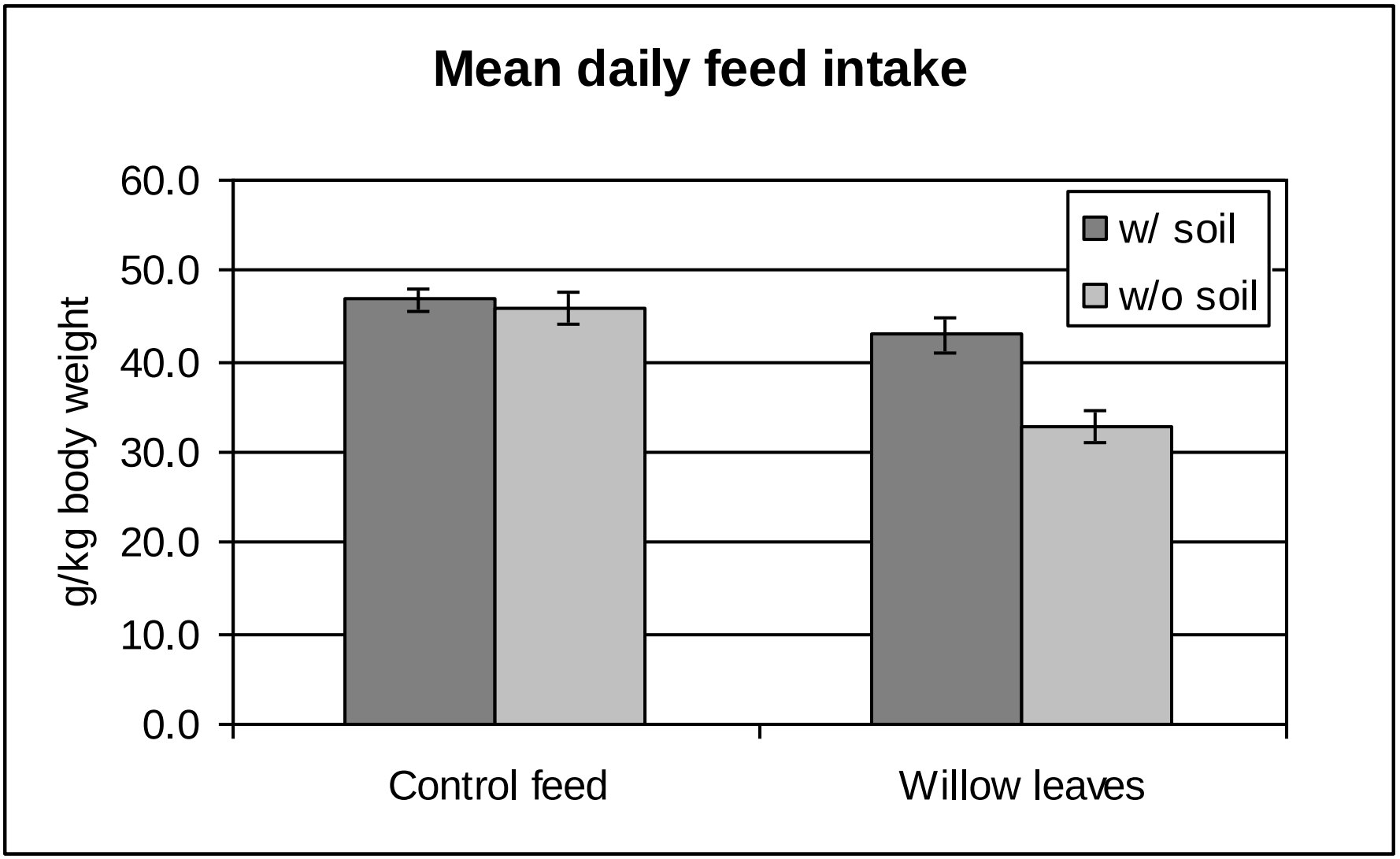
Working with local trappers to map mineral licks in the Brooks Range

Knut Kielland, IAB & Donna DiFolco, NPS

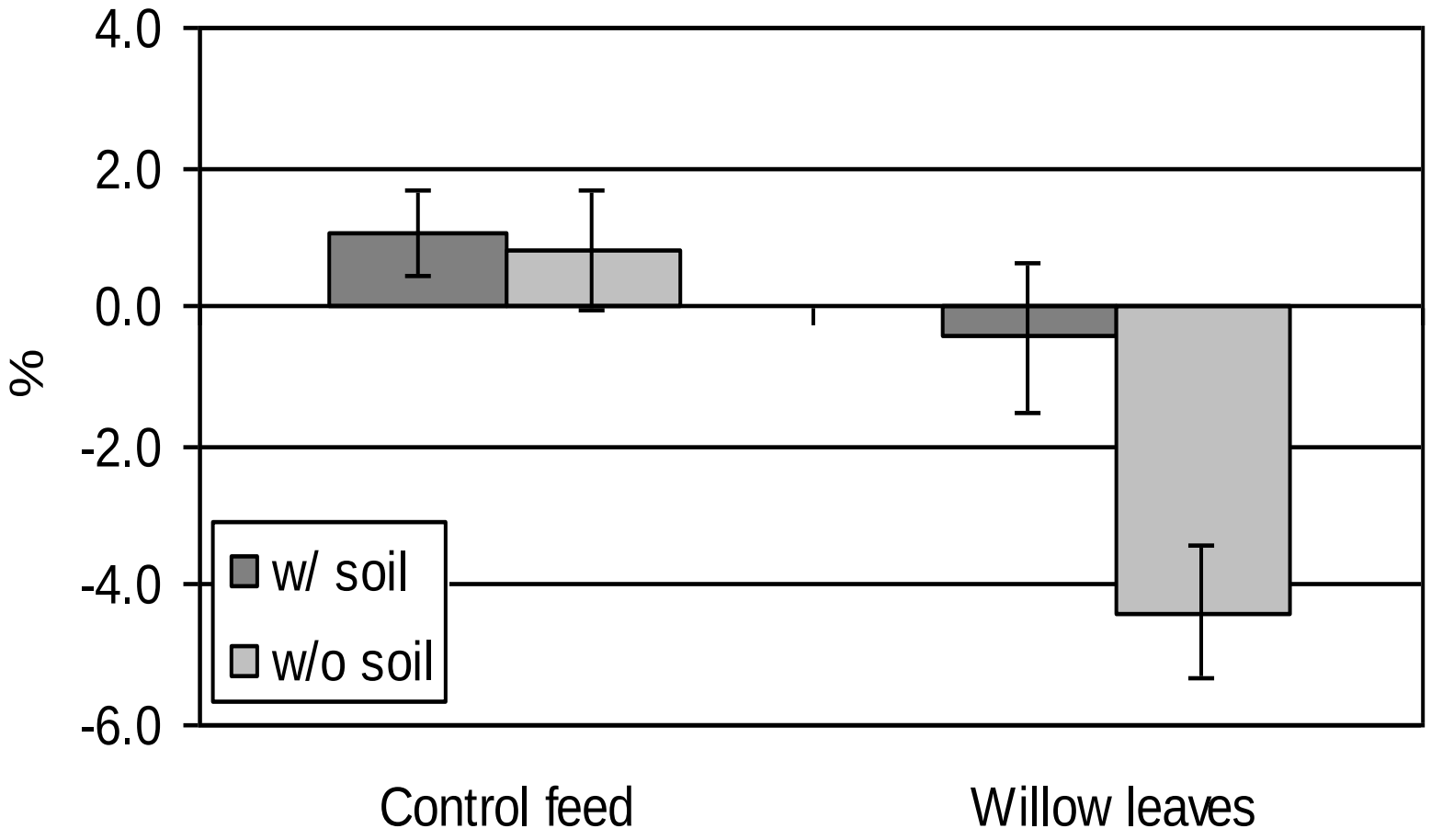
2018 BNZ LTER Symposium

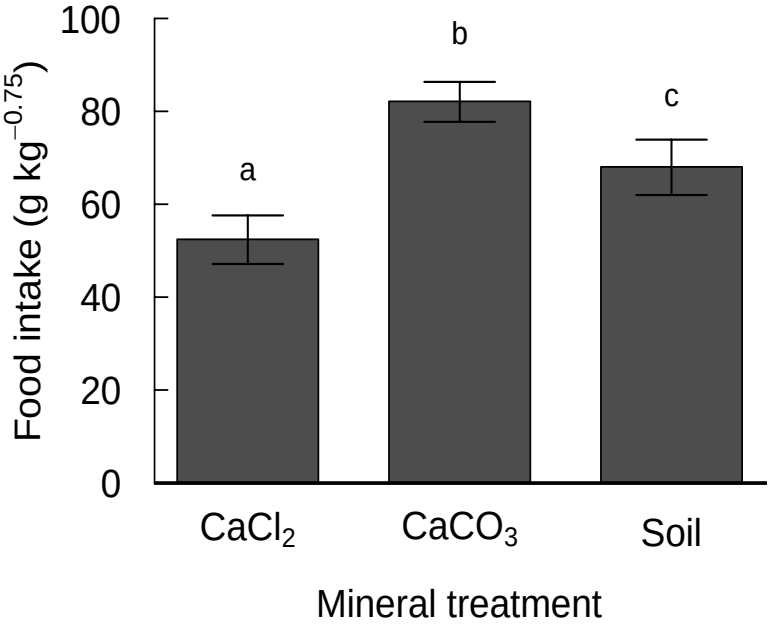
High concentrations of 2° compounds in CAG avoided by eating older-aged stems. Moreover the effects of 2° compounds can also be diluted by decreasing the the bark : wood ratio of forage stems selected when foraging. The common rejection of CAG twigs of both willow and birch is consistent with this idea.

Food intake in summer

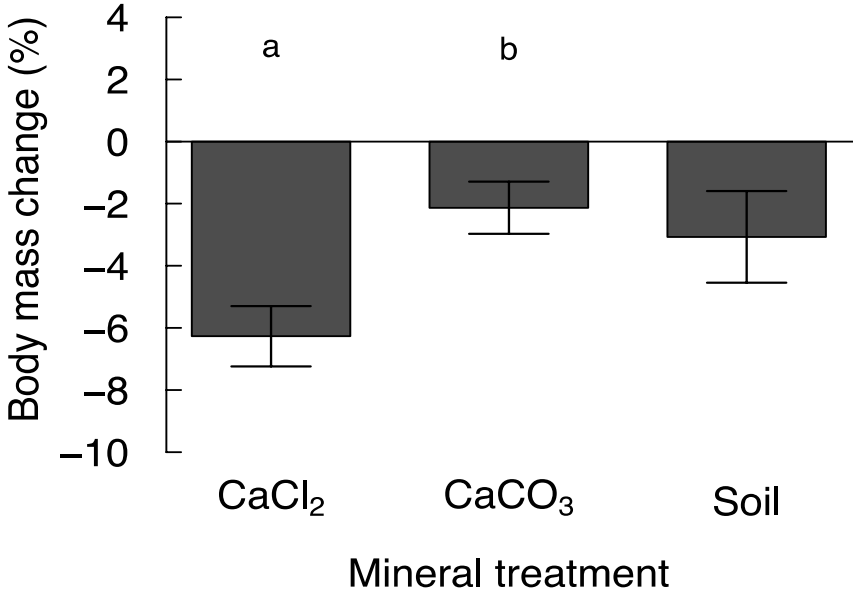


Mean body weight change





Access to mineral soil and $CaCO_3$ most enhance food intake…



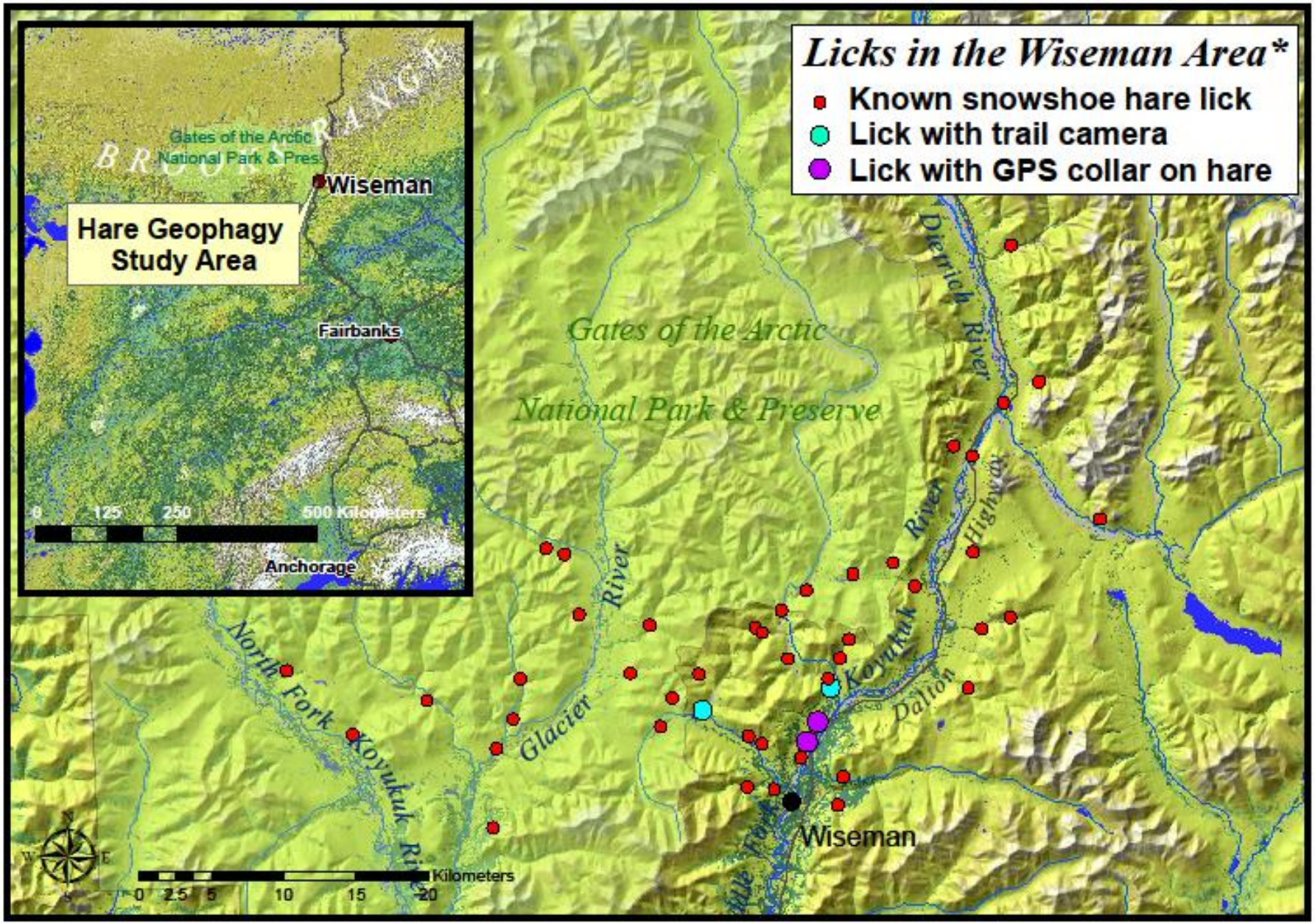
which reduces the rate of weight loss in captive snowshoe hares kept on a diet of winter-dormant felt-leaf willow stems.

Soil properties from The Hammon Bluff lick used by herbivores near Wiseman, Alaska

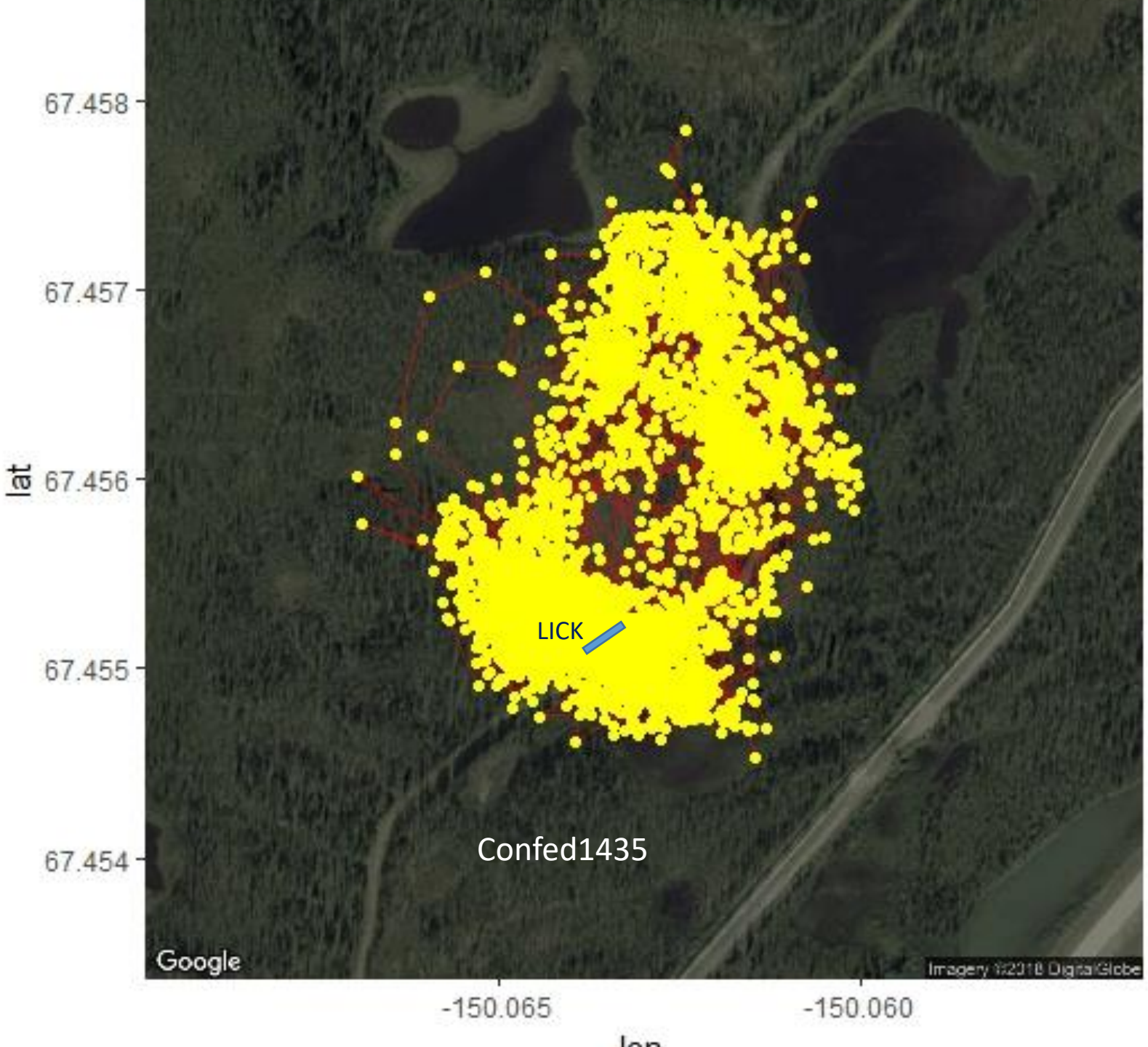
	Mean	±	SE
pH	8.9	±	0.0
$CaCO_3$ (%)	12.5	±	0.4
Clay (%)	4.8	±	0.2
CEC (meq.100 g^{-1})	1.4	±	0.1
Na (mg kg^{-1})	313	±	16
K (mg kg^{-1})	6492	±	246
Ca (mg kg^{-1})	14701	±	717
Mg (mg kg^{-1})	14537	±	246
P (mg kg^{-1})	802	±	12

Hares consume mineral soil (geophagy) in order to obtain critical nutrients and to combat the adverse effects of plant secondary compounds

Dusty
Mtn
Grotto
Mtn
Vermont
Dome
Vermont
Pass
Snowshoe
Pass
Smith Cr
Dome
Nolan
Placer
Mines
Pasco
Pass
Glacier
Pass
Midnight
Dome
BM 1205
Gaging Sta
Cabin
Wiseman
Landing Strip
Kalhabuk
Mountain
Bluecloud
Mountain
Landing Strip
Placer
Mine
Cabins
Cabin
GATES
OF
Jennie
Creek
Lake
Linda Creek
Landing Strip
Minnie Creek
Lake
Middle
Fork
Wiseman
Creek
Nolan Creek
Lake
Prospects
Minnie
Creek
Washington
Yankee
Creek
Hammond
Grotto
Creek
River


Licks in the Wiseman Area*
Known snowshoe hare lick
Lick with trail camera
Lick with GPS collar on hare
Hare Geophagy Study Area
Gates of the Arctic National Park & Preserve
Wiseman
Fairbanks
Anchorage
0 125 250 500 Kilometers
Dietrich River
Koyukuk River
Dalton Highway
Glacier River
North Fork Koyukuk River
Middle Fork Koyukuk River
Kilometers
0 2.5 5 10 15 20


Bushnell
M HARE CAM 11 19°F-7°C
10-14-2017 19:58:09


67.458
67.457
67.456
67.455
67.454
lat
LICK
Confed1435
Google
Imagery ©2018 DigitalGlobe
-150.065
-150.060

Hammond River (high cover)			
Month	#Visits/Day	% Night	
August	5.6	29%	
September	9.0	52%	
October	9.3	65%	
November	3.8	95%	

Nolan Flats (low cover)		
Month	#Visits/Day	% Night
October	2.8	100%
November	1.0	100%
December	1.0	100%
January	0.4	100%
February	0.3	100%