

# Identifying Shorebird Breeding Sites to protect suitable Shorebird Nesting Habitat on Military Lands in Interior Alaska

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# Why we do what we do

- Contractor with DOD
- “Maximize military mission support and recreational access/use while sustaining the environment and built infrastructure while enhancing, conserving and minimizing impact to natural, cultural and subsistence resources”
- Cooperative Conservation - Collaborate with federal and state agencies, and non-profits [Sikes Act, INRMP]



# Shorebird Project

- Funder: U.S. Army Garrison Alaska
- 3-year study to ensure conservation success of migrating shorebirds on Fort Wainwright's Training Lands

## Main Objective

- Determine the range of shorebird species inhabiting military lands in Interior Alaska and their associated breeding habitats

# Scope of Work (SOW)

## Task 1 - Shorebird Surveys

- Determine the range of species inhabiting military lands as well as their distribution
- Estimate probability of detection (repeat sampling framework)
- Target the breeding distribution of shorebirds

## Task 2 - Shorebird Occupancy Modeling

- Analysis of the habitats that shorebirds occupy
- Identify most suitable habitat for each present species

# Meeting ASG Objectives

## ASG Overarching Goals

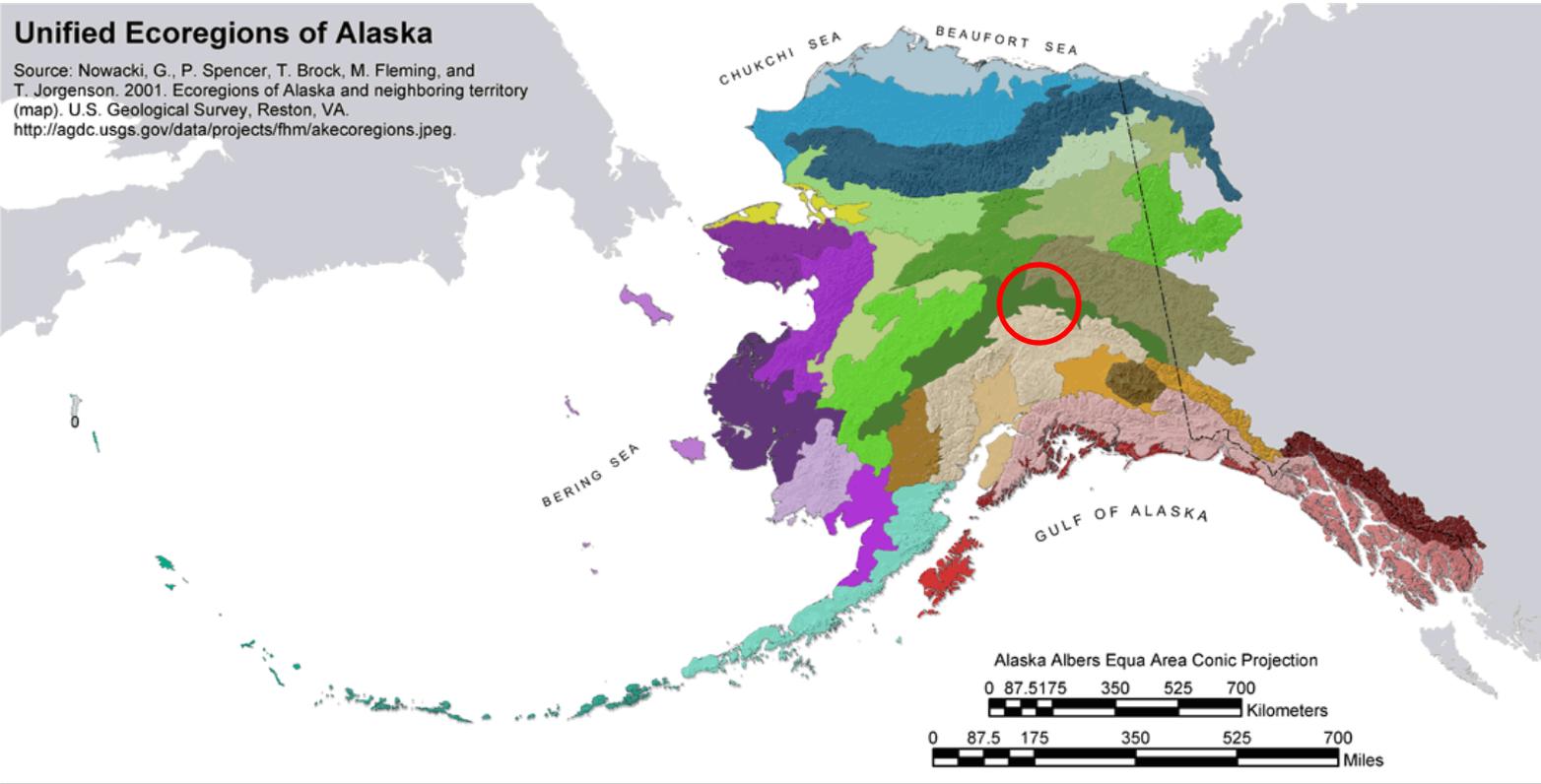
- Identify shorebird habitats prone to human disturbance and develop mitigation prescriptions to reduce negative impacts

## BCR 4 Specific Goals

- Develop and implement standardized methods for estimating densities of shorebirds in boreal forest and upland habitats
- Develop habitat-based models to predict the occurrence and distribution of breeding shorebirds on areas that are difficult to access

# Study Area(s)

BCR 4



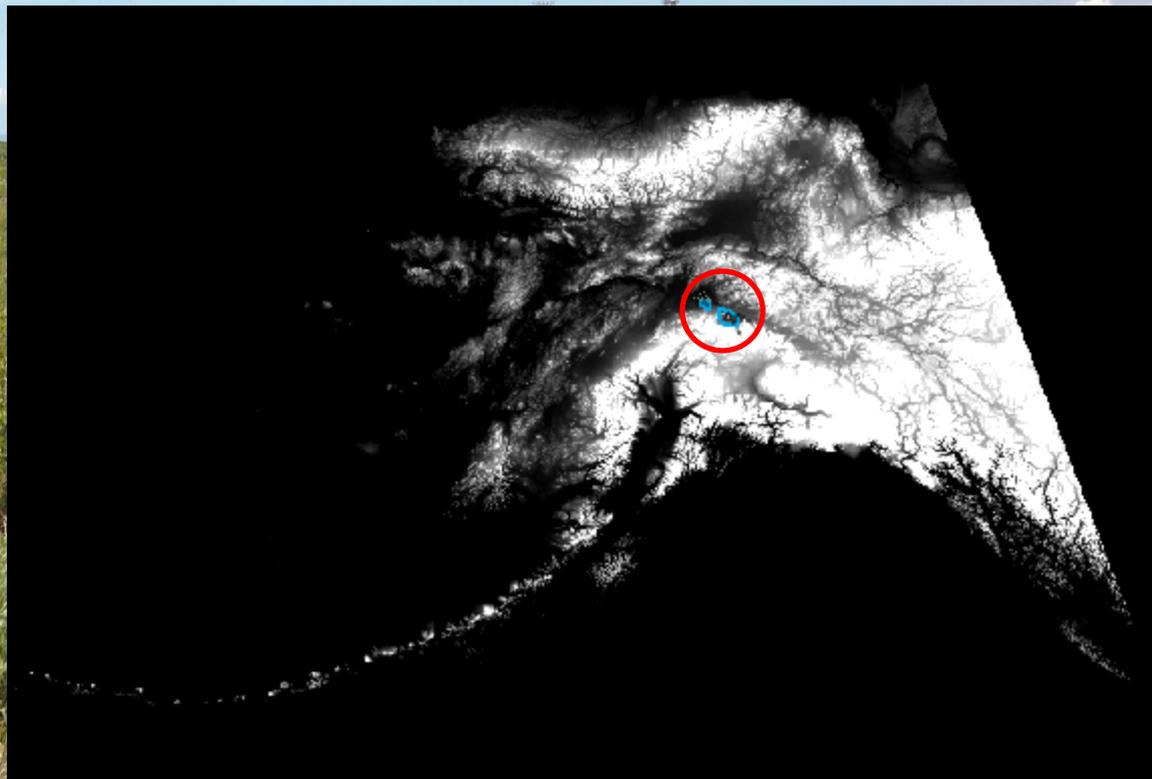
Polar		Temperate Continental		Temperate Coastal	
<b>Arctic Tundra</b>	<b>Subarctic Tundra</b>	<b>Beringia Boreal</b>	<b>Coast Mountains Boreal</b>	<b>Hypermaritime Forests</b>	<b>Hypermaritime Meadows</b>
Beaufort Coastal Plain	Ahklun Mountains	Davidson Mountains	Alaska Range	Chugach-St. Elias Mountains	Alaska Peninsula
Brooks Foothills	Bering Sea Islands	Kobuk Ridges and Valleys	Cook Inlet Basin	Alexander Archipelago	Aleutian Islands
Brooks Range	Bristol Bay Lowlands	Kuskokwim Mountains	Copper River Basin	Kodiak Island	
<b>Bering Tundra</b>	Nulato Hills	North Ogilvie Mountains	Kluane Range	Gulf of Alaska Coast	
Kotzebue Sound Lowlands	Seward Peninsula	Ray Mountains	Lime Hills	Boundary Ranges	
	Yukon-Kuskokwim Delta	Tanana-Kuskokwim Lowlands	Wrangell Mountains		
		Yukon River Lowlands			
		Yukon-Old Crow Basin			
		Yukon-Tanana Uplands			

Map created by Shane T. Feirer, The Nature Conservancy in Alaska, August 2004

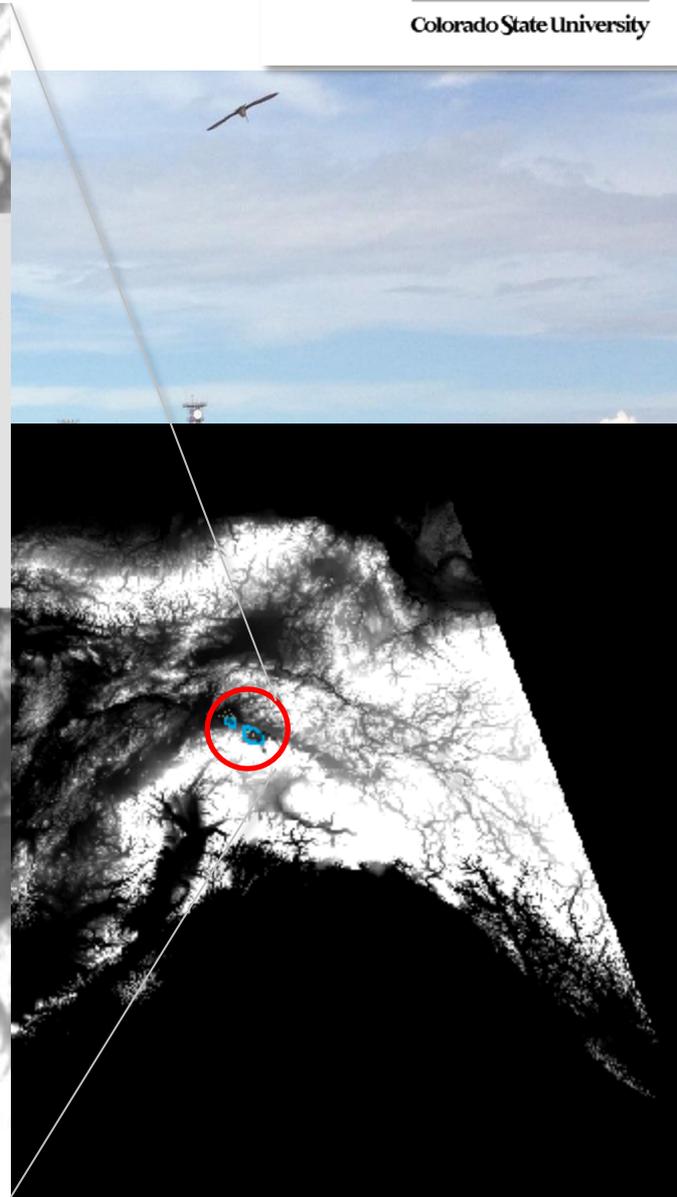
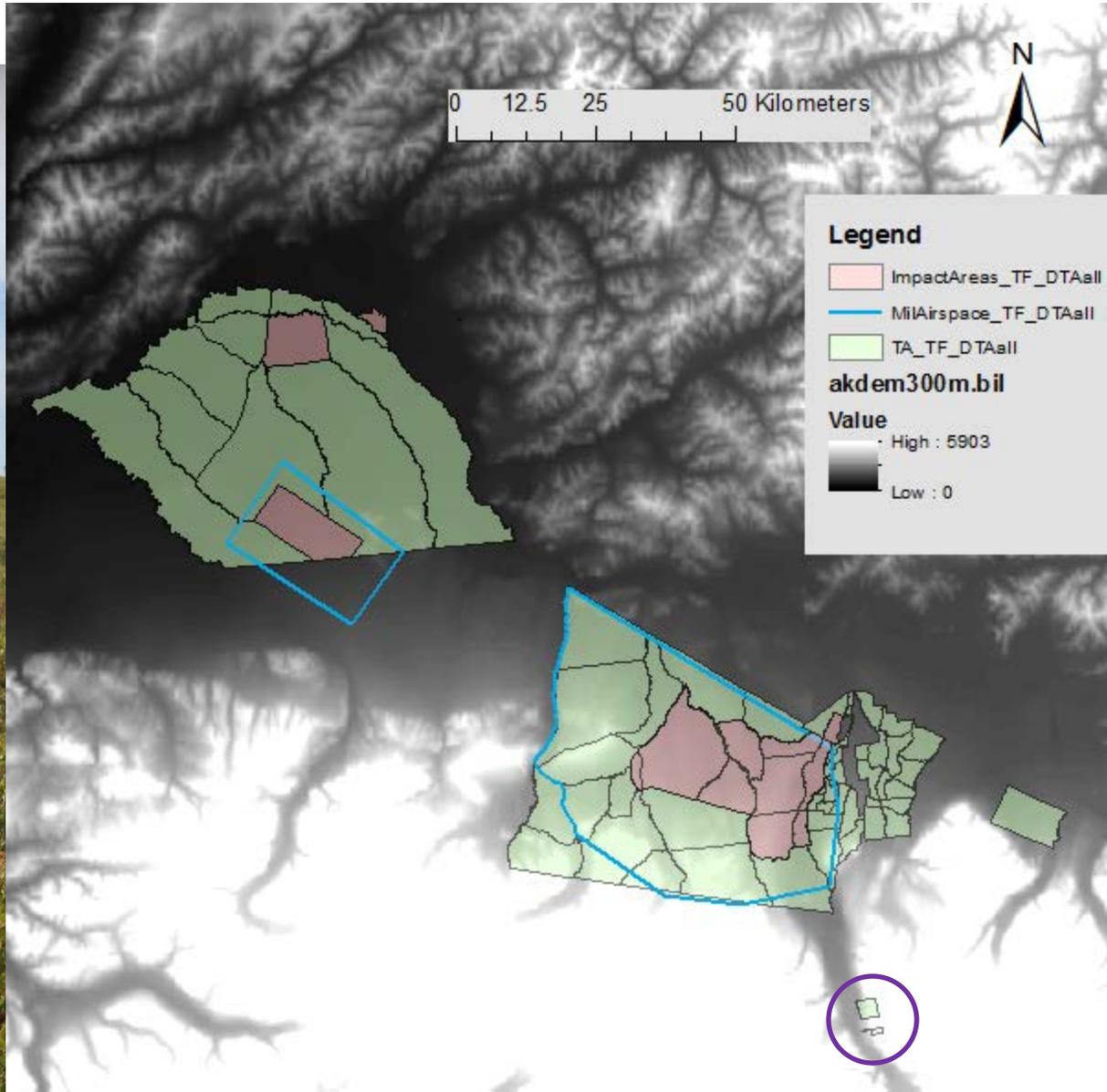


# Study Area(s)

- 640.000 acres TFTA
- 660.000 acres DTA lands



# Study Area(s)



# Shorebird Project 2015



Center for  
Environmental  
Management

MILITARY LANDS

Colorado State University

- Repeat Linear River Surveys (TFTA)
- Habitat Classification (DTA East and West)
- Whimbrel Breeding Population (DTA East)



# Shorebird Project 2015

## Repeat Linear River Surveys (TFTA)

- Double observer
- Repeat sampling (2x per season)
- Non-motorized boat
- Between 5am – 12pm
- Detection Point Count
  - Species, Distance, Detection Type
- GPS presence points, track recording
- 1 Point Count at least once per hour!



# Shorebird Project 2015

## Habitat Classification



# Shorebird Project 2015

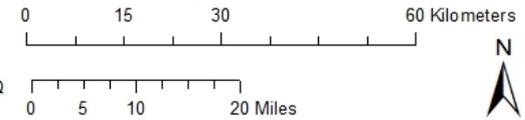
## Habitat Classification

- Viereck 2C1Q
- Elevation
- Patch size
- Collected detailed habitat parameters

## Overview Wildlife DTA West July 2015

### Legend

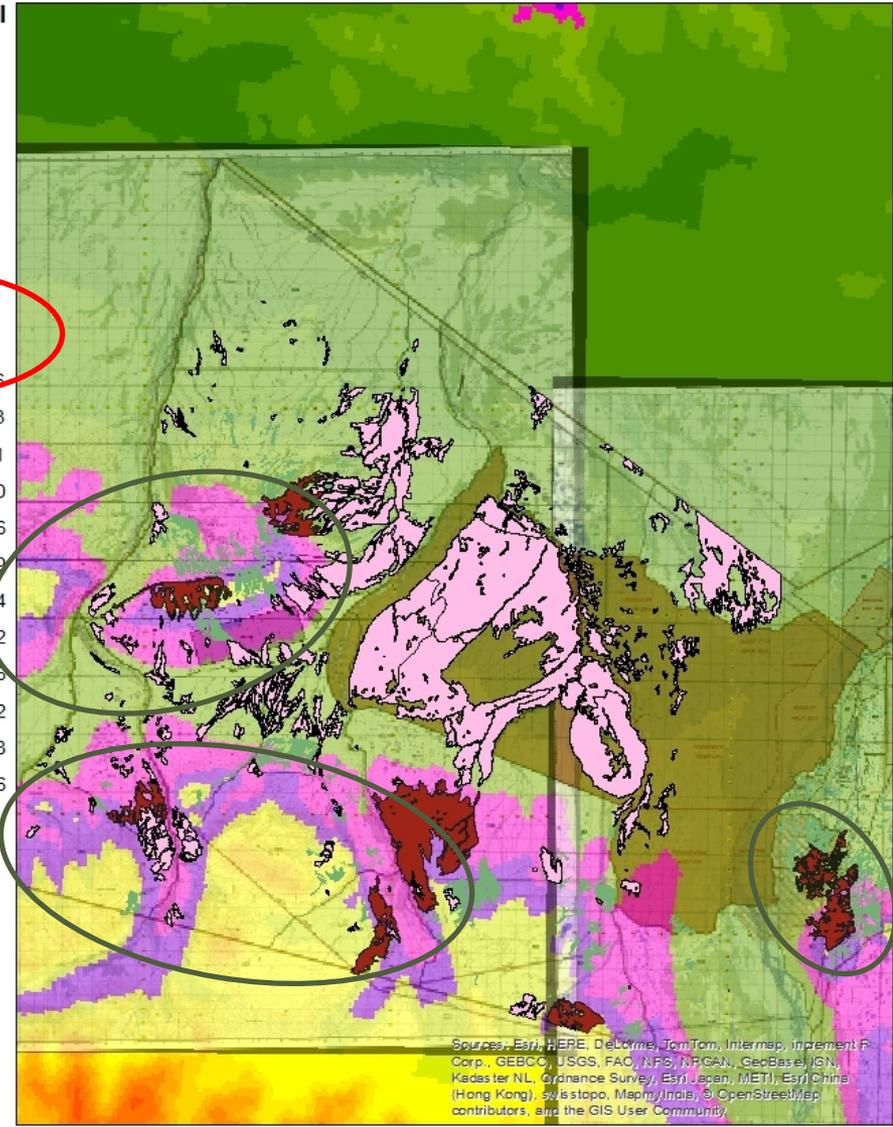
- veg\_map\_2C2A
- Habitat\_Whimbrel\_Over1000Acres\_2C1Q
- Habitat\_Whimbrel\_all\_2C1Q



### akdem300m.tif

#### Value

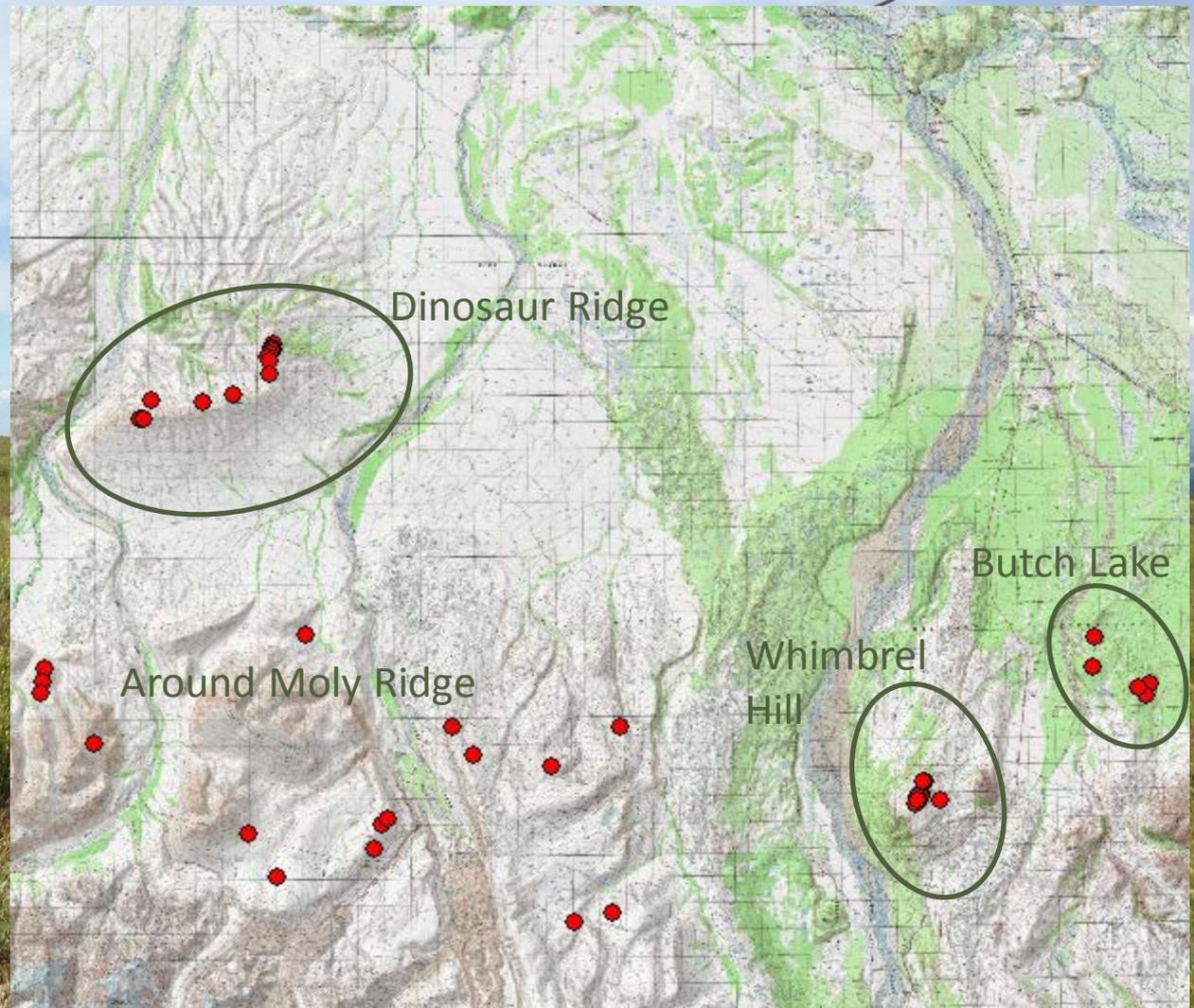
- 0 - 52
- 52.01 - 161
- 161.1 - 278
- 278.1 - 404
- 404.1 - 538
- 538.1 - 677
- 677.1 - 821
- 821.1 - 967
- 967.1 - 1,116
- 1,117 - 1,263
- 1,264 - 1,411
- 1,412 - 1,560
- 1,561 - 1,716
- 1,717 - 1,909
- 1,910 - 2,114
- 2,115 - 2,412
- 2,413 - 2,816
- 2,817 - 3,322
- 3,323 - 4,138
- 4,139 - 6,036



# Shorebird Project 2015

## Habitat Classification

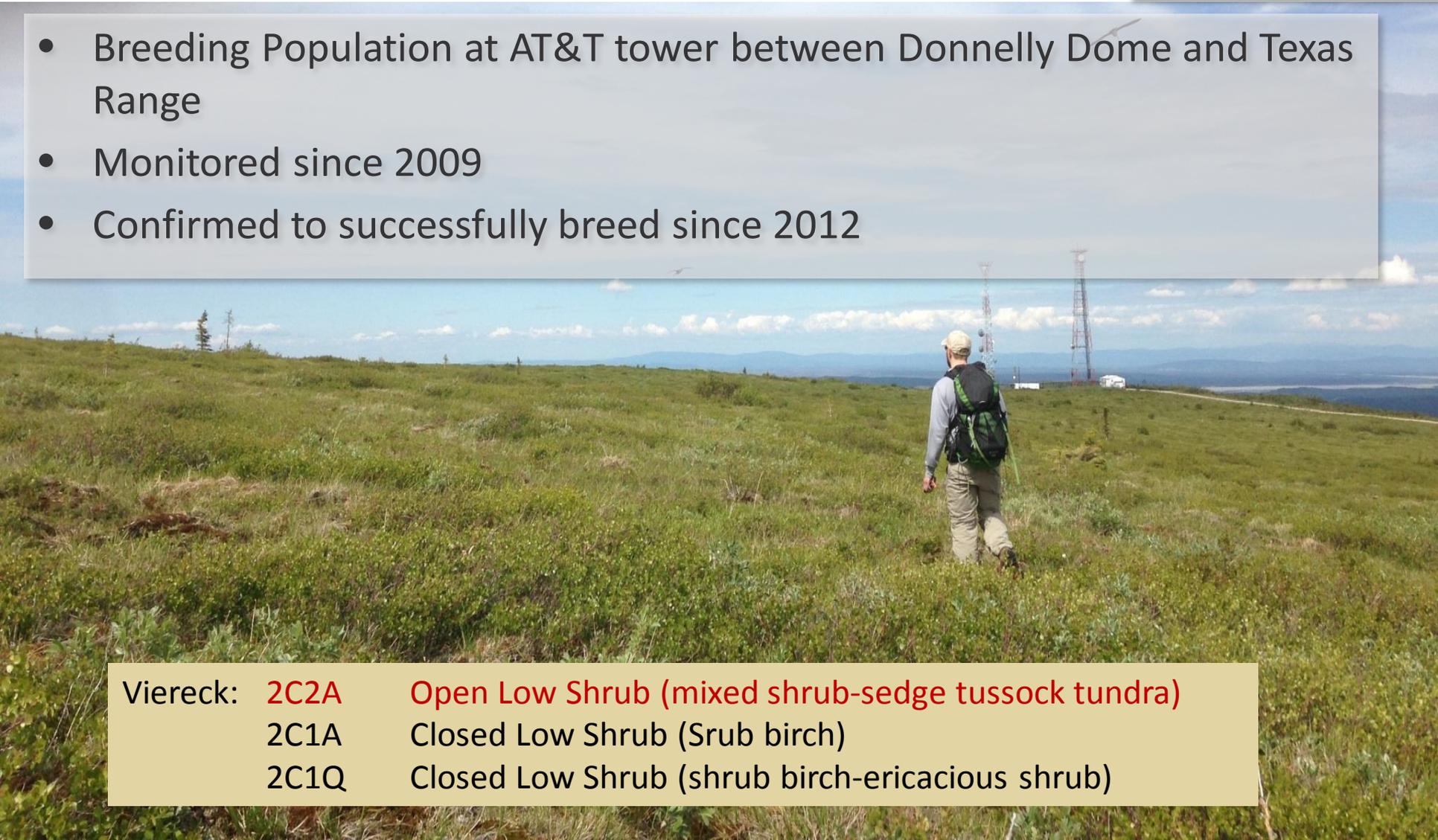
- 44 locations across whole DTA
- All very different micro habitats
- ➔ Whimbrel Hill habitat is highly unique





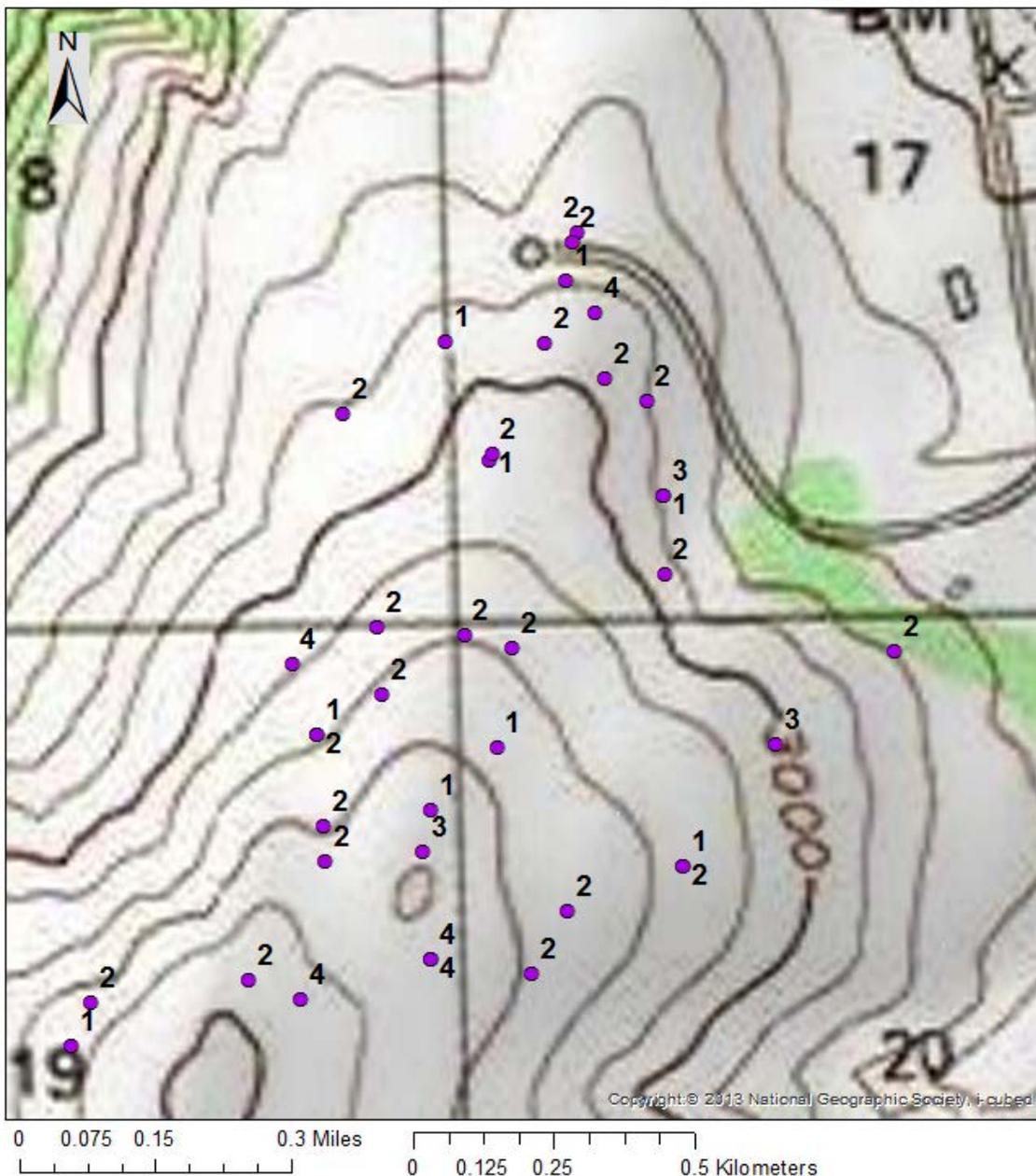
# Breeding Whimbrel Colony

- Breeding Population at AT&T tower between Donnelly Dome and Texas Range
- Monitored since 2009
- Confirmed to successfully breed since 2012



Viereck: **2C2A**      **Open Low Shrub (mixed shrub-sedge tussock tundra)**  
2C1A      Closed Low Shrub (Shrub birch)  
2C1Q      Closed Low Shrub (shrub birch-ericaceous shrub)

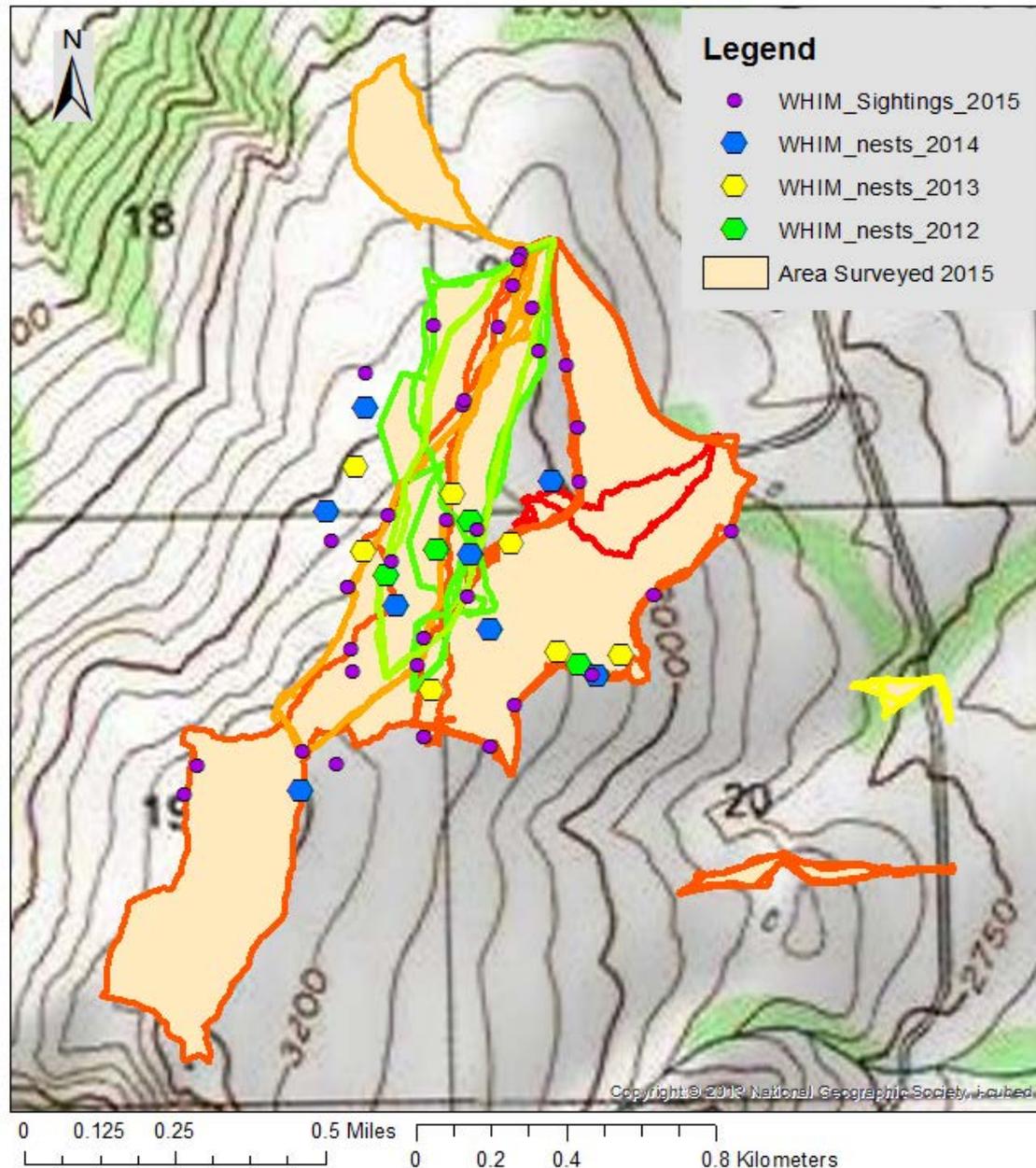
# Whimbrel 2015 - Identified Breeding Pairs



- This year > 20 breeding pairs were identified and eggshells found
- Last breeding pair present 07/02



# Whimbrel 2015 - Survey Tracks



- 2012 – 2014: Nests identified between 05/27 and 06/20
- 2012-2014: Nests hatched during 06/20 and 07/01
- Early breeding season?



# Species of Interest

## TFTA

### Main

- Lesser Yellowlegs
- Solitary Sandpiper
- Spotted Sandpiper

### Others

- Least Sandpiper
- Wilson's Snipe
- Killdeer
- Red-necked Phalarope

## DTA

### Main

- Whimbrel
- Surfbirds
- Lesser Yellowlegs
- Solitary Sandpiper
- Upland Sandpiper

### Others

- American Golden-Plover
- Least Sandpiper
- Marbled Godwit
- Short-billed Dowitcher

# Study Design Difficulties

- Study area size
- Different ecosystems
- Multiple species
- Limited man power
- Micro-habitat differences



# Study design 'so-far'

## Combination of liner and plot sampling

### Upland

- Repeat plot sampling &
- Distance sampling

### Lowland

- Repeat liner river transects &
- Distance sampling &
- Plot sampling?

## Factors impacting plot choice

- Habitat
- Elevation
- Patch size
- Wetland index
- Distance to wetlands
- Additional geophysical parameters



Thank You for your  
attention and input!

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