess Community Education Centre | 10 - 11 | 9 | Loretta Beacock |
| Nov. 24 | Fishing Lake First Nation | Fishing Lake School | 7 - 12 | 16 | Shanna Harriman and Laurie Kayseas |
| Dec. 8 | Muskowekwan First Nation | Muskowekwan School | 6 - 8 | 21 | Tony Ruhland and Dorothy Asapace |
| Dec. 14 | Ochapowace First Nation | Kakisiwew School | 6 - 8 | 26 | Elton McKay and Joyce Leggott |
| Mar. 15 | Sakimay First Nation | Goose Lake School | 2 - 5 | 28 | Kendra Tappotat and Shauna McNabb |
| Mar. 16 | Kahkewistahaw First Nation | Chief Kahkewistahaw Community School | 8 - 9 | 18 | Maria Sparvier |
| Totals | | 11 schools | | 206 students | |



Google Earth image of Southeast Saskatchewan showing locations of schools visited.

Detailed Summary of School Visits

Asiniw-Kisik Education Campus Teacher Wanda Poorman and Gregory Weaver

This was the first school visited as part of this engagement program. Carrying the moose antlers from the vehicle, several students came up to chat and ask about the antlers, and ended up carrying it inside where they told their peers about the presentation they were receiving. This resulted in a second classroom being added to the presentation, with much excitement about the activities.



Student having fun with moose antlers in front of a trail camera.

Upon arrival, we were told that several students were not prepared to go outside, and the group seemed hesitant about the outside portion of the program. Students received a powerpoint presentation in the library that introduced the moose project and methods used in the research. A few items were shown around during the presentation, but this seemed to distract the students.

We did spend some time outside trying out the radio telemetry tools. It was difficult to keep the students together and the students struggled to find the collars which had been hidden by peers who were not participating in the activity and could not be found to aid the students. Several students went back inside and it was difficult to get everyone back together.

Back inside we did a “show and tell” with some of the items (antlers, skulls, furs, etc.) which the kids liked, but it did not have much direction or means of interaction with the students other than passing the items around.

Scott lead an awareness/teamwork game with the students while Raea secured a trail camera outside. The students were slow to start the game, but ended up really enjoying it and we nearly ran out of time to check on the trail camera. We had intended to talk about how to set up a trail camera, and take a group photo, but very few students joined us outside and they were more interested in just posing for photos.

There were a few questions from students and the teacher, but overall engagement was not that high. More could be done to make the “props” be part of an interactive activity. All-in-all it was a successful first attempt, but many improvements could be made in facilitation, structure, and engagement, including bringing more supplies.



Students work together to track a radio collar with telemetry equipment.

White Bear Education Complex
Teacher Stephanie Brown

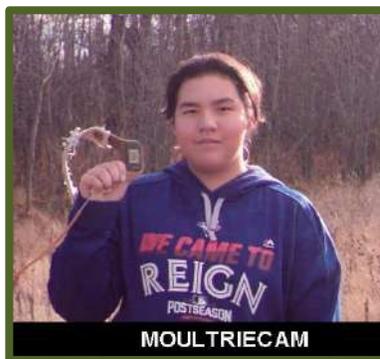
After a round of introductions in the classroom, we brought the students to another room where we set up 5 stations of furs (2), antlers, skulls, and feet/tracks with index cards and had students match the items with the species labels at each station. The students enjoyed looking through all of these items, and there were opportunities for some learning moments (e.g. difference between horn and antler). We had each group report their answers for the station they finished on, and explain their conclusions. This activity seemed to go very well and burned off some of the energy so that the kids were better able to focus and more engaged in the remainder of the presentation and workshop.

Back in the classroom, Scott lead a “KWL” (what do you know, what would you like to know, what did you learn?) activity to gauge the students’ knowledge, curiosity, interest level, etc. about moose. This was partially done in a “think, pair, share” style where students brainstormed on their own before talking to peers and then shared their answers with the class. The students generated a lot of questions, and were evidently quite interested.

The powerpoint was modified in style to walk through the scientific method, which was described in the first slide. This allowed the students to appreciate the process of answering a scientific research question. The students had LOTS of questions during the presentation, so much so that we began to run out of time and had to rush the later portion of the activities. It was great to see this level of interest from the students.

Students were placed into three groups to do the telemetry exercise, and were told that they would have to bring the collar, once found, to the trail camera we had set up to take a photo. Other students documented the activities with Scott’s iPads. We may have hid the collars too well – there seemed to be signal interference and the students struggled with locating them. They do not work that well at short range, so the collars should be visible once you get within a few meters. The students had fun regardless.

We unfortunately ran out of time and were not able to do a debrief or look through the trail camera photos as a group.



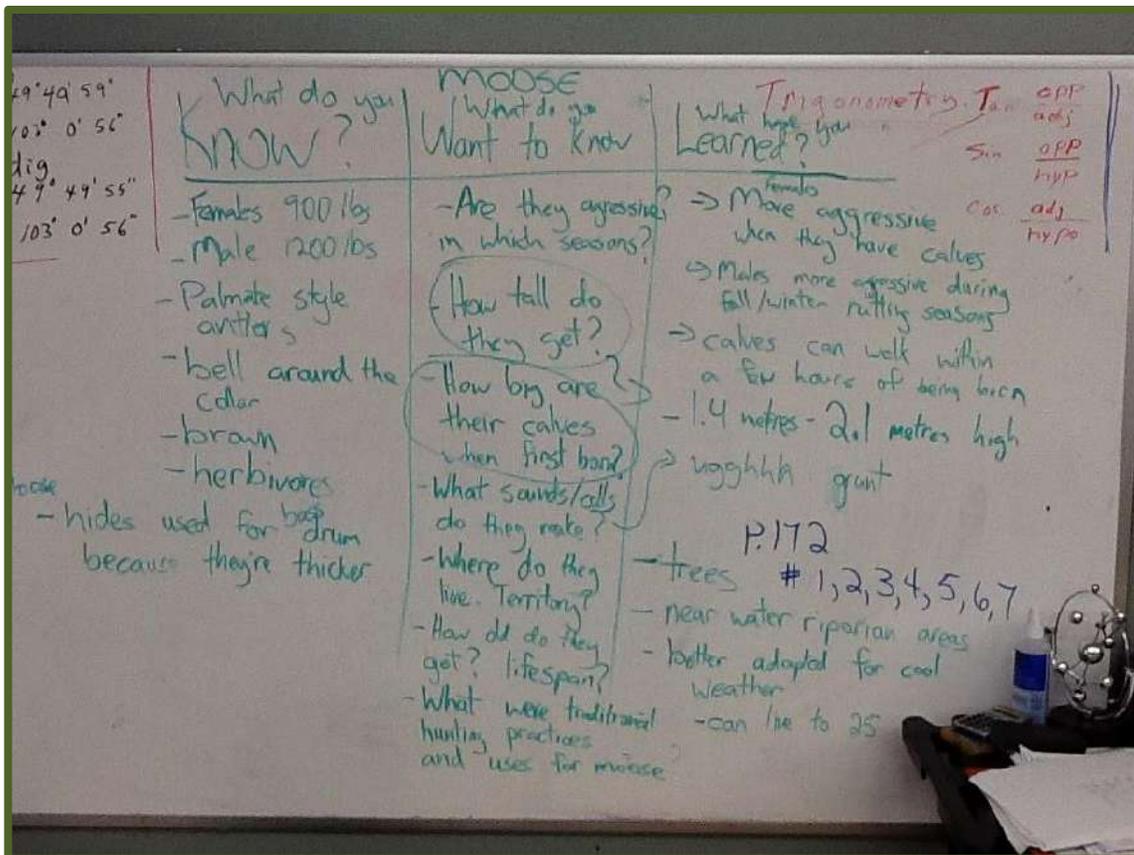
A student shows the hidden collar they found in front of the trail camera.

Ocean Man Education Complex
Teacher Patrick Wilson

The teacher, Patrick, had been in communications with Raea several weeks prior, asking questions about moose calves. The students had apparently been discussing the many moose twins and triplets they had been seeing in the summer months. The class seemed keen to do a higher level presentation and workshop.

Being a smaller school, we combined grades 7 – 12 for the presentation. We started out with the species matching game in a small classroom, so it was a bit cramped. Not all students were participating without some strong guidance - perhaps there were too many different grade levels to make it the appropriate level of difficulty for all students. It took the students a little while to warm up and engage in the material.

Scott lead the KWL activity again prior to the presentation. There were one or two students with extensive knowledge about wildlife, and they were happy to share this with the room. There was also another teacher that sat in for part of the presentation that was asking questions and also sharing some traditional knowledge. We had a really good list of information and questions regarding moose to work with.



The results of our KWL activity with the students.

Throughout the presentation, the students were curious and respectful. There was a lot of knowledge sharing between students. The teacher had prepared them well with some hands on activities and experiments that they were able to draw from when talking about the scientific method. In particular, many of the students had participated in an experiment on the effects of grazing on vegetation biodiversity. The students were able to chat about this and we made comparisons throughout the presentation to this work.

After the presentation, students were placed in groups to do the outdoor activities. The older students received the telemetry equipment to track the collars, while the younger students were given GPS units to locate the collars and find the trail camera. This group seemed to really like using the telemetry equipment. We took several group photos at the trail camera, and other students documented activities on the iPads as well.



A group of older students pause during their telemetry activity to smile at the camera.

We had time to debrief in the classroom after the activities where we looked through the trail camera photos, finished the KWL exercise, and then played the awareness/teamwork game lead by Scott. The students really enjoyed this game and we played several rounds.

We were invited to stay for lunch, and several students hung around in the classroom with us and showed us some interactive computer games that they often play. It is evident that the teacher takes care to find engaging ways for the students to learn. Some schools seem to have a strong divide between the grades, but these students were very respectful and inclusive of each other. Overall, this was a really good session, if a little slow to start.

Keeseekoose Chief's Education Center
Teacher Alex Tawpism and Michael Sanderson

Alex was another teacher that had been in contact with Raea weeks prior expressing interest in bringing the project out to the school and doing some activities. We combined two classes for this presentation and ended up with a fairly large group. Settling in and introductions took up a lot of time, so we were a bit rushed in the later parts of the presentation. A few students were misbehaving and were pulled from the room.

The animal matching stations were set up in another room which also took some time traveling back and forth. The students had a lot of fun with the furs and other props and enjoyed this component of the presentation.



Students investigate some replica skulls.

Students were quick to share answers and questions for the KWL activity. By the time the KWL activity was wrapped up, we were clearly running out of time for the rest of the activities. The powerpoint was majorly shortened so that the kids could get outside to do the activities. We were unable to take all of the questions that the students had, in the interest of time. They seemed to be having a lot of fun and were genuinely interested in the material. Very lively group of students.

Students were placed in groups so that three groups used telemetry to track the collars, three used GPS units to find the collars and the trail camera, and two had iPads to document activities. We took a few group photos at the trail camera, but ran out of time to debrief.

This was a very lively group with lots of questions, and it is unfortunate that we did not have time to address them all. This is a group that could certainly do a higher level activity, as both students and teacher (Alex Tawpism) were very enthusiastic.



Getting silly in front of the trail camera.

Chief Gabriel Cote Education Complex
Teacher Priscilla Gamble and Elton Keshane

This was a bit of a quiet group. We seemed to go through the activities fairly quickly as they were not asking a lot of questions. The students did, however, chat readily in one-on-one situations during the matching game.

The students were really good sports about the outdoor portion of the presentation, despite the cold weather. We had lots of time to debrief, including going through the KWL chart to see what was learned, looking through the trail camera photos, and playing a round of the awareness/teamwork game.

It would be helpful to have other activities in case the main program finishes early. Not all students wanted to play the awareness game. It is often difficult to draw out questions and get engagement from quieter students, particularly in morning presentations.



Students take their turn at each wildlife station.

Cowessess Community Education Centre
Teacher Loretta Beacock

We were joined on this trip by Tiffany Cassidy from the Nature Conservancy of Canada who took photos and interviewed some students and Raea on the outreach program. As these were older students, we did the matching game activity without the index cards, adding them later to give clues to students that were struggling. Even so, the students tended to move on quite quickly from the stations and it got a little disorganized. Perhaps for older students it could be made more challenging, by posting questions at each table for example. There were one or two students that were extremely knowledgeable about wildlife, and keen to share their knowledge. This set a tone for the other students to follow and really served the presentation and workshop well.



Students check out some fur bearing animals in a warm-up identification activity.

The KWL activity went quite well, with a lot of knowledge sharing going on, and some higher level questions to work with. The students were all very respectful of each other and of us. There were a number of questions during the presentation as well, and students seemed quite interested.

The students used the telemetry equipment to find collars, and had a really fun time. We hid the collars up a hill and they did not hesitate to run all around looking for them. They really

took the exercise to heart and seemed to be trying really hard to use the tools, even when it was a bit difficult. They also interacted a lot with the trail camera that was set up and just generally seemed to really enjoy the activity. GPS units were given out towards the end of the activity to aid in finding the collars. We then wrapped up with a group photo at the trail camera.



These students certainly didn't mind going off trail to find their collars.

We were able to debrief by going through the questions from the KWL exercise and looked through the trail camera photos. A few students stuck around and chatted with us, and were interviewed by Tiffany. One student in particular, who was very knowledgeable, shook our hands at the end and was very grateful for the opportunity. He expressed that he was especially happy that we brought in all the furs to show the students, as many of them would have never seen that.

Overall this was really a wonderful group. They asked a lot of questions and were polite and attentive; all of them a real pleasure to talk to. The teacher was also keenly interested in the presentation, and told us that the students would be given an assignment the next day to try to answer our outstanding moose questions from the KWL exercise.

Fishing Lake School
Teacher Shanna Harrimen and Laurie Kayseas

There were low numbers in the 7,8,9 class that we had arranged the presentation with, so we combined with the 10,11,12 classes. We took some time getting ready as space was limited. While starting our introductions with the group, there seemed to be very low interest. A few students were at the back of the room on computers, their phones, or seemingly snoozing in armchairs while we were talking. A few students refused to even introduce themselves. On the other hand, a number of students and all teachers were very engaged right from the beginning.

We set up our stations in a spare room, so moved over to look at them. This activity did seem to pique the interest of the students and they certainly had fun, especially with the furs. We were struck by the number of posters around the room giving the Saulteaux names for some of the animals we were talking about, and we tried to encourage the students to use these names in the matching game as well.

Back in the classroom, we did the KWL brainstorming and came up with a pretty good list. You could tell that more and more students were getting involved and tuning in to the project. There were a lot of questions during the presentation, but towards the end it seemed to turn more into interruptions of chatting between students. Overall, the students were attentive and seemed largely interested.

It was just starting to snow when we went outside to do the telemetry exercise, and yet the vast majority of students were eager to try out the activity. We were very impressed with their participation! We walked through a field that had some frozen puddles than in some cases was cracking underfoot, and students were laughing as they navigated around it, trying to balance the direction of the telemetry equipment with the obstacles on the land. Other students were given GPS units to aid the telemetry users, and the collars were found fairly quickly. We took several photos at the trail camera as a group before heading back inside.



Students laugh while navigating a wet spot in a snowy field during the telemetry exercise.

There were some buses arriving to take the kids home as we wrapped up, but the majority of students still stuck around to debrief with us. We looked through the trail camera photos and revisited our KWL chart. It was amazing to see the change in attentiveness with the students at this point compared to when we were doing introductions. They truly just needed some time to engage with the project. We also talked with the teacher afterwards who said she is always amazed by how much the students are actually absorbing when they are on their phones or otherwise looking unengaged.

It was a very personally rewarding experience to see the students come alive during the active portions of the presentation. A student that had been snoozing in the back at the beginning made a point of saying thank-you and goodbye before leaving to catch the bus during our debrief.

Muskowekwan School
Teacher Tony Ruhland and Dorothy Aspace

This was a friendly bunch of students that were joking around upon greeting us at the beginning of the presentation. Scott presented tobacco to and invited three elders (Eric, Alvin, and Joan) to attend the presentation and share a few stories. After a round of introductions, we moved to another room to do the matching exercise. A lot of the students found this game easy, particularly as there were a lot of adults to help, including one elder that was an outfitter. There were a lot of conversations and learning moments surrounding the matching game and the students seemed to be having fun with it. One example was one of the elders sharing that she remembered people eating the bone marrow from deer legs, as the students were examining all of the feet and tracks at one of the stations. A lot of students were familiar with caribou as well, despite them not being found in the area.

The KWL activity was also enriched with contributions from the elders in the room, who were able to share stories of the relationship between moose and people, and also of moose and water. It was a very valuable learning experience for the students as well as us as visitors, and we regret that we could not have better integrated the elders in the day. There is great potential in drawing on these themes in the future.

We were starting to run out of time so the powerpoint was a bit rushed and therefore perhaps not as engaging as it could have been. There were still some questions, again especially about the collaring/capture of moose. The students showed a surprising amount of willingness and enthusiasm to go outside in the freezing conditions, and several were very curious about the telemetry equipment. Perhaps due to the weather conditions, the telemetry equipment was not working very well, and the students needed the aid of the GPS to find the collars. They were very good sports and there was a lot of participation.



A student braves the cold, wearing one of the collars as a hat.

We were able to get a few group photos at the trail camera before returning to the warmth inside. We only had time to skim through the trail camera photos and were not able to do a full debrief, but we left the outstanding questions on the whiteboard and encouraged the students and teacher to follow up if interested. Interest from the teachers seemed high, and they warmly thanked us for coming to the school.

Kakisiwew School
Teacher Elton McKay and Joyce Leggott

This was a truly wonderful group of students and a great school to visit. We did two back-to-back presentations for two different classes, and there is certainly potential to visit others in the school. We started with Elton's grade 7/8 split class. Elton was very pleased to welcome us to the class and we immediately felt that there was enthusiasm for the presentation. The students were bright-eyed for a morning workshop, and were quick to participate in the introductory questions.

We moved to the gym to do the animal matching game, and the smaller class meant there were only a few students at each station. This allowed for quite a bit of discussion with the students, and we were impressed at the quality of the questions they were asking. Several students asked about the ethics of trapping these animals, and if any of them were threatened species. Raea also had a discussion with one student about how red foxes are moving into arctic fox territory because of climate change; the student asked several follow-up questions about what that meant for the arctic fox. This was truly a higher level session than we have seen at many other schools.



Scott Fulton guides two students as they match animal tracks and feet to species cards.

Back in the classroom, we filled out the KWL chart before starting the powerpoint presentation. The students were extremely attentive during this entire period, and you could tell that their questions and comments were from a place of genuine interest. At the end of the presentation, as we prepared to go outside for the activities, there were so many students wanting to try the telemetry gear that we had to set up a third apparatus. They seemed to be very interested in the technology and did not hesitate to go outside in the -20°C temperatures!

It quickly became apparent that the telemetry equipment is nearing its end – the third telemetry apparatus was not working at all, and one collar was giving such a weak signal that we switched the frequencies so that both remaining groups were looking for the same collar. There was much excitement when the collar was found, but this meant that one group did not really get to do the full activity. Other than being a little chilled, they seemed to enjoy the activities none-the-less and only went back inside after a big group photo. We were impressed!



These bundled up students were determined to find the collars, no matter the temperature!

Back in the classroom we did have time to look through the photos and debrief through the KWL. At the end of our workshop, the students warmly thanked us – they each came up and shook our hands. A very wonderful group to work with.

We were welcomed into the staff room for lunch, where we had a number of conversations with some teachers and elders about moose. More than one individual talked about moose nose as a delicacy, and another told us about the resident moose that hangs out in her yard most days. An elder – Sharon Bear – was present and sharing many stories with us. Scott invited her to attend the afternoon presentation and she was happy to do so.

The afternoon presentation was every bit as great as the morning. Joyce's 6/7 split was eager to get started and had even had a sneak peak of some of the furs and other items that morning. After doing initial introductions, we started to move to the gym to do the matching game – several students lagged behind because they wanted to change their answers for “what animal would you be if you could be anything other than a human?”. It was heartwarming to see them treat this exercise so thoughtfully!

The matching game went over very well. Elder Sharon provided much value to the students, giving the Cree names for many of the animals, and sharing information about how moose and other wildlife were used in the past. The students really soaked up the information provided and asked a number of questions about what they were seeing. One student pointed out markings on some of the furs and was wondering if that was what all of the animals typically looked like. Students were familiar with many of the animals shown, and had some stories to tell of otters, moose, and wolves. This community seems to live very close to many wildlife species!

Back in the classroom, the students blew us away with their inquisitive nature. We nearly ran out of space for the KWL chart, as the students had so many questions! There were all kinds of questions about moose from reproduction and diet to behavior and interactions with humans. Several students were interested in the concept of spirit animals, and the relationship of wildlife to people. Elder Sharon had a lot of insight to share, and it was a very rich exercise altogether.

The students also asked a tremendous amount of questions, and shared comments, throughout the entirety of the powerpoint portion – a very good sign! Once again there was a lot of interest in the technology portion, and the process of collaring the moose. The students were happy to bundle up and get outside for the activities, and even though we could only find one collar, they were very excited about it, and great sports about braving the weather. The second collar died and we were searching for it just by walking and looking. We were touched by the number of students that stayed to help us with this!

We did some more learning by going through the KWL questions, and looked through the photos. The kids were all smiles, with more handshakes to offer before they left for the day. Our final surprise came as we were cleaning up the matching stations – several students in

Elton's class had written us thank you letters, which were presented to us and are attached in the evaluation section of this document.

We really enjoyed visiting this school, and the students seemed to enjoy our visit too! There is tremendous opportunity for further work with the students already visited (they mentioned a desire to use more tools on the land – maybe even to track a real moose!) and additional classes that we were unable to visit on this trip. We would be happy to return again.



A group of students try on some of the furs.

Goose Lake School
Teacher Shauna McNabb and Principal Kendra Taypotat

This was a high energy and fun workshop. We entered the classroom that housed the grade 2 to 5 students, and they were dancing along to a video on the smartboard. They did settle into their desks for our introductions. It took a very long time to go around the room and have all students introduce themselves, so there was a bit of chatter as students lost interest.

Moving the students to the next building for the station exercise proved to be a bit of a challenge. We had to keep each group with a supervisor as the students were wanting to run all around the playground. Once in the room the students were extremely interested in the activity, but it was again difficult to hold their attention for too long, and some students were moving away from the stations early. They probably could have used a more structured activity with questions and a supervisor at each station. Nevertheless, this is always a lot of fun for the kids!



Students match deer feet with tracks and species cards.

The students were full of questions for the KWL chart – we actually ran out of space to write them all down! Many of the questions centered around antlers, and revealed that the students actually had quite a bit of knowledge about moose! We presented a condensed version of the powerpoint given the age and energy level of the group, but it took a really long time as the students had a LOT of questions, and a few stories to share. As usually, they were very interested in the collaring process, and the technology of the collars and technology of mapping the moose locations.

The kids undoubtedly had fun with the outdoor portion of the workshop, but due to the number and energy level of the students, the use of the telemetry was not ideal. Some collars were found merely by stumbling upon them, or perhaps with GPS. One of the collars was not functioning, and some students were quite disappointed that they were unable to try out the equipment. It was likely too large of a group size for the equipment available. The students were very enthusiastic with the activity!



A creative shot taken by one of the students showing a collar and the GPS used to find it.

We ran out of time to debrief the KWL chart. Unfortunately, the photos from the trail camera were not saved, but students took some extraordinary photos with a DSLR in addition to the iPads. The students seemed to have a lot of fun with the program, even if their attention spans ran out in a few parts!

Kahkewistahaw School
Teacher Maria Sparvier

This Grade 8/9 class was a bit shy, but seemed to enjoy the exercises and presentation. There was a lot of fantastic discussion and information sharing for the station exercise, and the students had a lot of fun. The teachers were quick to share interesting information about the furs and their traditional uses with the students, which really enriched the exercise. One wonderful comment made by a student to her peers was “Don’t just stand there looking at them – feel them!” The students were really using their investigative skills and bouncing ideas off of each other to identify the animals in the exercise.

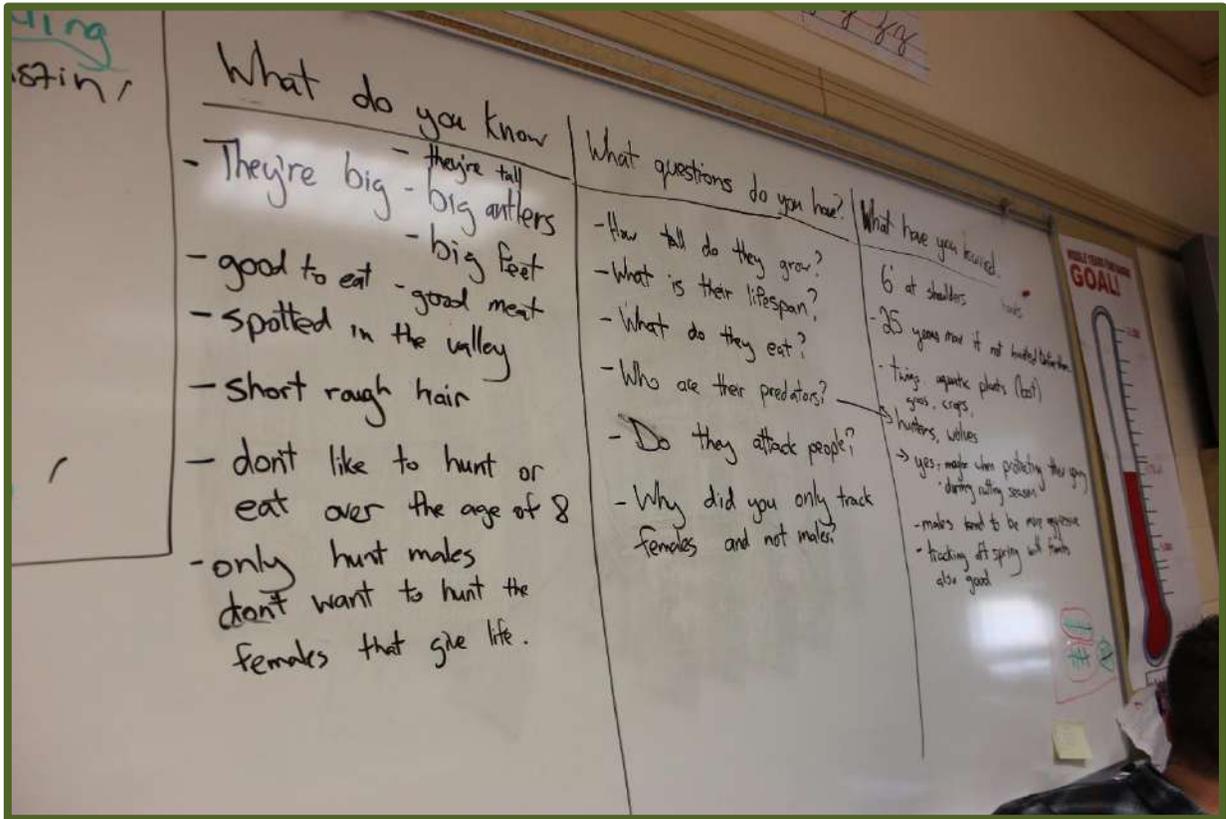


Students look at a tail to help them identify furs in the stations exercise.

The students were pretty quiet for the KWL exercise, and did not contribute very many questions. They were a bit more willing to give information, and some of the teachers were really active in this regard. We heard a lot of very interesting information regarding which moose are appropriate to hunt. Students were respectful during the presentation and did ask a few questions. They seemed to become quite excited when it was time to go outside for the last portion of the workshop. Several students were specifically interested in taking photos, while others wanted to try another option we added - finding the collars using NO technology (look at footprints, and other clues). Several students came back from the break early to ask if they could partake in a certain group, which was encouraging.

The students found the collars very quickly – perhaps the fastest school yet - primarily using the GPS. The students that were not using any technology ended up very far away, which everyone had a good laugh at. We successfully took some photos at the trail camera and the

students enjoyed looking at them back in the classroom. We had time to revisit our questions from the KWL and once again the teachers were open to sharing their knowledge as well.



Final results of our KWL exercise.

Overall it was a successful workshop, with the students engaging in the active portions of the day (stations, tracking), but a bit quiet in the classroom setting.

Presentation Components and Props

The details of our presentations are as follows:

1. Introductions

We introduce who we are (Scott, Raea) and our organizations and initiatives (Treaty 4 Education Alliance – Student Retention, Nature Conservancy – Learning the Land, University of Saskatchewan Wildlife Ecology and Community Engagement – Saskatchewan Farmland Moose Project). We have each student around the room introduce themselves and answer the question “If you could be any animal other than a human, what would you be?”. This is aided by passing around a glass ball so that only one person is speaking at a time.

This activity gets students comfortable speaking in front of the room and tells us a bit about each student’s personality.

2. Matching Activity

Five stations are set up with various themed animal items:

Furs I – caribou, wolf, lynx, red fox, wolverine

Furs II – skunk, arctic fox, weasel, otter

Antlers and Horns – moose, female caribou, elk, bighorn sheep

Skulls – moose, elk, white-tailed deer

Feet and tracks – caribou foot, caribou track, moose track, elk foot, elk track, white-tailed deer foot, white-tailed deer track

For each group there are index cards with the animal species plus one incorrect answer. The cards are placed on the table for students to use to match them to the items they see.

This activity is exciting for students, as many have never seen these furs and other items. Other students that hunt and/or trap enjoy the activity as a chance to share their knowledge with their peers. It is a good way for students to discuss with each other what they are seeing in a friendly, exploratory way. It is also a good gauge of knowledge, interest level, and energy level of the students.

3. KWL Exercise

This activity is done using the whiteboard at the front of the class, and is facilitated by a presenter. A chart is drawn on the board as follows:

| What do you already KNOW (about moose)? | What do you WANT to know (about moose)? | What have you LEARNED (about moose)? |
|---|---|--|
| | | |

We go through the chart in order, taking suggestions from students. If time allows, and/or it is a quieter group, this can be done in a “think, pair, share” style. The students are asked to ponder the question to themselves, then discuss with a partner, and then they can share their

combined thoughts with the group. The first two columns of the chart are filled out and left until the end of the presentation when we complete the final column.

This activity is great for gauging student interest and knowledge in the topic. What are they interested in? Are they asking high level or basic questions? What they are curious about can influence the direction of the remainder of the presentation.

4. Powerpoint Presentation

The powerpoint takes approximately 20 – 30 minutes depending on questions from students. For the full slideshow, see the appendix. Topics covered include the scientific method, introduction to research questions of the Saskatchewan Farmland Moose Project, how we set up our study, how we collected data (collaring), some results (maps from collaring), our facebook page, and tools that we use (radio telemetry and trail cameras). The powerpoint is mainly photos and graphics and can focus on slightly different topics depending on student interest. There are a few items to pass around during the presentation – a collar, a sampling kit (used when we handle the animals during capture), and a trail camera. We often segue into careers in the wildlife sector, as well as moose adaptations and behaviour.

This portion of the presentation is to demonstrate to students how we answer some wildlife-related inquiry questions at the university. They are often very interested in the collaring of the moose and have a lot of questions about that portion. They are usually excited to learn that we will try the telemetry equipment that they can see in the presentation.

5. Telemetry and Trail Camera Activity

This activity involves some initial preparation to hide the collars (transmitting the signals) in a natural setting around the school. It was found to work best if the collars were hung from a tree or another object where students can see them when they get in close range. Working with the telemetry equipment can be quite difficult depending on the weather, and interfering obstacles, so students were often given the option of a GPS unit as well, and always work in groups. The gear works by receiving the signal from the collars when the tower is pointed directly at the source, and varying the tone and clarity of the beep from the receiver. It is helpful to check in with the students and give them hints to keep them in the right direction. There is also a trail camera which needs to be set up beforehand, that takes photos of the students as they walk by during the activity, and they are encouraged to interact with it once they have found their collars as well. In addition, some of the students are given iPads to document the activities and their classmates. Lastly, we try to take a group photo of all participants in front of the trail camera.

This activity is usually a highlight for the students as they get to move around and use some “high tech” equipment. Students can have the choice of whether they want to use the telemetry gear, GPS, or iPads, which usually satisfies everyone.

6. Debrief

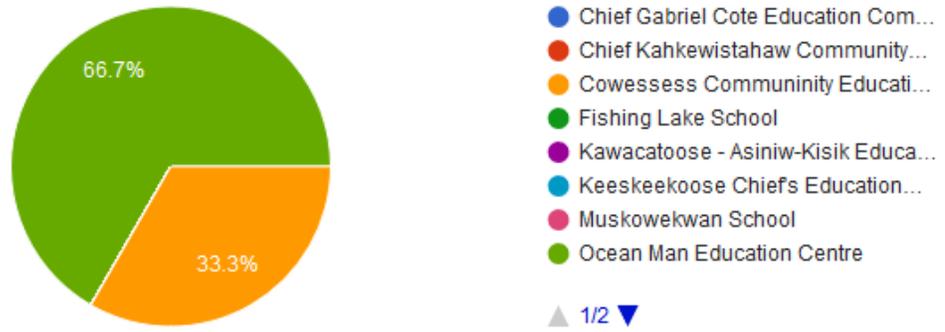
There was not always time to debrief after the telemetry exercise. Generally we start by looking through the photos from the trail camera, which always gets a good laugh. These photos are left with the class. We then fill out the final column in our KWL chart – what did you learn? This usually takes the shape of going through the second column (what do you want to know?) and answering the questions from our collective experience or online research of the students with iPads. Although we answer many of the questions, we are often left with outstanding questions, which are a great springboard for a potential project for the students. If there is time leftover, we play an awareness/teamwork game lead by Scott (see appendix for details).

The debriefing is a good way to tie together everything from the session, and gauge student interest in a repeat visit or further involvement. It also brings the energy down a bit from the running around outside after the telemetry exercise.

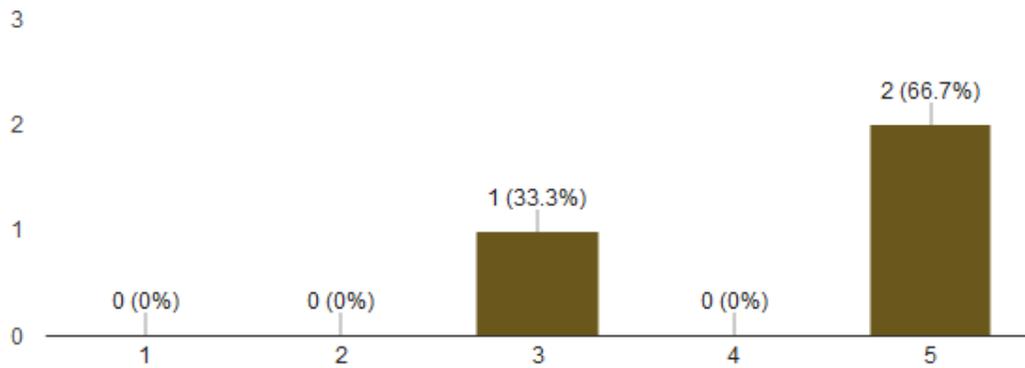
Evaluation

Formal Survey Responses

What school/community are you from? (3 responses)



How much did you enjoy taking part in the session? (3 responses)



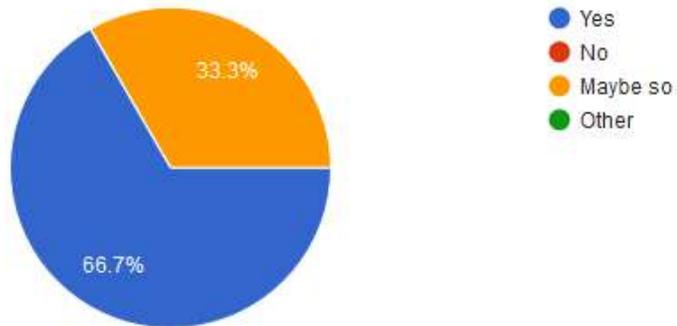
My favourite part of the session was: (3 responses)

- Telemetry and Moose study details.
- the plants
- seeing the students enjoying themselves using the gps.

My least favourite part of the session was: (3 responses)

- When it ended
- walking
- all was good

I would recommend this presentation/workshop to my friends (3 responses)



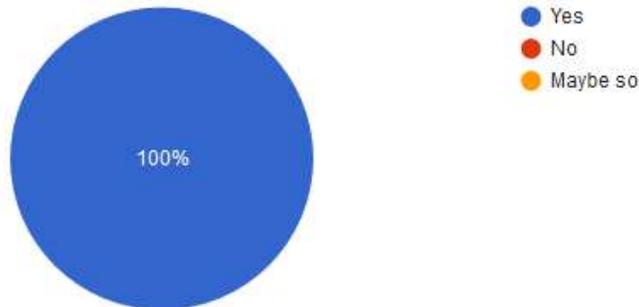
One question I still have about moose is? (2 responses)

How many are shot each year in hunting season south of Saskatoon in SK?

can you raise a moose to be a pet

Would you be interested in participating in more Learning the Land offerings this school year?

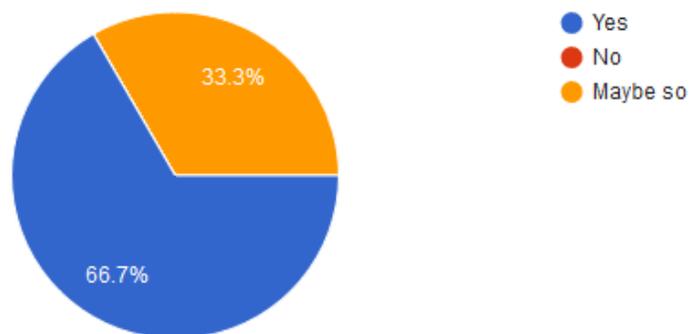
(2 responses)



Would you be interested in staying in contact with the Saskatchewan Farmland Moose Project through their facebook page:

<https://www.facebook.com/SaskatchewanFarmlandMooseProject>

(3 responses)



Thank you letters from students at Kakisiwew

Thank you letter

Thank u guys for coming out to ochap I had lots of fun it was cool seeing your cool tech cant wait for u guys to come down to ochap again and show us some other cool stuff

Leighton Delorme

TO: SCOTT AND RAEA

**Thank you for your fun and
have a merry x-mas and happy
new year and see you next
year**

Fr: Teasheena Hotomani

TO: Reae & Scott

Have a merry x-mas and happy new year

Fr.Mason the (vulture)

Dear, Scott and Raea thank you for today I learned a lot about moose how you can track them when they go far away and that you put secret cameras in the bushes so that you can find them. It was cool when you guys showed us some of the moose, deer, and a ram horns and I kind of liked seeing those animal skins but it was pretty sad to see but cool. Thank you and I hope you guys come back and teach us again. From Madeline

Dear, Scott and Raea

Thanks for coming out at teaching us more about moose. It was really fun, I think we all froze but it was worth freezing and the class session I never knew all that about moose it was really interesting

You guys should come back again!!!

Thank you

Sincerely, Jordyn Bear

To: Scott and Raea

Thank you Scott and Raea for all that you did and I enjoyed learning about the moose program it was fun learning about all of your teleology. Both of you should come back to our class again

Gina Lewis - bird

Appendix



Saskatchewan Farmland
Moose Project

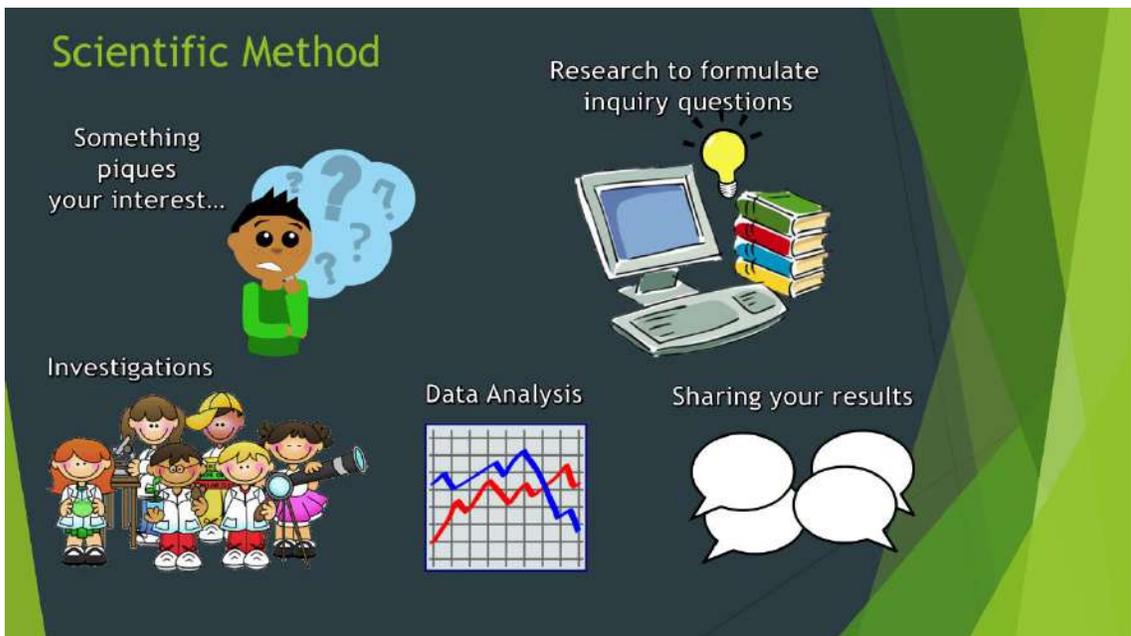
Raea Gooding  UNIVERSITY OF SASKATCHEWAN

Powerpoint Slides

Introduction to project – Wildlife Ecology lab at U of SK.

Walk through scientific method

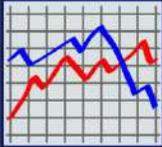


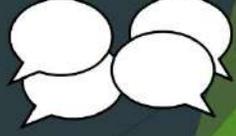
Scientific Method

Something piques your interest... 

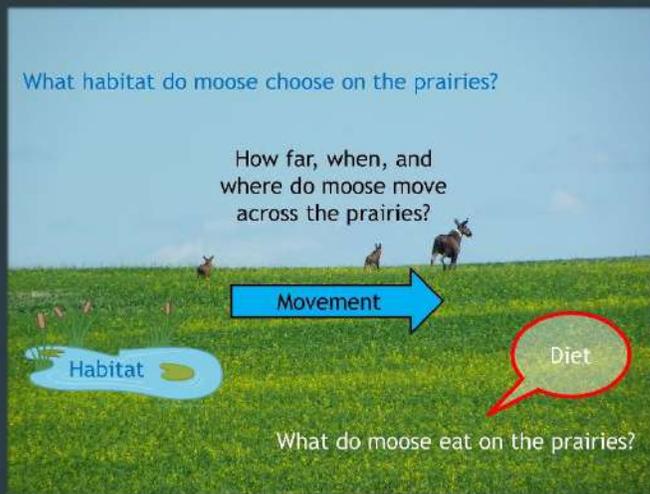
Research to formulate inquiry questions 

Investigations 

Data Analysis 

Sharing your results 

Research Questions



Explanation of project's inquiry questions – habitat selection, movement patterns and home ranges, diet preferences and resource selection.

Background Research



Why is this important to study? Talk about vehicular collisions

Setting up the Study

- ▶ 40 female moose



- ▶ Along Highway 11 between Saskatoon and Regina



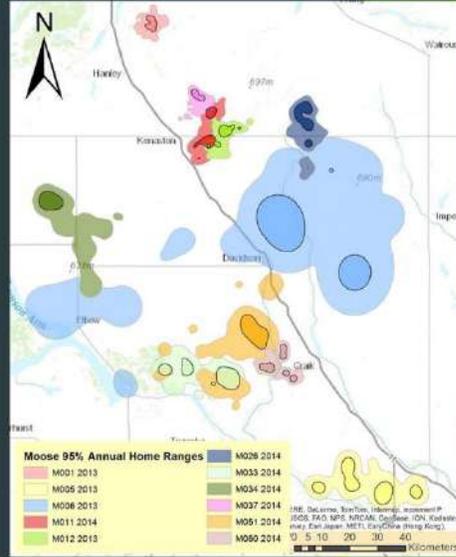
Study parameters – target animals, area

Collecting Data



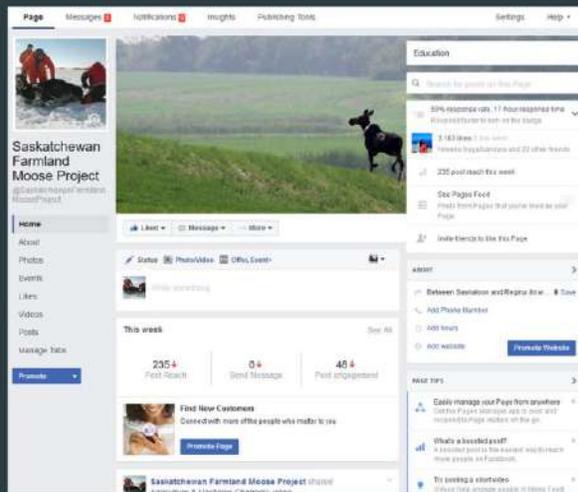
How collaring is done

Results and Analysis



Some of the findings – habitat preferences, use of crops, importance of wetlands. Home range differences between animals

Sharing Findings



Importance of sharing results – facebook as a tool to connect with public

The Fun Stuff!

▶ Trail Cameras



High quality images from trail cameras, even at night with infrared flash

The Fun Stuff!

▶ Trail Cameras



Can see signs of reproductive success.

The Fun Stuff!

▶ Trail Cameras



The Fun Stuff!

▶ Trail Cameras



Can see body and hair condition as indication of animal health.

Can see other species and the information this gives us – competition, disease transfer, predators.

The Fun Stuff!

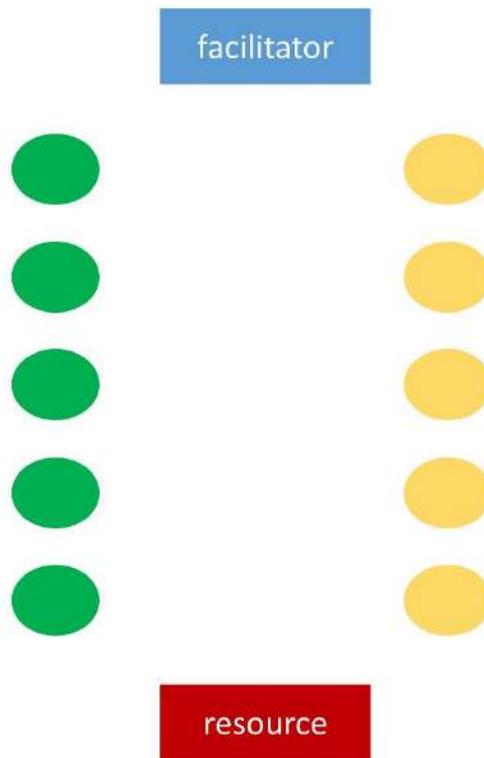
- ▶ Radio Telemetry



We use radio telemetry to track moose on the ground for calving surveys and to check collar fit.

Awareness and Teamwork Game

Students are split into two EVEN groups representing two different predators that compete for the same resource (ex. Eagles and bears). Students in each team line up with a facilitator on one end, and an item representing the food source on the other end.



To play the game, students on each team must hold hands to form a chain. The entire team, except for the person closest to the facilitator then closes their eyes. The facilitator flips a coin so that only the two leaders can see it. Heads means that NOTHING happens. Tails signals that the leader should squeeze the hand of the next team member, who in turn squeezes their partner's hand. This hand squeeze travels to the end of the line. When the last team member feels the squeeze, they open their eyes and grab the "food resource". Whichever team is

successful in grabbing the resource gets to advance by having the resource grabber move to the front of the line so everyone shifts down. If the team leader squeezes a hand when the coin showed heads, and someone grabs the resource, the team is penalized by sending their leader to the back. The game is won when the original team leader makes it back to the front of the line.

Media Articles

Students learn the importance of tracking moose

The Farmland Moose Project is trying to figure out why moose are living in an area with only one percent forest coverage.

<http://www.natureconservancy.ca/en/where-we-work/saskatchewan/stories/students-learn-the-importance.html>



Learning the Land program combines Indigenous teachings with scientific knowledge

Tracking moose collars isn't something most kids get to do while studying science at school, but that's exactly how students at 11 schools in southern Saskatchewan are learning about the subject.

<http://www.cbc.ca/news/canada/saskatchewan/learning-the-land-indigenous-teachings-western-science-1.3933343>