

Susitna-Watana Hydroelectric Project Document

ARLIS Uniform Cover Page

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Susitna-Watana Hydroelectric Project Terrestrial Wildlife Resources

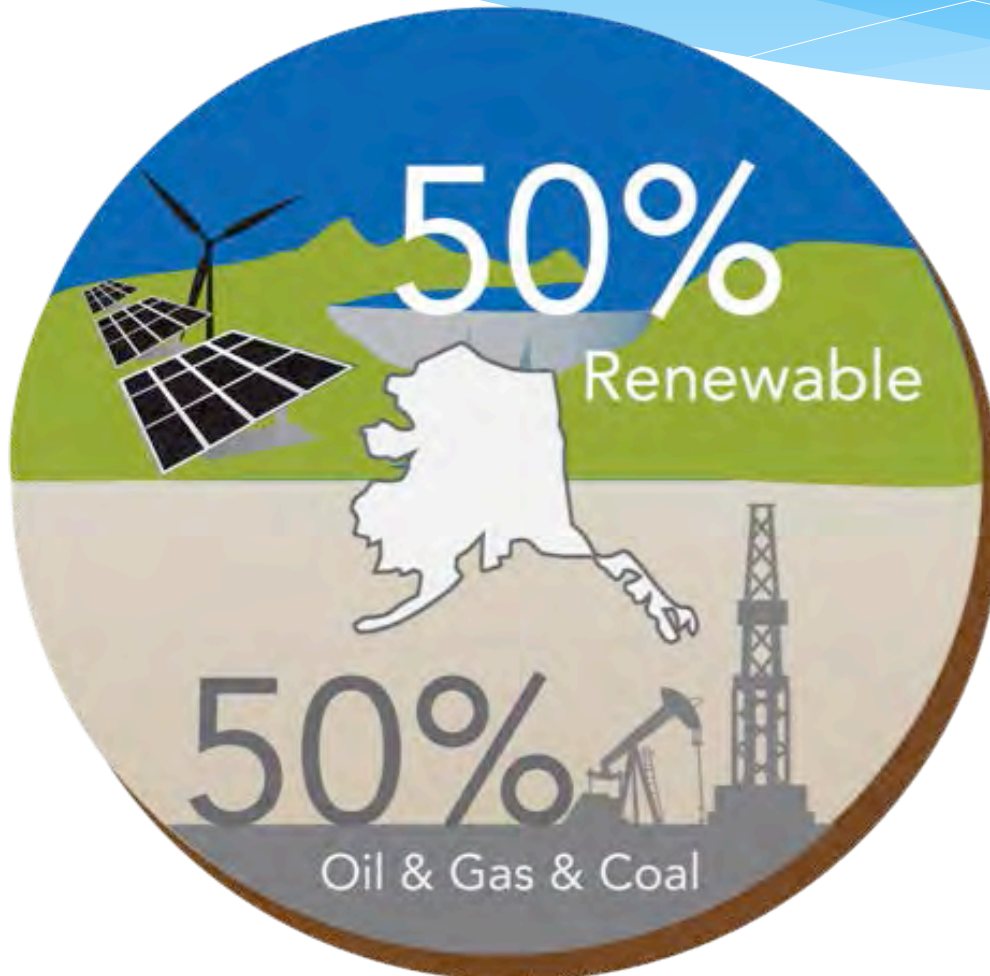
Mark Burch and Kim King

RC2 Tab 1

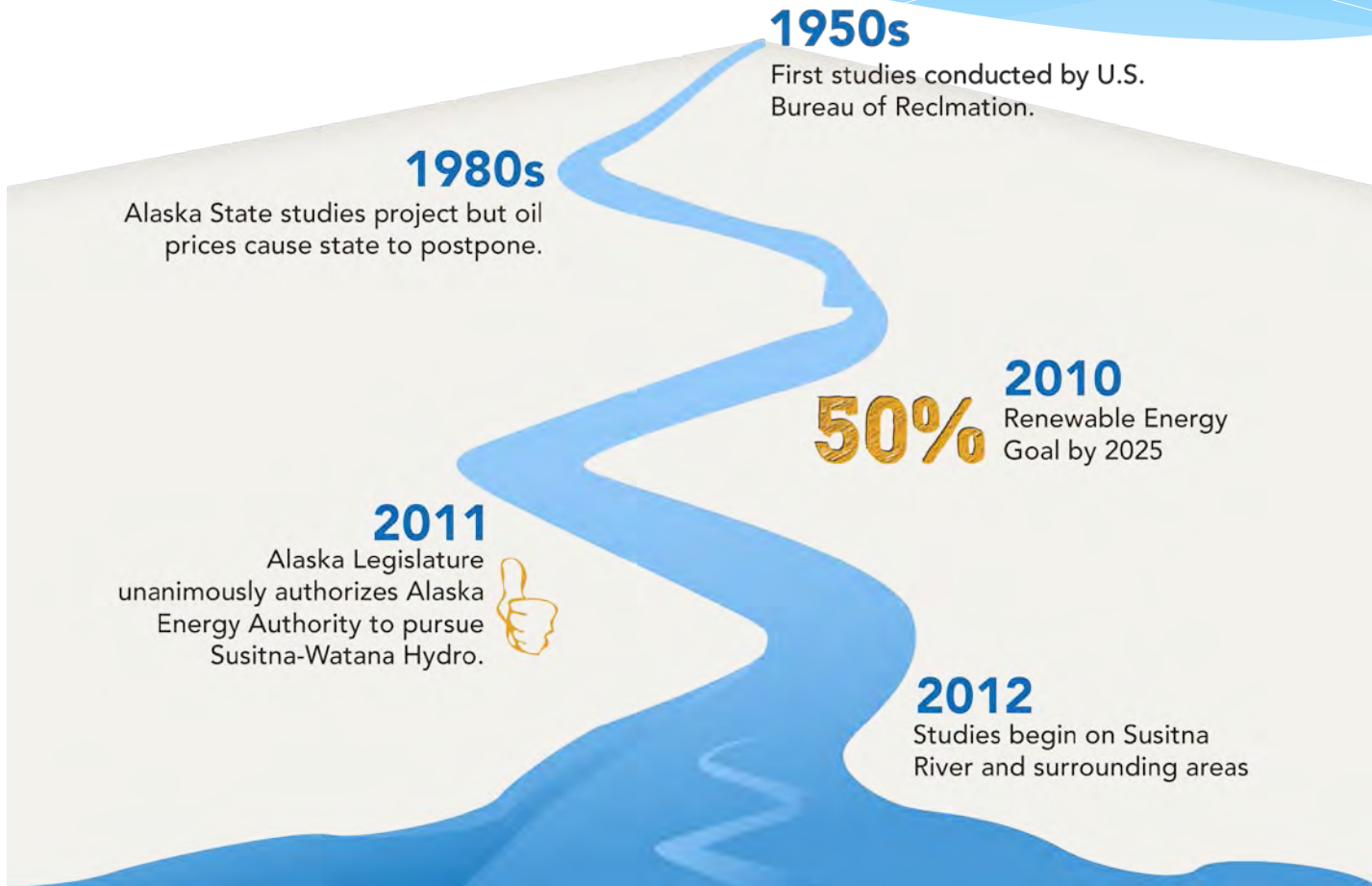
Source material - <http://www.susitna-watanahydro.org/study-plan/>



The State of Alaska and Legislature have set a goal to obtain 50 percent of the state's power from renewable sources by 2025.



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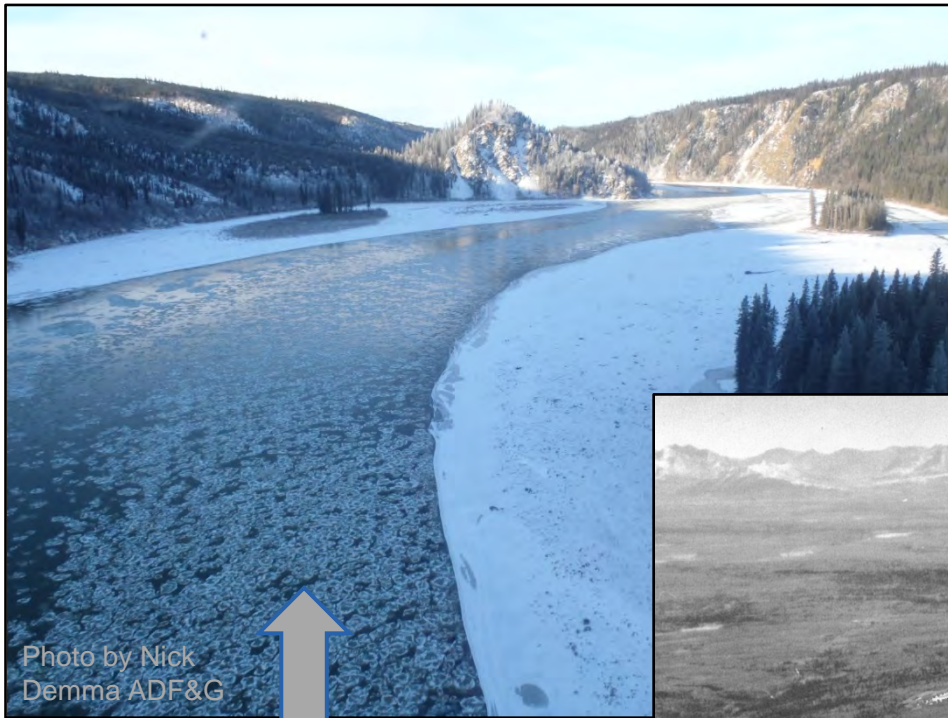
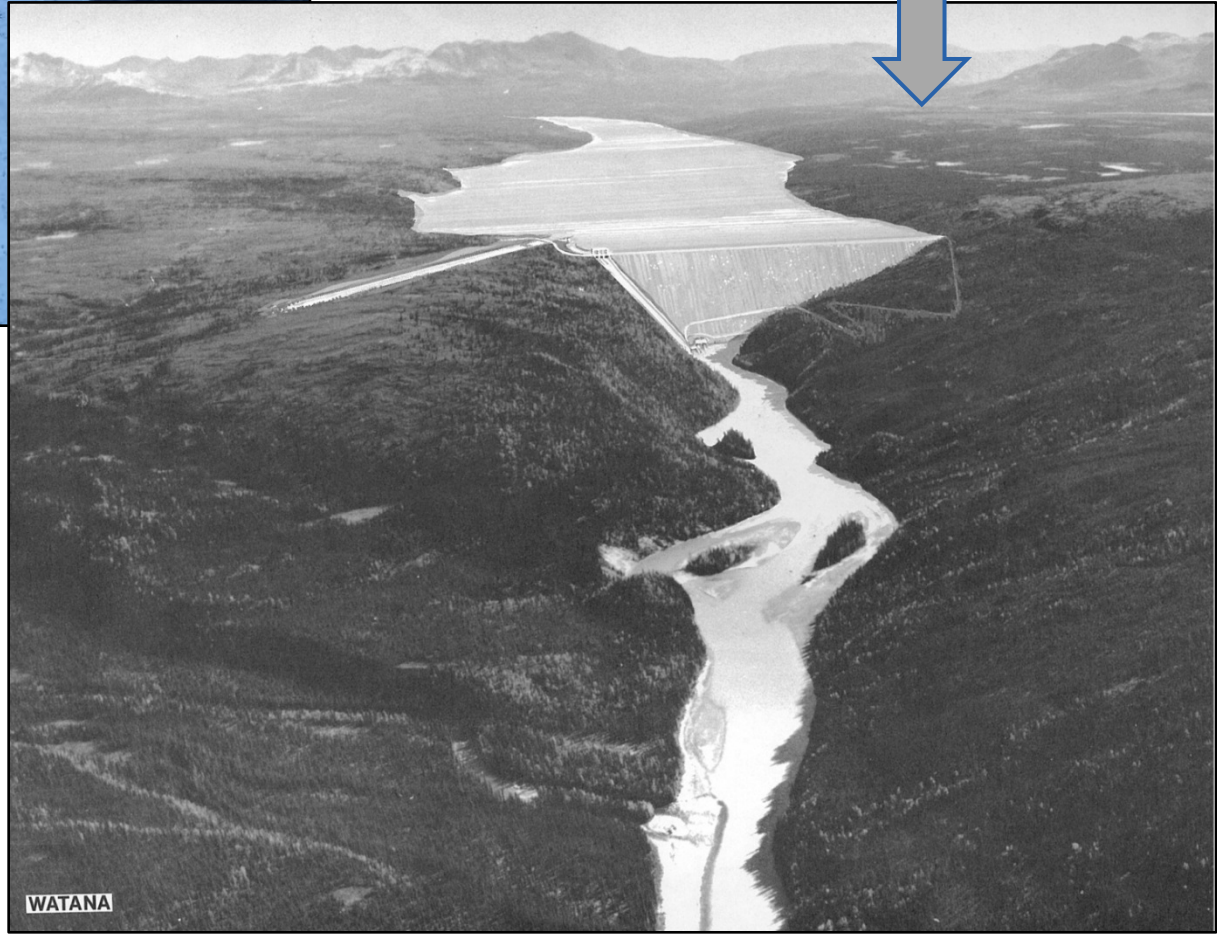


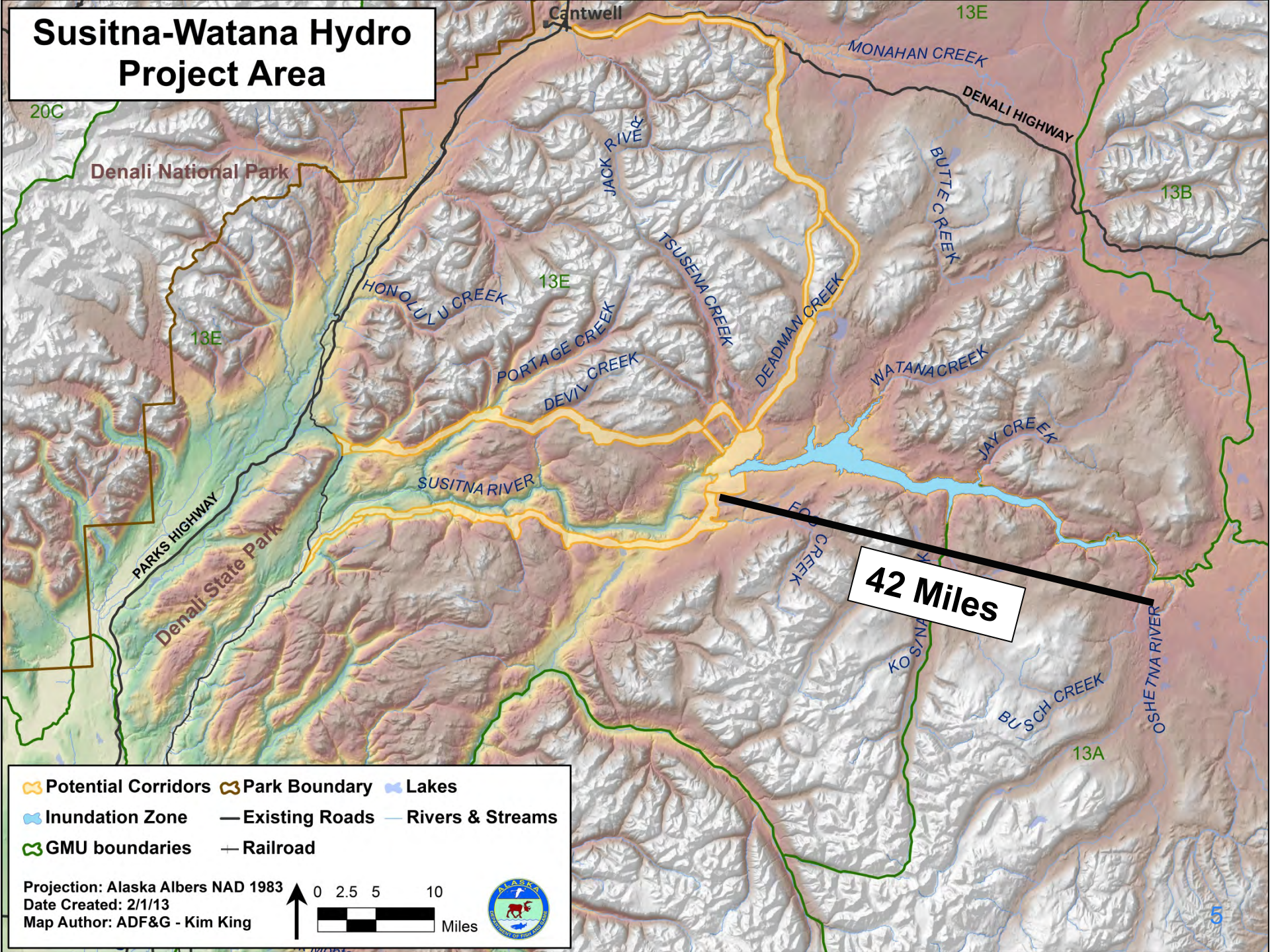
Photo by Nick Demma ADF&G

Proposed Dam:
735 feet above
bedrock

Proposed
Inundation Area
Oct 2012

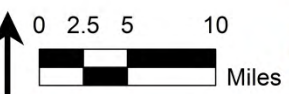


Susitna-Watana Hydro Project Area



- Potential Corridors
- Park Boundary
- Lakes
- Inundation Zone
- Existing Roads
- Rivers & Streams
- GMU boundaries
- Railroad

Projection: Alaska Albers NAD 1983
Date Created: 2/1/13
Map Author: ADF&G - Kim King



42 Miles

The FERC Integrated Licensing Process (ILP) allows agencies and the public to weigh in on the proposed project.

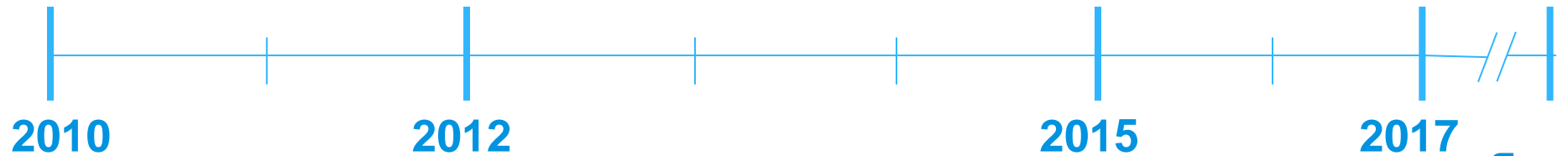
Preliminary Planning
Study Gap Analysis
Permit Application

Environmental Impact
Statement Preparation
Agency Approvals

Design/ Licensing
Field Studies
Permit Applications

2025

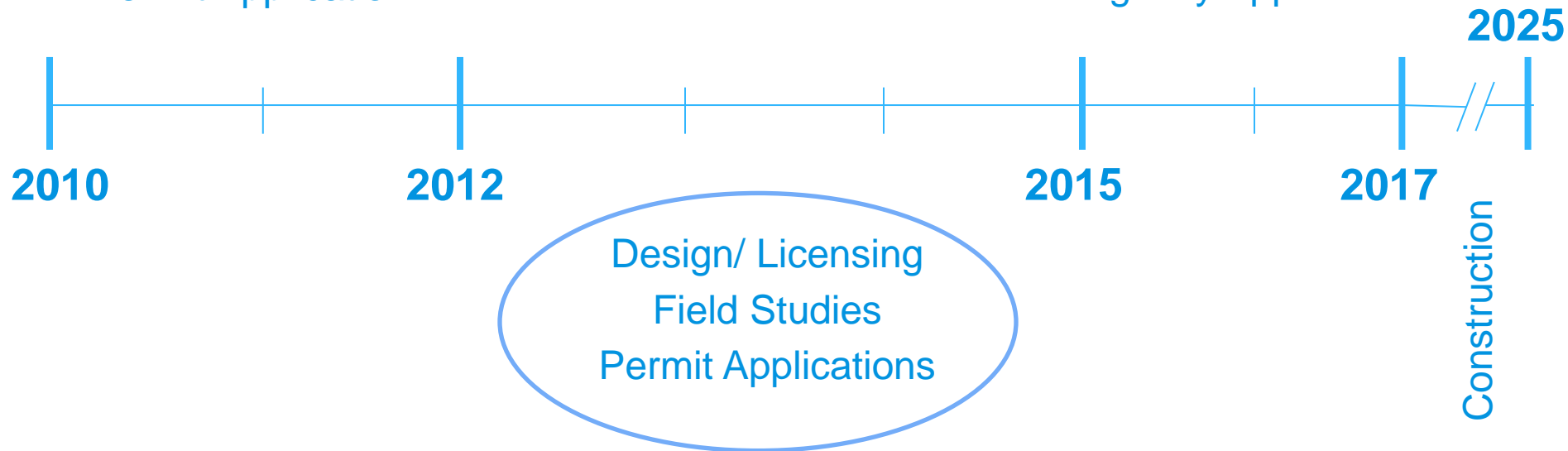
Construction



The FERC Integrated Licensing Process (ILP) allows agencies and the public to weigh in on the proposed project.

Preliminary Planning
Study Gap Analysis
Permit Application

Environmental Impact
Statement Preparation
Agency Approvals



The ILP involves planning, review, approval and implementation of a Study Plan.

The Study Plan addresses the following areas:

- Geology and Soils
- Water Resources
- Instream Flow
- Fish/ Aquatics & Beluga
- Wildlife
- Botany
- Recreation
- Culture and Paleontology
- Subsistence
- Socioeconomics
- Transportation
- Project Safety

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- Transportation
- Project Safety



The Wildlife Study Plans will provide baseline data for assessments of potential Project impacts.

Potential Impacts on Wildlife

- Habitat Loss/ Alteration
- Blockage of Movements
- Disturbance
- Increased Hunter Access



Wildlife Studies are being conducted on multiple species in the Project vicinity.

Wildlife Studies in the Project vicinity:

- Moose
- Caribou
- Dall's Sheep
- Wolverines
- Large Carnivores*
- Ptarmigan
- Terrestrial Furbearers
- Aquatic Furbearers
- Bats & Small Mammals
- Eagles/ Raptors
- Waterbirds
- Landbirds/ Shorebirds
- Wood Frog
- Wildlife Habitat Evaluation

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- **Aquatic Furbearers**
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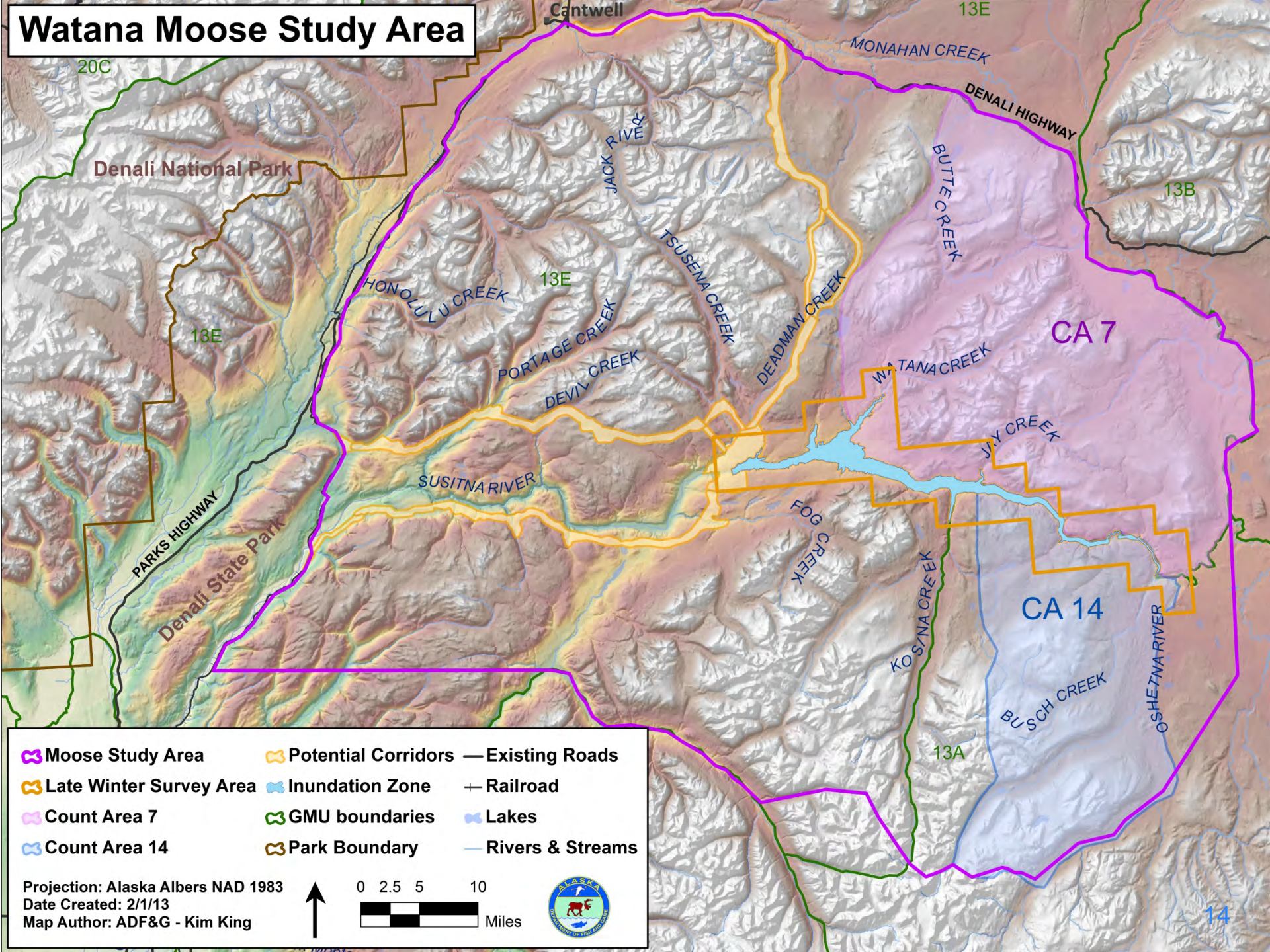
ADF&G is monitoring the distribution, abundance, productivity, and survival of **moose** in the Project vicinity.

This study involves:

- Monthly Telemetry of VHF Radio collars
- Monitoring ARGOS Satellite-linked GPS collars
- A GeoSpatial Population Estimation (GSPE) Survey
- Traditional Count Area Surveys
- Late Winter Inundation Surveys
- Twinning/Calving Surveys
- Browse Surveys



Watana Moose Study Area



- | | | |
|-------------------------|---------------------|------------------|
| Moose Study Area | Potential Corridors | Existing Roads |
| Late Winter Survey Area | Inundation Zone | Railroad |
| Count Area 7 | GMU boundaries | Lakes |
| Count Area 14 | Park Boundary | Rivers & Streams |

Projection: Alaska Albers NAD 1983
 Date Created: 2/1/13
 Map Author: ADF&G - Kim King



100 Moose VHF and GPS collars will be deployed in the study area.



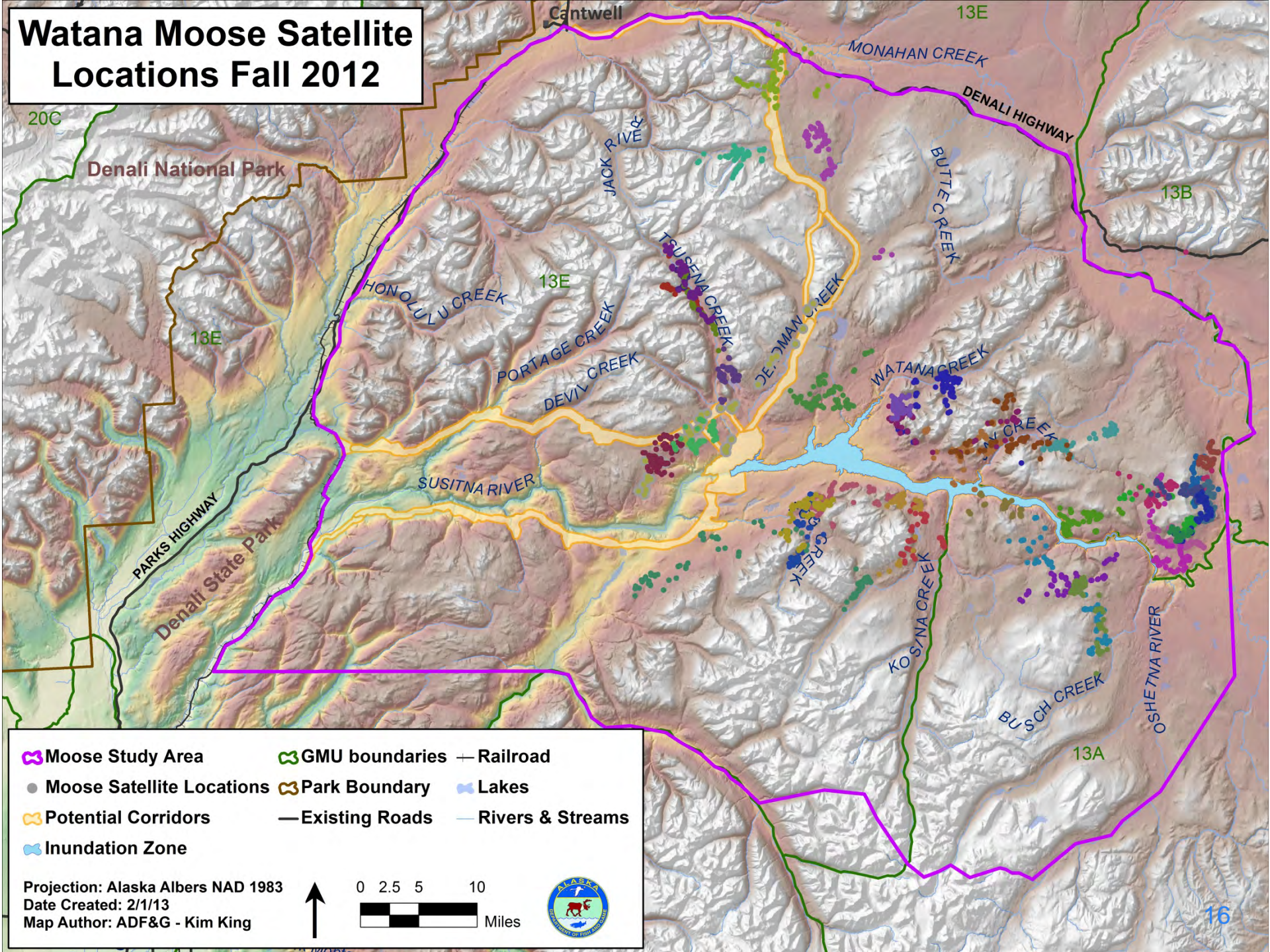
Photo by Becky Schwanke ADF&G



Photo by Becky Schwanke ADF&G

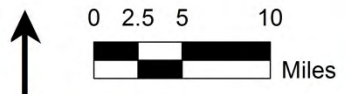
Collar Type	Sex	Oct 2012	Mar 2013	Total
VHF	Bulls	3	17	20
	Cows	7	33	40
GPS	Bulls	14	0	14
	Cows	26	0	26
TOTAL		50	50	100

Watana Moose Satellite Locations Fall 2012



- ⬮ Moose Study Area
- ⬮ GMU boundaries
- ⬮ Park Boundary
- ⬮ Potential Corridors
- ⬮ Inundation Zone
- + Railroad
- ⬮ Lakes
- Rivers & Streams
- Existing Roads

Projection: Alaska Albers NAD 1983
 Date Created: 2/1/13
 Map Author: ADF&G - Kim King



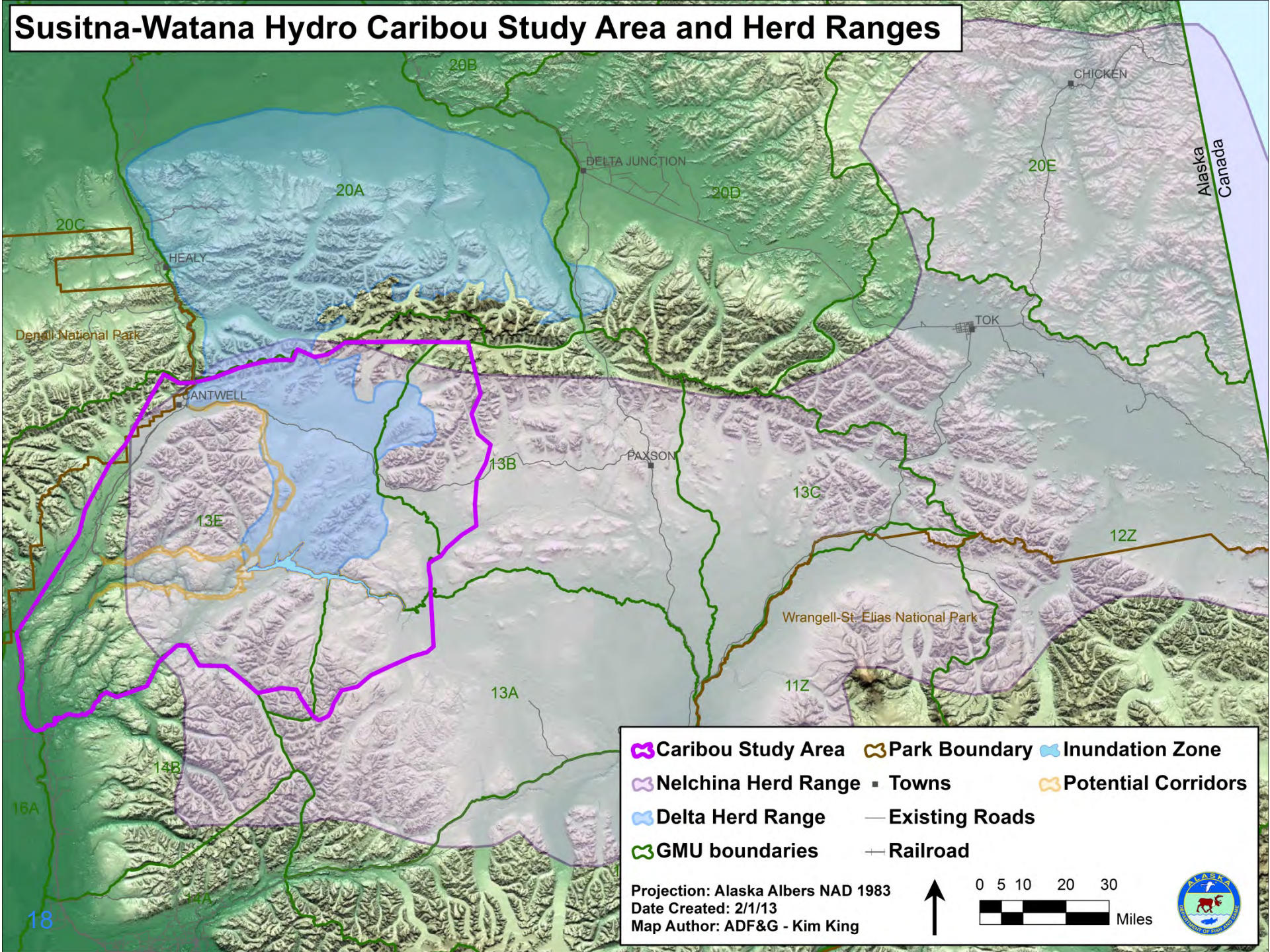
ADF&G is monitoring the distribution, abundance, movements, and productivity of Nelchina and Delta caribou in the Project vicinity.

This study involves:

- Monthly Telemetry of VHF Radio collars
- Monitoring ARGOS Satellite-linked GPS collars
- Calving Surveys

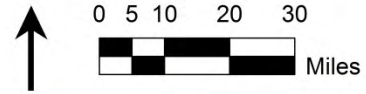


Sisitna-Watana Hydro Caribou Study Area and Herd Ranges



- ⬮ Caribou Study Area ⬮ Park Boundary ⬮ Inundation Zone
- ⬮ Nelchina Herd Range ▪ Towns ⬮ Potential Corridors
- ⬮ Delta Herd Range — Existing Roads
- ⬮ GMU boundaries —+— Railroad

Projection: Alaska Albers NAD 1983
 Date Created: 2/1/13
 Map Author: ADF&G - Kim King



90 Caribou VHF
and Satellite
Collars were
deployed in 2012.



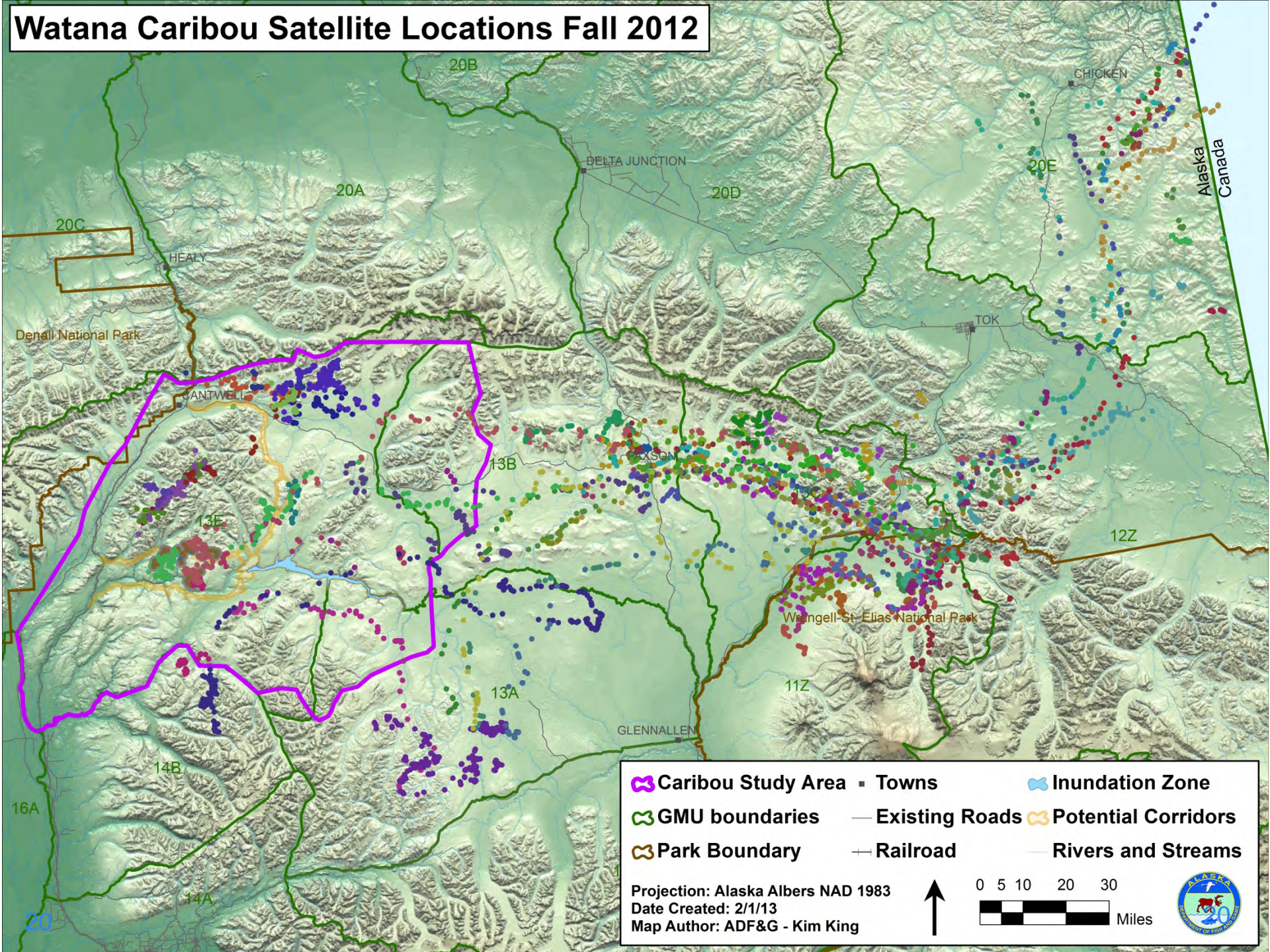
Photo by Kim King ADF&G



Photo by Kim King ADF&G

Collar Type	Sex	Apr 2012	Oct 2012	Total
VHF	Bulls	15	15	30
GPS	Bulls	8	10	18
	Cows	0	42	42
TOTAL		23	67	90

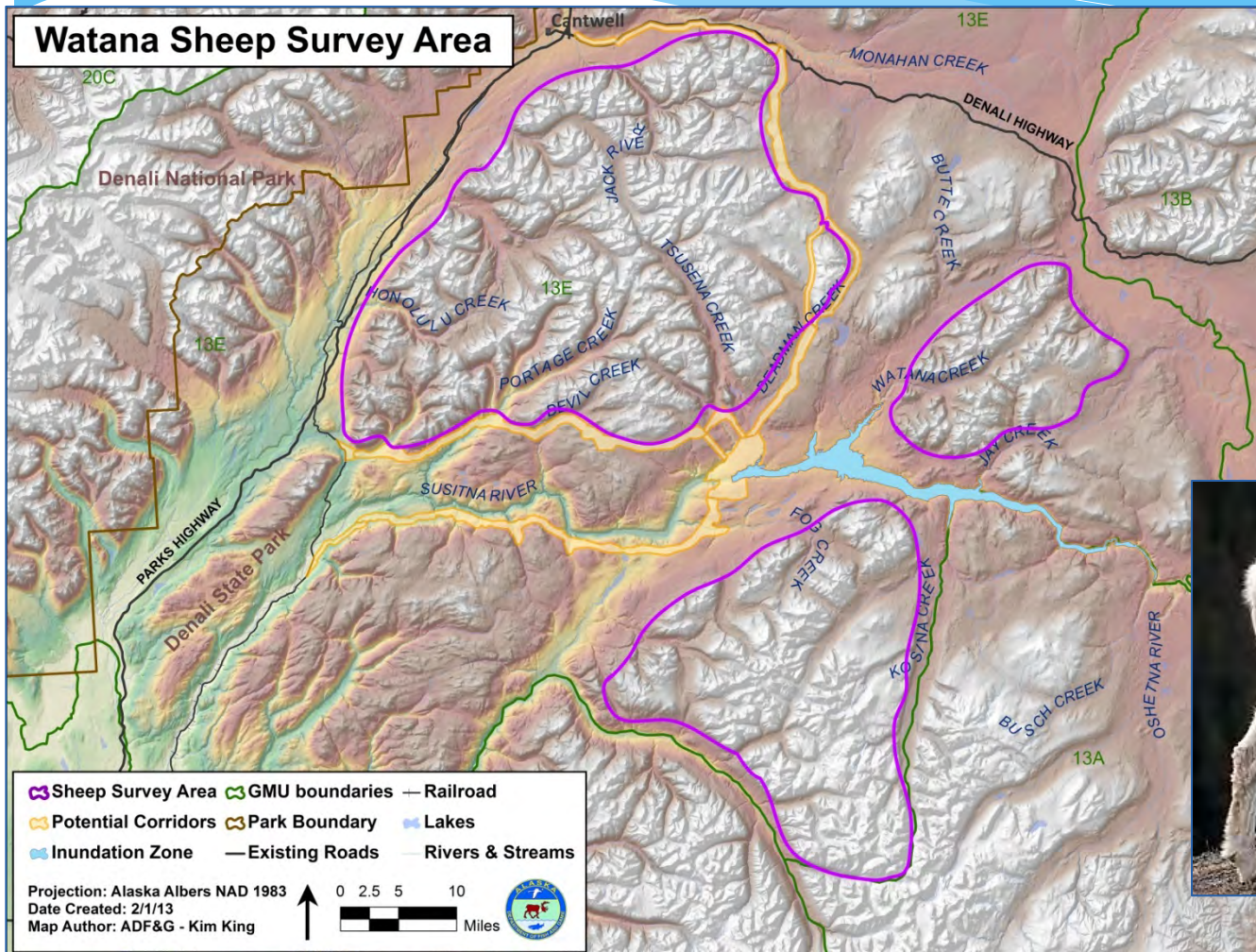
Watana Caribou Satellite Locations Fall 2012



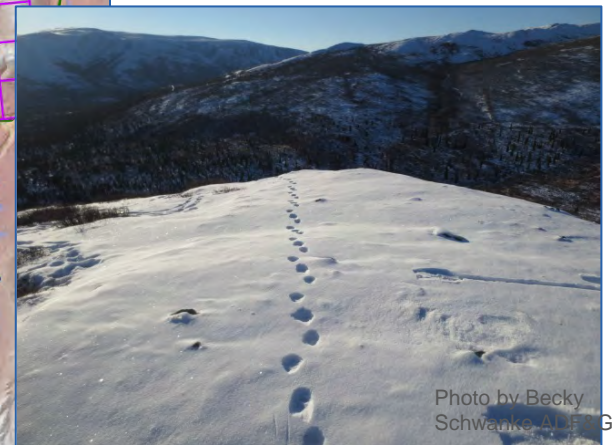
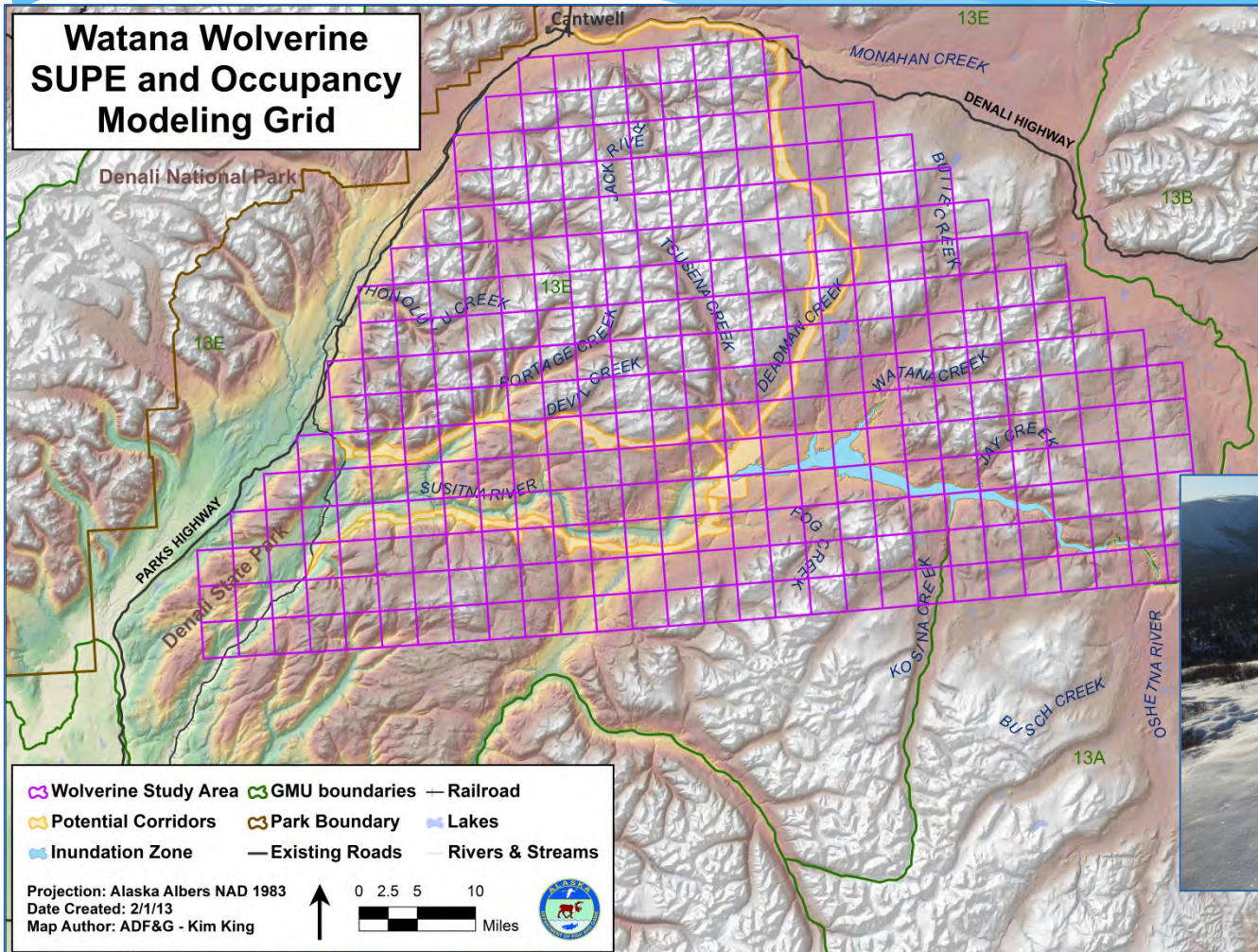
Caribou Study Area	Towns	Inundation Zone
GMU boundaries	Existing Roads	Potential Corridors
Park Boundary	Railroad	Rivers and Streams

Projection: Alaska Albers NAD 1983
 Date Created: 2/1/13
 Map Author: ADF&G - Kim King

ADF&G will fly a survey of all suitable Dall's Sheep habitat in the Project vicinity.

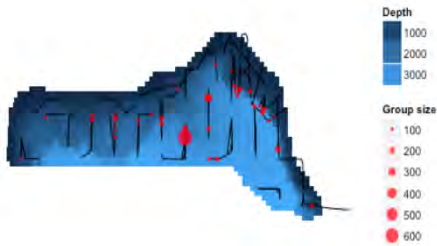


ADF&G will conduct a Sample Unit Probability Estimator (SUPE) and Occupancy Modeling on wolverines in the Project vicinity.

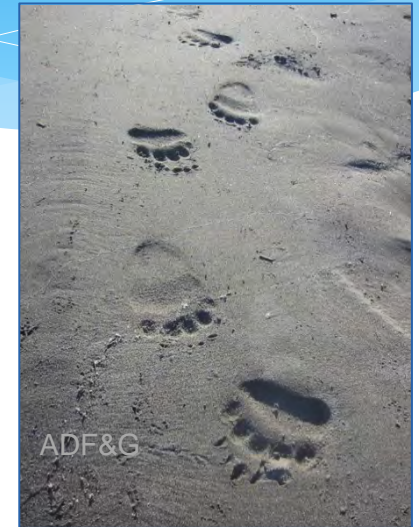
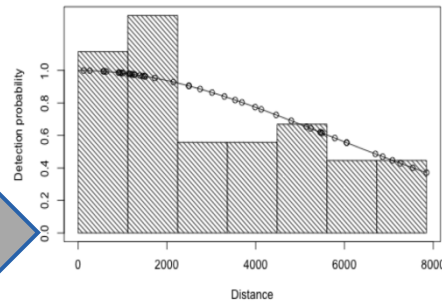


Spatial-line transect modeling will be used to estimate bear populations in the Project vicinity from ADF&G 2000-2004 data.

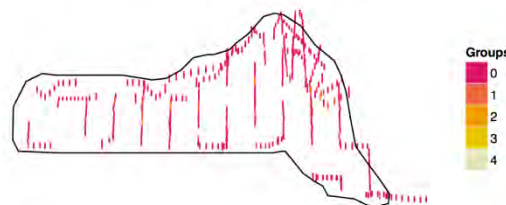
Collect spatially referenced data



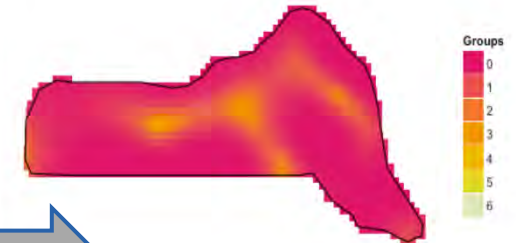
Fit detection function



Aggregate to segments

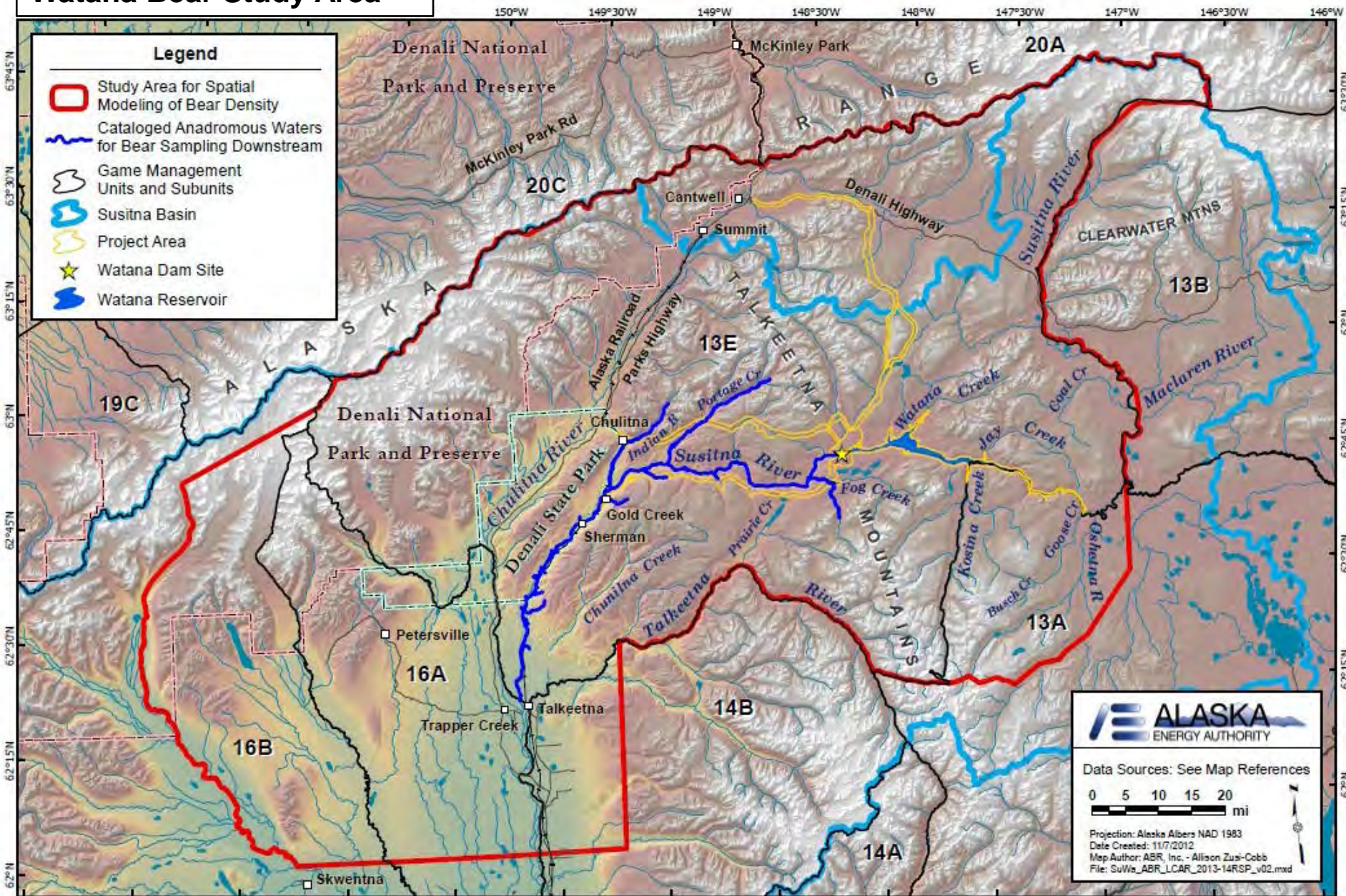


Fit spatial model



Spatial density surface estimation from distance sampling surveys
David L. Miller, Len Thomas, Laura Marshall

Watana Bear Study Area



Looking downstream from the proposed dam site

Mount McKinley

