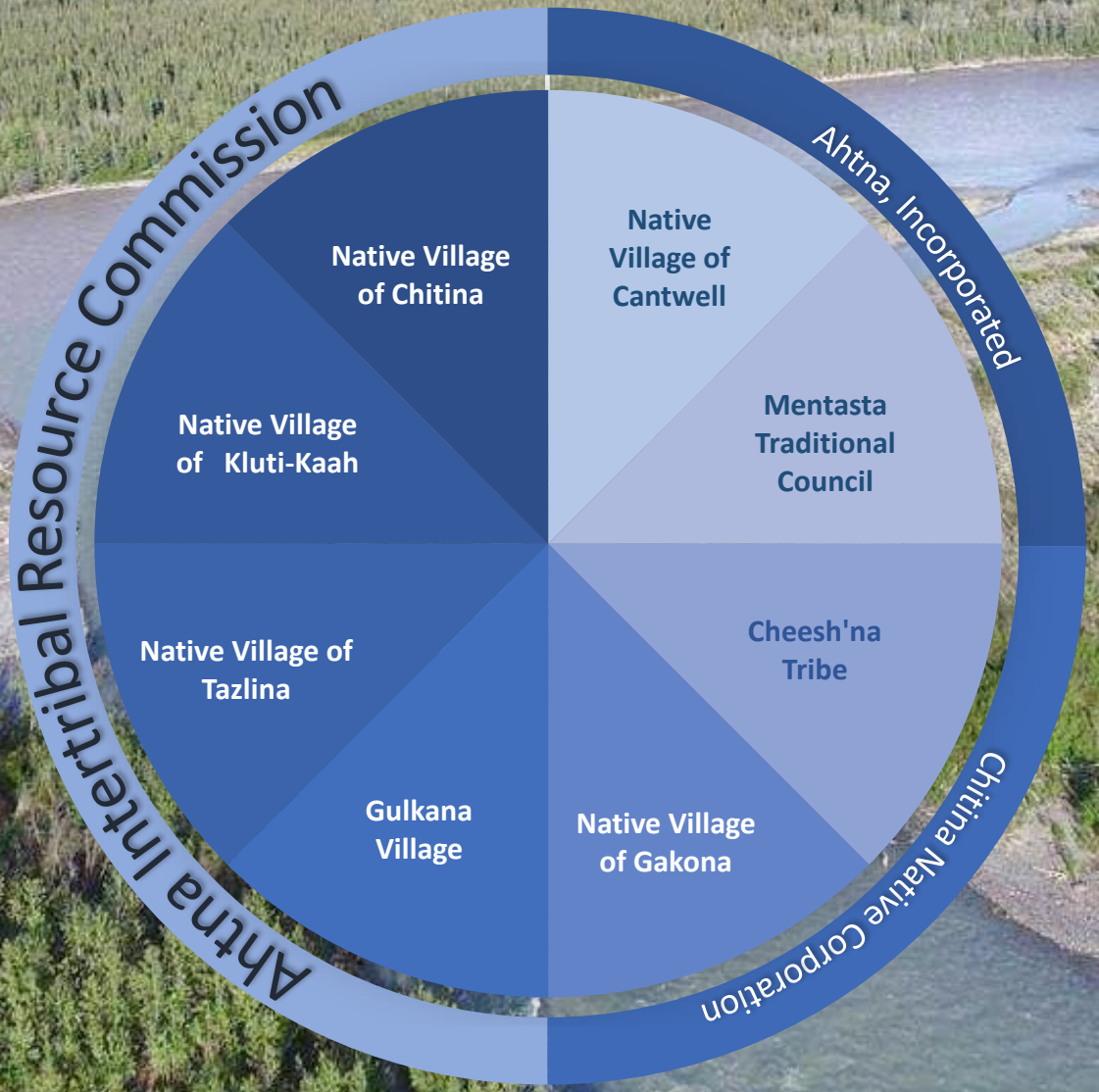
Ahtna Intertribal Resource Commission (AITRC) Carnivore Stewardship

Sterling Spilinek Research Coordinator

Our Organization

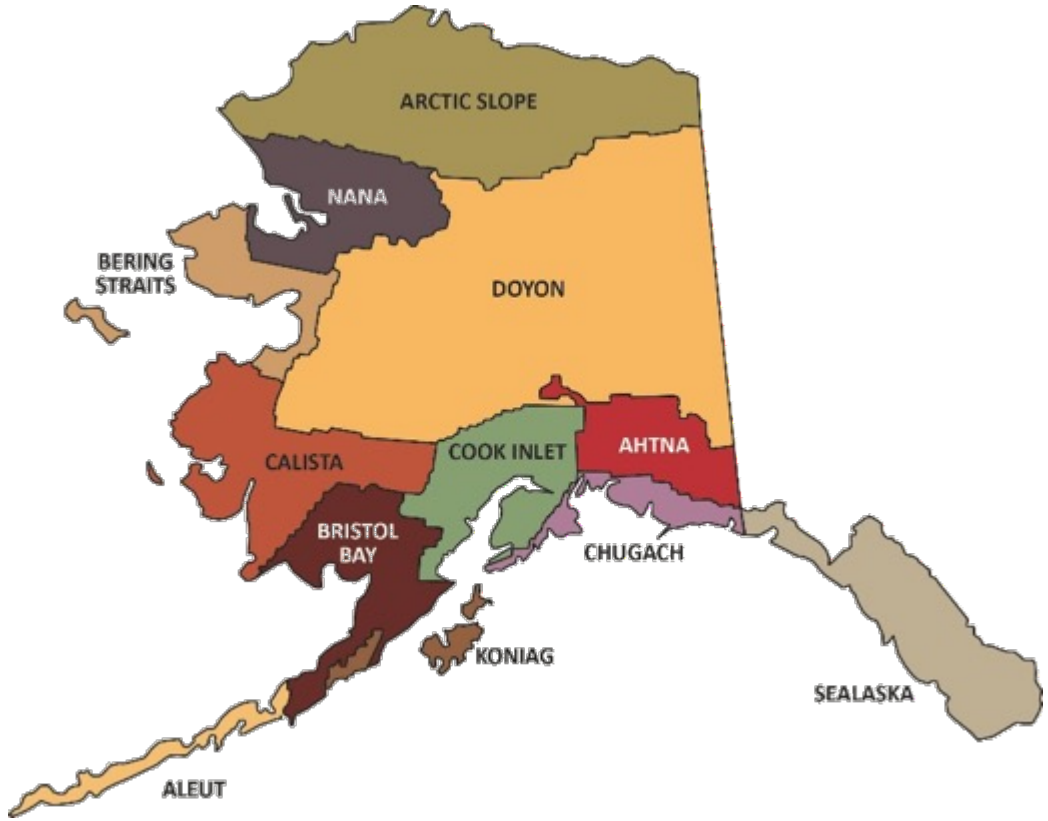


The Ahtna Region

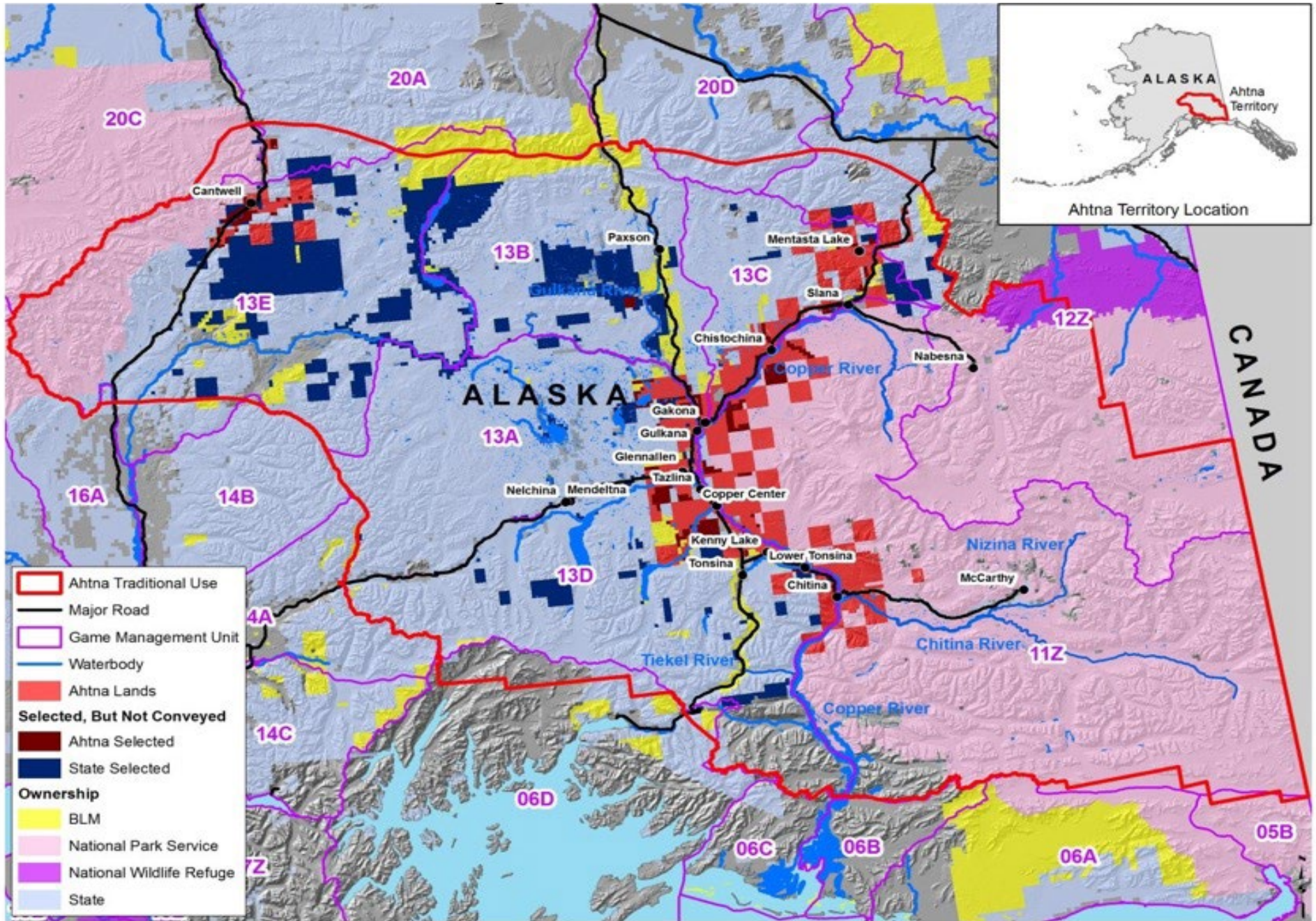
The Ahtna Region is approximately 45,000 square miles of land (28,700,000 acres)

- Ahtna's total ANCSA land entitlement is 1.77 million acres – 1.53 million already conveyed

- South-central Alaska
  - The Copper River Basin
  - 5 mountain ranges
  - 2 National Parks: Wrangell-St. Elias & Denali National Parks
- The Copper River watershed is the 4th largest in Alaska
  - Every species of Alaska fish represented
  - 11 salmon runs
- Five major highways (500+ miles state road)



Ahtna Traditional Use Territory



GMU13+ Grizzly Bear Research Program

Alaska Cooperative Fish & Wildlife Research Unit

Ahtna

Wildlife Genetics International

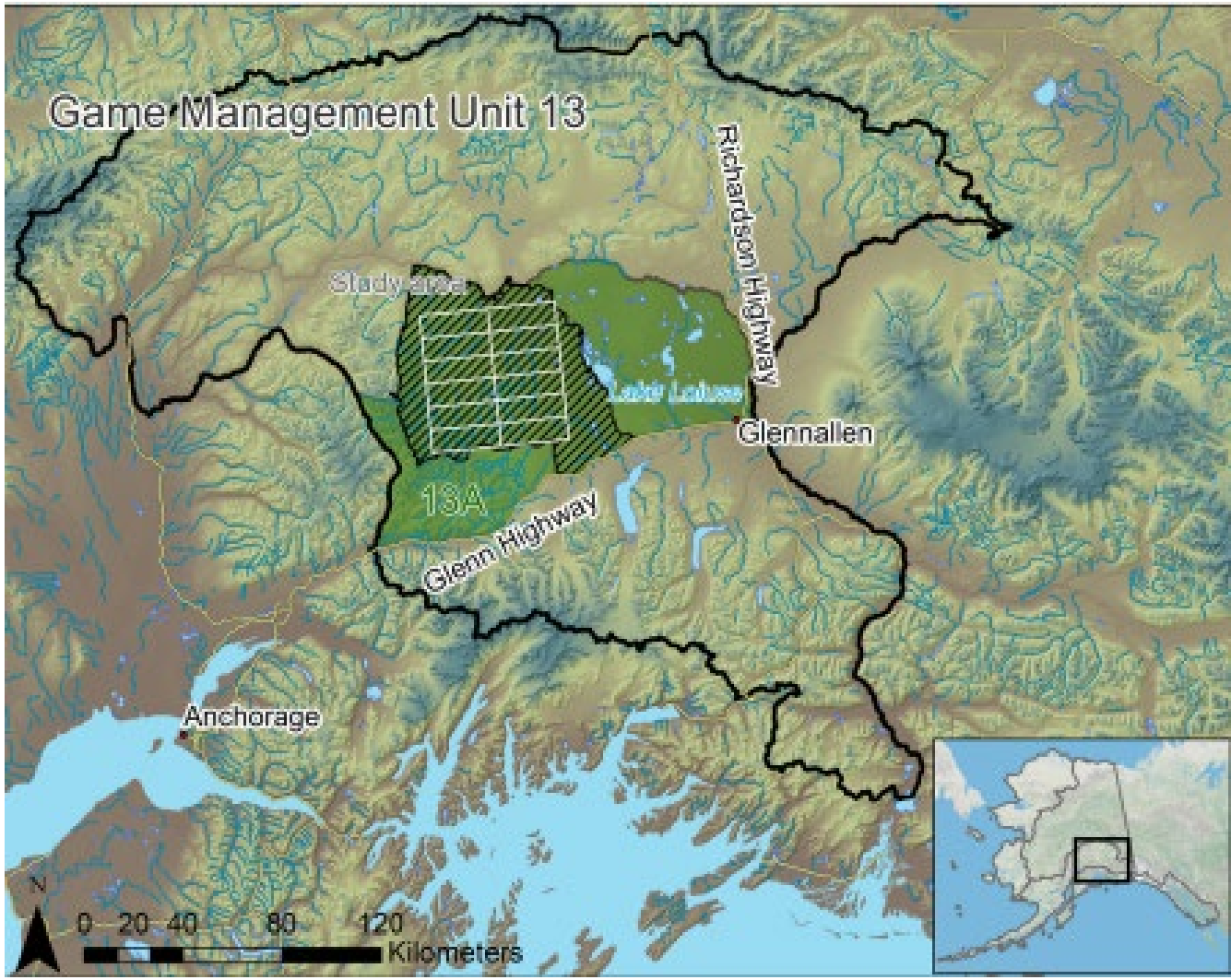
Project: Density and demography of GMU 13 grizzly bears

Previous research:

- 3,000 km^2 study area
- 84 female grizzlies collared between 2006-2011
- Vital rates (e.g., survival) monitored

Status:

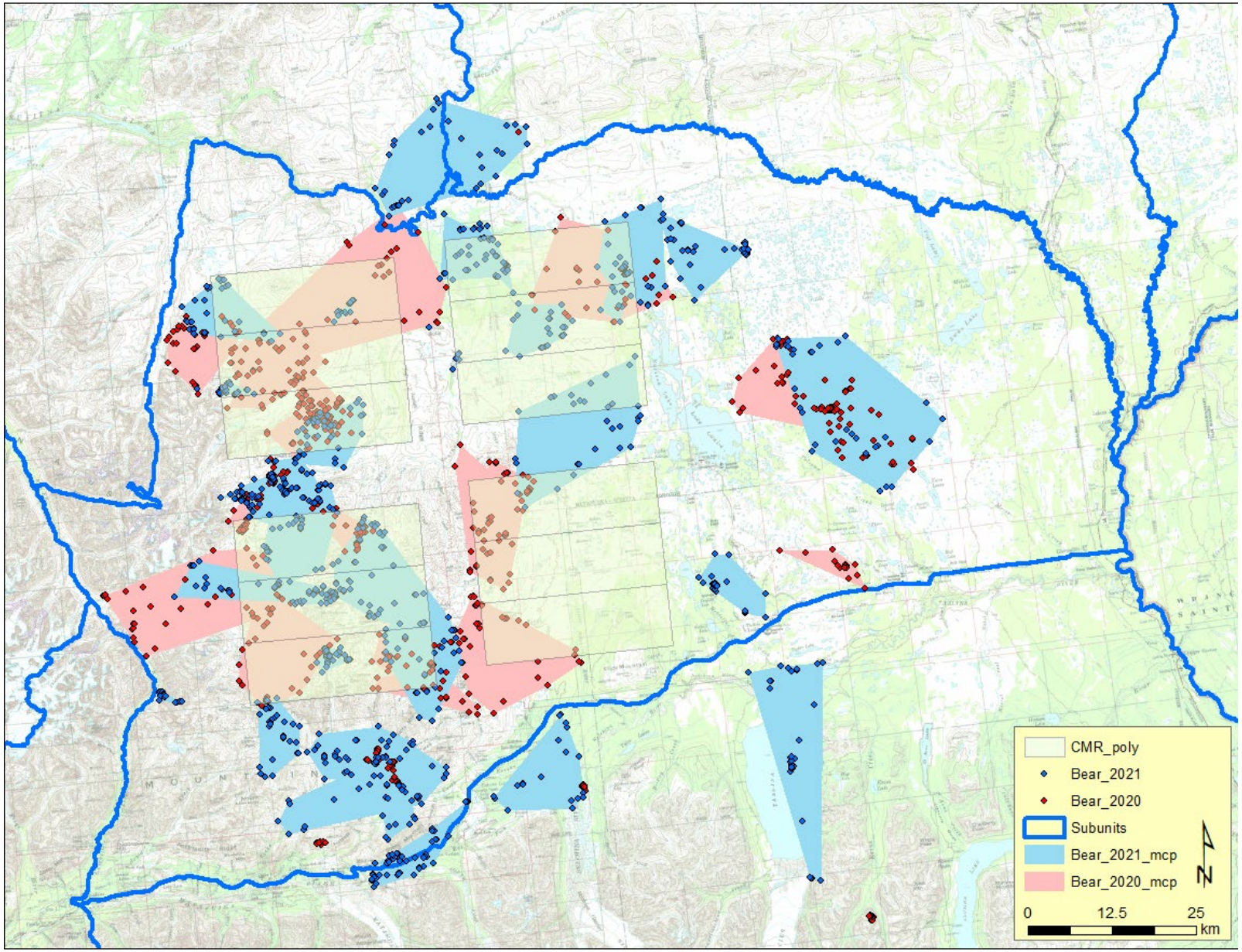
- Previous study area was tiny relative to bear ecology
- Required extrapolation across large, heterogenous area
- Non-spatial model
- No covariates for detection, etc.



Project: Density and demography of GMU 13 grizzly bears

Status:

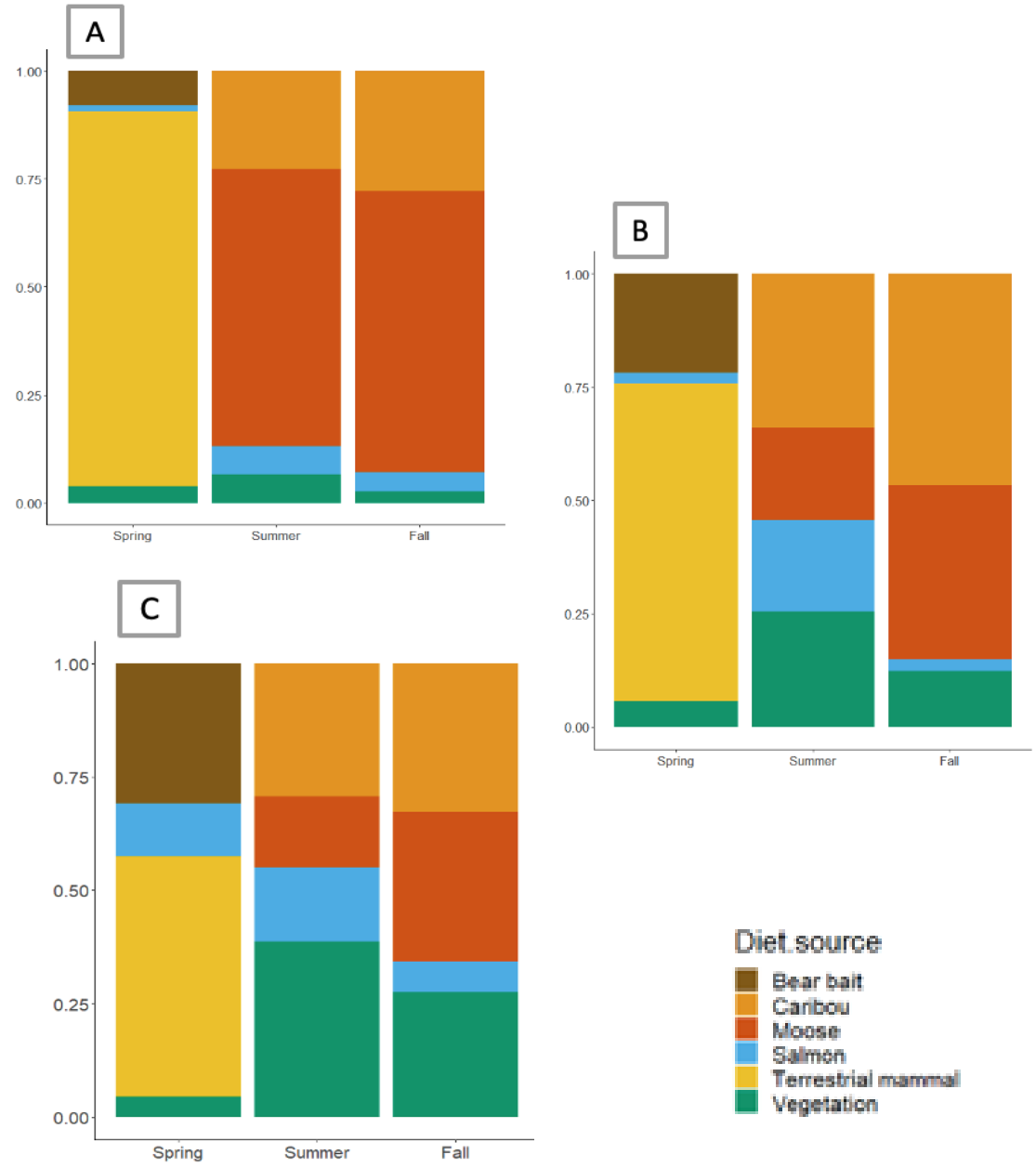
- We can do better!
- Exploit GPS data
- Explored spatial models
- Refine design to better capture heterogeneity



Project: Density and demography of GMU 13 grizzly bears

Quick aside:

- University of Alaska Anchorage collaboration
  - Amanda Mumford (Zuelke) M.S. Student
  - Dr. Jeff Welker, Faculty Advisor
  - Thesis: *Investigating habitat usage, dietary composition, and behaviors of brown bears in the Nelchina Basin*
- Defended thesis in July



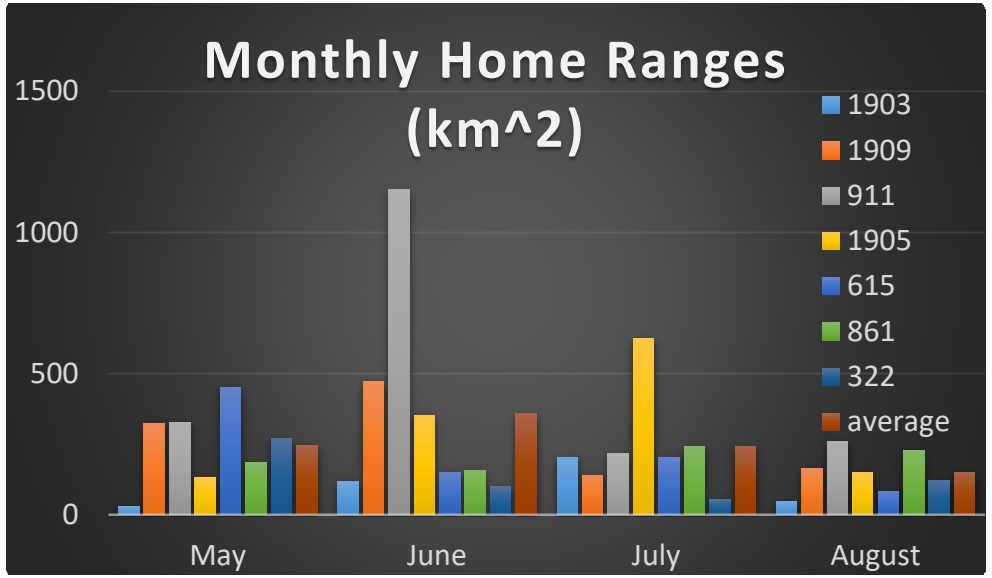
Project: Modeling density patterns of GMU 13 grizzly bears

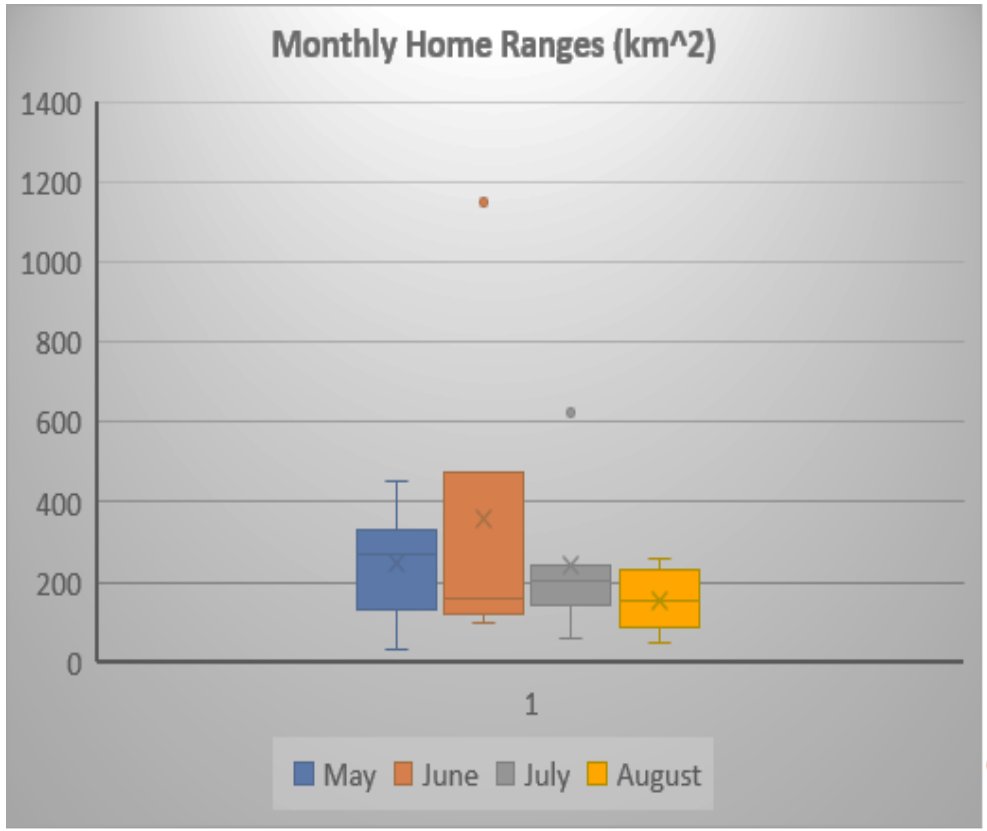
Purpose: To use genetic sampling and spatial CMR modeling to explain/predict bear density; explore potential for long-term monitoring

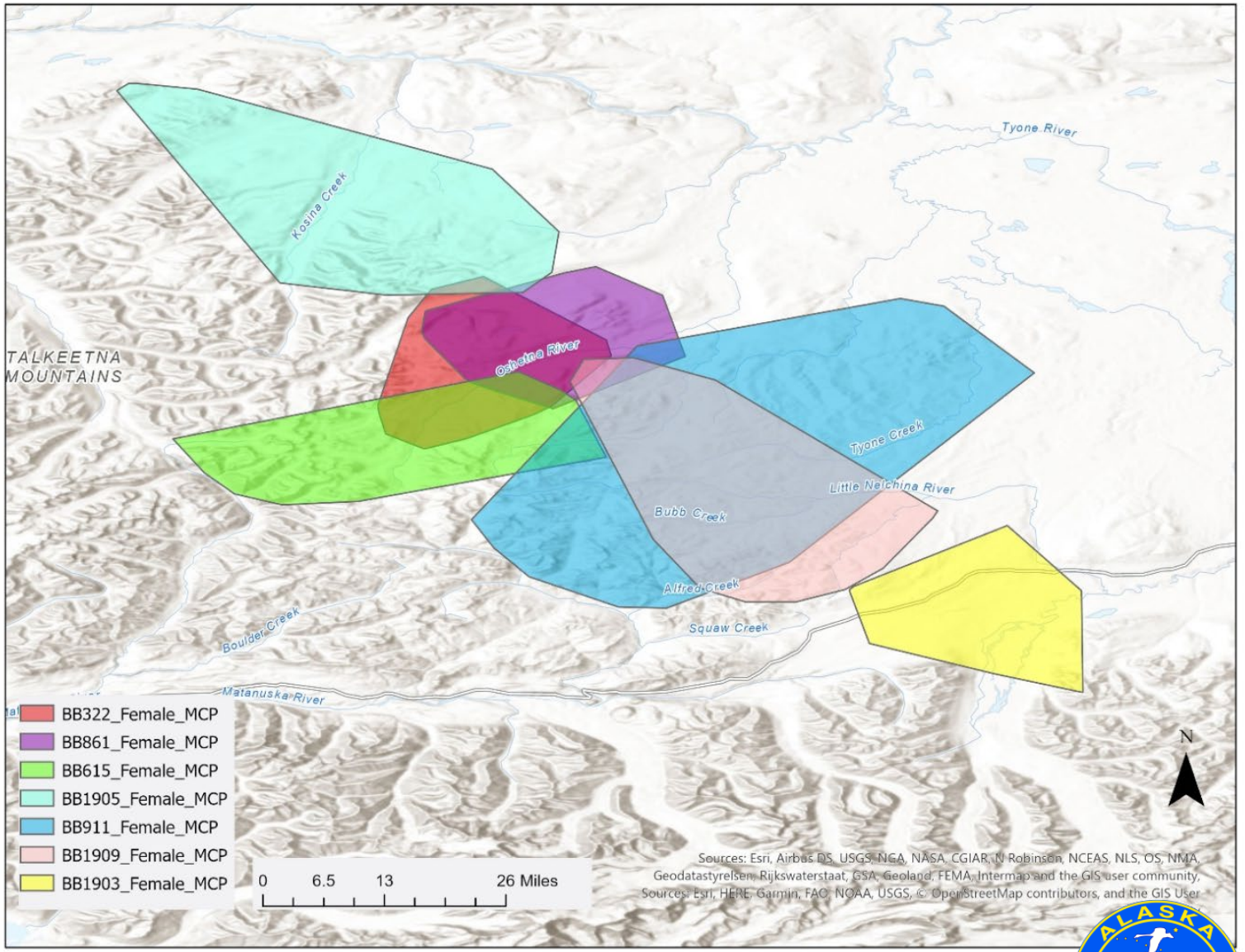
Objectives:

1. Estimate bear density and model (i.e., explain) density patterns using newer, advanced methods
2. Contrast estimates/inferences from mark-resight and stable isotope models
3. Use detection data to explore study designs for long-term monitoring

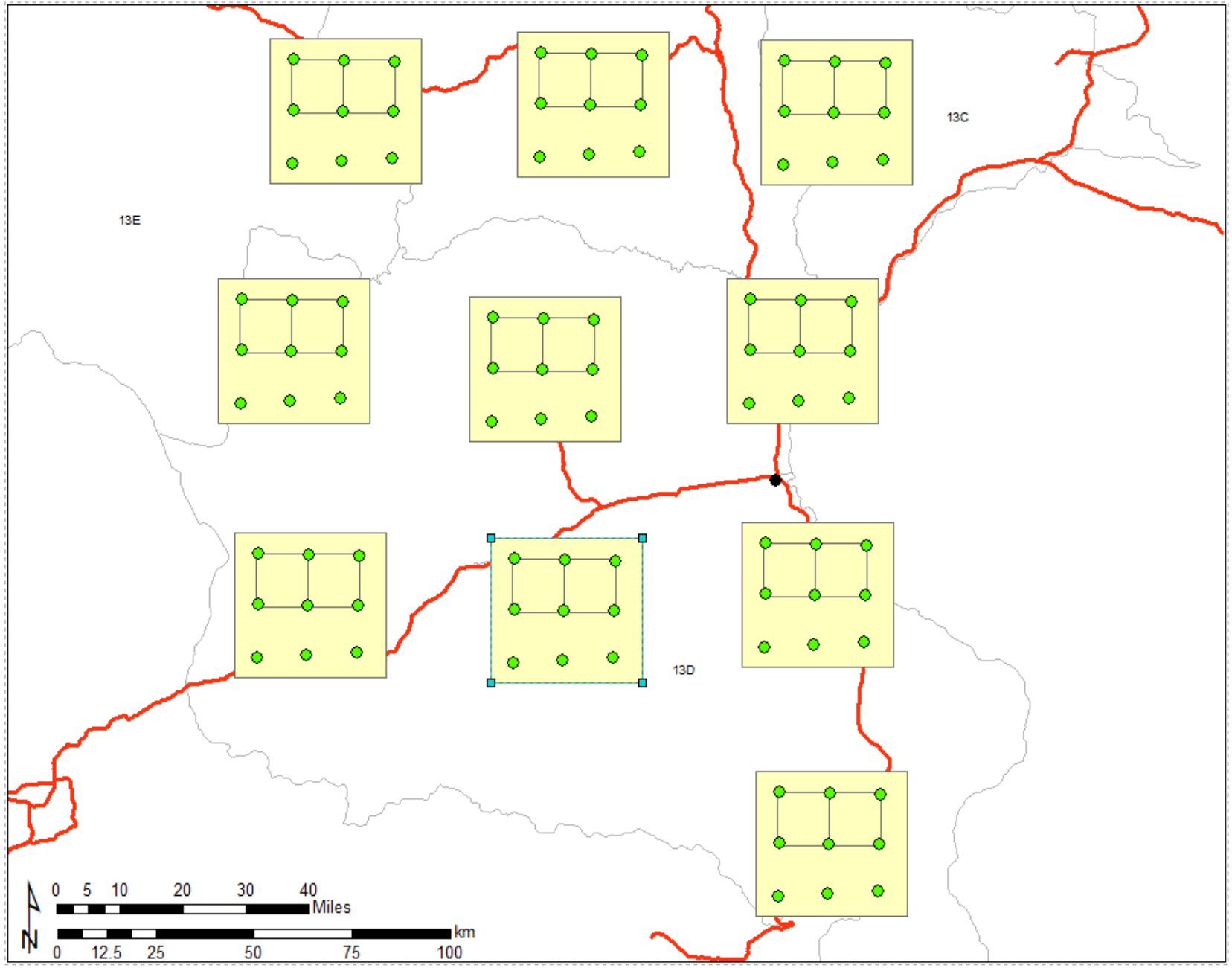
Collared data to inform spacing







GPS Collar Data Provided by the Alaska Department of Fish & Game



Site Layout

2σ ≈ 13 km site distances

10σ ≈ 63 km cluster distances

10 clusters - 90 traps

Avg 2 samp/trap

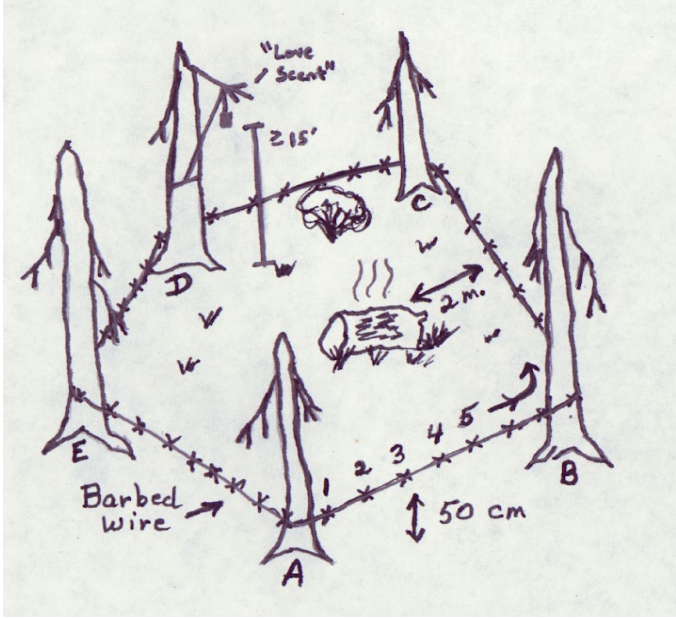
Possible 6 sessions ≈ 1100 samples

Hair Snares Designs

Traditional

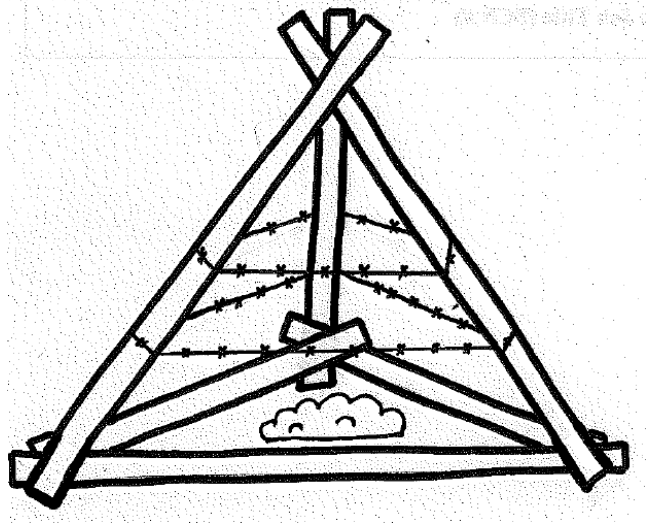
Free Standing

Site Construction - Traditional



- look for a level or even surface with 3-6 trees
- center of the trap is **≥ 2 m from the wire in all directions**
- At a height of **50 cm**, stretch the wire around the trees as tightly as possible, ensuring that it does not droop at the middle.
- Where the ground surface is irregular, fill in the low spots and level the high spots.
- Coil any extra wire and attach using two staples to the base of the last tree on the outside of the hair trap.

Site Construction – Free Standing



- in areas lacking adequate trees, consider cutting six poles 2.5-3m long each and building a free-standing, ‘teepee’ hair trap.
- Place uprights on the outside of the corners of the logs at the base
- use bungee cords or wire to secure the poles together, keeping in mind that bears may be inclined to try to destroy the trap by pushing against the legs, dragging or flipping it, etc..

Site Construction – Free Standing

- Wrap two strands of barbed wire around the circumference of the uprights at ~0.5 and 1.0 m above the ground.

- Consider pouring lure on the logs in case a bear drags or flips the trap, exposing the pile.

Building the Artificial Cache

- Pile a mound of rotten wood, moss, tree bark, etc. in the center of the trap.
- Consider the materials and design that will best allow the scent to disperse; consider a ‘cover’ of bark to shield from rain.
- This is meant to resemble a cached carcass (i.e., free meal) to a bear, disturb the ground, placing bones, etc.

Signage

- When trees are available, staple

  3-4 warning signs

- approximately 10-15 m distant and facing away from the site in the most likely approach routes.

Summer 2022 Bear Research Project
Hair Collection Station.

Please do not disturb or remain in the area.

Questions? Please contact

ADFG: jeffrey.stetz@alaska.gov
AITRC: sterling@ahtnatribal.org

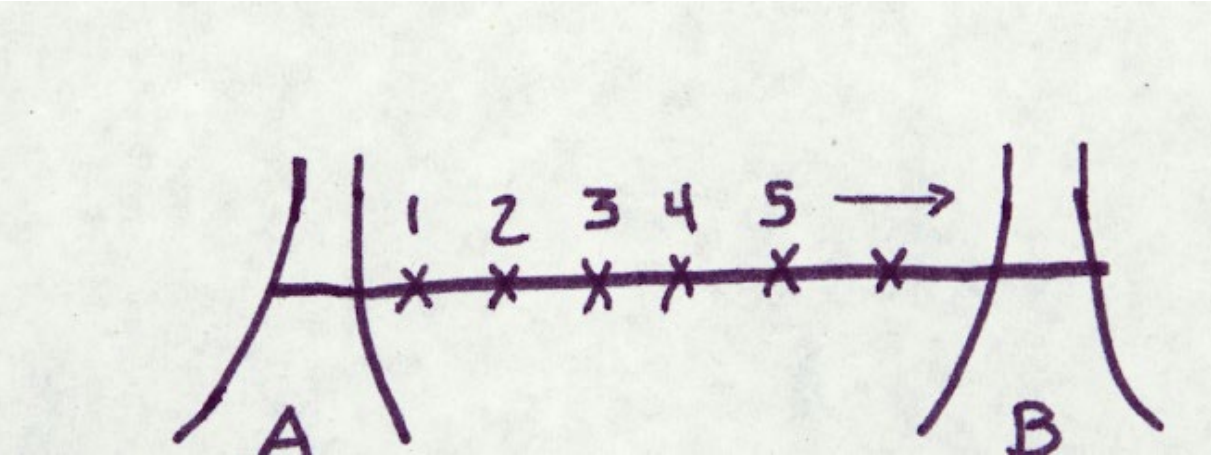
AITRC

Things to consider

- **Minimize human odors at and near trap sites**.
- Do not eat, make latrine stops, or otherwise remain at the trap site.
- It has been proven that animals avoid areas with a strong human presence.
- Bait the trap just before leaving the site.
- Deploy the secondary scent in the best location available to disperse on the wind, be protected from rain, and encourage the bear to enter the site.
- **AVOID GETTING LURE/SCENTS ON YOU!!** You will want to leave ASAP. Take extra caution when leaving the site as bears may be in the area. As always, make LOTS of noise.

Sample Collection

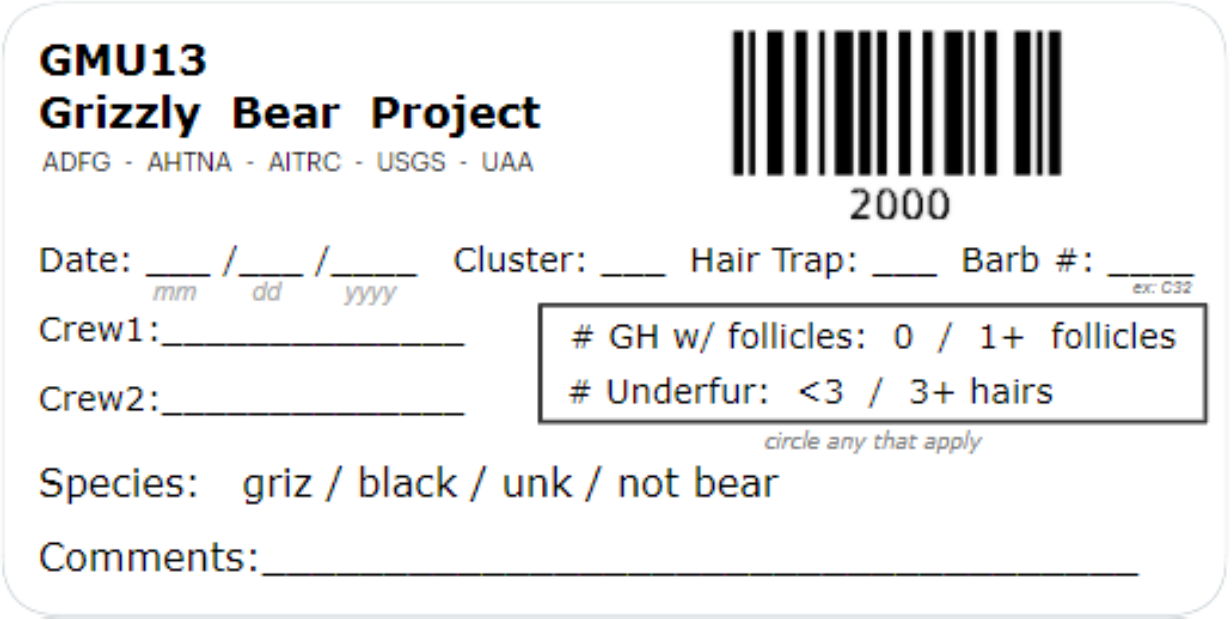
- Carefully examine **<u>every</u>** barb of the hair trap wire **twice**,
- Holding a medium-tone piece of paper behind the barb makes dark and light-colored hair more visible.
- **All hairs found on one barb are considered one sample.**



Sample Collection

- Being careful to not break the hair and using hemostats or multitool, place all hairs found on one barb in a new sample envelope.
- Closely search the ground and lure pile for samples as well.
- Transport and store in a cool, dry
- place and return samples to the office as soon as possible.

Sample Collection


GMU13
Grizzly Bear Project
ADFG - AHTNA - AITRC - USGS - UAA
2000
Date: ___ /___ /____ Cluster: ___ Hair Trap: ___ Barb #: ____
mm dd yyyy ex: C32
Crew1:_____
Crew2:_____
GH w/ follicles: 0 / 1+ follicles
Underfur: <3 / 3+ hairs
circle any that apply
Species: griz / black / unk / not bear
Comments:_____

- Each of these envelopes has a unique number that we will use to track the sample.
- ***Complete all blanks on the envelope write all sample numbers on the back side of the Hair trap Data Form before leaving the site.***
- After removing all hair that can be seen on a barb, pass a flame under the barb and hemostats to burn any remaining traces of hair to prevent sample contamination.
- Hair left on a barb could either contaminate subsequent samples rendering them useless, or create false detections that could affect model integrity.

Revisitation

- After all hair samples have been removed and the barbs flame- cleaned, remove staples from trees and roll up the wire - it will be used again.
- Take down and pack out all signs, staples,

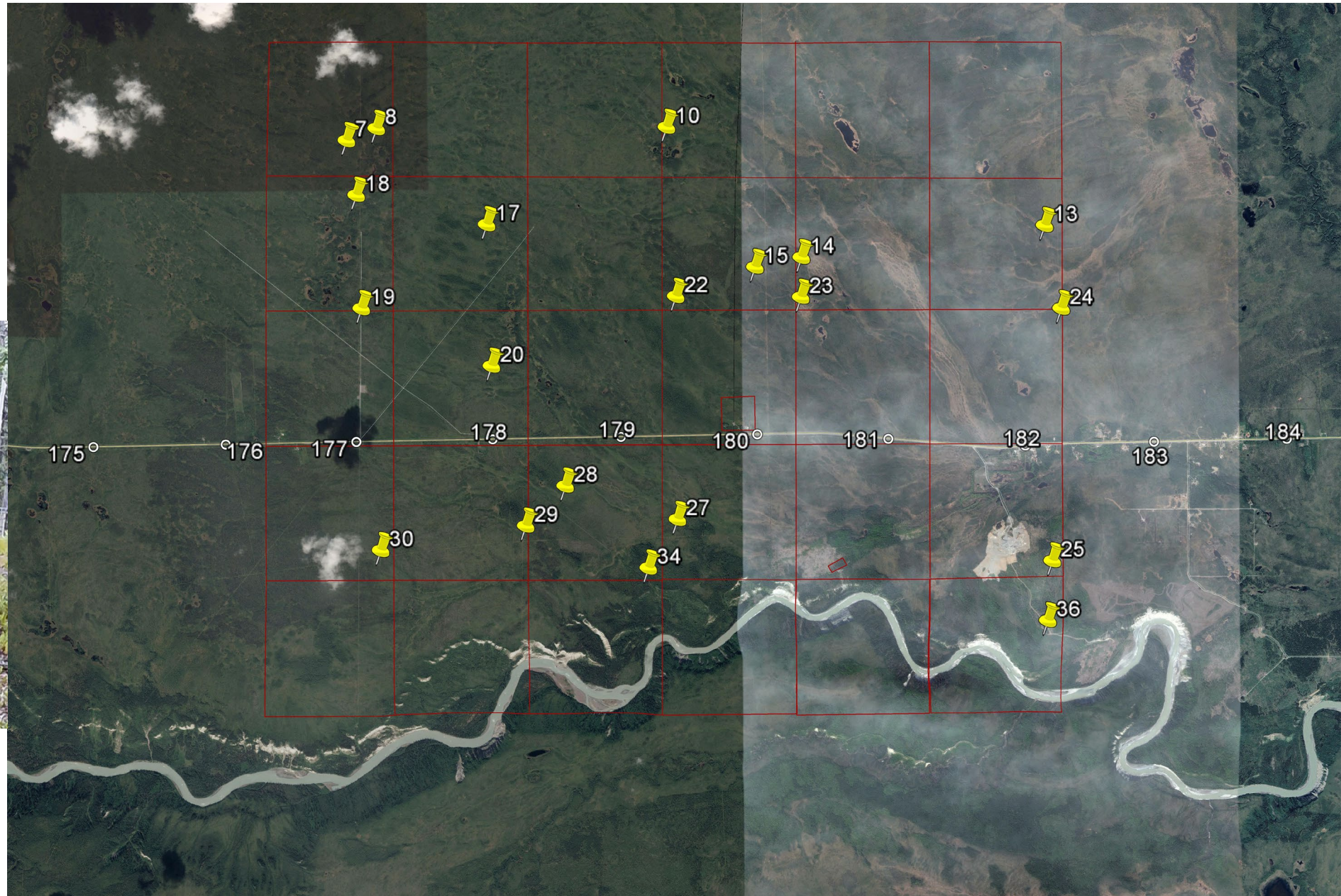
  and flagging.
- Double check the site to ensure no

  materials are left behind.

Progression of the Bear Research

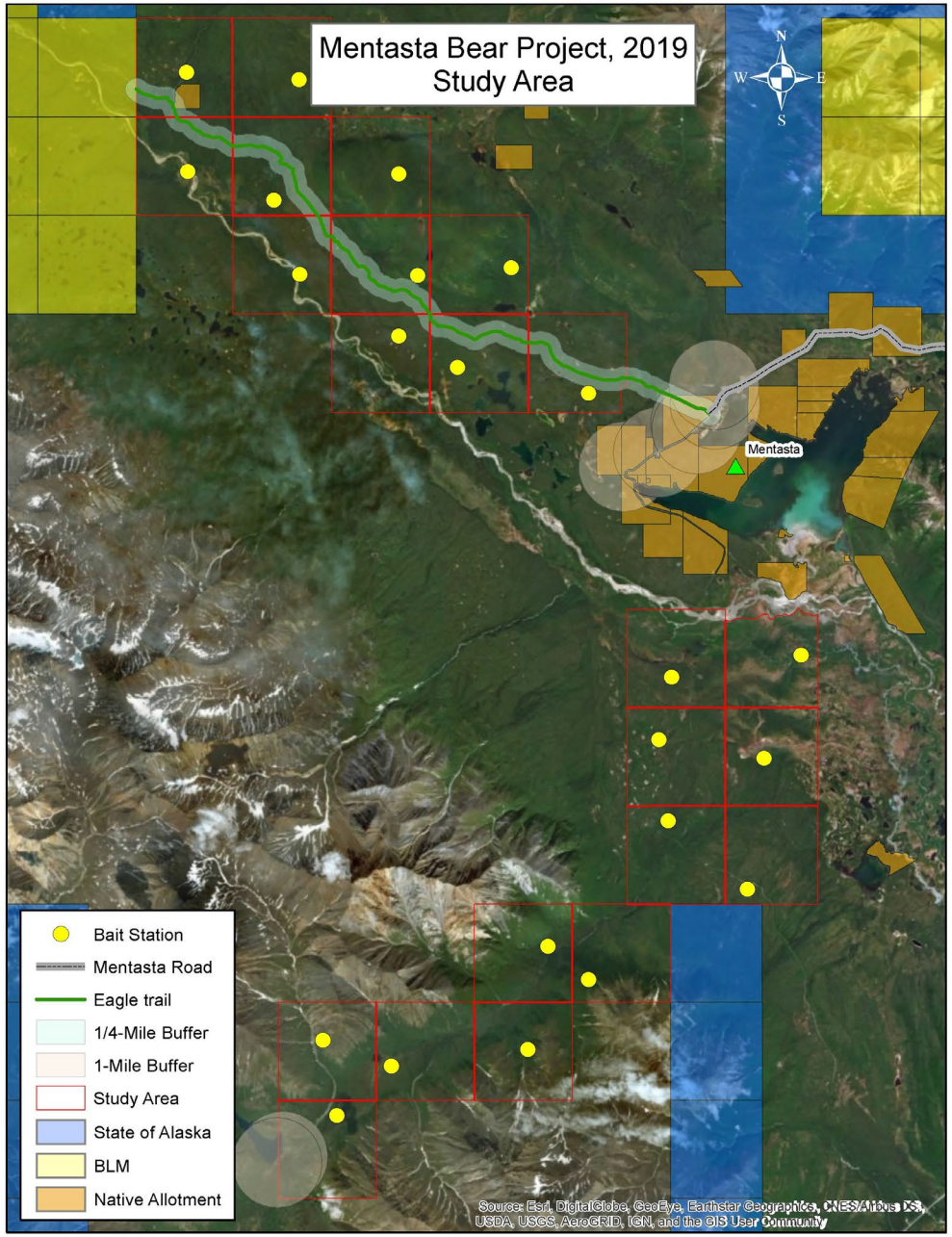
West of Glennallen

2018



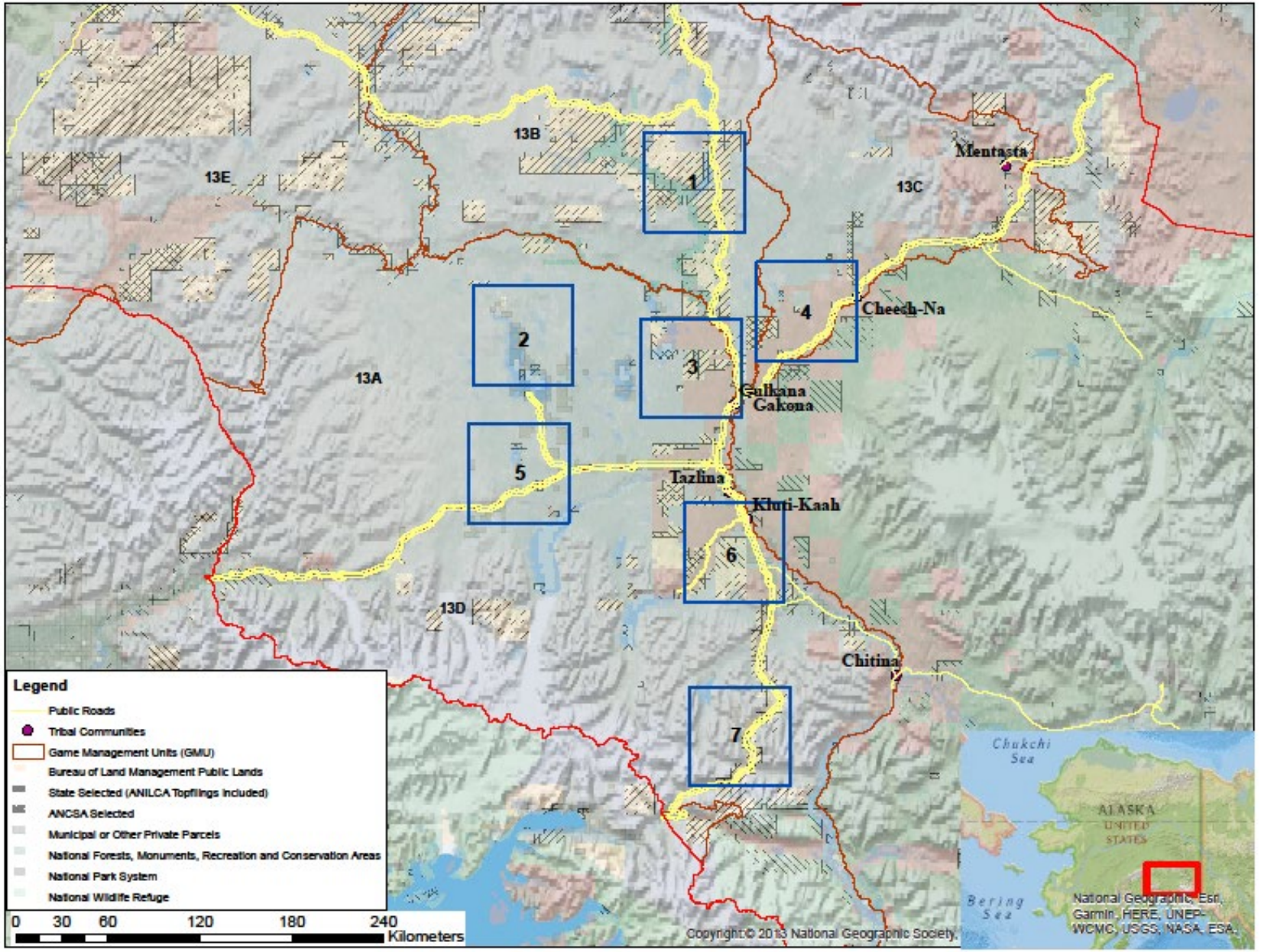
Progression of the Bear Research

Mentasta Lake
2019



Progression of the Bear Research

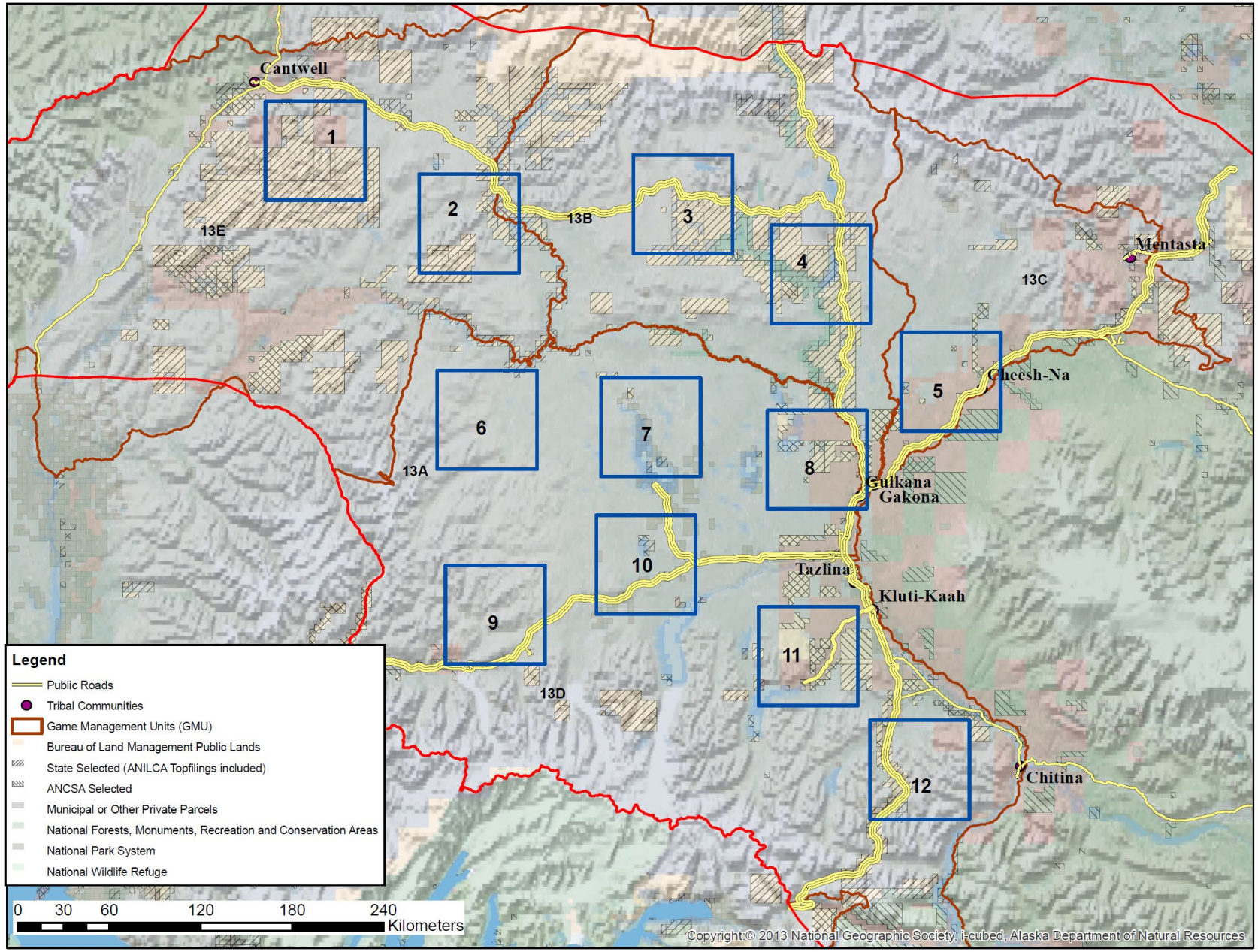
2020



Progression of the Bear Research

2021

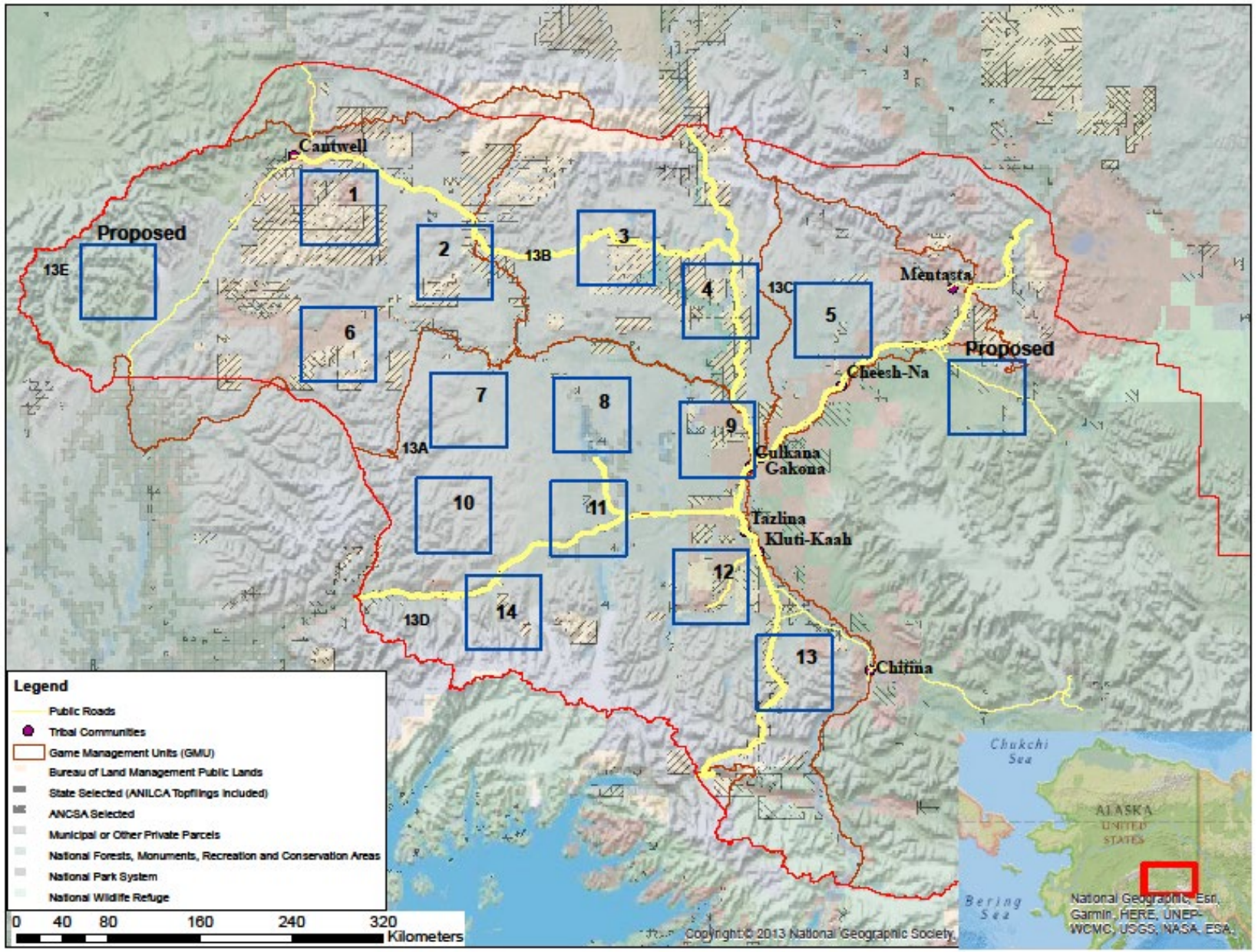
Still waiting on samples from the lab

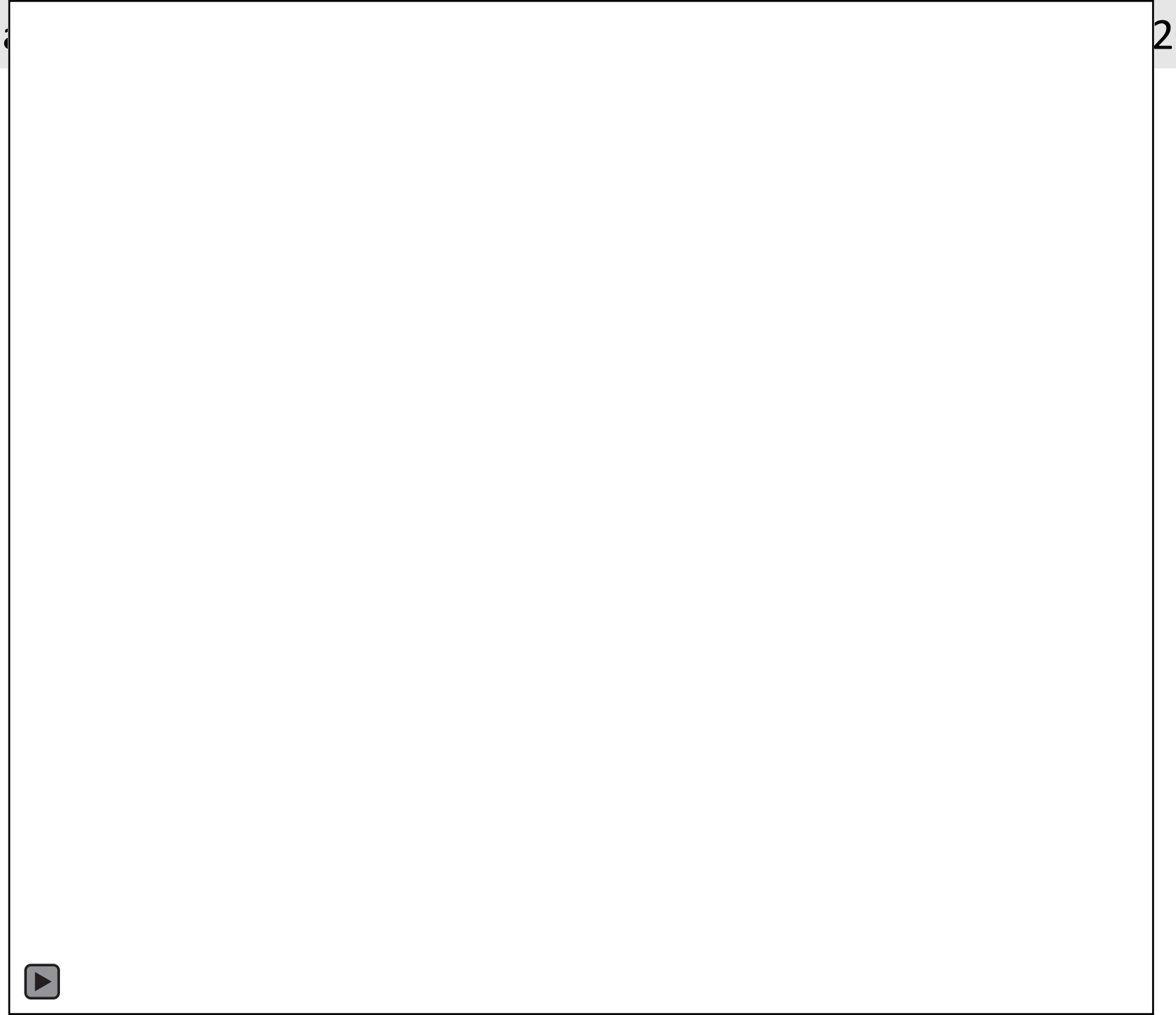


Progression of the Bear Research

2022

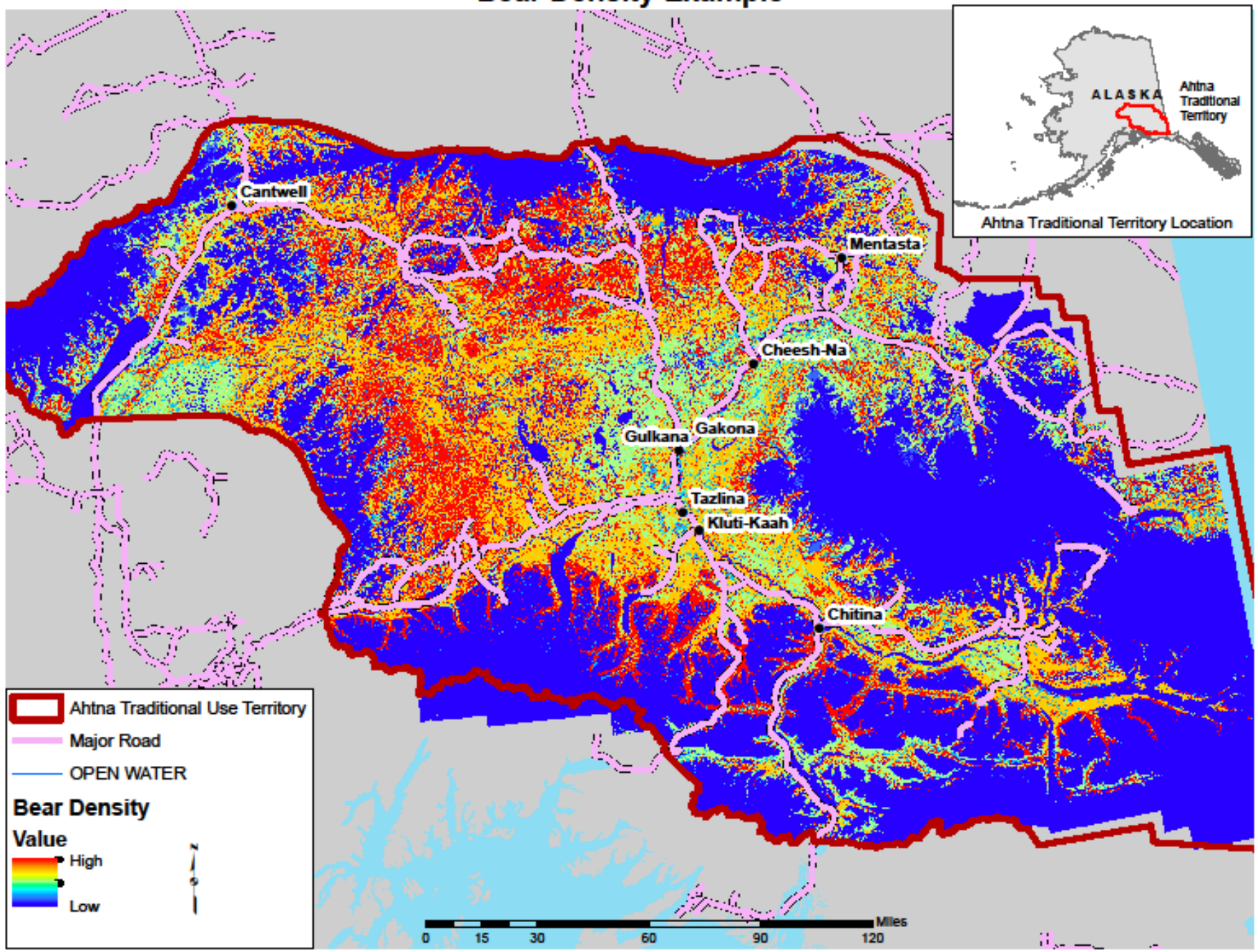
Over 2,000 samples collected 3x more than any previous year



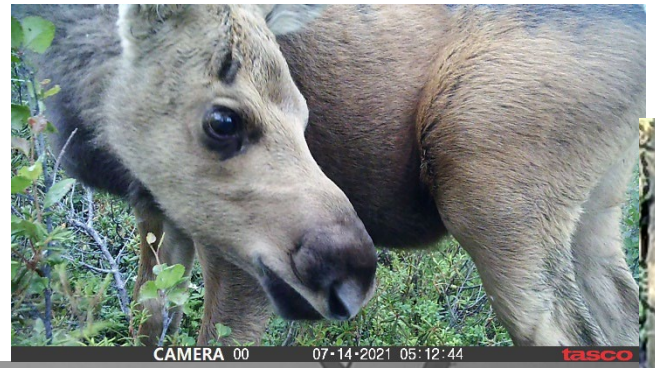


Collar data provided by ADFG

Bear Density Example



Other Wildlife at the Hair Snares



Questions?