



## **Final Report for AFSAR Project: GCXE21C174 Community Monitoring of Threatened Wood Bison (*Bison bison athabasca*)**

August 2021

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for Dene Tha' First Nation

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# 1.0 Background and Summary of Project

Wood Bison are a “Threatened” SARA-listed species and assessed by COSEWIC to be of “Special Concern”. The herd of interest, the Hay Zama herd, is ecologically important as it remains one of the last disease-free herds in Alberta. Presence of bovine diseases is the greatest threat to Wood Bison recovery, and so maintaining and managing currently disease-free herds is a priority for achieving species recovery. At fewer than 400 individuals, the influences to the population dynamics and behaviours of the Hay Zama herd are of keen interest; specifically a

better understanding of predation threats, habitat use and availability, and movement corridors.

Wood Bison are culturally significant to the Dene Tha' First Nation (DTFN). DTFN's Traditional Territory is in Treaty 8 and 11 and overlaps what is now Alberta, British Columbia and Northwest Territories. DTFN has seven reserve parcels, including: Amber River 211; Bistcho Lake 213; Bushe River 207; Hay Lakes 209; Jackfish Point 214; Upper Hay River 212; and Zama Lake 210. DTFN has three settlements, at: Bushe River (Bushe River 207), Chateh (Hay Lakes 209), and; Meander River (Upper Hay River 212). DTFN has approximately 3000 members with approximately 2000 living on-reserve. Please find a map of DTFN's Traditional Territory at left as *Figure 1.1*.

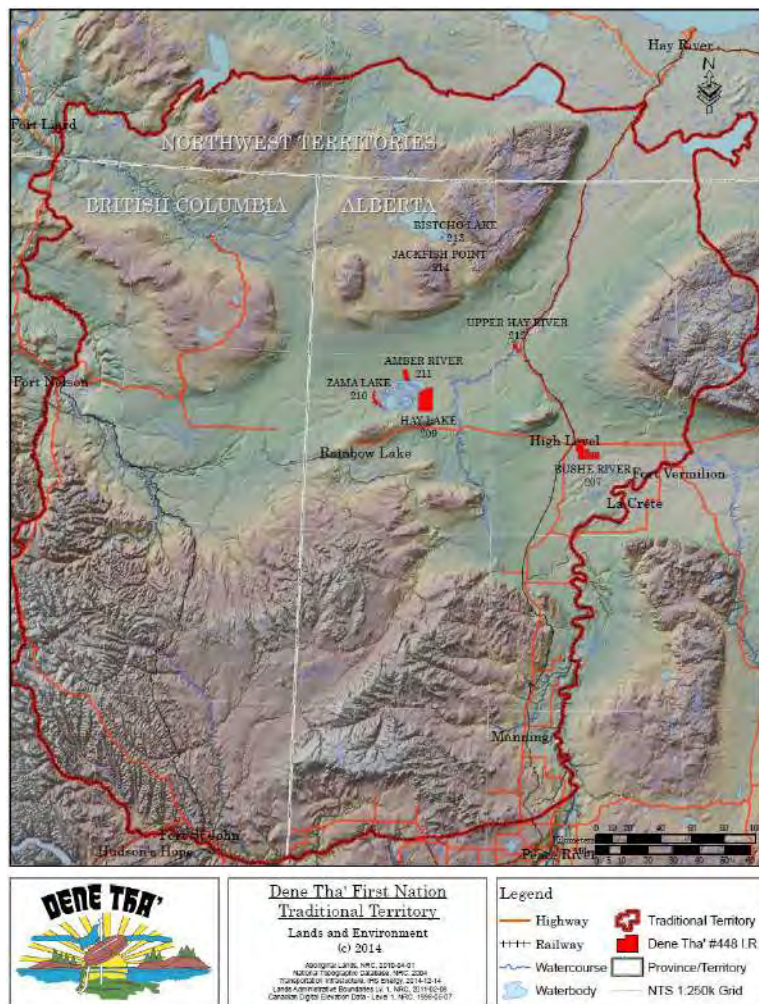


Figure 1.1. Map of Dene Tha' First Nation's Traditional Territory

From 1983 to 1988, Dene Tha' was closely involved in reintroducing disease-free bison into the Hay-Zama lakes complex; the herd was fed and watered by Dene Tha' members during this time. Dene Tha' has also played an active role in decision-making boards concerning the management of bison, such as the Northern Buffalo Management Board. Given our active role in helping to reintroduce bison to our Traditional Territory, and because of the interconnection between bison

and our Aboriginal and Treaty rights, we need to be actively involved in the collection of data for the management of this culturally significant species.

This report represents a narrative description of the field work conducted in surveying the Hay Zama (and incidentally Etthithun Lake) bison herds, and the results of these efforts. For the most recent information regarding wood bison conservation and recovery, please see the Recovery Strategy for the Wood Bison (*Bison bison athabasca*) in Canada 2018, ECCC<sup>1</sup>.

Project activities included having trained technicians conduct road surveys for Wood Bison belonging to the Hay Zama herd throughout the herd range (with a caveat for safety that high-risk sites, such where predators are still around or disease is suspected, will not have been visited). Technicians were trained to collect biological samples, landscape characteristics (i.e.: area of clearing, distance to road, distance to cutline and other spatial aspects of interest) and other landscape characteristics in movement corridors and areas important to Wood Bison. Group composition and photos were also collected of all bison groups observed. Project data was collected by community technicians using a community-developed information inventory and database, and is available for sharing with the Government of Alberta and ECCC.

## 2.0 Purpose and Expected Results

Historically, wood bison ranged extensively throughout DTFN Traditional Territory including what is now Alberta, British Columbia, and the Northwest Territories. Prior to first contact and the signing of Treaty 8, bison were critical to DTFN food security and cultural and traditional use. From the 1900's to the present, bison populations have diminished in size, range, and health. DTFN has long missed the bison herds and has been longing for opportunities to hasten their recovery. Recently, DTFN has developed a community-led monitoring app that is easily obtained and used by community members. This app in the hands of our community field technicians has enabled the collection of high accuracy and form-driven data collection on the whereabouts, condition, and status of bison individuals, herds, and habitats.

In acknowledgement and recognition of Canada's wood bison recovery strategy of 2018<sup>1</sup>, DTFN and its members have taken this opportunity provided by ECCC to undertake activities that will further the intentions and objectives of the recovery strategy by providing local and experiential Indigenous knowledge and community-led science to support broad strategies at general approaches for meeting federal, provincial, and local/indigenous objectives and short- and long-term outcomes. DTFN hopes that one day there will be a sufficient population of naturally

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<sup>1</sup> Recovery Strategy for the Wood Bison (*Bison bison athabasca*) in Canada 2018, ECCC.  
<https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/recovery-strategies/wood-bison-2018.html#toc9>

sustainable and healthy wood bison in and about Hay Zama lakes and DTFN's Traditional Territory.

The purpose and expected results of this project are to provide DTFN community members and Indigenous knowledge holders to have the tools, methods, and capacity to undertake roadside surveys of wood bison in and about the Hay Zama head range and generally as opportunities may arise within our Traditional Territory. Community members conducted roadside surveys in the fall and winter of 2020 and up until the project end date of March 31<sup>st</sup>, 2021. Notably, the app is still being used by community members to collect cultural and environmental data even though the project has now concluded. Roadside surveys include location, age, sex, behavior, and calf coat colour, in some instances, belonging to the Hay Zama and Etthithun Lake herds. The data collector app has photo and audio recording functions that were also used to collect bison data. These data are held in a cloud-based file geodatabase that enables the use, storage, analysis, conditioning, and reporting from within existing geographic information systems and information management system proprietary software packages (i.e.: ESRI and MS-Office). DTFN community members conducted over 20 days of field work in the project area, on both federal Indian Reserve land and provincial Crown land.



Figure 2.1: Bison observed within the study area, photographs by DTFN technicians.

ECCC's wood bison recovery strategy document outlines broad strategies, priorities, and general approaches to meet objectives for research, management, and habitat. The community-led monitoring and data collection supported by this project has enabled DTFN to provide crucial information and tools that integrate Indigenous knowledge with western scientific approaches towards supporting greater understanding of wood bison and habitat needs for better management of disease-free herds in Northwestern Alberta.

Of the activities identified in the proposal document that DTFN submitted to ECCC, there was intention to have community members conduct opportunistic mortality assessments. After discussion with provincial scientists, it was decided that mortality assessments can introduce



health and safety concerns and therefore were immediately rejected as permissible monitoring activities within this project. It was supposed that collecting information at mortality sites about vegetation, evidence of predation, and general observations of the deceased animal and its surroundings would be a good opportunity to collect important ‘in-situ’ information and data during a single animal sighting in habitat -type observation. Future project extensions could include training and proper procedure and equipment for community members to undertake mortality assessment surveys safely and adequately.

### 3.0 Summary of Results

“In many areas throughout the range of Wood Bison, experience has shown that the perspectives, support, and engagement of local and Indigenous communities will have a significant influence on the outcome of long-term management objectives.”<sup>2</sup>

Bison observations were recorded between the dates of June 22nd, 2020 and March 6th, 2021. Forty-eight (48) Bison point features were created within the survey area near the Hay Zama bison herd range. [30] were direct observations of Bison or Bison sign (tracks, scat), while [18] were sites at which either Bison could be traditionally found, or which were identified as good Bison habitat or movement corridors. Sixteen (16) DTFN band members contributed this point information, which included broad classifications of habitat type (see Figure 3.1 below).

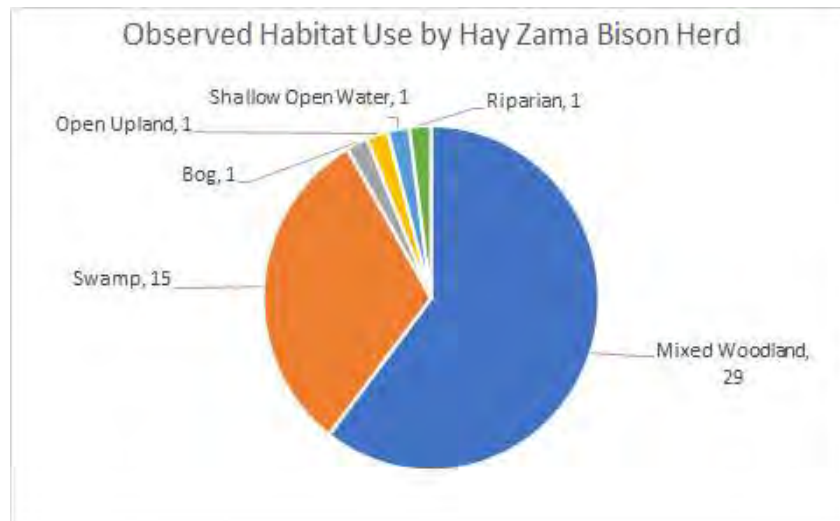


Figure 3.1. Habitat use of observed Hay Zama Wood Bison

Systematic mortality surveys could not be conducted because of health and safety concerns for community technicians.

<sup>2</sup> Ibid.



Figure 3.2: Pictures of Wood Bison in Mixed Woodland (left) and Swamp (right)

One significant finding was that one observation of wood bison (Site 46) and wood bison tracks (47) were observed outside the Hay Zama bison range delineated by the Government of Alberta, between the Hay Zama range and the range of the Etthithun Lake herd. This suggests that one or both of these boundaries do not encompass the true range of their respective herds, and possibly that there is movement of bison between the two herds. If there is inter-herd contact, there are genetic and disease-dynamic considerations for managers to make. Disease spread and range size are both key considerations in the ECCC Recovery Strategy<sup>3</sup>, so this finding may be extremely important for Bison recovery in this area.

Investigating this possibility could be the focus of a project continuation. This continuation could also involve the vegetation surveys that could not be completed in this stage of the project. In any case, these data may also be valuable additions to the Alberta Fish and Wildlife Information Management System (FWIMS) and/or ECCC's GIS/IMS (See Section 4: Project Extensions).

DTFN and Alberta Fish and Wildlife did discuss some ideas around how information and data collection, content and applicability might be improved by exploring further some relatively unexplored characteristics of the Hay Zama herd, such as the identification of late summer/early fall 'third-calf' recruitments by hair/coat coloring. Unfortunately, our Project was unable to implement this idea into our approach, methods, and tools – there was insufficient opportunity to meet with community members and Project participants on these ideas due to Covid-19 travel and meeting restrictions. We are hopeful for the future that we will be able to resume and continue these explorations with provincial scientists into provincial and community-led fish and wildlife data collection, assessment, and cooperative management opportunities for Hay Zama bison.

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<sup>3</sup> Ibid.

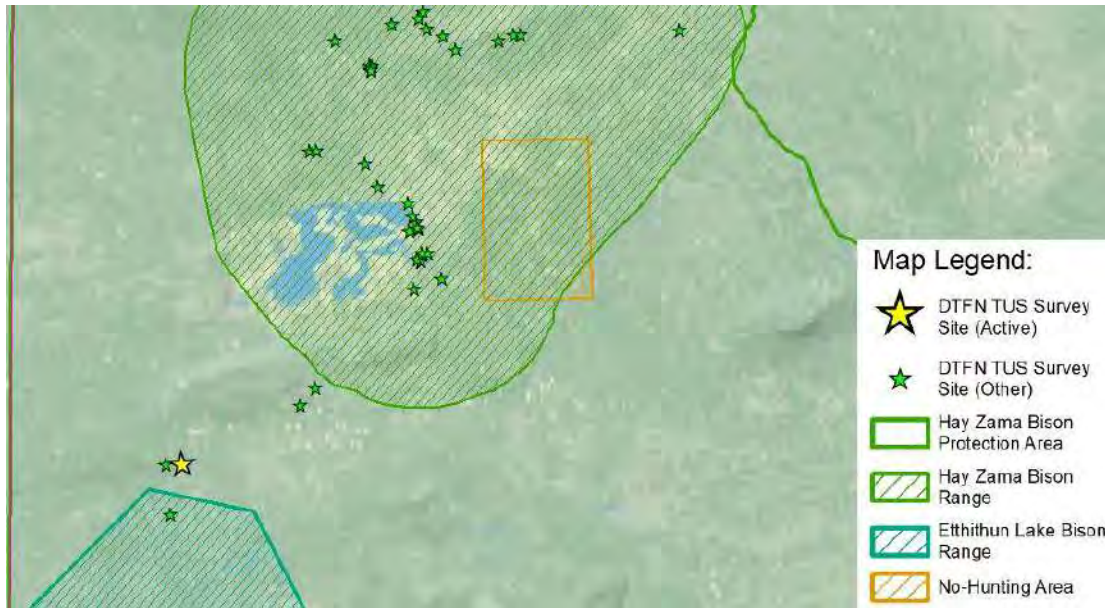


Figure 3.3: Map of observations in study area showing Bison locations between Hay Zama and Etthithun Lake herds.

In addition to Bison, values identified at these sites include moose, horse, grey wolf, fisher, otter, muskrat, rabbit, Canada lynx, red fox, black bear, deer, beaver, wolverine, mink, marmot, squirrel, mouse/vole, bat, and coyote. Community technicians noted that there were many instances of wolf tracks in the area, which may indicate a sizeable predation risk in this area. Technicians located a bison mortality along the Zama highway during the winter survey. As this location is now recorded, technicians will be able to revisit the site in the spring/summer months in order to identify vegetation and site characteristics in order to assess factors that may have contributed to this event.

Finally, given the ease with which bison herds were found by road survey on high-traffic roads, there is a possibility that the Hay Zama bison are preferentially using linear disturbances. This also may be a consequence of bias inherent to opportunistic road surveys, as the only bison that *could* be seen were nearby roads and in relatively open spaces. Given the frequency with which bison were found near high-traffic roads, there is implication of increased mortality risk from vehicle traffic in these spaces. Further mortality surveys would help better understand the implication and if/how bison mortality and high traffic/high-speed roads may be correlated in these spaces, and if/how these implications hold true or compare elsewhere in bison ranges.

For site-specific reports and photos, please see attached Project Data Report for CGXE21C174, as *Appendix A*.<sup>4</sup>

<sup>4</sup> DTFN and CPAWS. August 2021. Project Data Report for ECCC Grant Project #CGXE21C174. [BisonGCXE21C174\_DDP\_V1.5\_20210804.pdf].



## 4.0 Project Extensions

The following are possible extensions to the current project that would expand on the current knowledge of the Hay Zama bison and inform their conservation and management. Any and all of these topics would represent meaningful contributions to managing the Hay Zama herd, and intergovernmental collaboration between Dene Tha' First Nation, the Government of Alberta, and the Government of Canada.

- A. Condition project and DTFN bison geodata into Alberta Fish and Wildlife Information Management System (FWIMS)
- B. Condition project and DTFN bison geodata into ECCC's GIS/IMS
- C. Co-create a new data collection user form and data structure to match or increase compatibility with government data - update the new form and structure into DTFN's app
- D. Train community bison specialists in federal and provincial science, methods and tools to collect better and more useful bison information for management, habitat and recovery actions
- E. Train community bison specialists to undertake correct bison mortality and vegetation/habitat assessments
- F. Develop, implement and secure capacity supports for a long-term community -led bison monitoring program to provide new and current bison data
- G. Information share with government and co-manage bison recovery strategy elements, including:
  - a. Broad strategy
  - b. Threat limitation
  - c. Priority
  - d. Research
  - e. Management approaches
- H. Determine the herd to which the 'between-boundary' bison belong through deployment of GPS or Radio Telemetry collars and recommend revisions to current herd boundaries.
- I. Identify bison with radio collars and correlate these with government data telemetry, as there is added benefit if technicians on the ground are 'filling-in-gaps' that may enhance government of Alberta field reports, aerial surveys, and FWIMS data.
- J. Investigate 'third cohort' calf recruitment events in late summer / early fall - these calves are assumed to be at risk of very high mortality due to late season birth and also prioritized for predation by wolves, bears, cougars, coyotes, and possibly other predators such as wolverine.

## 5.0 Recommendations

The following points are the recommendations of the project managers and technicians on behalf of Dene Tha' First Nation.

- Continued support of Indigenous participation in bison conservation measures, which fosters meaningful collaboration between First Nation and Crown governments and supports conservation that engages an array of stakeholders for more integrative approaches.
- Bison knowledge is especially timely given discussions between the Governments of Alberta and Canada regarding bison conservation.<sup>5</sup> Community technicians will play a critical role in monitoring bison populations, habitat, ranges, health, and threats.
- Technicians noted that speed limits on the roads intersecting the Hay Zama bison herd had too high of speed limits considering the density of wildlife, and the lack of visibility at night. They recommend slower night-time speed limits in this area to ensure the safety of drivers and wildlife.
- Identify opportunities, partners, capacity and plans to undertake the Project Extensions noted above.

## 6.0 Acknowledgements

This project, and those like it, could not be completed without collaboration between First Nations, Crown Governments, and Non-Government Organizations. Mahsi-cho/Thank you to the following Dene Tha' technicians who completed the field surveys for this project:

Anthony Providence	Graham Providence Toho	Nick Ahkimnachie	Blaine Didzena
Riley Didzena	Courtney Metchooyeah	Brendan Bushe	Neil Metchooyeah
Carmen Chambaud	Lorney Metchooyeah	Trevor Denechoan	Sam Beaulieu
Joe Pastion	Kyle (Sonny) Seniantha		

Mahsi-cho/Thank you to provincial scientists at Alberta's Fish and Wildlife department, our partners at CPAWS Northern Alberta, and to our funders, the Aboriginal Fund for Species at Risk program of Environment and Climate Change Canada, without whom this project would not have been possible, and with whom we hope to continue this meaningful work.

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<sup>5</sup> Government of Alberta. 2021. Bison Conservation Agreement engagement. [website]. Available: <https://www.alberta.ca/bison-conservation-agreement-engagement.aspx>. Accessed: August 13, 2021

## **Appendix A:**

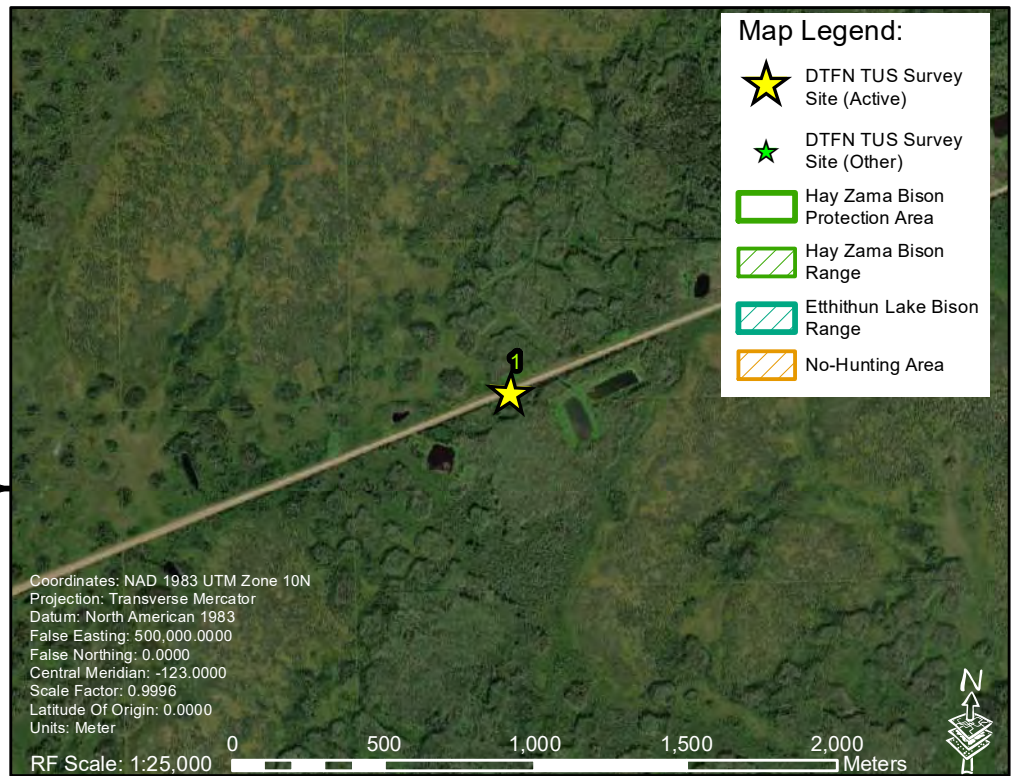
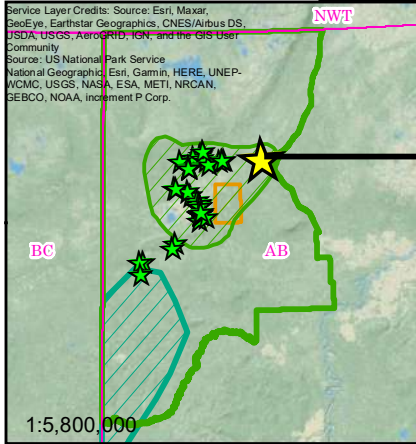
A.1: Project Data Report for ECCC Grant Project #CGXE21C174

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July 26, 2021

Inset Map:

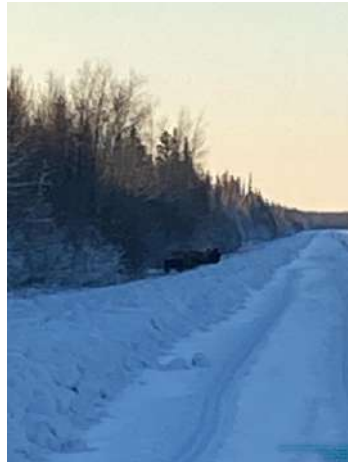
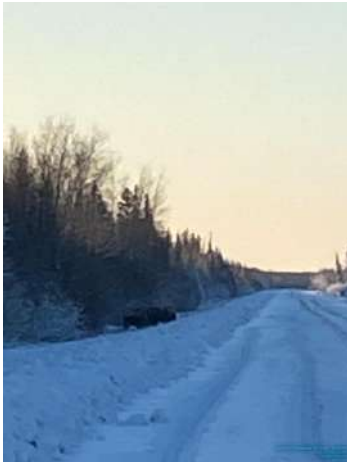


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## Site ID: 1 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Brendan bushie



Slide A: (required)

Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 1

**Survey Date: 2020-12-15**

Land Classification (DUC): Wetland Bog Open

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): other

Notes (General): None

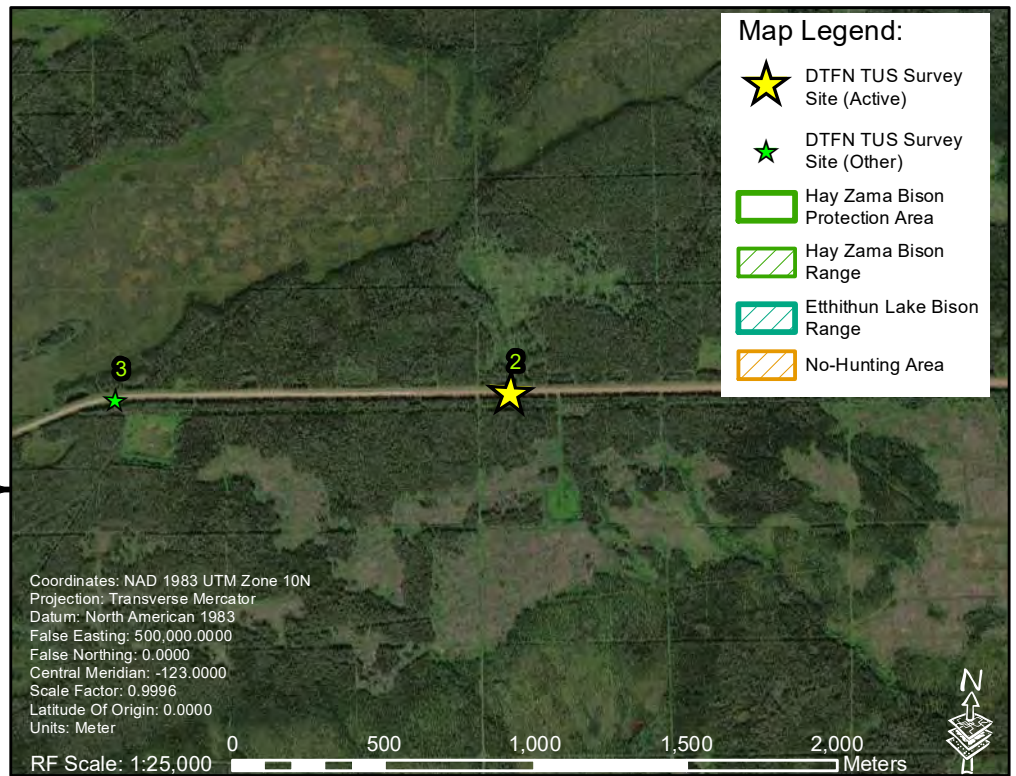
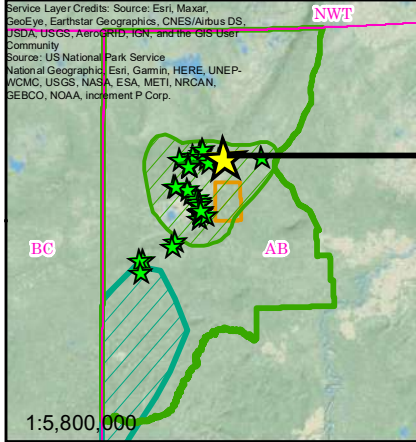
Notes (Environmental): Buffalo monitoring





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## Site ID: 2 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Courtney metchooyeah Lorney metchooyeah



Slide A: (required)



Slide B: (optional)



Slide C: (optional)



Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 2

**Survey Date: 2020-12-01**

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): Hunting, Trapping, Gathering

Notes (General): Herd of bison

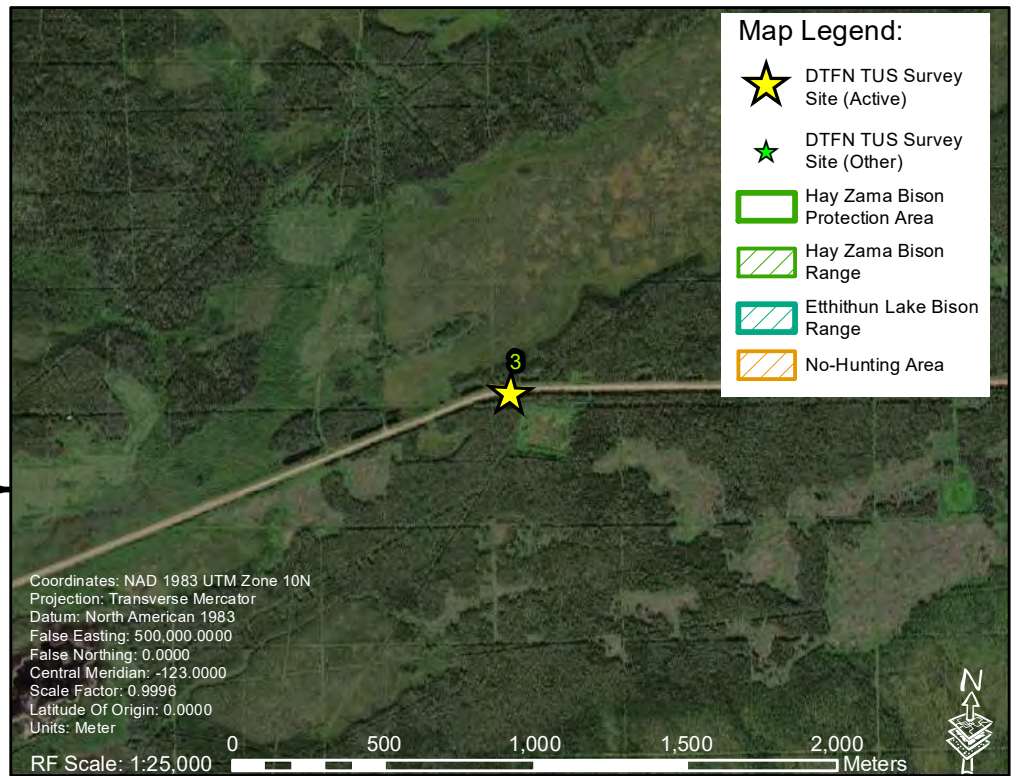
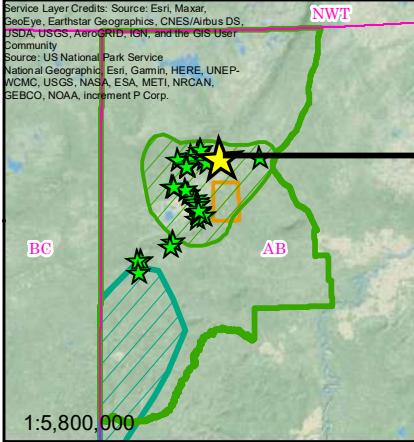
Notes (Environmental):





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## Site ID: 3 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Neil Metchooyeah Carmen Chambaud



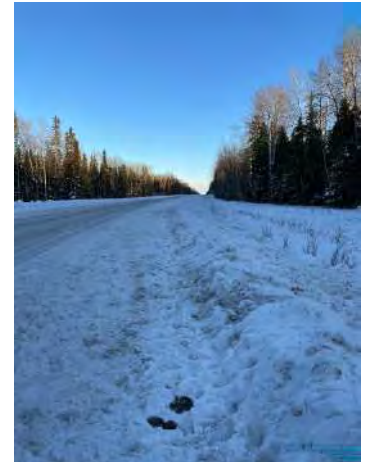
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Slide C: (optional)



Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 3

Survey Date: 2020-12-04

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): other

Notes (General): Carcass of bison, located off Zama Road. Tracks of bison herd with multiple droppings in area. No other bison spotted in area. Foul smell from carcass. Multiple ravens in area.

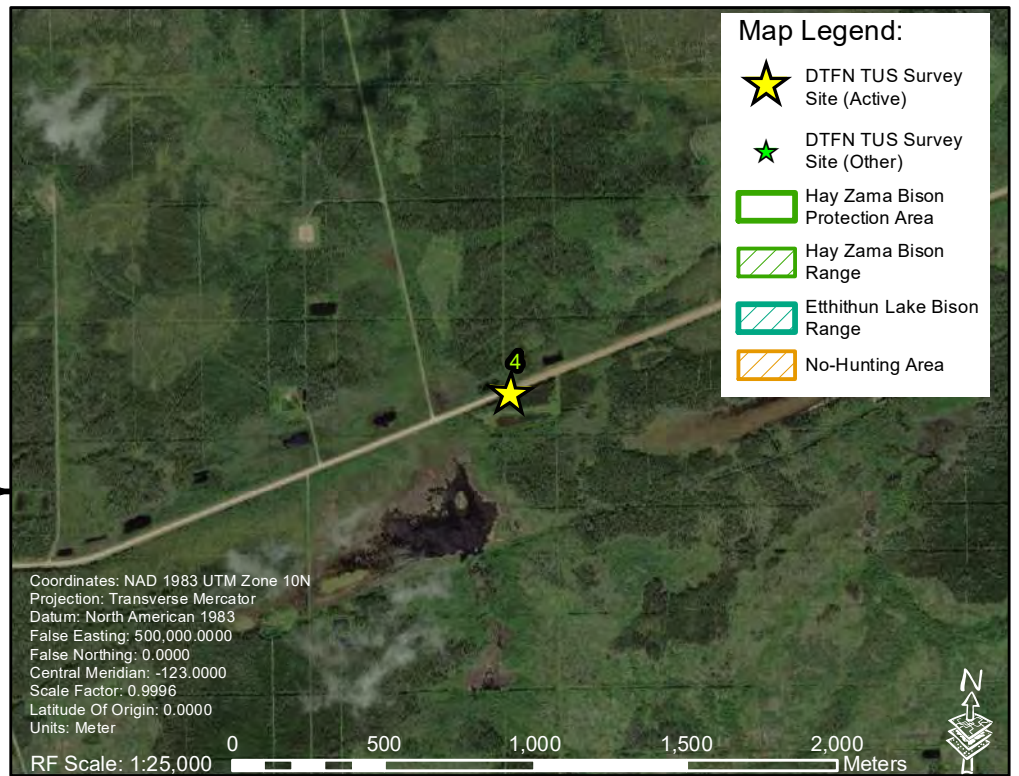
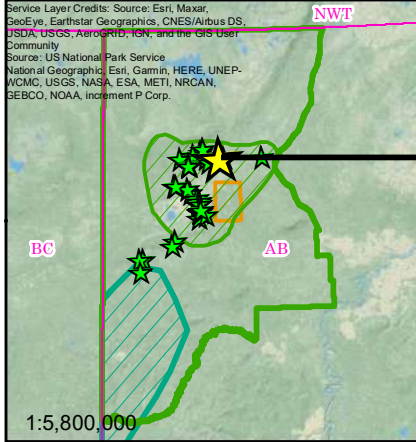
Notes (Environmental): Bison Protection Area

More signage required on zama road. Large volume of tracks along road towards highway 35.



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Inset Map:



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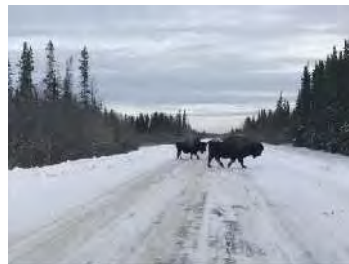
## Site ID: 4 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Courtney metchooyeah Lorney metchooyeah



Slide A: (required)



Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 4

Survey Date: 2020-12-01

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): Hunting, Trapping, Gathering

Notes (General): Bison 2

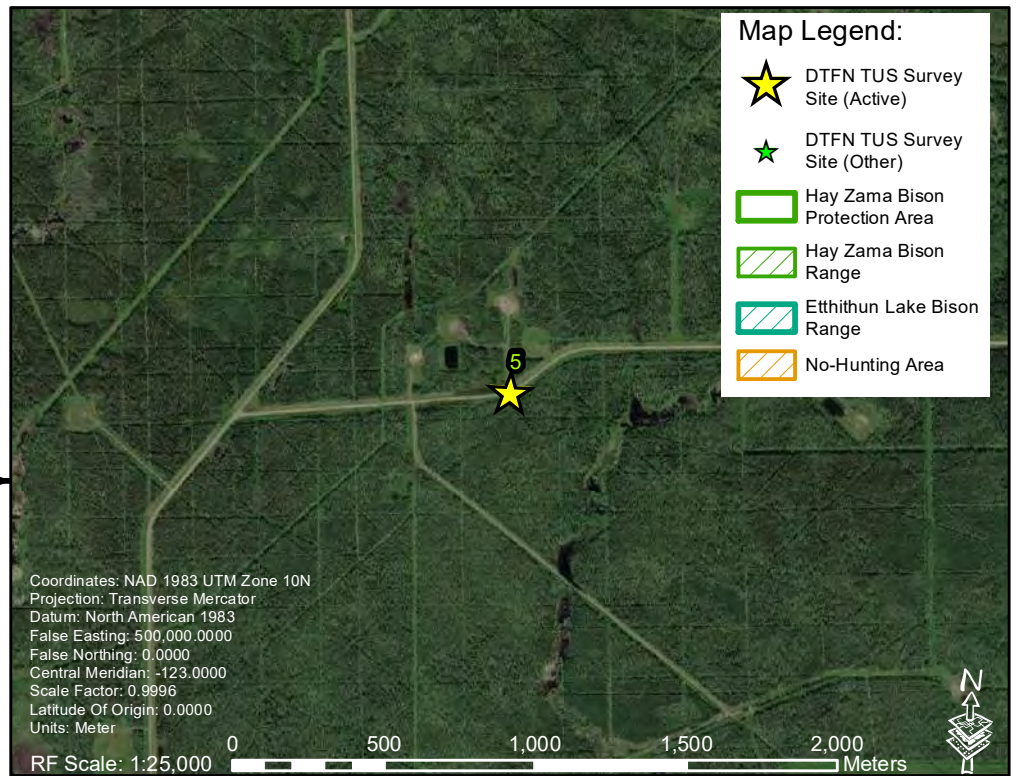
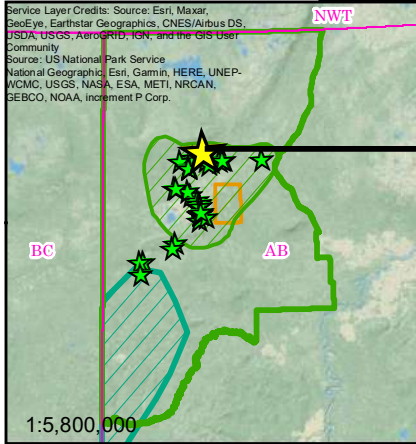
Notes (Environmental):





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## Site ID: 5 (of 48)

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## Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

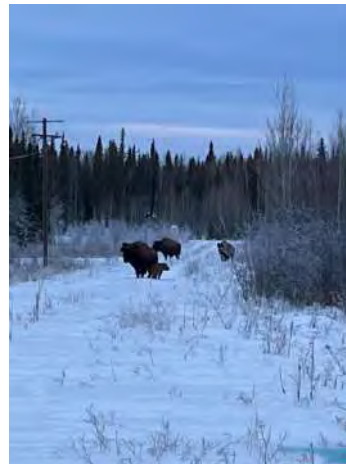
Indigenous Knowledge Technicians: Neil Metchooyeah Carmen Chambaud



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Slide B: (optional)



Slide C: (optional)



Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

## Some Survey Attributes: Survey No.: 5

**Survey Date: 2020-12-06**

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): other

Notes (General): Spotted Three adult bison and one calf bison on access road.

Notes (Environmental): Wood land bison Protection Area

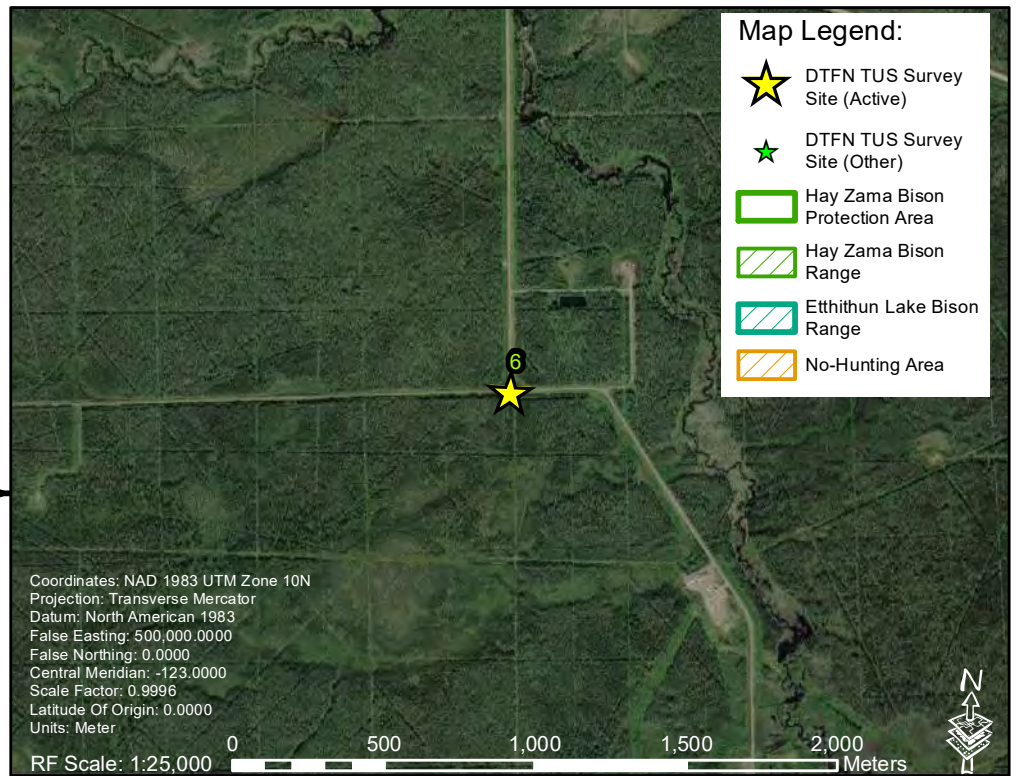
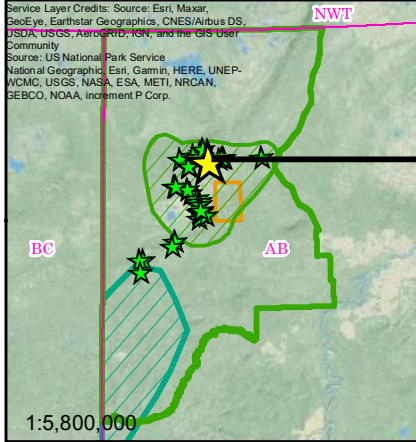
Woodland bison are protected in this area.





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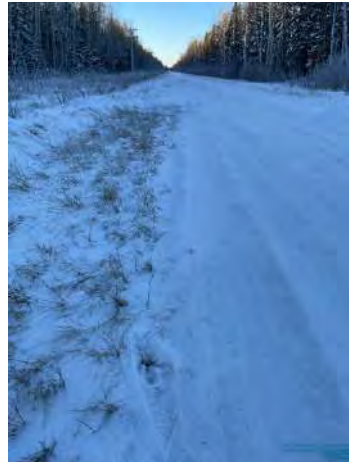


GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 6 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Neil Metchooyeah Carmen Chambaud



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Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 6

Survey Date: 2020-12-04

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): other

Notes (General): Single Bison tracks on snow covered gravel road. Tracks going along gravel road.

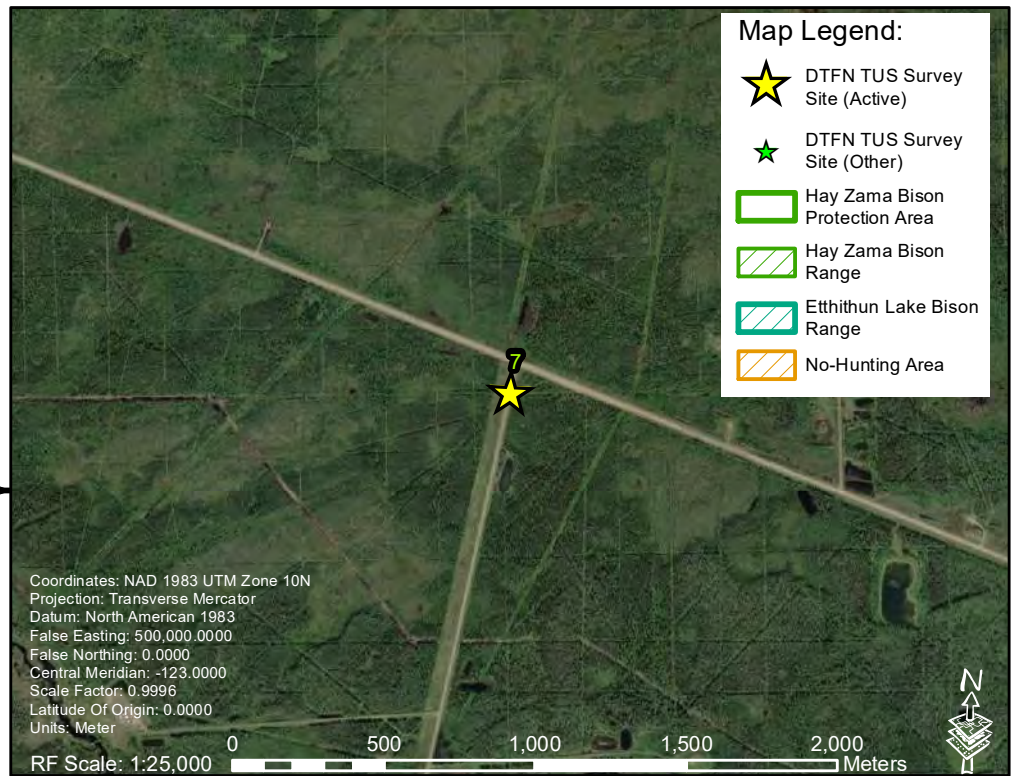
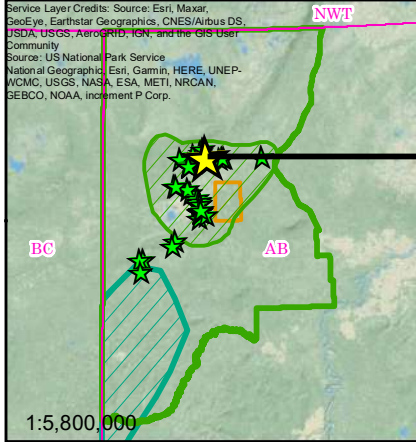
Notes (Environmental): Bison Protection Area

Oil and gas pipelines in area, logging active in area as well.



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GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 7 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Courtney metchooyeah



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Slide B: (optional)



Slide C: (optional)



Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 7

**Survey Date: 2020-12-02**

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): Hunting, Trapping, Gathering

Notes (General): Herd of buffalo

Notes (Environmental):

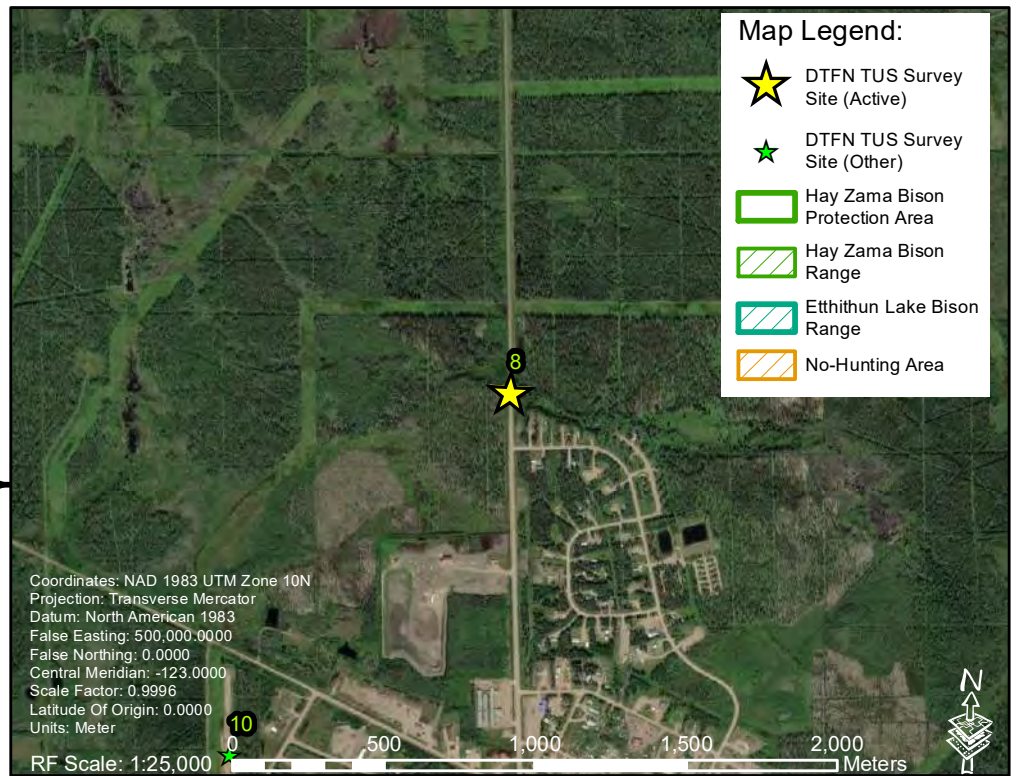
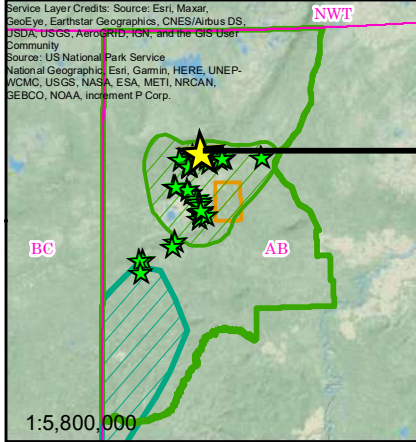
Highway nearby





July 26, 2021

Inset Map:



GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 8 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Courtney Metchooyeah Lorney metchooyeah



Slide A: (required)

Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 8

**Survey Date: 2020-11-28**

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): Hunting, Gathering

Notes (General): Edible food and may be used for clothing

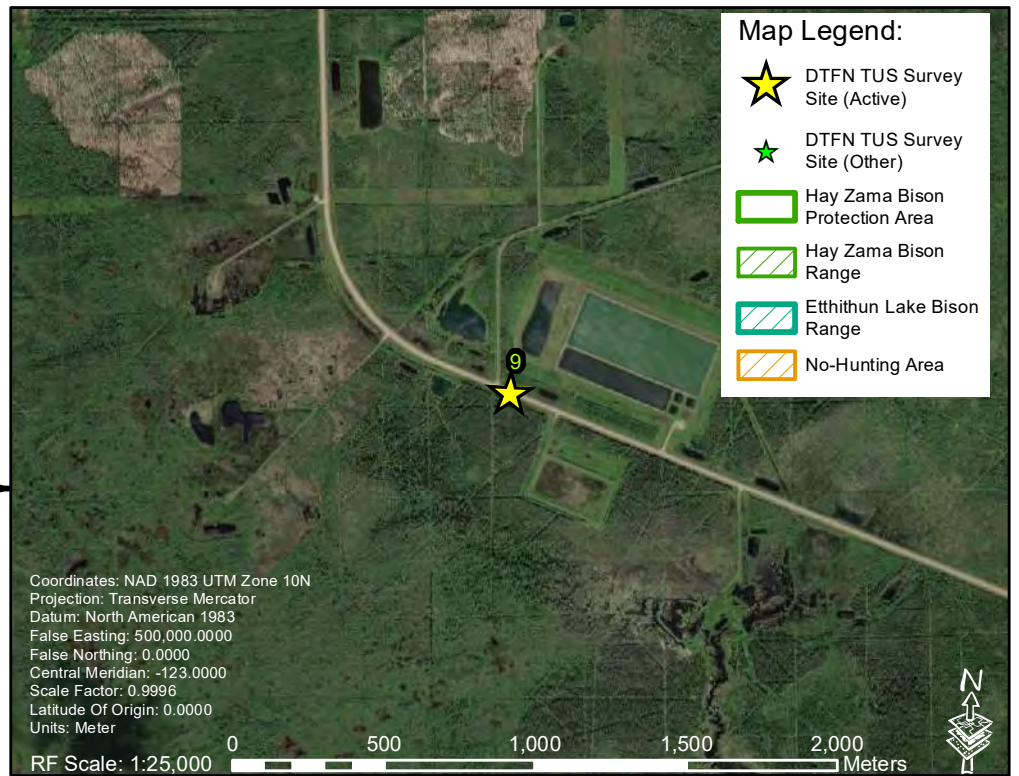
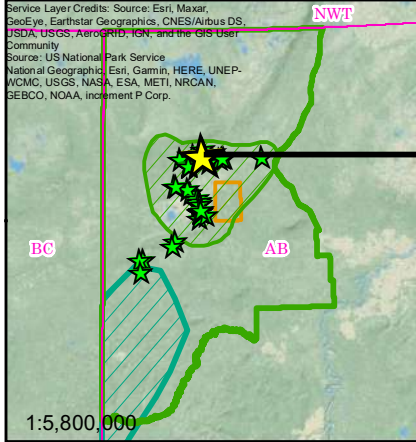
Notes (Environmental):

Buffalo near outskirts of zama



July 26, 2021

Inset Map:



## Site ID: 9 (of 48)

GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Courtney metchooyeah Lorney metchooyeah



Slide A: (required)



Slide B: (optional)



Slide C: (optional)



Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 9

**Survey Date: 2020-12-01**

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): Hunting, Trapping, Gathering

Notes (General): Herd of 20+ bison

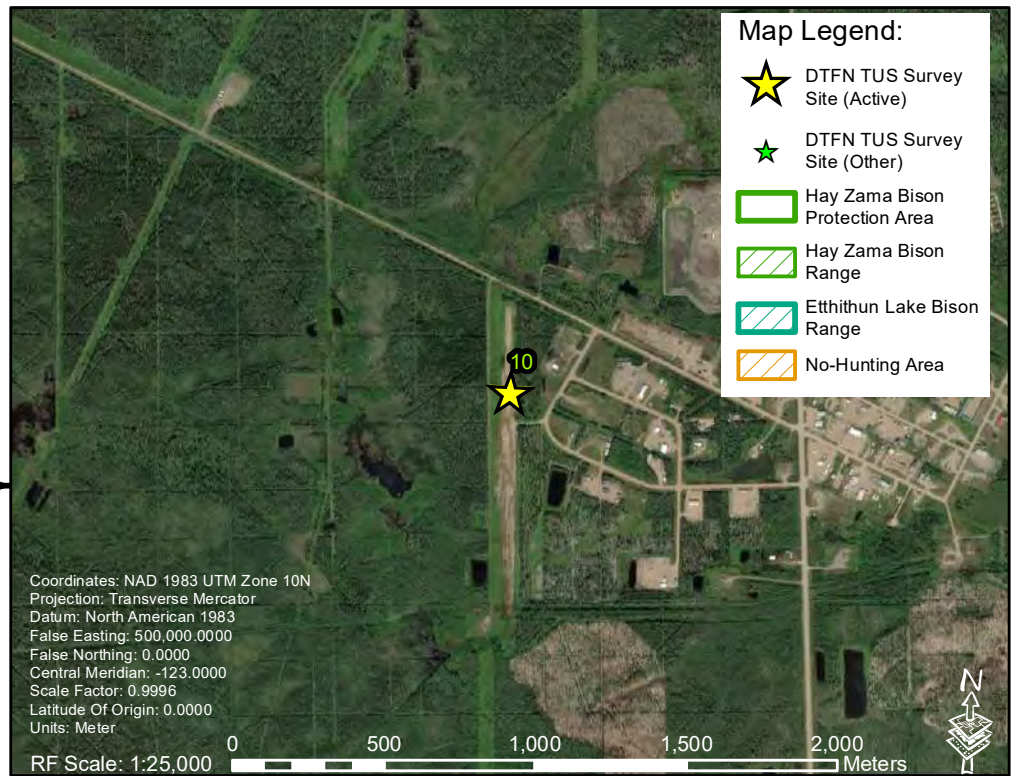
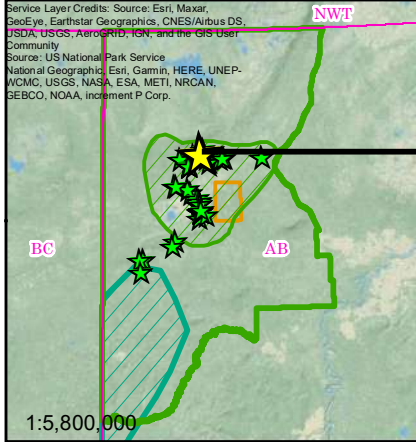
Notes (Environmental):





July 26, 2021

Inset Map:



**Site ID: 10 (of 48)**

GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

**Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"**

Indigenous Knowledge Technicians: Courtney Metchooyeah Lorney metchooyeah



Slide A: (required)



Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

**Some Survey Attributes:** Survey No.: 10

**Survey Date:** 2020-11-28

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): Hunting, Gathering

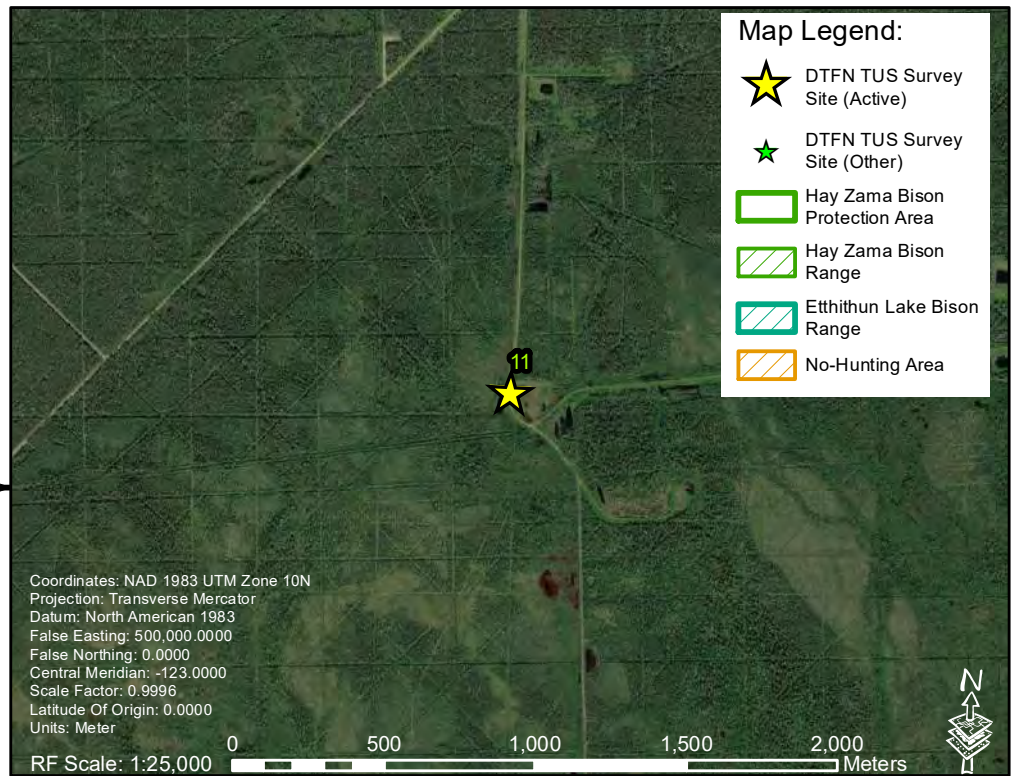
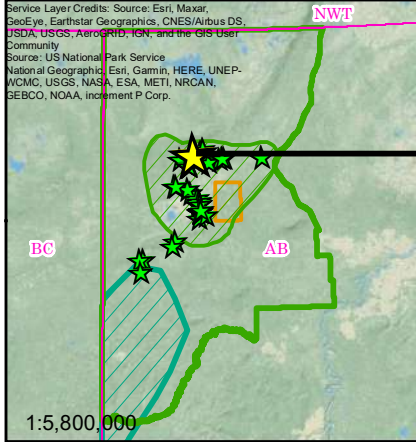
Notes (General): Bison at the airport in zama estimate 26 mixed gender

Notes (Environmental):



July 26, 2021

Inset Map:

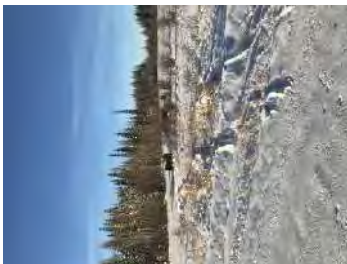


**Site ID: 11 (of 48)**

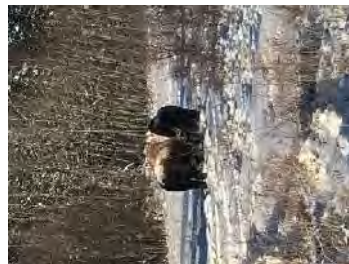
GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

**Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"**

Indigenous Knowledge Technicians: Courtney Metchooyeah Lorney metchooyeah



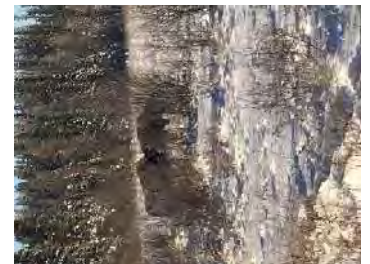
Slide A: (required)



Slide B: (optional)



Slide C: (optional)



Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

**Some Survey Attributes: Survey No.: 11**

**Survey Date: 2020-11-28**

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): Hunting, Trapping, Gathering

Notes (General): 5 male bisons

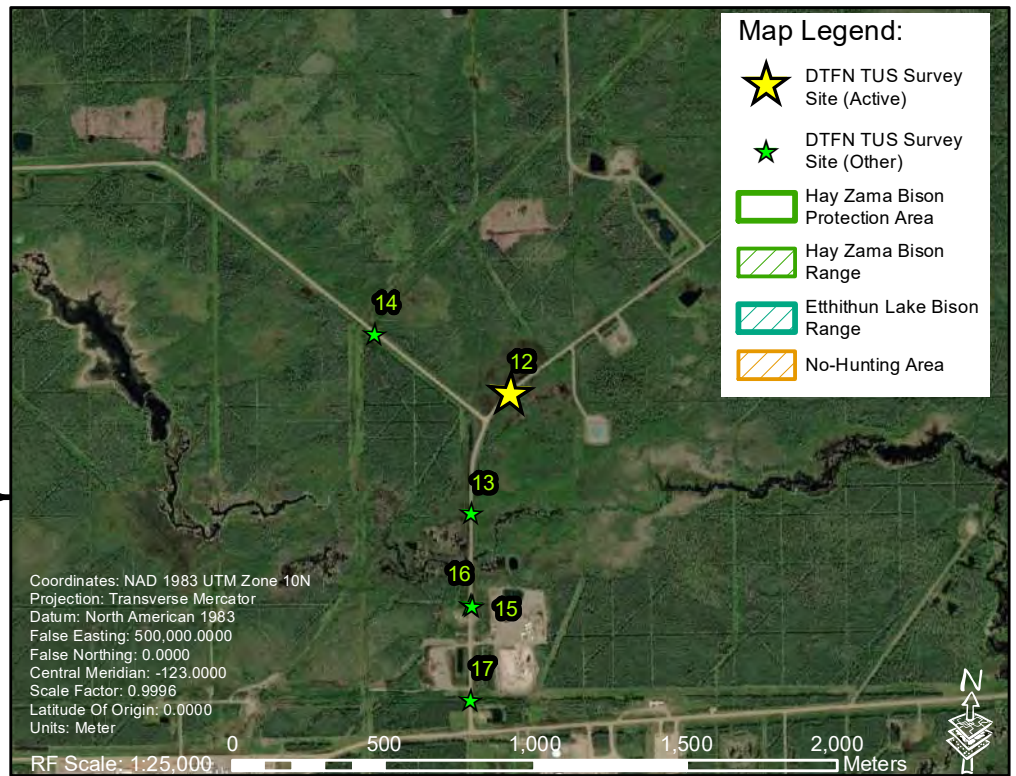
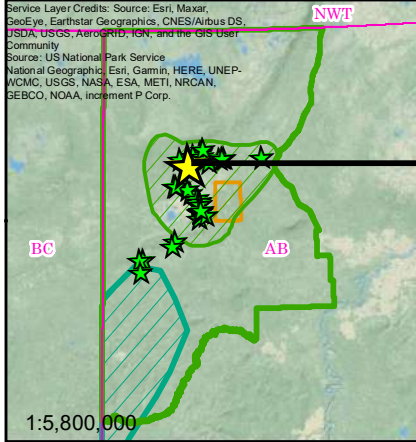
Notes (Environmental):





July 26, 2021

Inset Map:



#### Map Legend:

- ★ DTFN TUS Survey Site (Active)
- ★ DTFN TUS Survey Site (Other)
- Hay Zama Bison Protection Area
- Hay Zama Bison Range
- Etthithun Lake Bison Range
- No-Hunting Area

Coordinates: NAD 1983 UTM Zone 10N  
Projection: Transverse Mercator  
Datum: North American 1983  
False Easting: 500,000.0000  
False Northing: 0.0000  
Central Meridian: -123.0000  
Scale Factor: 0.9996  
Latitude Of Origin: 0.0000  
Units: Meter

RF Scale: 1:25,000

GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

### Site ID: 12 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Riley Didzena Blain Didzena Brendan bushe



Slide A: (required)

Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 12

Survey Date: 2020-12-13

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): GreyWolf,Bison

Values (Some Uses): Hunting,Fishing,Trapping

Notes (General): Access roads, seismic roads, wild life crossing, wolfs hunting sites  
-26 temp

Notes (Environmental):

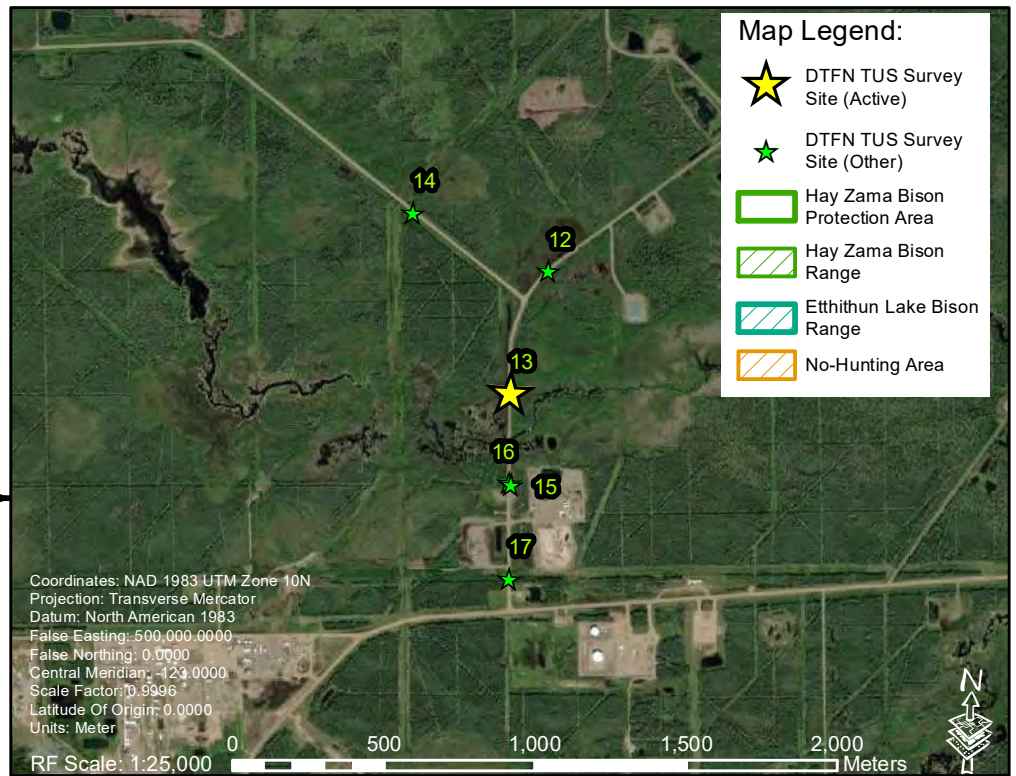
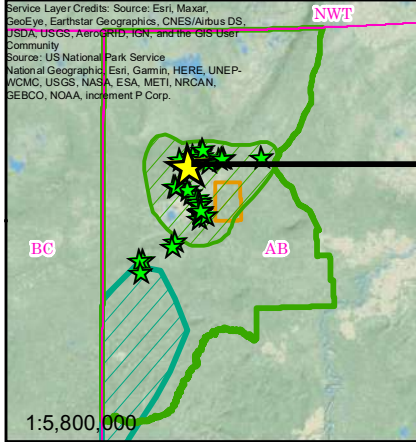
Wolfs on hwygrade roads





July 26, 2021

Inset Map:



GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 13 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Nick ahkimnachie Anthony providence



Slide A: (required)



Slide B: (optional)



Slide C: (optional)



Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 13

Survey Date: 2021-02-12

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison, CanadaLynx, Coyote, GreyWolf

Values (Some Uses): Trapping, Hunting

Notes (General): Seen a lot of chickens on the road lots of bison and wolve tracks, wolves seem to be following the bison and lots of other small animal tracks

Notes (Environmental):

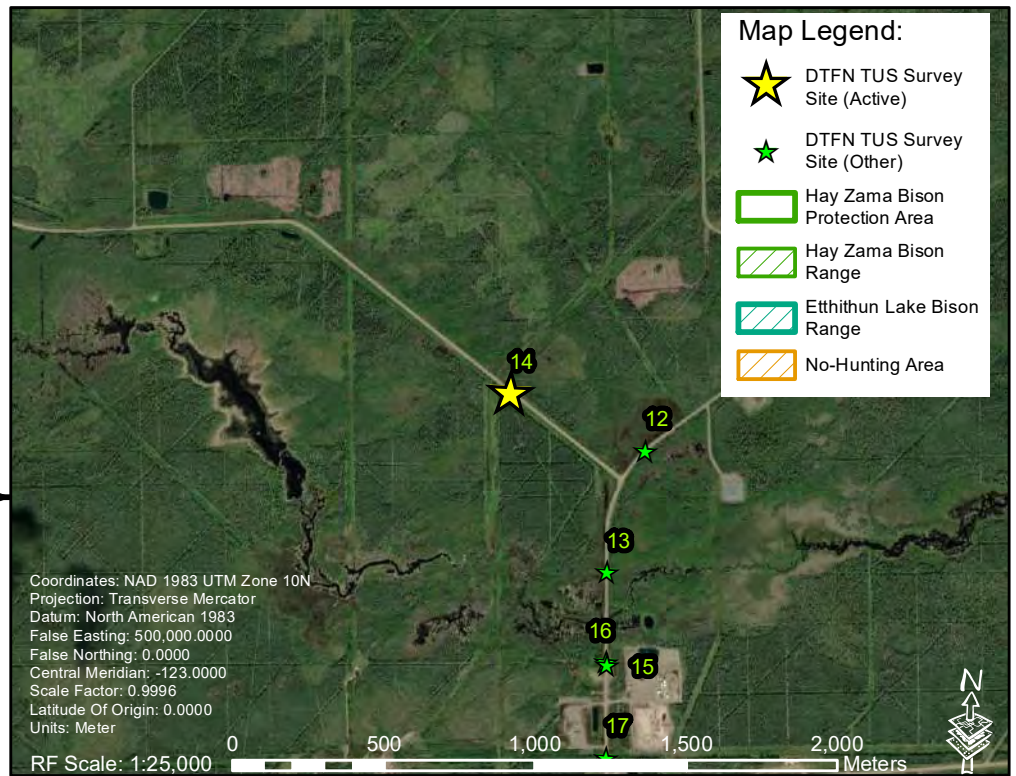
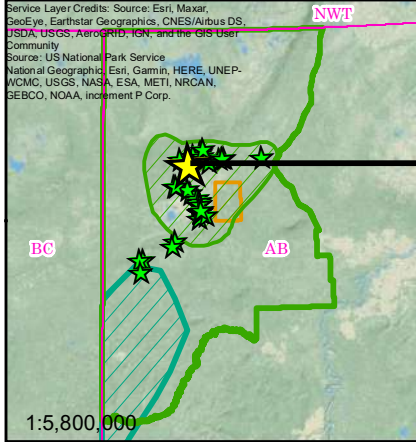
Lots of forestry steady working in the area and other oil field workers





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Inset Map:

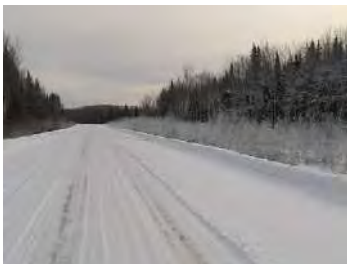


GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 14 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Blaine Didzena Riley Didzena Brendan Bushe



Slide A: (required)

Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 14

**Survey Date: 2020-12-13**

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): other

Notes (General): - 26 deg c, wind calm, zama group 2, moved from 59°4'14.778"N 118°51'28.930"W to this location 20201212>>20201213. No sighting of group, tracks terminate this loc.

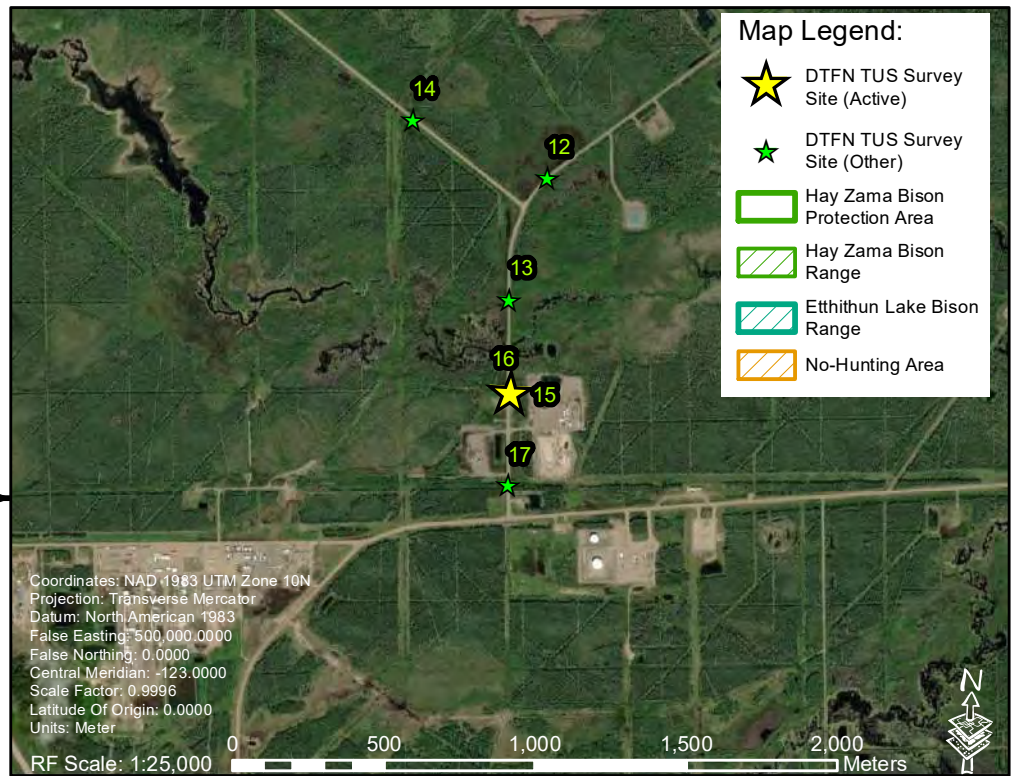
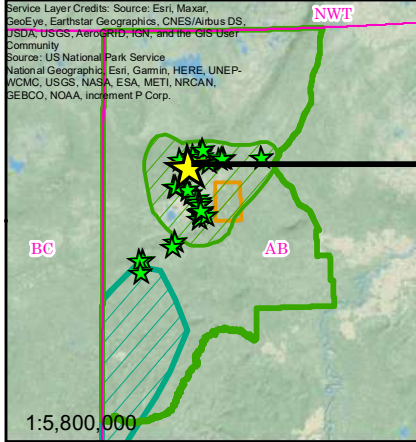
Notes (Environmental): Buffalo survey





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GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 15 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Riley Didzena Blain Didzena Brendon bushie



Slide A: (required)

Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 15

**Survey Date: 2020-12-12**

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): Hunting, Trapping

Notes (General): High traffic forestry road, off of oil and gas plant road.  
-21 temp

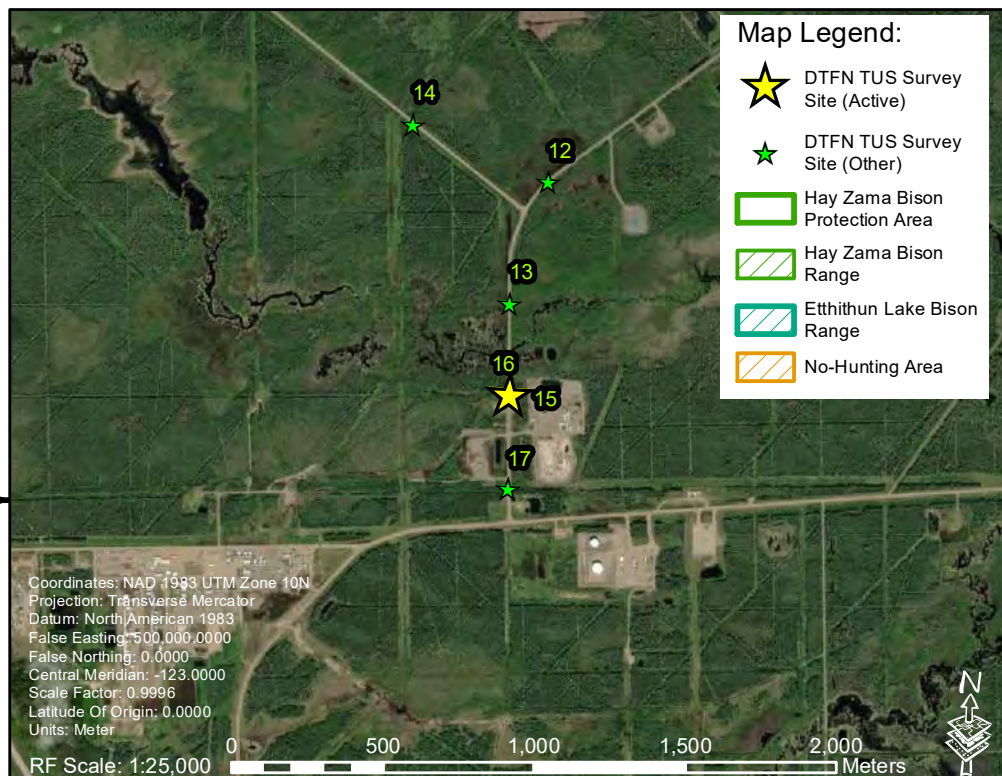
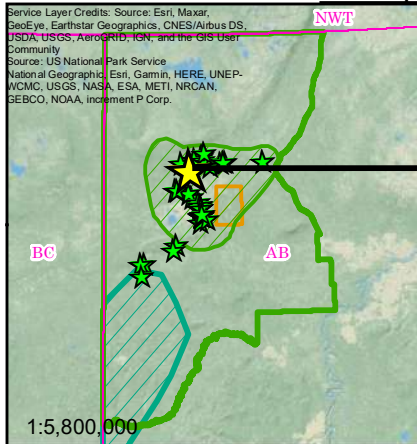
Notes (Environmental):

Wild animals cross road, caution of high traffic, oil and gas industry on sites,



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Inset Map:



GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 16 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Blaine Didzena Riley Didzena Brendan Bushe



Slide A: (required)

Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 16

**Survey Date: 2020-12-12**

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): Hunting

Notes (General): - 20 deg c, wind southeastward 5 to 15 kmh. Second buffalo group near zama plant, tervita, shekile road access.

### Notes (Environmental):

Oil and gas infrastructure, enbridge tie in location, animals on right of way, heavy vehicle traffic area

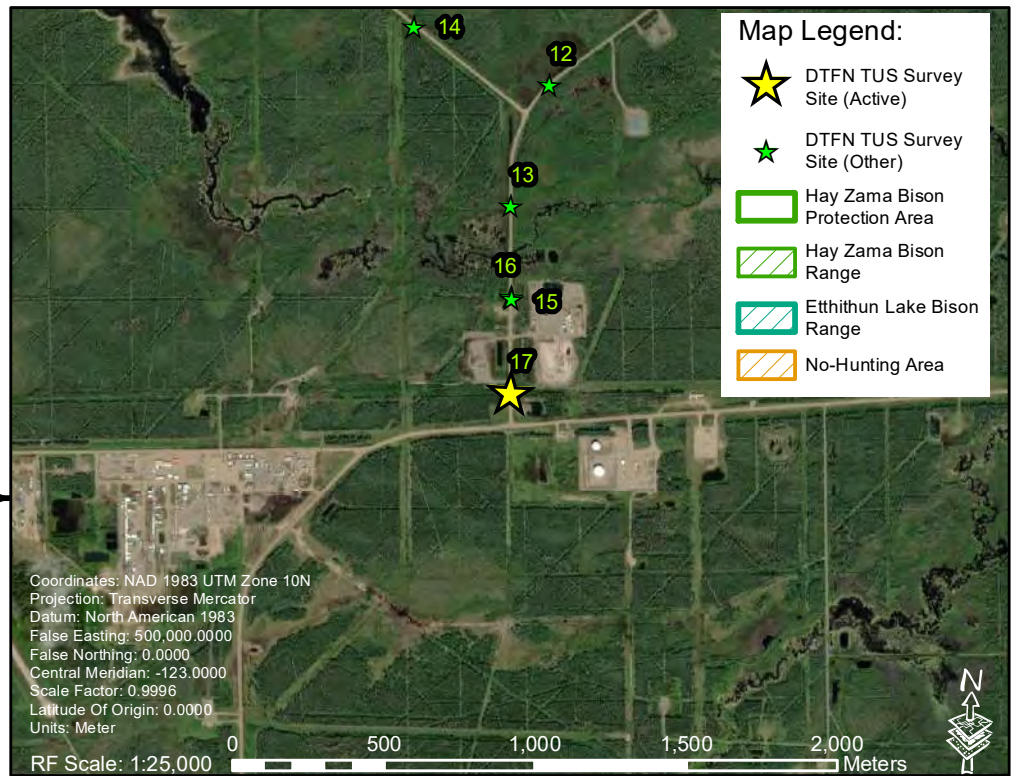
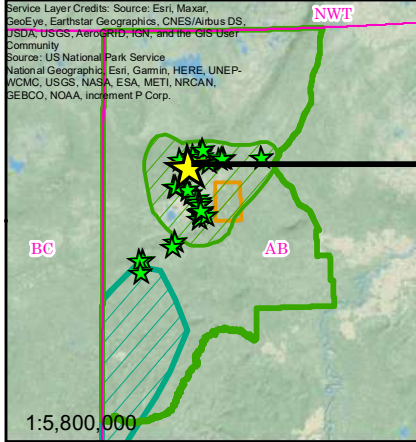
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July 26, 2021

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GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 17 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Nick ahkimnachie Anthony providence



Slide A: (required)



Slide B: (optional)



Slide C: (optional)



Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 17

Survey Date: 2021-02-13

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison, GreyWolf, CanadaLynx, Moose

Values (Some Uses): Hunting, Trapping

Notes (General): Lots of bison and wolve activity fresh wolve tracks and bison, seem to be moose in the area also and other small animals

Notes (Environmental):

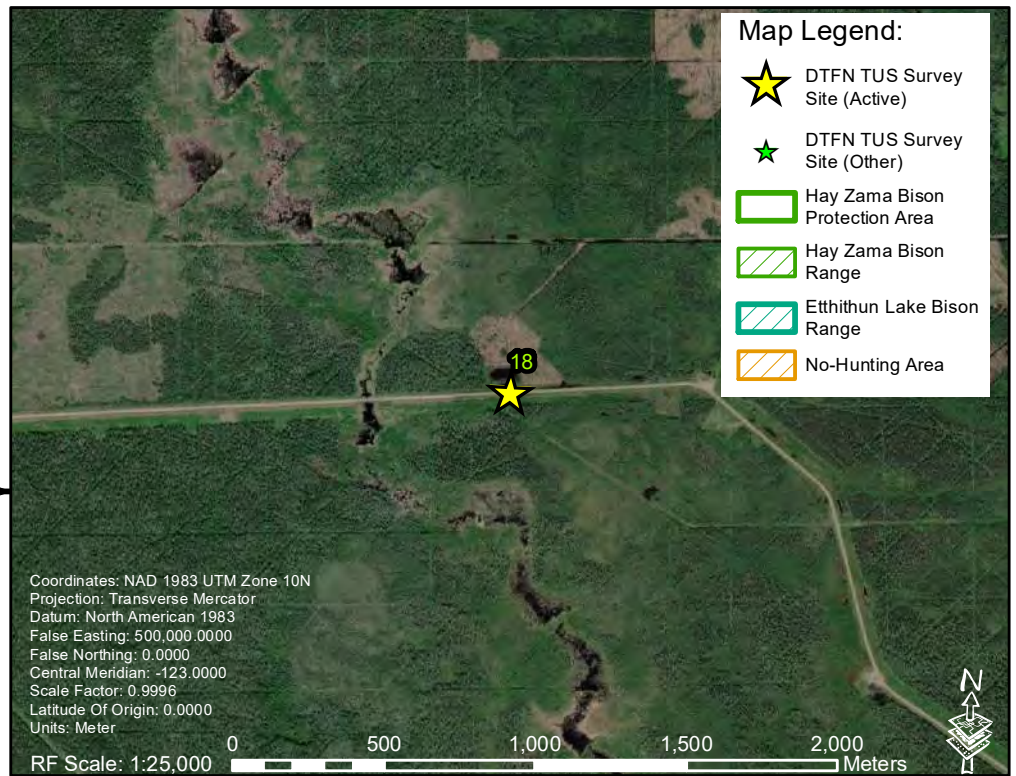
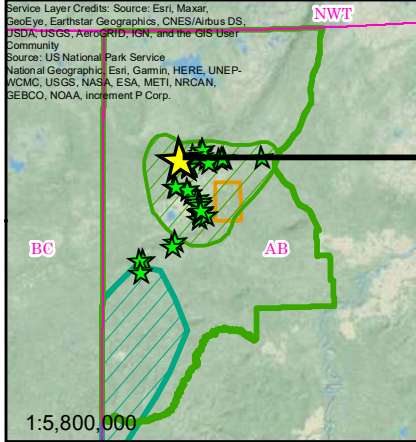
Lots of logging trucks doing some forestry work and other oil field workers in the area





July 26, 2021

Inset Map:



GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 18 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Courtney Metchoooyeh Lorney metchooyeah



Slide A: (required)



Slide B: (optional)



Slide C: (optional)



Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 18

**Survey Date: 2020-11-29**

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): Hunting, Trapping

Notes (General): 1 bison grazing

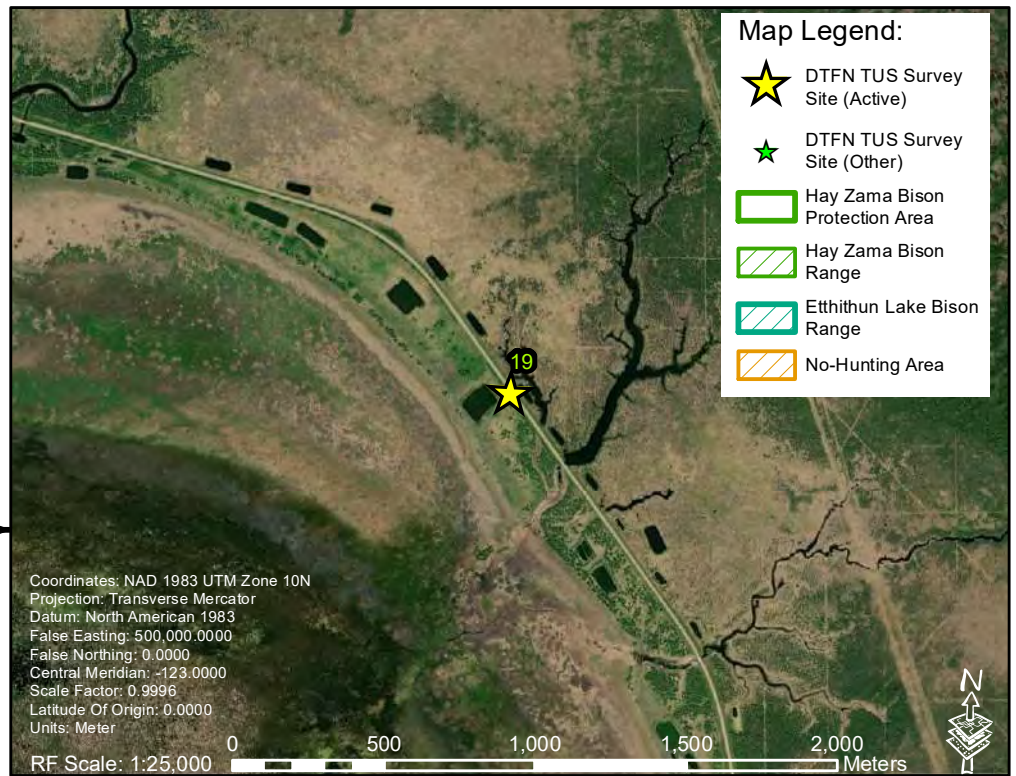
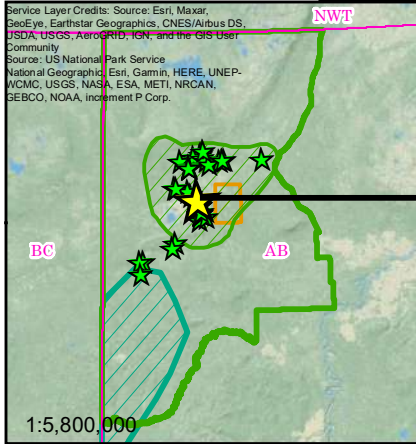
Notes (Environmental):





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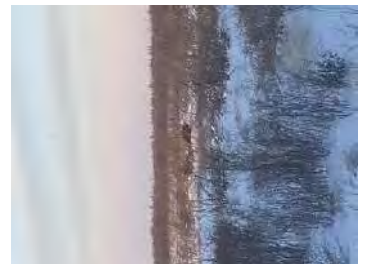
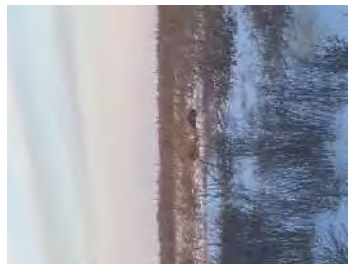
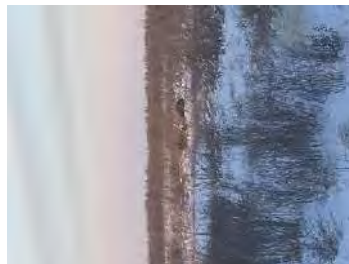
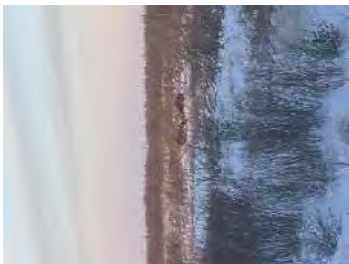


GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 19 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Courtney Metchooyeah Lorney Metchooyeah



Slide A: (required)

Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 19

**Survey Date: 2020-11-29**

Land Classification (DUC): Wetland Swamp MixedWood

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): Hunting, Trapping, Fishing, Gathering, Medicine Sacred

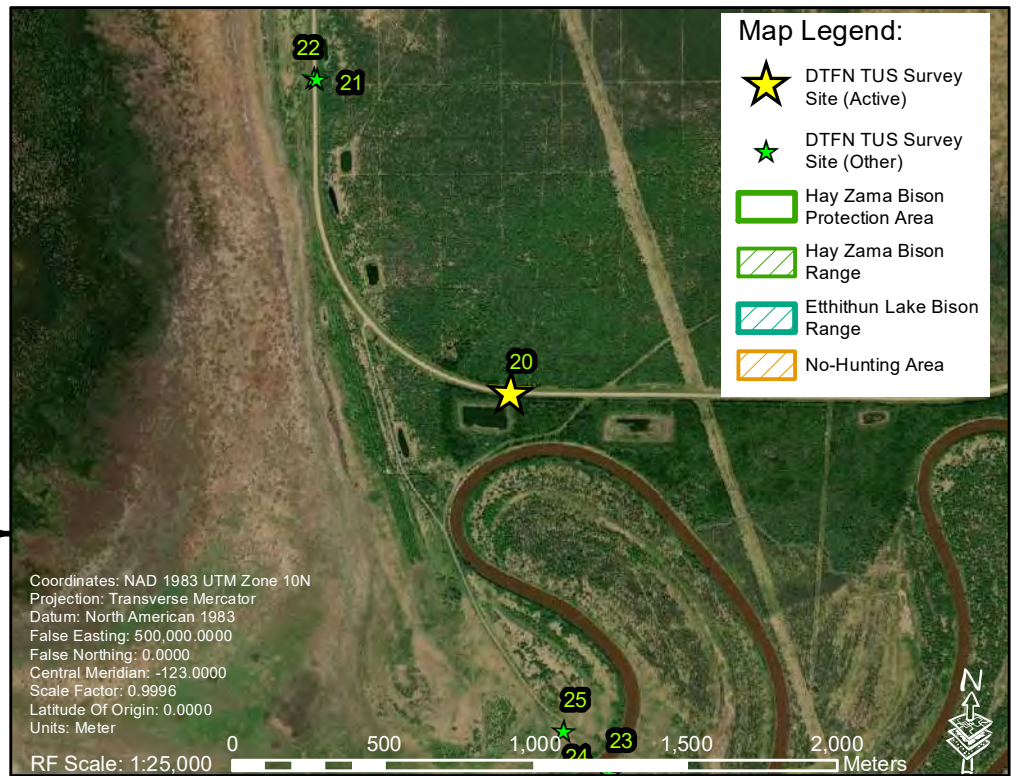
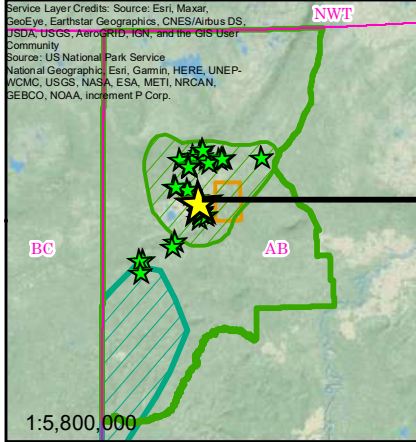
Notes (General): Land used for hunting and gathering year round  
Seen buffalo

Notes (Environmental):



July 26, 2021

Inset Map:

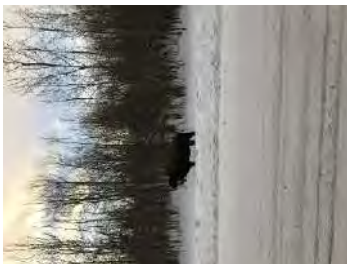


GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 20 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Courtney Metchoooyeh Lorney metchooyeah



Slide A: (required)

Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 20

Survey Date: 2020-12-01

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): Hunting, Trapping, Gathering

Notes (General): Bison in habay 2

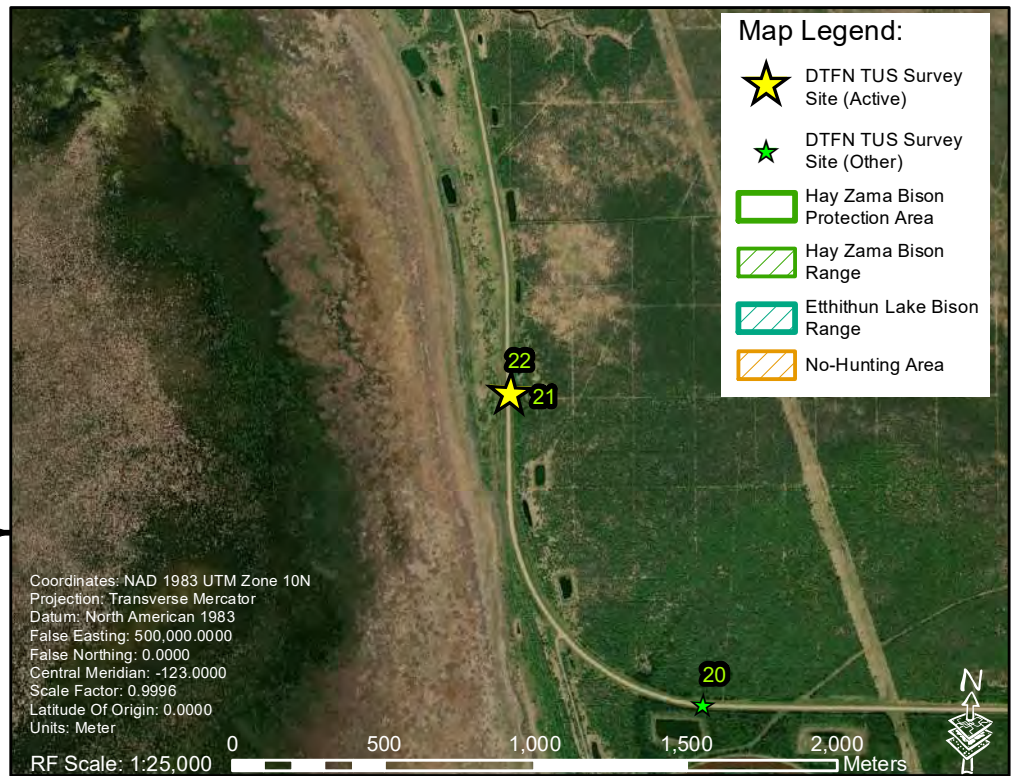
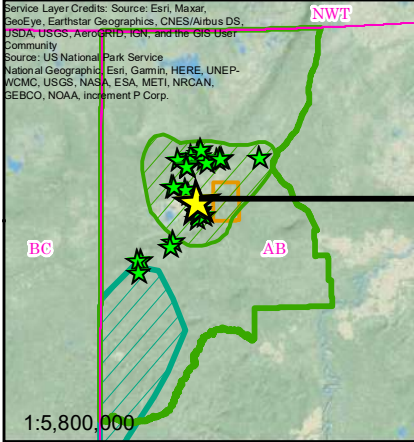
Notes (Environmental):





July 26, 2021

Inset Map:



## Site ID: 21 (of 48)

GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Riley Didzena Blain Didzena Brendan bushe



Slide A: (required)

Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 21

**Survey Date: 2020-12-12**

Land Classification (DUC): Wetland Swamp Shrub

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): Fishing,Hunting,Trapping,Gathering,MedicineSacred

Notes (General): Habay lake, off high grade road. Multiple buffalos right off the road. Habay, used for cultural purposes, hunting trapping, fishing, any possibility of cultural use  
-20 temperature

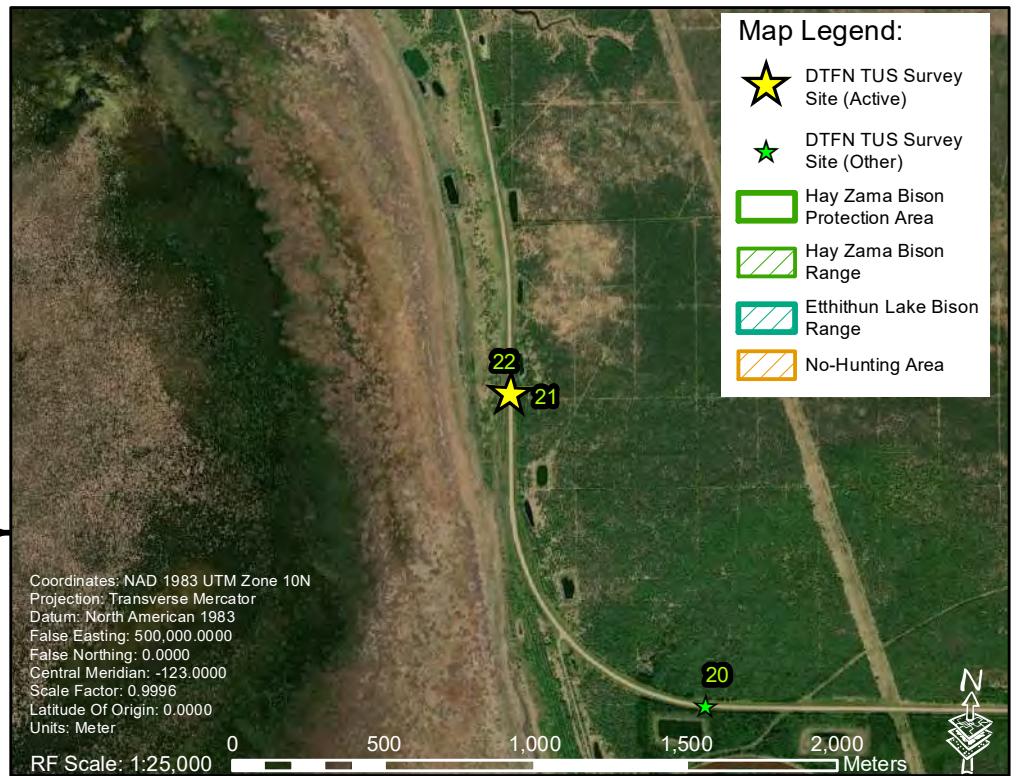
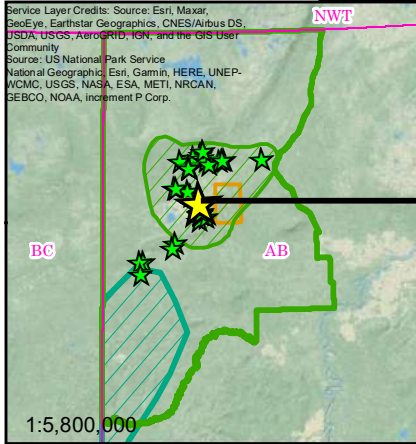
Notes (Environmental):

Access road, use of wild animals, high traffic, take caution on road.



July 26, 2021

Inset Map:

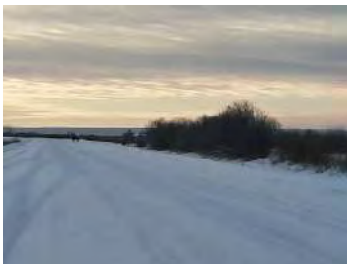


**Site ID: 22 (of 48)**

GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

**Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"**

Indigenous Knowledge Technicians: Blaine Didzena Riley Didzena Brendan Bushe



Slide A: (required)

Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

**Some Survey Attributes: Survey No.: 22**

**Survey Date: 2020-12-12**

Land Classification (DUC): Wetland Swamp Shrub

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): Hunting, Fishing, Trapping, Gathering, Medicine Sacred

Notes (General): -20 deg c, wind southward 15 20 kmh. lake edge of Hay Lakes along access road, buffalo group.

Notes (Environmental):

Ducks unlimited site, seasonal hunting area, hi grade access hwy 58n, animals crossing road, sensitive water environment, sensitive animal area, oil and gas infrastructure, traditional plant

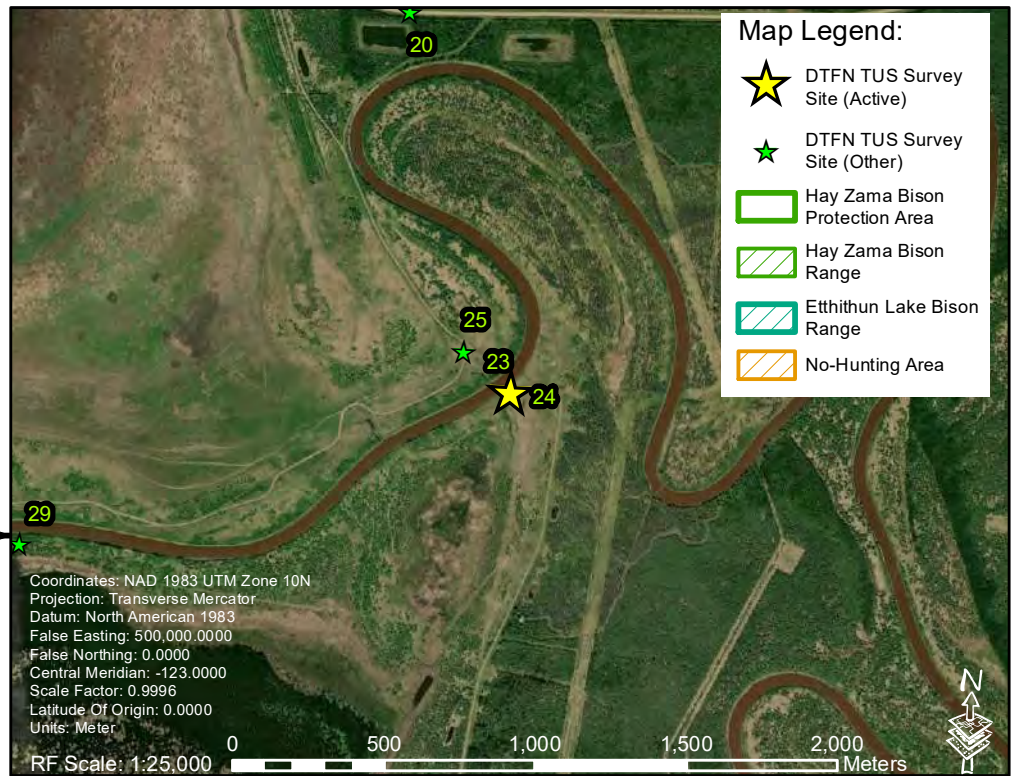
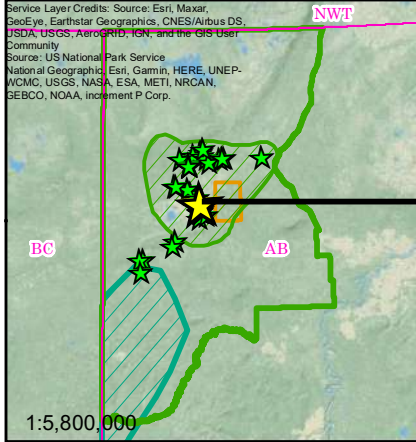
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July 26, 2021

Inset Map:



**Site ID: 23 (of 48)**

GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

**Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"**

Indigenous Knowledge Technicians: Riley Didzena Blain Didzena Brendan bushe



Slide A: (required)

Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

**Some Survey Attributes: Survey No.: 23**

**Survey Date: 2020-12-13**

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): Hunting, Trapping, Fishing, Medicine Sacred

Notes (General): Near riverside, canoeing as traditional, ice bridge road, camp sites, tea dance area.

Wild animal site seen, Buffalo trails

-30 temp

Notes (Environmental):

Right of way access road, boating area,

Animals crossing access road

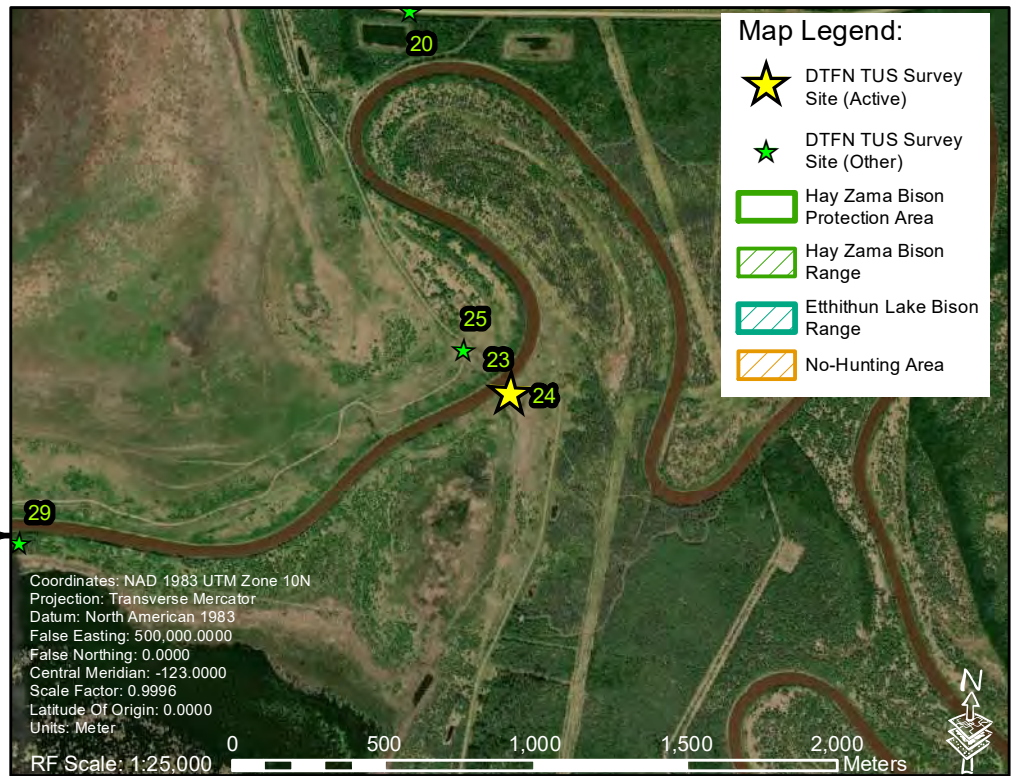
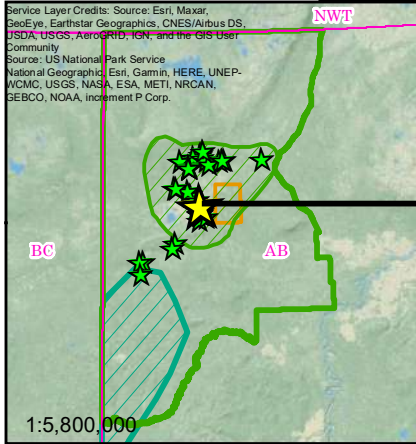
Nesting areas.

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July 26, 2021

Inset Map:



GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 24 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Blaine Didzena Riley Didzena Brendan Bushe



Slide A: (required)

Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

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### Some Survey Attributes: Survey No.: 24

**Survey Date: 2020-12-13**

Land Classification (DUC): Upland other

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): Hunting,Fishing,Trapping,Gathering,MedicineSacred,other

Notes (General): - 30 deg c, wind westward 10 to 20 kmh. Solo male buffalo. Crossing for winter fisherman, old bridge location at hay lakes. Old settlement area which had Hudsons Bay store. High use year round.

Notes (Environmental): Boat launch, Fjord

Heavy TK and use area, Tea Dances, fishing, sensitive environment, water quality, animals crossing hi grade access, animal fjording point, ducks unlimited site, animal diversityRiparian

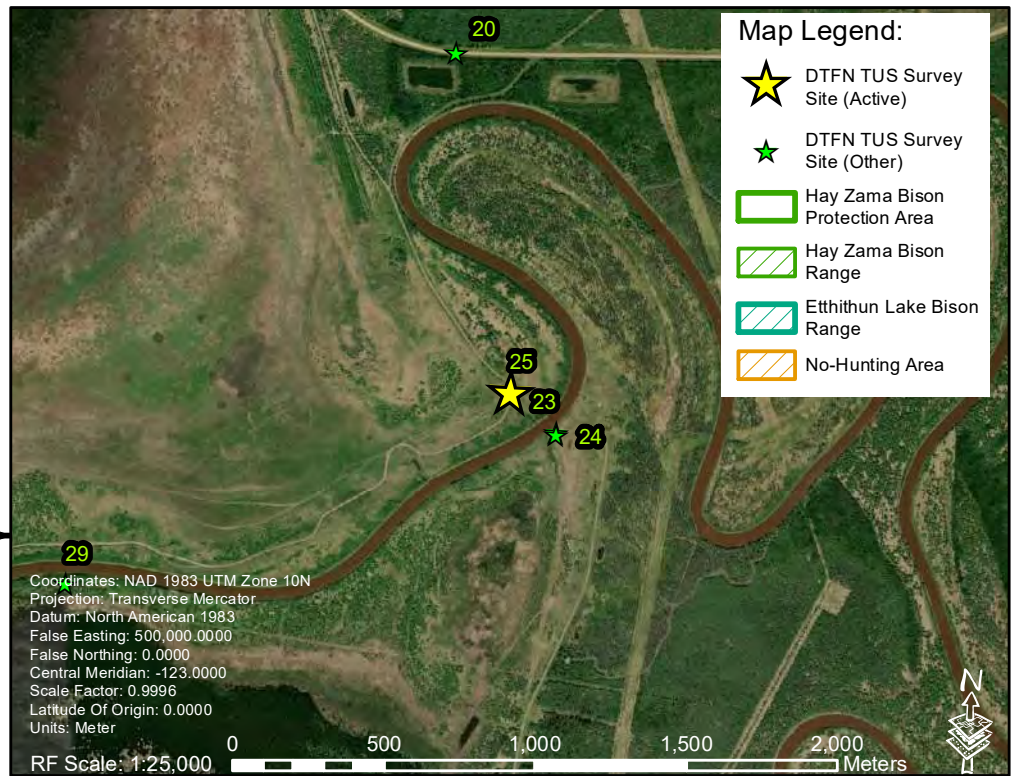
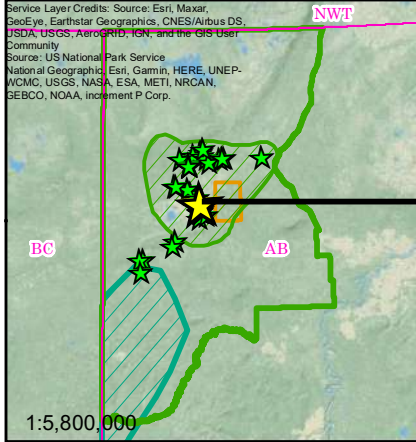
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July 26, 2021

Inset Map:



GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 25 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Courtney metchooyeah Rocky metchooyeah



Slide A: (required)



Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

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### Some Survey Attributes: Survey No.: 25

Survey Date: 2021-01-26

Land Classification (DUC): Wetland Swamp MixedWood

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): Hunting, Trapping

Notes (General): Bison in the vicinity around 15

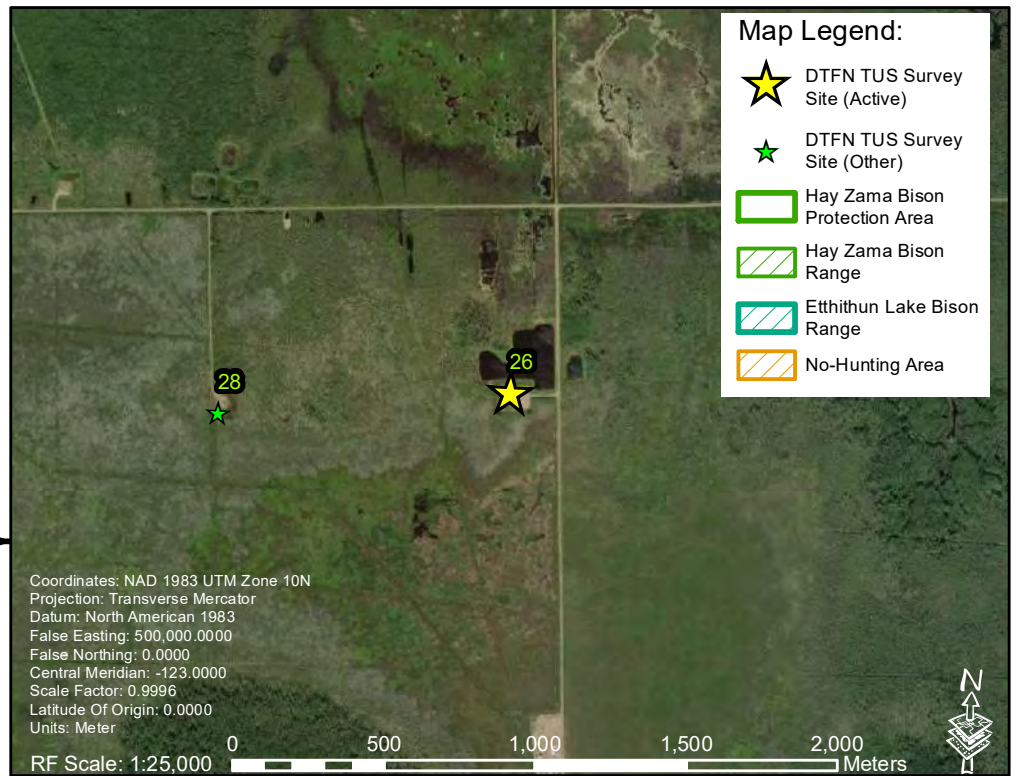
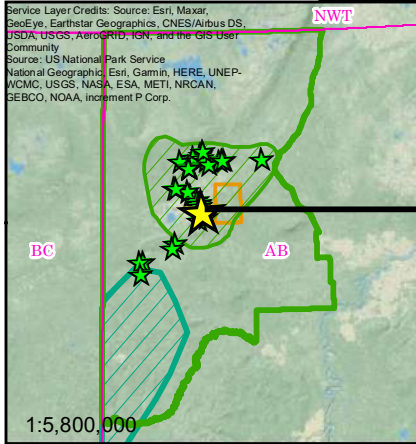
Notes (Environmental):

Sampling soil around leases



July 26, 2021

Inset Map:



GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 26 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

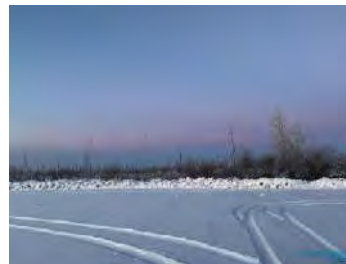
Indigenous Knowledge Technicians: Graham providence toho Sonny seniantha



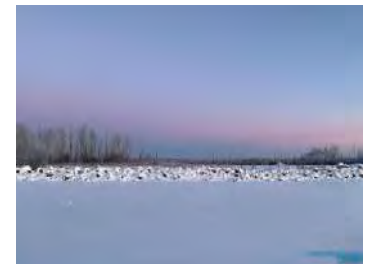
Slide A: (required)



Slide B: (optional)



Slide C: (optional)



Slide D: (optional)

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### Some Survey Attributes: Survey No.: 26

**Survey Date: 2020-12-29**

Land Classification (DUC): Wetland Swamp MixedWood

Feature Type: Animal Mammal

Values (Some Items): GreyWolf, Beaver, CanadaLynx, Rabbit, RedFox, Mink, Bison

Values (Some Uses): Trapping, Hunting

Notes (General): Area has animal tracks, wolf tracks are in the lease we are currently in. Fox tracks as well, which indicates that this could be a decent area to visit for trapping and hunting, away from the leases preferably.

Notes (Environmental):

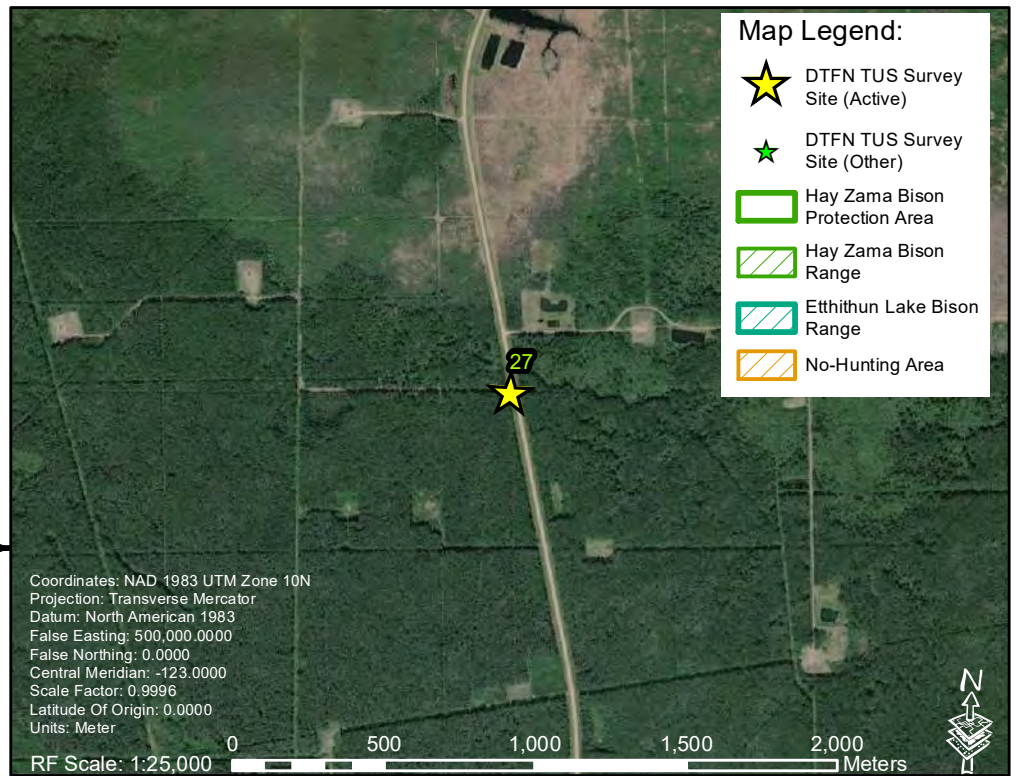
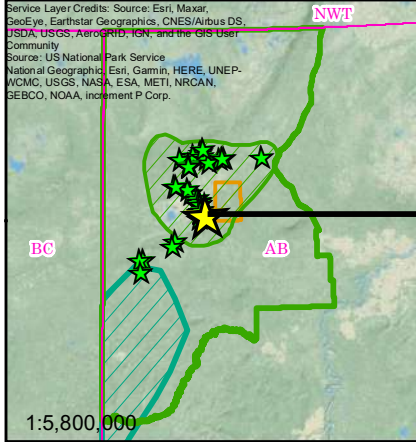
Pollution can ruin the area and cause wildlife to withdraw.





July 26, 2021

Inset Map:



GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 27 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

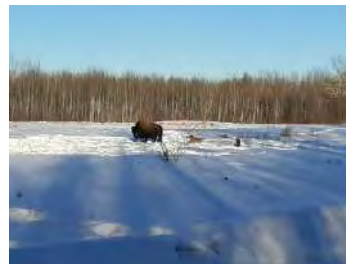
Indigenous Knowledge Technicians: Blaine Didzena



Slide A: (required)



Slide B: (optional)



Slide C: (optional)

Slide D: (optional)

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### Some Survey Attributes: Survey No.: 27

**Survey Date: 2021-02-13**

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): other

Notes (General):

Notes (Environmental): a pair of dogs chasing a pair of buffalo

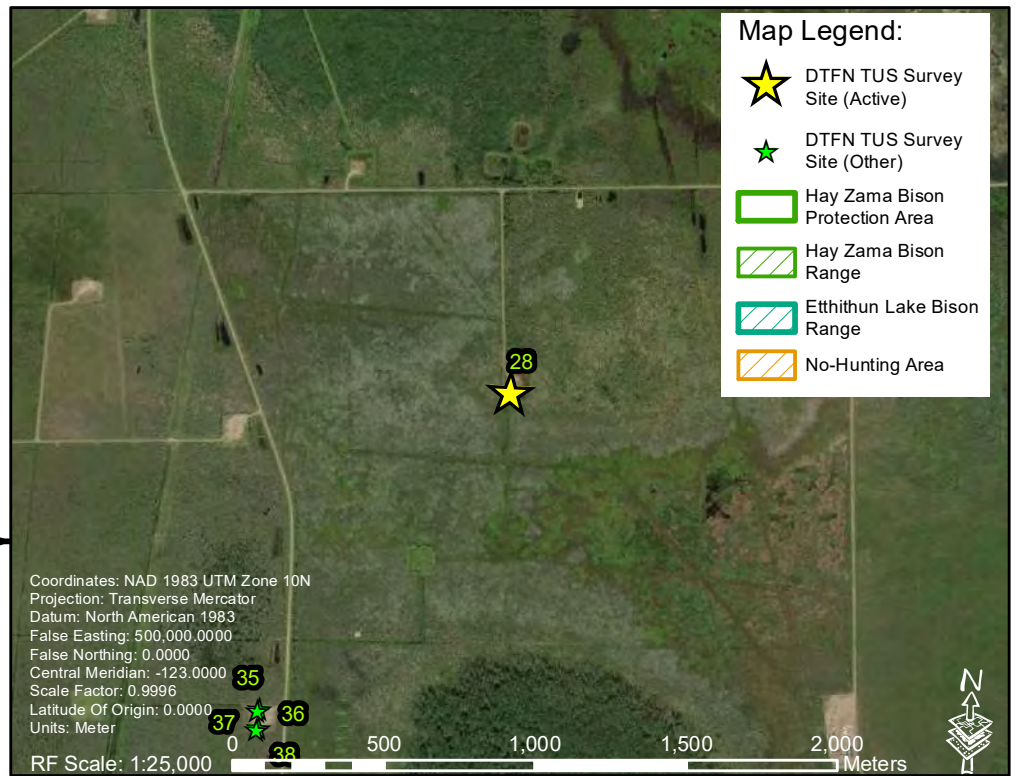
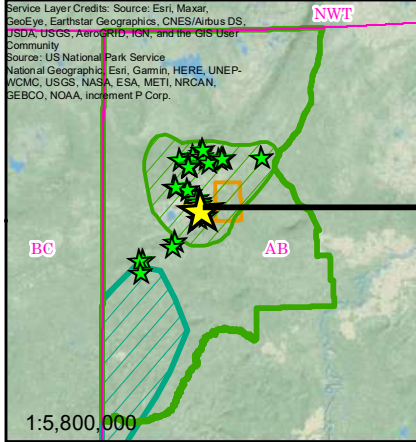
Animal interactions, animals crossing lease, animals crossing roads, high seasonal traffic, heavy hauler traffic

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July 26, 2021

Inset Map:



**Site ID: 28 (of 48)**

GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

**Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"**

Indigenous Knowledge Technicians: Joe pastion Kyle Seniantha



Slide A: (required)



Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

**Some Survey Attributes:** Survey No.: 28

**Survey Date:** 2021-03-07

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items):

Values (Some Uses): Hunting, Trapping, Gathering, Medicine Sacred

Notes (General): Habitat for herbivores and small fur bearing animals

Notes (Environmental):

Land use and access limited and impacts on animal habitat and limited gathering of medicinal plants and roots

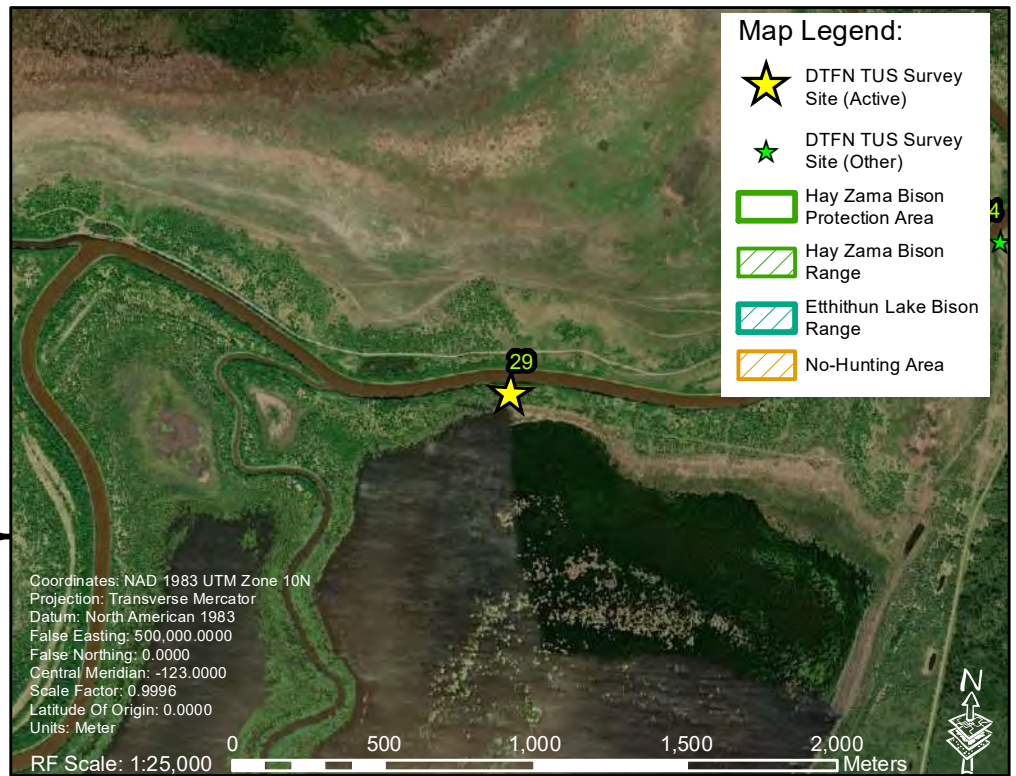
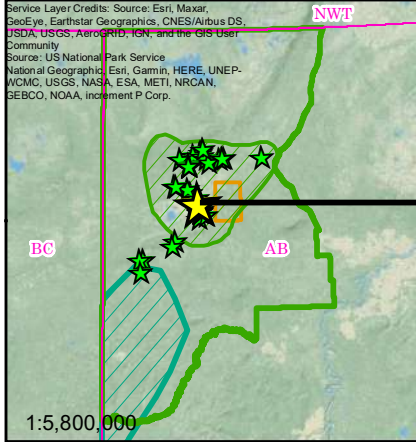
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July 26, 2021

Inset Map:



GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

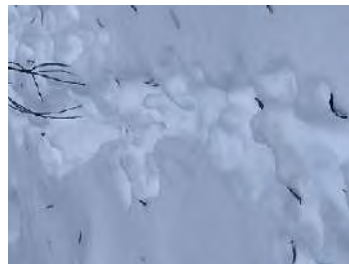
## Site ID: 29 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Courtney Metchooyeah Lorney metchooyeah



Slide A: (required)



Slide B: (optional)



Slide C: (optional)



Slide D: (optional)

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### Some Survey Attributes: Survey No.: 29

**Survey Date: 2020-11-27**

Land Classification (DUC): Wetland ShallowOpenWater

Feature Type: Animal Mammal

Values (Some Items):

Values (Some Uses): Fishing,Gathering,Hunting,Trapping,MedicineSacred

Notes (General): Fishing area, traditional land area where all animals that are checked are relevant but only tracks for rabbit pictures are provided

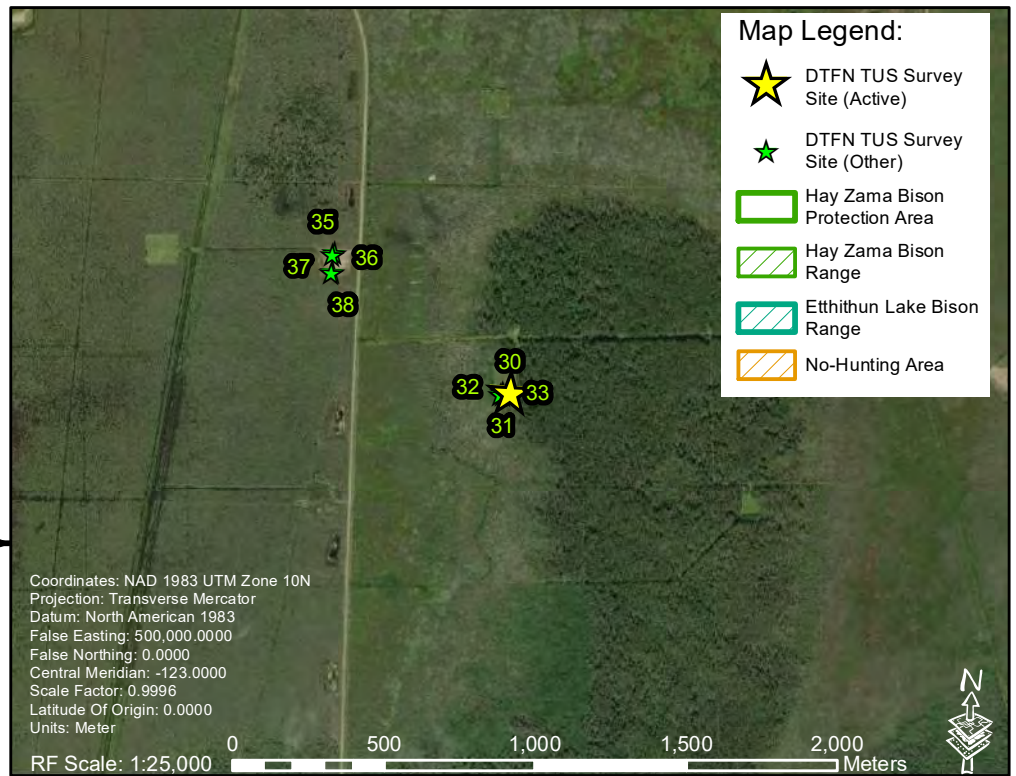
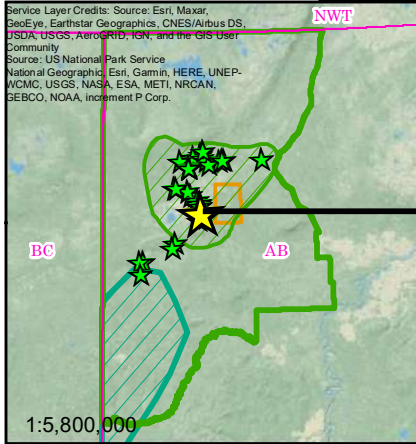
Notes (Environmental):

Proper manager of waterways through consultation



July 26, 2021

Inset Map:



GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 30 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Graham providence toho Kyle seniantha



Slide A: (required)

Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 30

Survey Date: 2021-02-04

Land Classification (DUC): Wetland Swamp MixedWood

Feature Type: Animal Mammal

Values (Some Items):

Moose, Deer, BearBlack, Bison, Horse, Beaver, Mink, Squirrel, MouseVole, Rabbit, CanadaLynx, RedFox

Values (Some Uses): Hunting, Trapping

Notes (General): Large and small game can pass through this area, and it is likely that many predators pass through as well. During winter, rabbits and smaller game can be trapped or even hunted.

Notes (Environmental):

Leaks and spills are a primary concern here, this can cause environmental damage and eventually drive away wildlife that is valued.

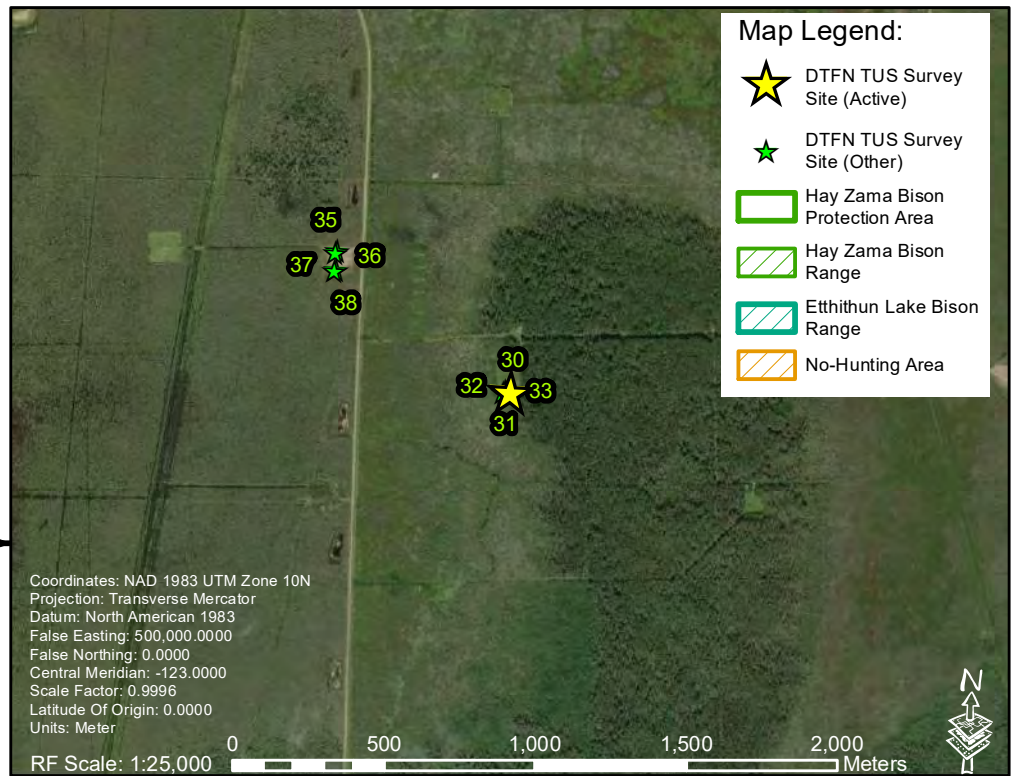
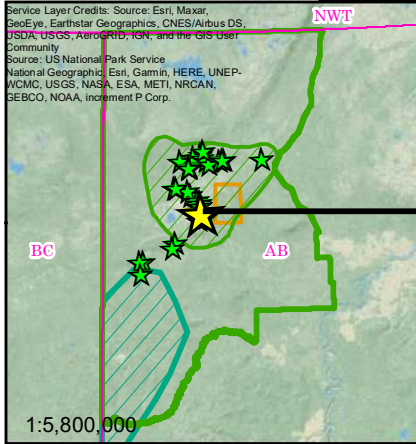
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GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

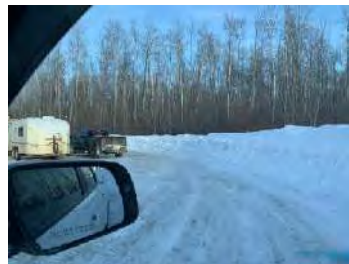
## Site ID: 31 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Graham providence toho Kyle seniantha



Slide A: (required)



Slide B: (optional)



Slide C: (optional)

Slide D: (optional)

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### Some Survey Attributes: Survey No.: 31

Survey Date: 2021-02-07

Land Classification (DUC): Wetland Swamp MixedWood

Feature Type: Animal Mammal

Values (Some Items):

Moose, BearBlack, Bison, Horse, GreyWolf, Deer, Beaver, Rabbit, CanadaLynx, RedFox, MouseVole, Squirrel

Values (Some Uses): Hunting, Trapping

Notes (General): Large and small game as well as predators pass through the area when there is no work being done nearby. Only crows fly overhead too. Ideal genera area for trapping, and maybe ideal for hunting in the warm seasons.

Notes (Environmental):

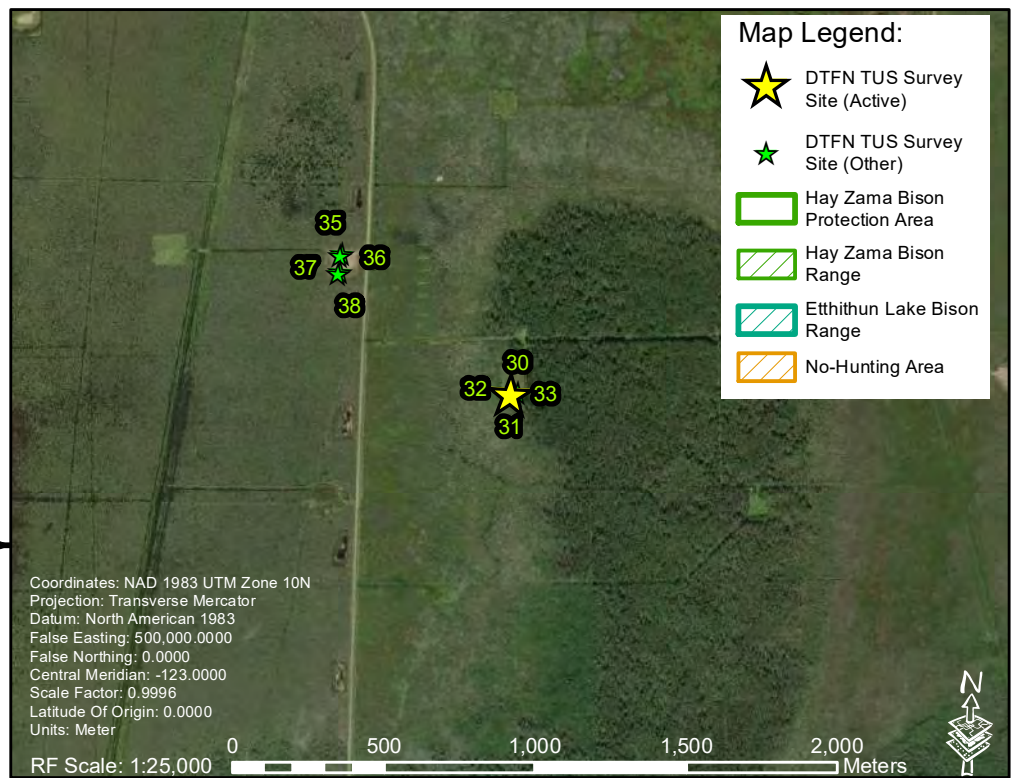
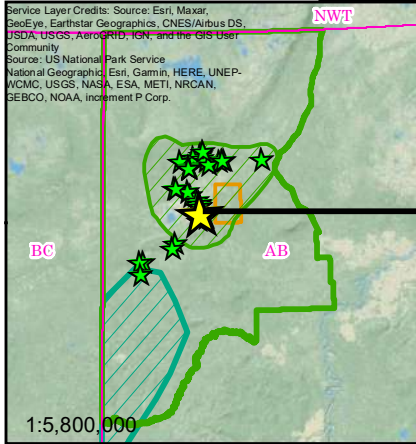
Primary concern is the risk of contamination of environment through leaks and spills from the pipes. This would damage the environment and cause wildlife to withdraw.

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July 26, 2021

Inset Map:



GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 32 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Graham Providence Toho Kyle Seniantha



Slide A: (required)



Slide B: (optional)



Slide C: (optional)



Slide D: (optional)

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### Some Survey Attributes: Survey No.: 32

Survey Date: 2021-02-06

Land Classification (DUC): Wetland Swamp MixedWood

Feature Type: Animal Mammal

Values (Some Items):

Moose, Bison, Bear Black, Deer, Beaver, Horse, Grey Wolf, Mouse Vole, Squirrel, Rabbit, Canada Lynx, Red Fox

Values (Some Uses): Hunting, Trapping

Notes (General): Large and small game pass through this area, making it ideal for hunting, but more likely for trapping. Predators also pass through the area, which can be a danger if not considered.

### Notes (Environmental):

Primary concern is contamination through leaks and spills from the pipes. This can cause damage to environment and make the wildlife leave the area in response.

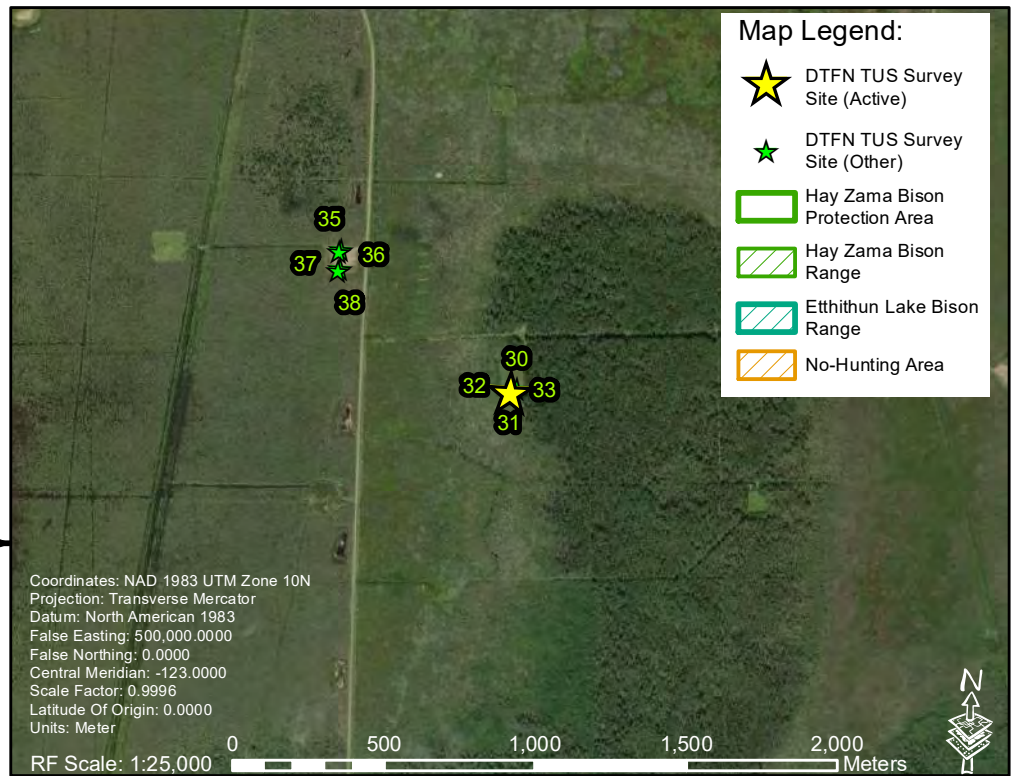
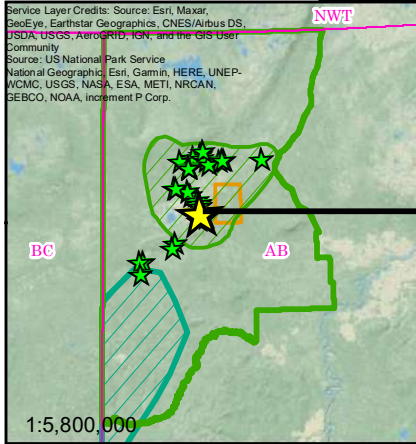
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GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 33 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Graham providence toho Kyle seniantha



Slide A: (required)



Slide B: (optional)



Slide C: (optional)



Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 33

**Survey Date: 2021-02-05**

Land Classification (DUC): Wetland Swamp MixedWood

Feature Type: Animal Mammal

Values (Some Items):

Moose, BearBlack, Bison, Deer, Beaver, GreyWolf, Horse, Squirrel, MouseVole, CanadaLynx, RedFox, Rabbit

Values (Some Uses): Hunting, Trapping

Notes (General): Plenty of wildlife potentially pass through here. Smaller game may be abundant and so could be smaller predators. Larger animals may pass through every now and then.

Notes (Environmental):

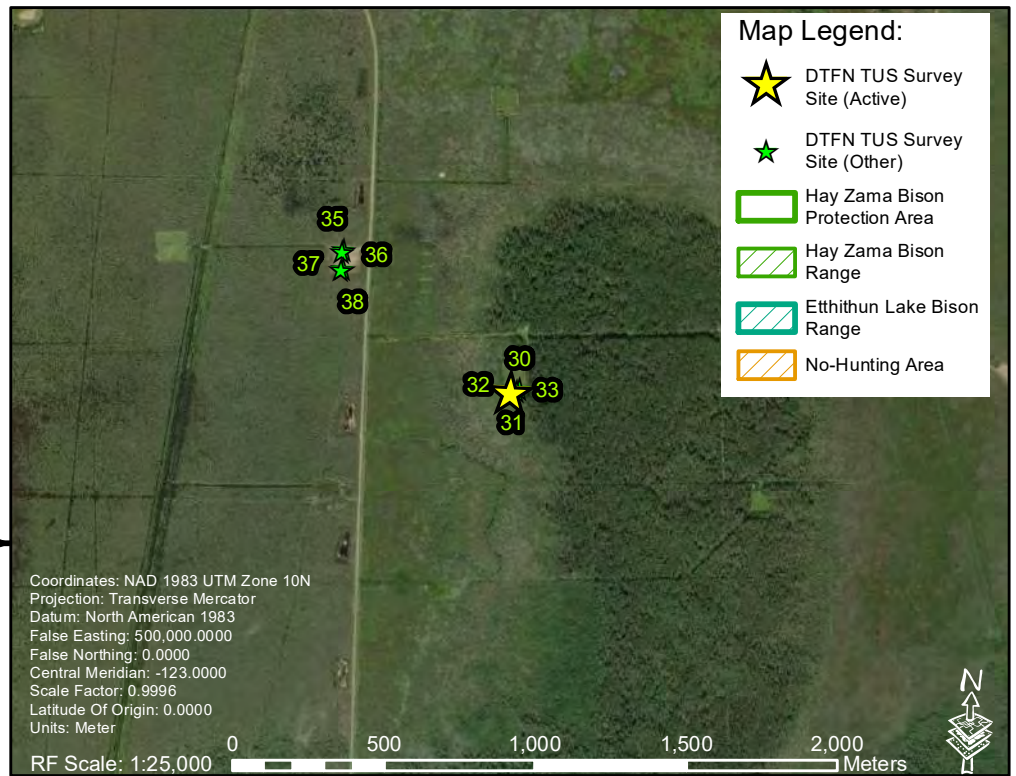
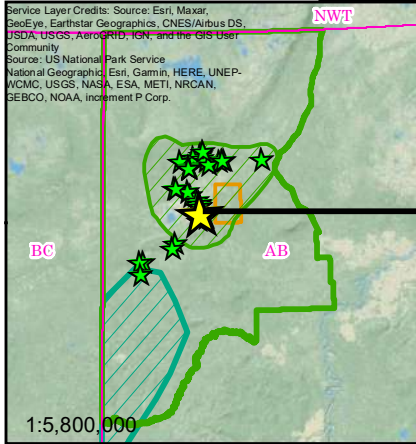
Main concerns here are leaks and spills from the pipeline. Contamination can ruin the environment and eventually cause wildlife to withdraw.

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July 26, 2021

Inset Map:

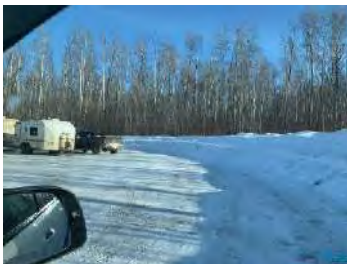


GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 34 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Graham providence toho Kyle seniantha



Slide A: (required)



Slide B: (optional)



Slide C: (optional)



Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 34

**Survey Date: 2021-02-08**

Land Classification (DUC): Wetland Swamp MixedWood

Feature Type: Animal Mammal

Values (Some Items):

Moose, Bison, BearBlack, Horse, GreyWolf, Rabbit, CanadaLynx, RedFox, MouseVole, Squirrel, Beaver, Deer

Values (Some Uses): Trapping, Hunting

Notes (General): Large and small game pass through the area as well as predators. Area is ideal for hunting as well as trapping.

Notes (Environmental):

Concerns are mainly contamination through leaks or spills, which will cause damage to the environment and drive away wildlife.

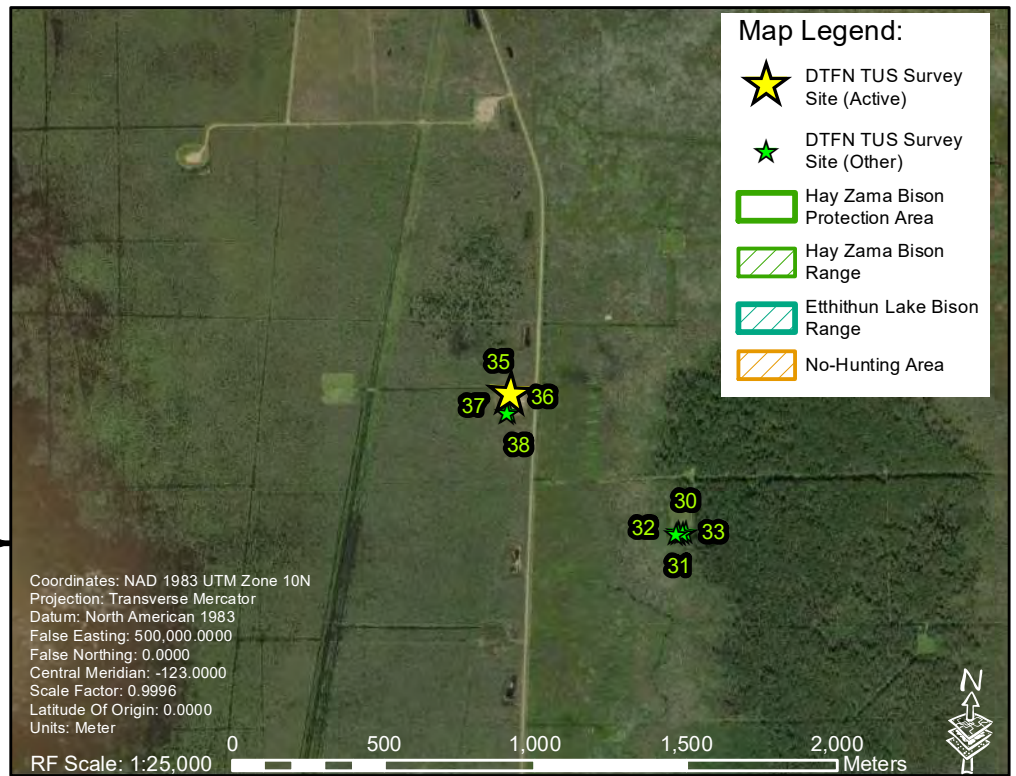
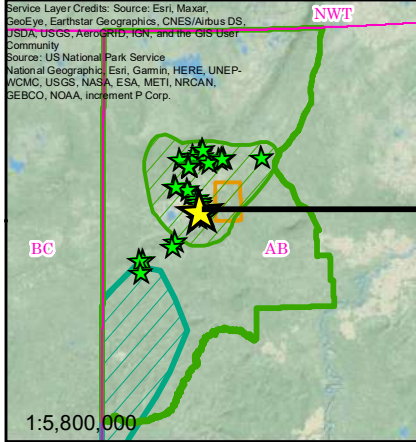
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July 26, 2021

Inset Map:



**Site ID: 35 (of 48)**

GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

**Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"**

Indigenous Knowledge Technicians: Graham providence toho Kyle seniantha



Slide A: (required)



Slide B: (optional)



Slide C: (optional)



Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

**Some Survey Attributes: Survey No.: 35**

**Survey Date: 2021-02-10**

Land Classification (DUC): Wetland Swamp MixedWood

Feature Type: Animal Mammal

Values (Some Items):

Moose, Bison, BearBlack, Deer, Beaver, Horse, GreyWolf, Squirrel, MouseVole, RedFox, CanadaLynx, Rabbit

Values (Some Uses): Hunting, Trapping

Notes (General): Large and small game as well as predators pass through the area. Ideal for hunting and trapping

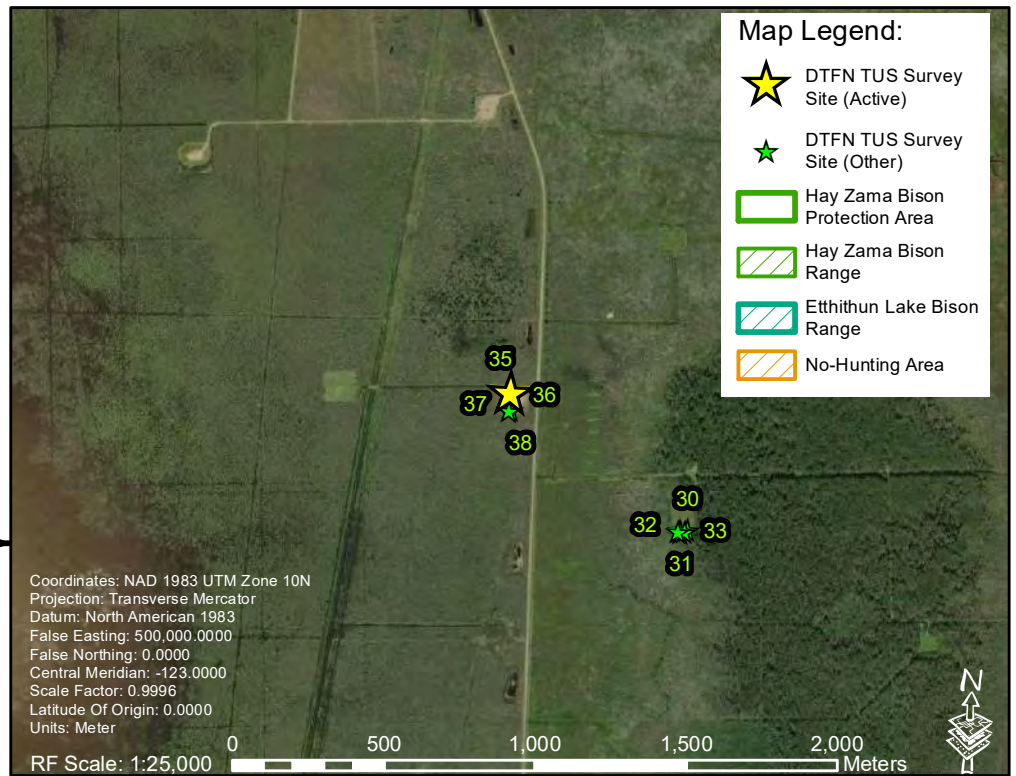
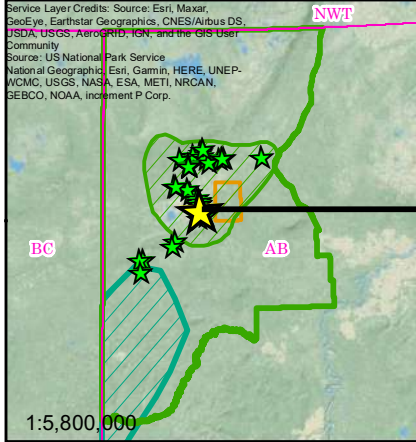
Notes (Environmental):

Leaks and spills are a concern



July 26, 2021

Inset Map:



**Site ID: 36 (of 48)**

GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

**Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"**

Indigenous Knowledge Technicians: Graham providence toho Kyle seniantha



Slide A: (required)



Slide B: (optional)



Slide C: (optional)



Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

**Some Survey Attributes:** Survey No.: 36

**Survey Date:** 2021-02-11

Land Classification (DUC): Wetland Swamp MixedWood

Feature Type: Animal Mammal

Values (Some Items):

Moose, BearBlack, Deer, Beaver, Bison, Horse, GreyWolf, Rabbit, CanadaLynx, RedFox, MouseVole, Squirrel

Values (Some Uses): Hunting, Trapping

Notes (General): Game of all sizes and predators pass through. Ideal for hunting and trapping.

Notes (Environmental):

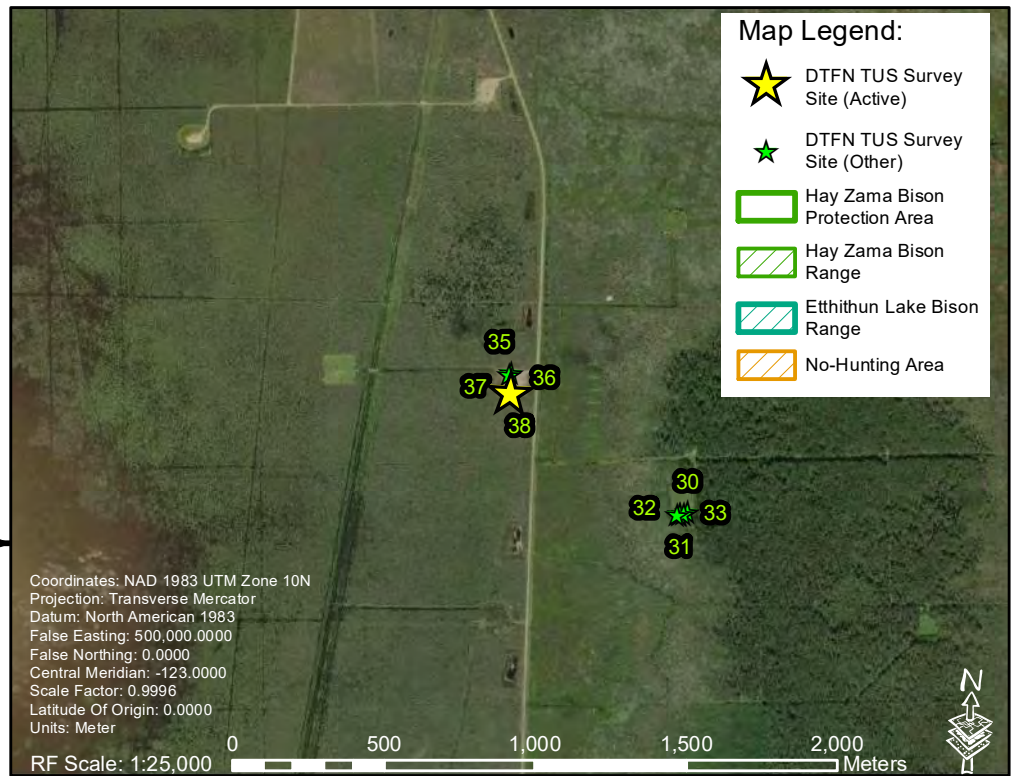
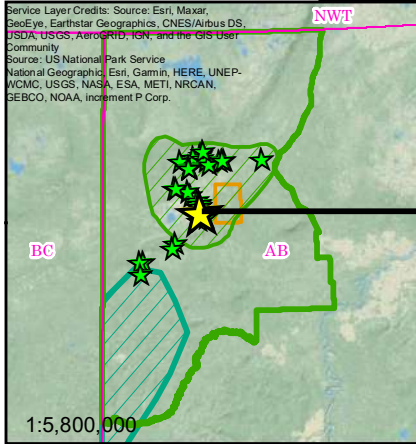
Spills and leaks can cause damage





July 26, 2021

Inset Map:



GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 37 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Graham providence toho Kyle Seniantha



Slide A: (required)



Slide B: (optional)



Slide C: (optional)



Slide D: (optional)

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### Some Survey Attributes: Survey No.: 37

Survey Date: 2021-02-12

Land Classification (DUC): Wetland Swamp MixedWood

Feature Type: Animal Mammal

Values (Some Items):

BearBlack, Moose, Bison, Horse, GreyWolf, Beaver, Deer, Rabbit, CanadaLynx, RedFox, MouseVole, Squirrel

Values (Some Uses): Hunting, Trapping

Notes (General): Large and small game as well as predators pass through area. Wolf tracks were sighted nearby.

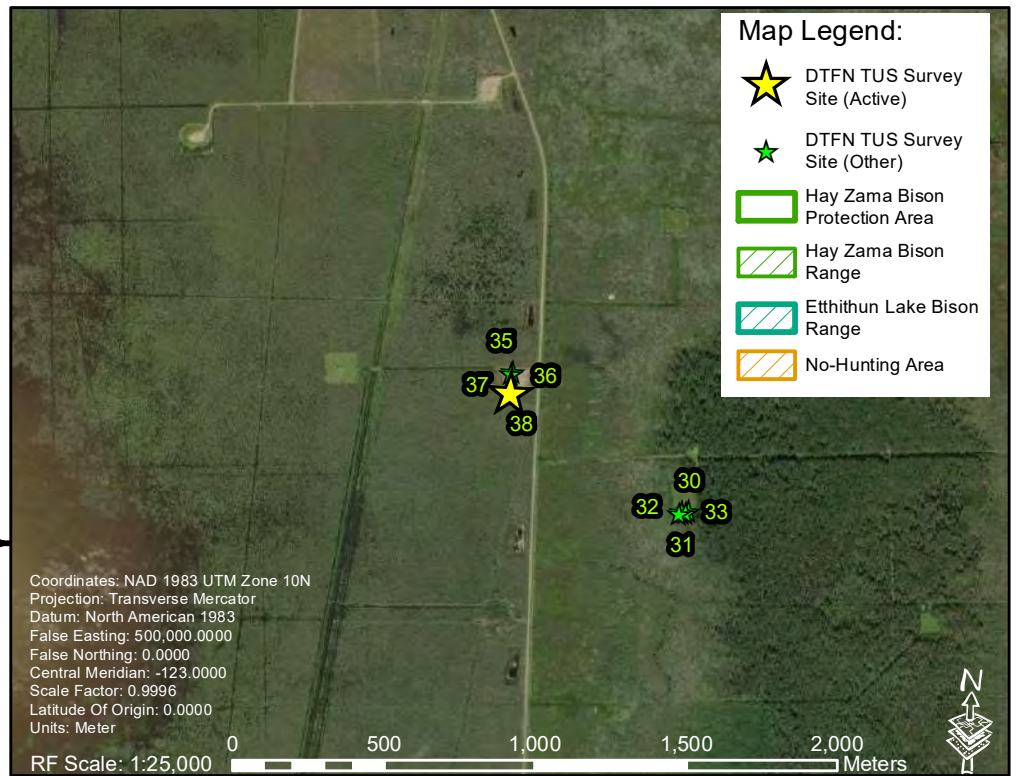
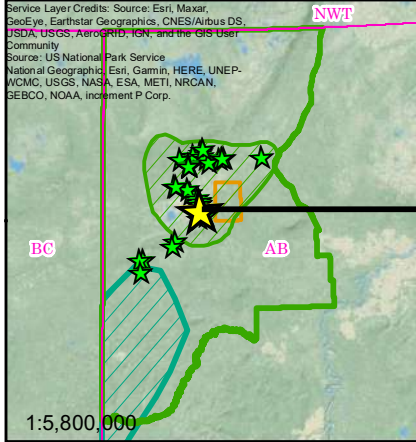
Notes (Environmental):

Leaks and spills can cause damage to environment



July 26, 2021

Inset Map:



GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 38 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

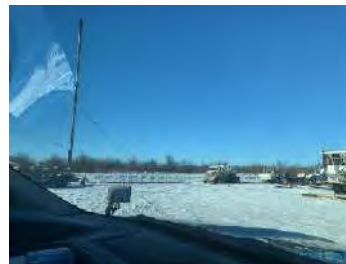
Indigenous Knowledge Technicians: Graham providence toho Kyle seniantha



Slide A: (required)



Slide B: (optional)



Slide C: (optional)



Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 38

Survey Date: 2021-02-13

Land Classification (DUC): Wetland Swamp MixedWood

Feature Type: Animal Mammal

Values (Some Items):

Moose, BearBlack, Deer, Beaver, Bison, Horse, GreyWolf, Rabbit, CanadaLynx, RedFox, MouseVole, Squirrel

Values (Some Uses): Trapping, Hunting

Notes (General): Large and small game pass through area, making it ideal for hunting in warm seasons and trapping in cold seasons. Predators also pass through area as well.

Notes (Environmental):

Contamination through leaks and spills will damage environment. This will cause wildlife to disperse from area.

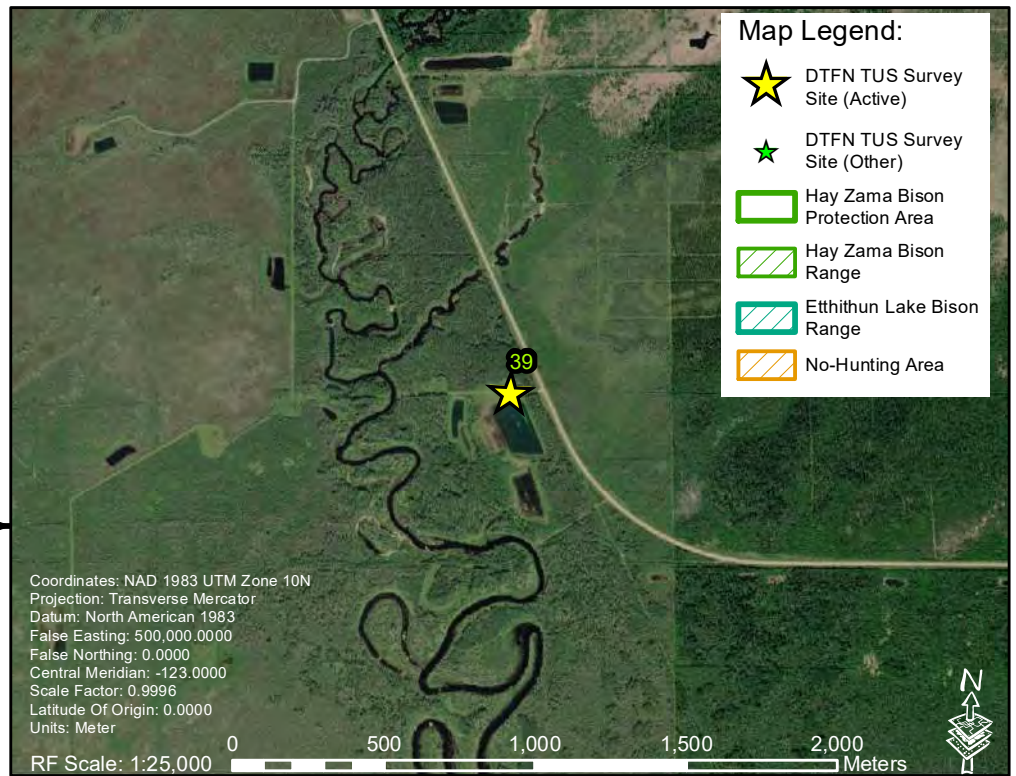
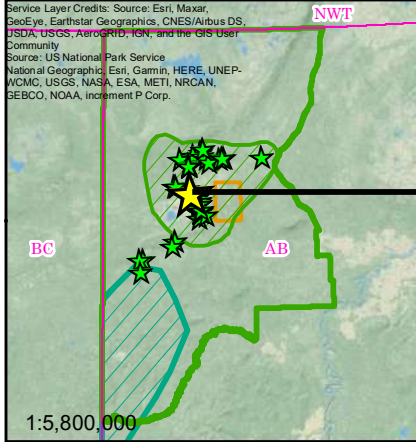
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July 26, 2021

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GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 39 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Blaine Didzena



Slide A: (required)

Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 39

**Survey Date: 2020-07-26**

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items):

Values (Some Uses):

Notes (General): Intersection of Zama hwy to old lease areas. Abandoned low maintenance lease road.

Notes (Environmental):

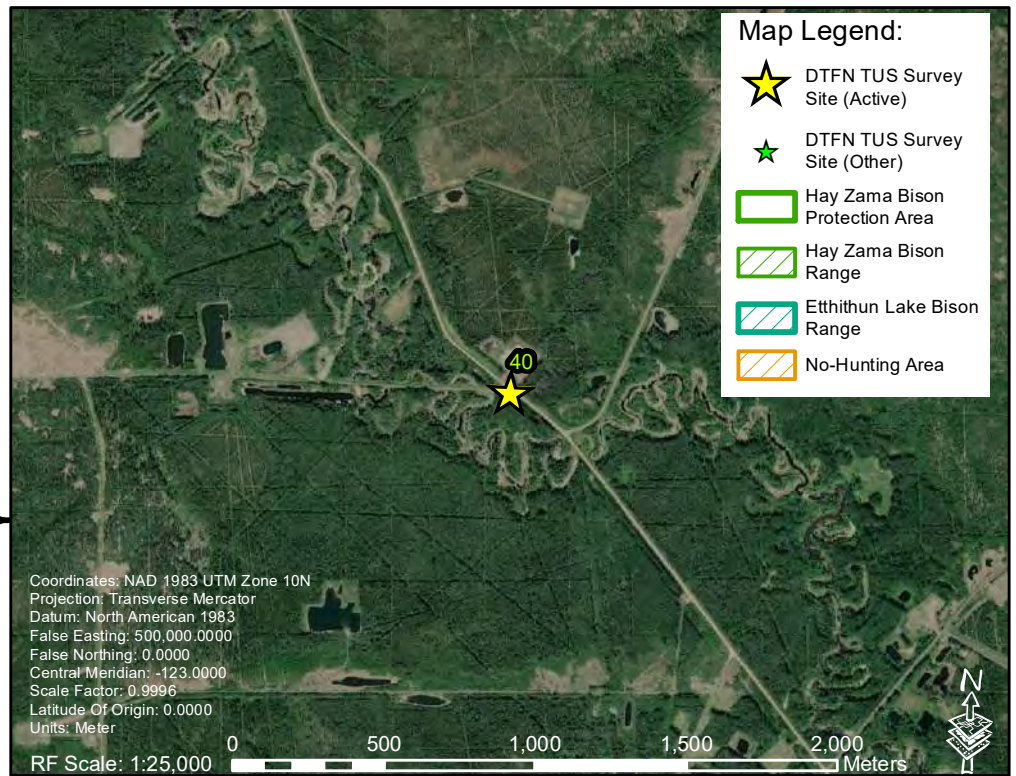
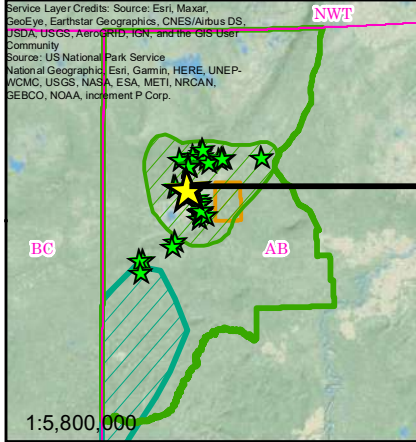
Major chokepoint of large game animal movements. Buffalo, beaver, muskrat, deer. Fjording point and migratory travel routes from virgo west to hay lakes complex.

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July 26, 2021

Inset Map:



**Site ID: 40 (of 48)**

GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

**Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"**

Indigenous Knowledge Technicians: Courtney metchooyeah Lorney metchooyeah



Slide A: (required)

Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

**Some Survey Attributes:** Survey No.: 40

**Survey Date:** 2020-11-27

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): Hunting

Notes (General): Hunting

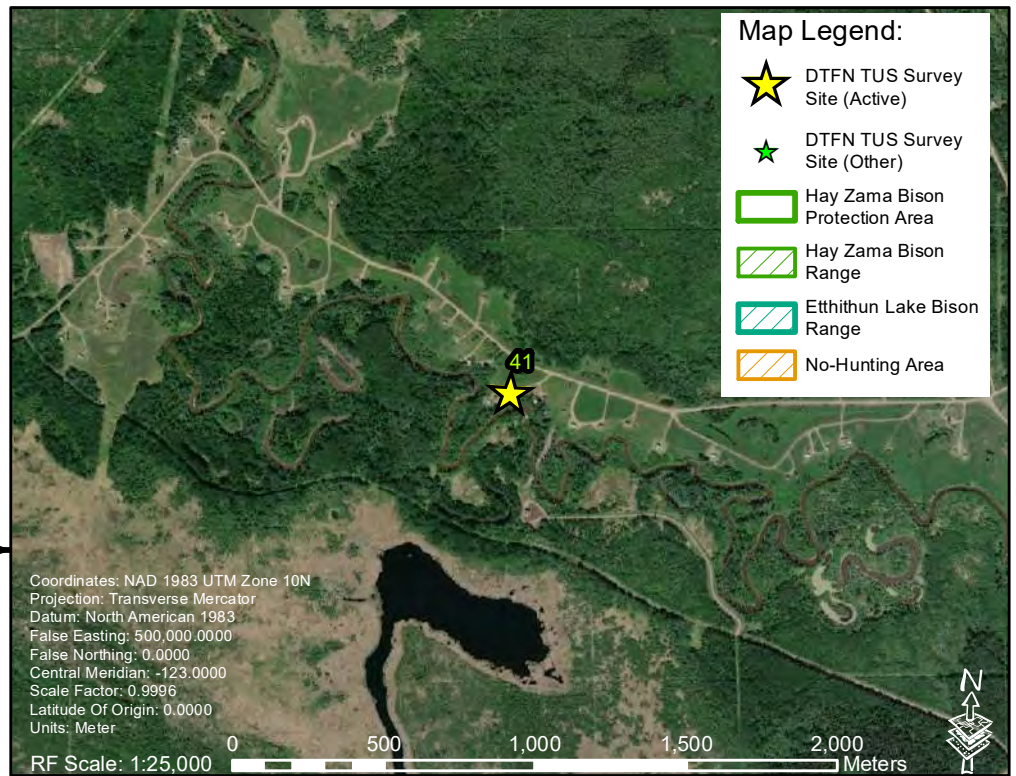
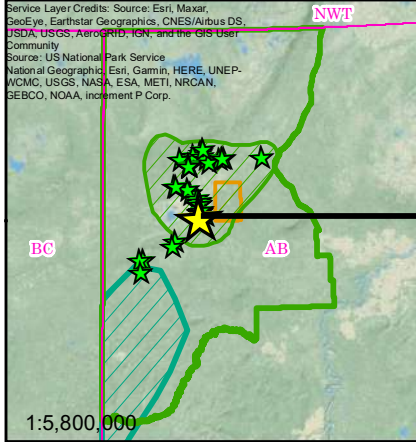
Notes (Environmental):





July 26, 2021

Inset Map:



**Site ID: 41 (of 48)**

GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

**Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"**

Indigenous Knowledge Technicians: Courtney metchooyeah Lorney metchooyeah



Slide A: (required)

Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

**Some Survey Attributes: Survey No.: 41**

**Survey Date: 2020-11-26**

Land Classification (DUC): Upland Grazing

Feature Type: Animal Mammal

Values (Some Items): Horse, Bison

Values (Some Uses): Gathering

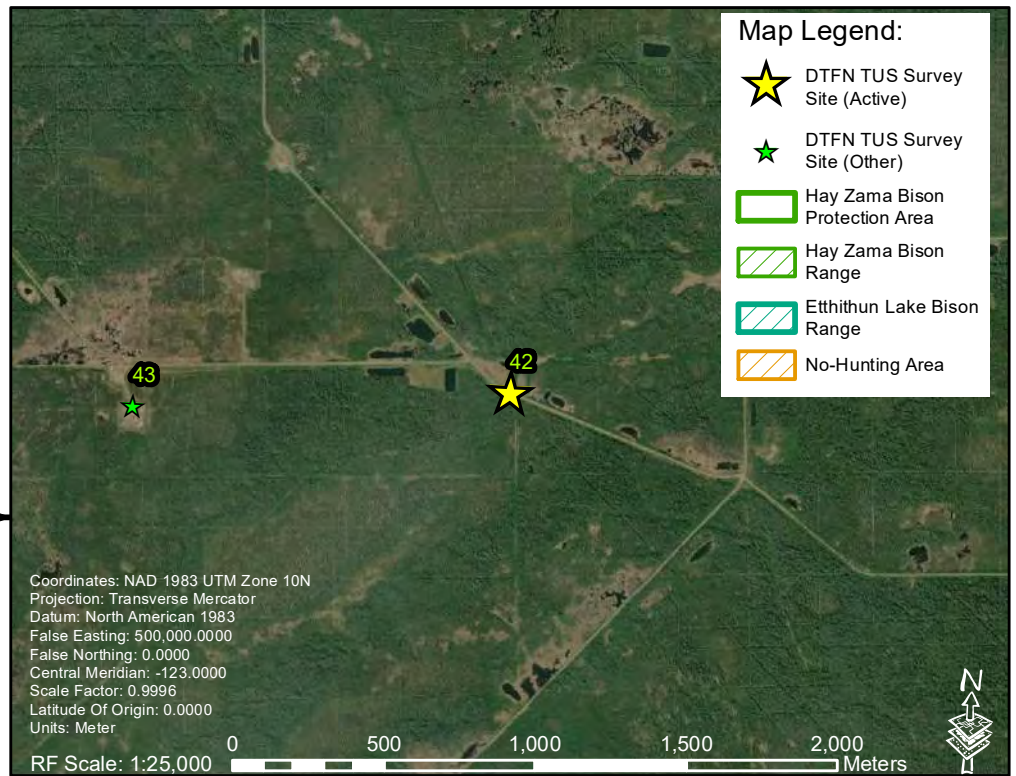
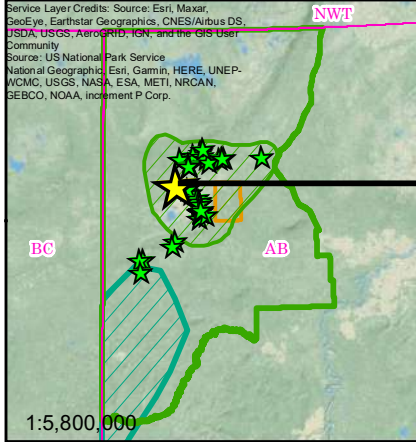
Notes (General): Herd wild Buffalo, and wild horses, deer.

Notes (Environmental):



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Inset Map:

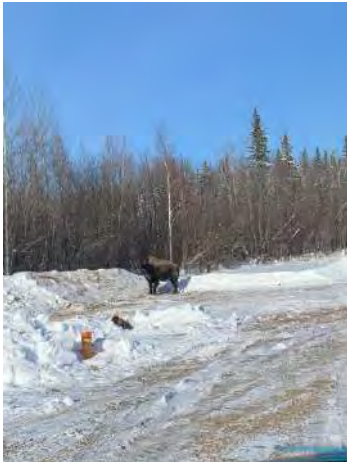


GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 42 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Nick ahkimnachie Anothony providence



Slide A: (required)

Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

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**Some Survey Attributes: Survey No.: 42**

**Survey Date: 2021-02-08**

Land Classification (DUC):

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): Hunting, Trapping

Notes (General): Buffulo standing alone in adult hood and in good health

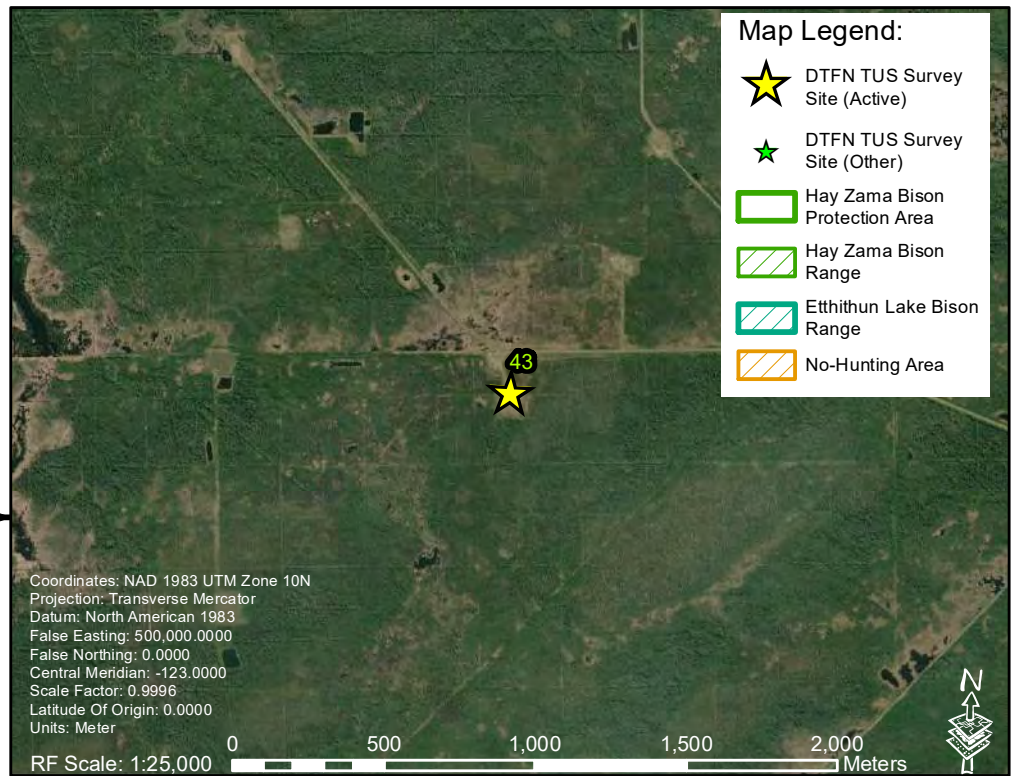
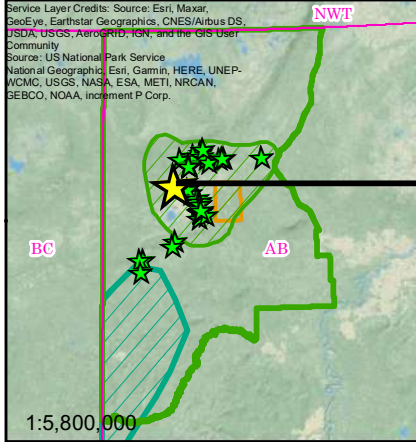
Notes (Environmental):





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Inset Map:

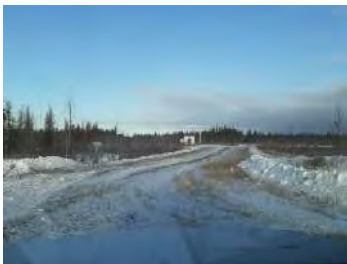


GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

**Site ID: 43 (of 48)**

**Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"**

Indigenous Knowledge Technicians: Blaine Didzena Riley Didzena



Slide A: (required)

Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

**Some Survey Attributes: Survey No.: 43**

**Survey Date: 2020-11-11**

Land Classification (DUC): Wetland Swamp MixedWood

Feature Type: Animal Mammal

Values (Some Items):

Moose, Rabbit, Wolverine, Bison, GreyWolf, Fisher, Muskrat, Mink, Ermine, Marmot, Beaver, BearBlack, Coyote

Values (Some Uses): Hunting, Trapping, MedicineSacred

Notes (General): Access to 16 35 114 7w6, muskeg mixed tree area.

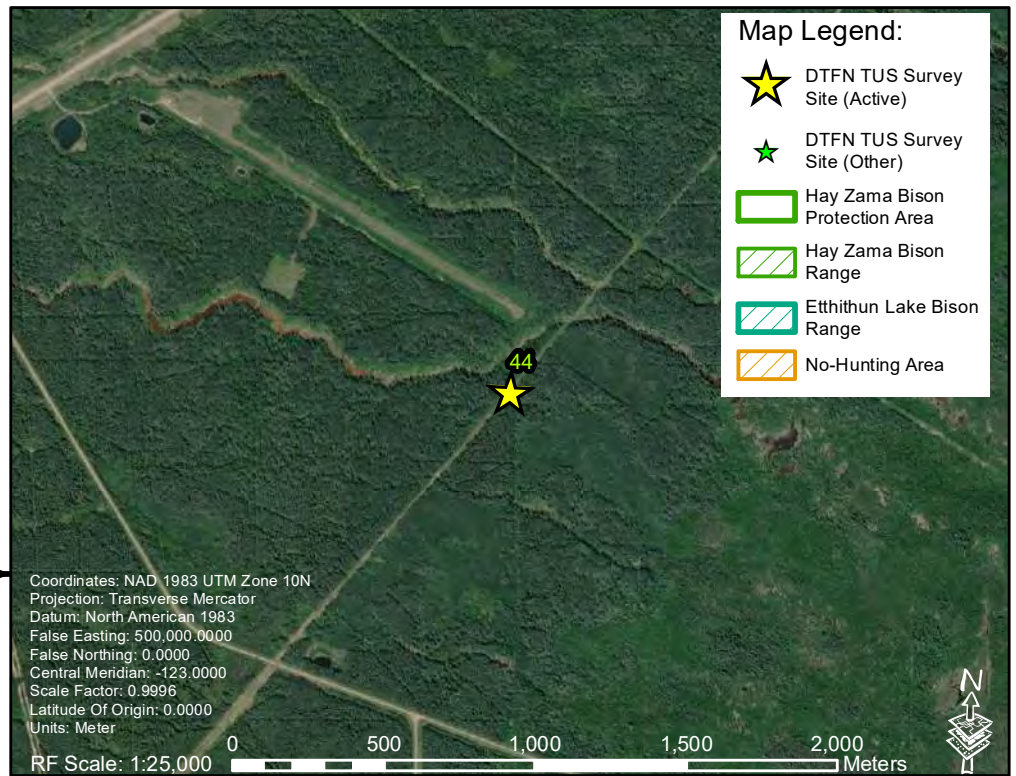
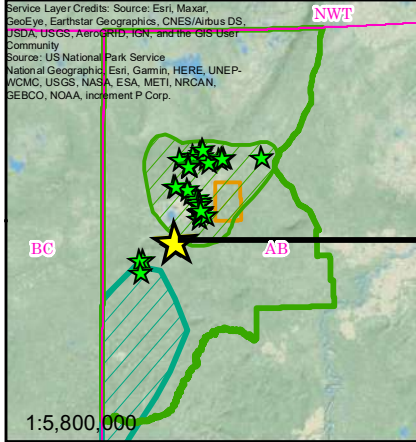
Notes (Environmental):

Wetland sensitive area, oil and gas infrastructure, seasonal access roads.



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Inset Map:



**Site ID: 44 (of 48)**

GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

**Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"**

Indigenous Knowledge Technicians: Joe pastion Trevor Denechoan



Slide A: (required)

Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

**Some Survey Attributes: Survey No.: 44**

**Survey Date: 2021-02-19**

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items):

Values (Some Uses): Hunting,Gathering,Trapping,MedicineSacred

Notes (General): Harvesting of herbivores and trapping fur bearing animals in the area

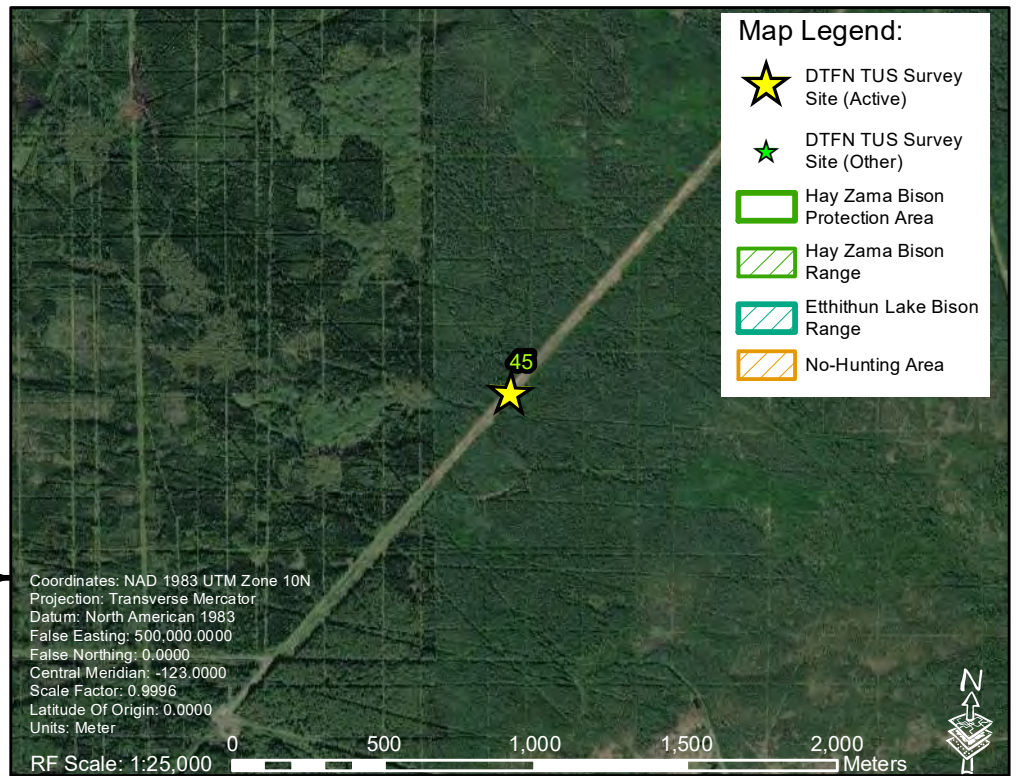
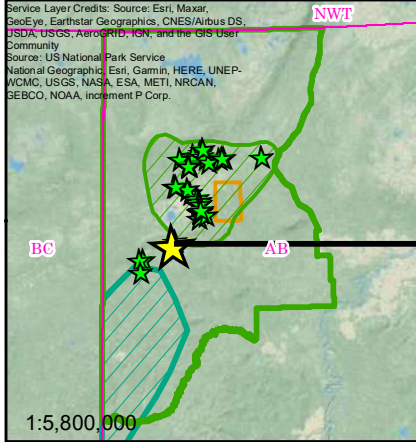
Notes (Environmental):





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GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

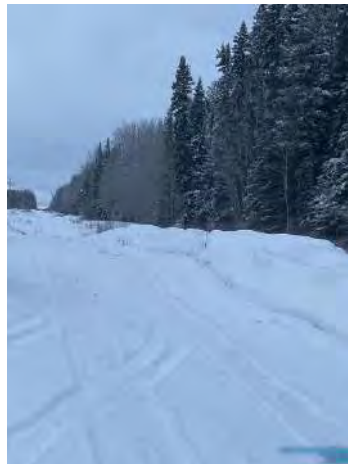
## Site ID: 45 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Joe Pastion



Slide A: (required)



Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 45

Survey Date: 2021-03-07

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items):

Values (Some Uses): Hunting, Trapping, Medicine Sacred

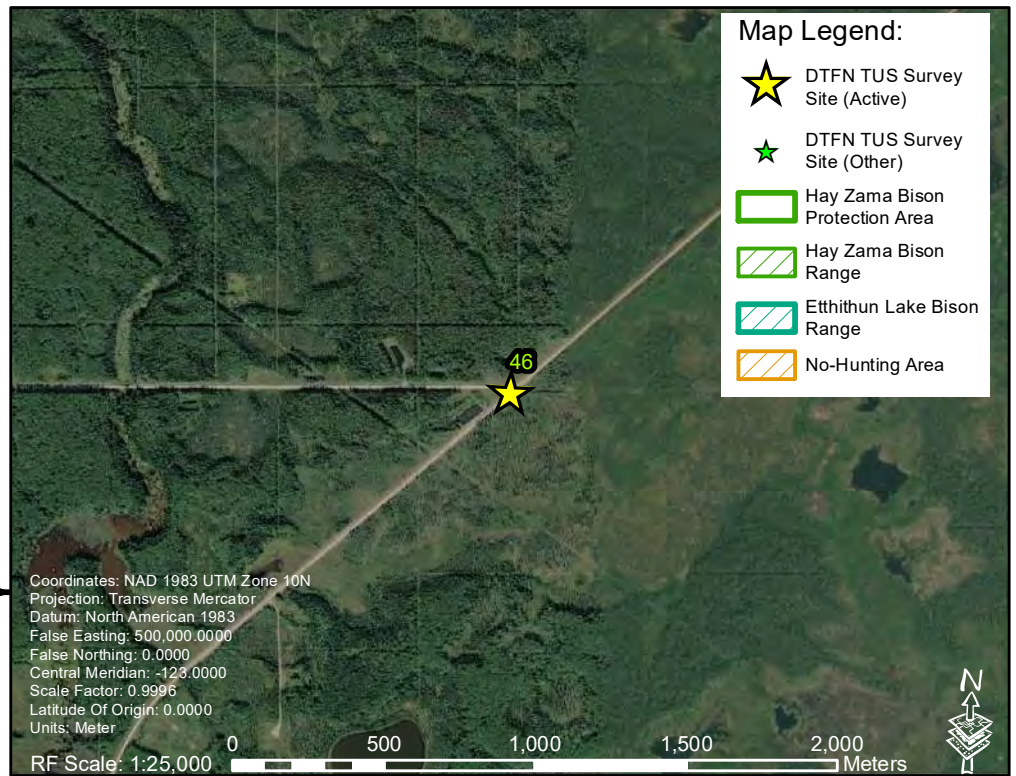
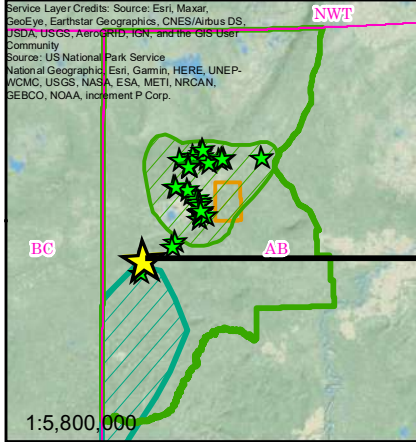
Notes (General): Access and area habitat for herbivores and small fur bearing animals

Notes (Environmental):



July 26, 2021

Inset Map:

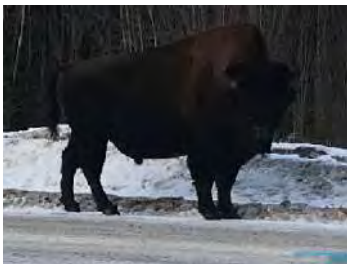


GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

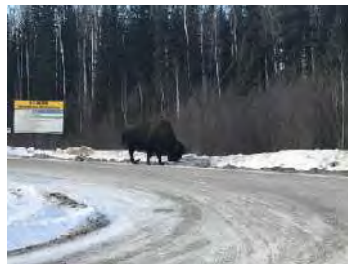
## Site ID: 46 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

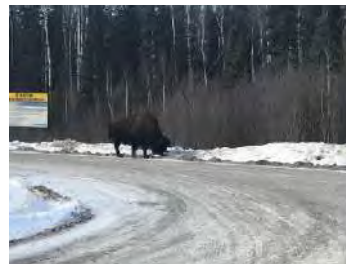
Indigenous Knowledge Technicians: Courtney Metchooyeah Lorney metchooyeah



Slide A: (required)



Slide B: (optional)



Slide C: (optional)



Slide D: (optional)

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### Some Survey Attributes: Survey No.: 46

Survey Date: 2020-12-04

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison

Values (Some Uses): Hunting, Trapping

Notes (General): Bison 4

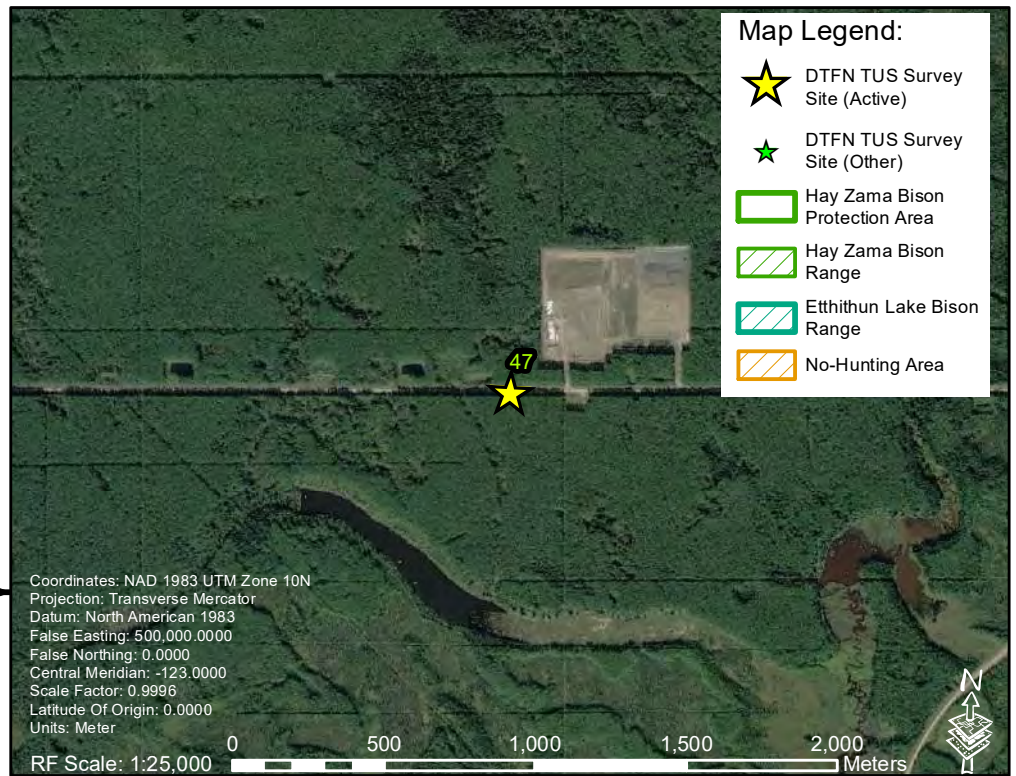
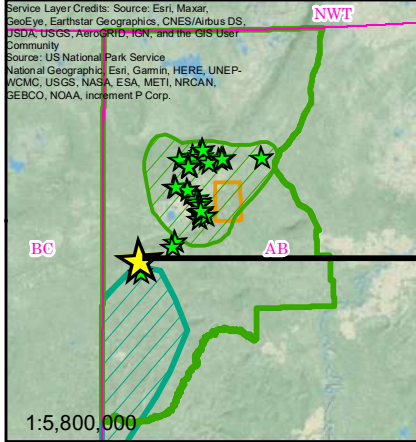
Notes (Environmental):





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Inset Map:



GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 47 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Graham providence toho Sonny seniantha



Slide A: (required)



Slide B: (optional)



Slide C: (optional)

Slide D: (optional)

Note: positional errors and omissions may exist between maps, attributes and photos, in the event of discrepancy, the watermark automated data embedded in the photo slides will prevail.

### Some Survey Attributes: Survey No.: 47

**Survey Date: 2020-12-13**

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): GreyWolf,other,Bison

Values (Some Uses): Hunting

Notes (General): Wolf tracks that follows what seems to be a herd of buffalo. The tracks indicate a lone wolf.

### Notes (Environmental):

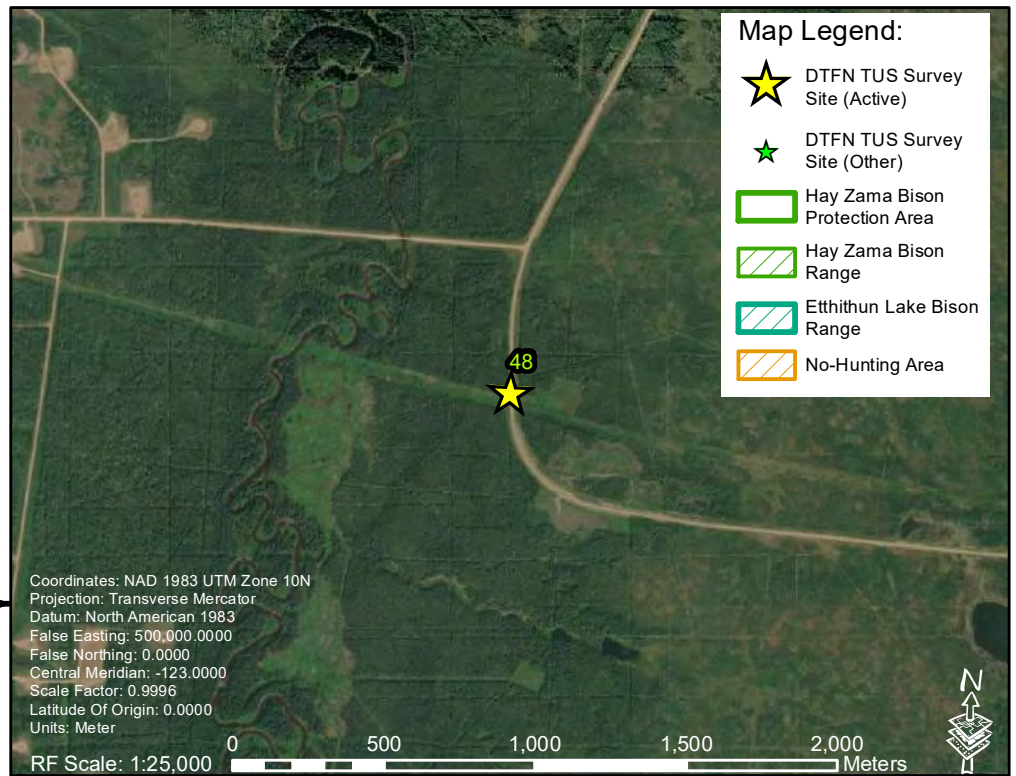
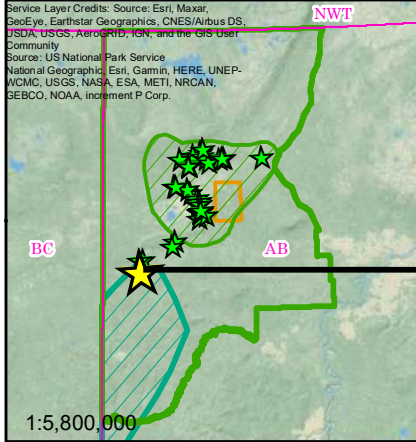
Pollution and logging interferes with the natural function of nature and how these animals interact, which can ultimately ruin the way the ecosystem functions.

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GIS and Report Authors: Matthew Munson, Ryan Cheng, Eamon Riordan-Short

## Site ID: 48 (of 48)

### Map Book of Some Dene Tha' First Nation (DTFN) Traditional Use Study (TUS) Survey Data for AFSAR Project: GCXE21C174 "Community Monitoring of Threatened Wood Bison"

Indigenous Knowledge Technicians: Blaine Didzena Sam Beaulieu



Slide A: (required)

Slide B: (optional)

Slide C: (optional)

Slide D: (optional)

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### Some Survey Attributes: Survey No.: 48

**Survey Date: 2021-01-08**

Land Classification (DUC): Upland Mixedwood

Feature Type: Animal Mammal

Values (Some Items): Bison, GreyWolf

Values (Some Uses):

Notes (General):

Notes (Environmental):

Animals on access, heavy winter vehicle traffic area, oil and gas infrastructure, electrical infrastructure, logging activities. Grey wolf tracks noted.

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