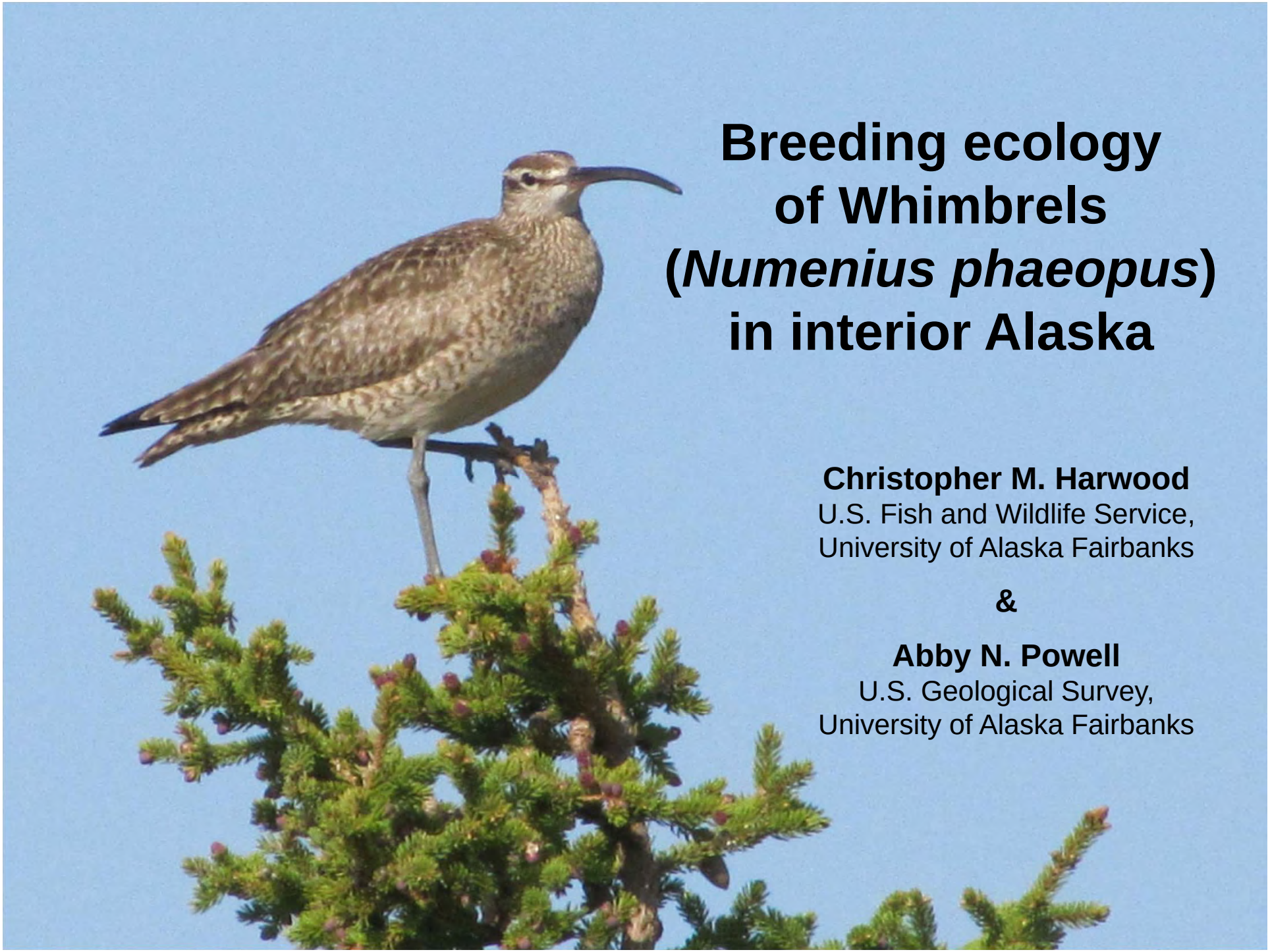

Breeding ecology of Whimbrels (*Numenius phaeopus*) in interior Alaska

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U.S. Fish and Wildlife Service,
University of Alaska Fairbanks

&

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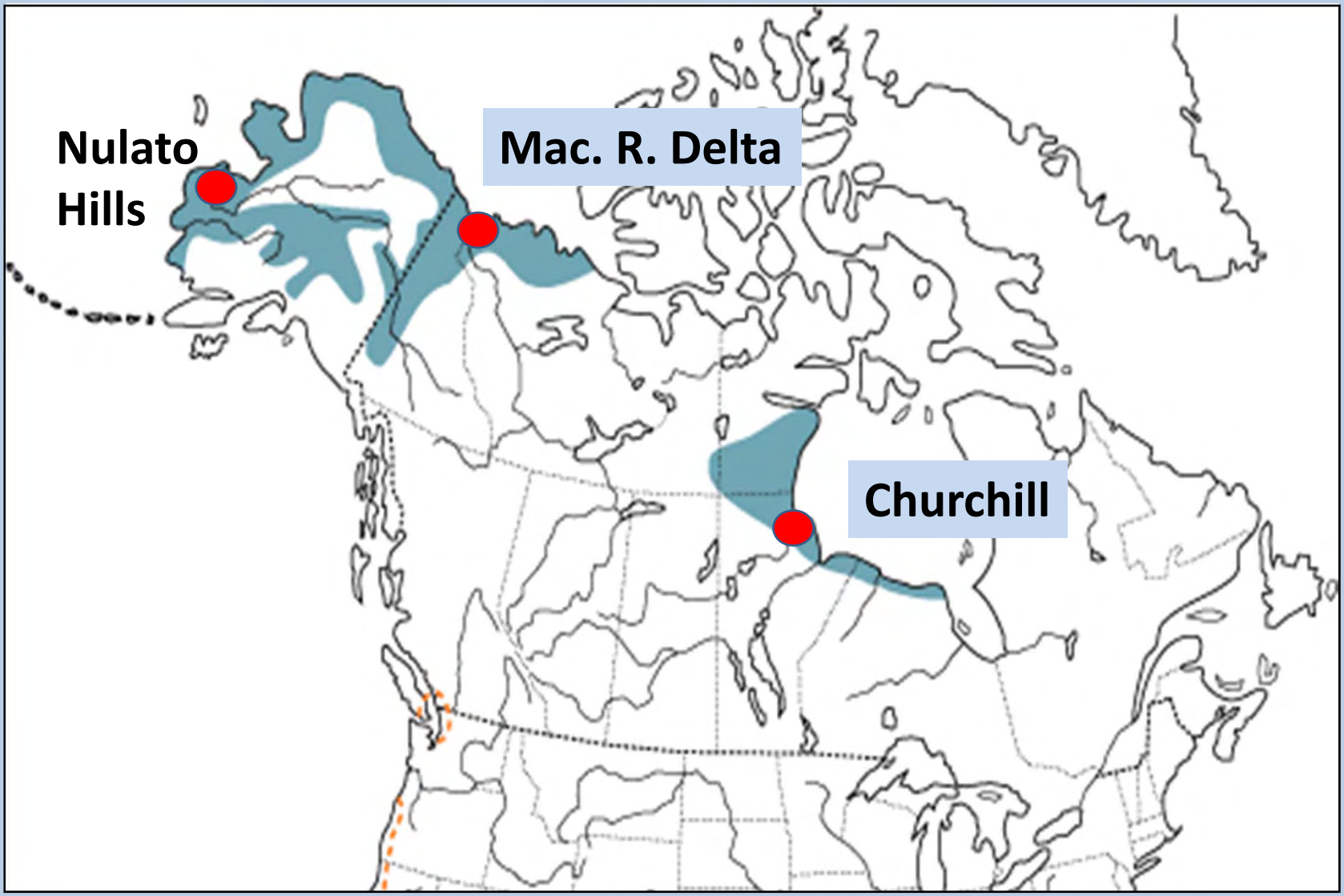
U.S. Geological Survey,
University of Alaska Fairbanks

N. American breeding Whimbrels

- **Recognized in Canadian, US, & Alaska shorebird plans**
- **“Species of Conservation Concern” –**
  - **7 of 8 USFWS regions nationally**
  - **4 of 5 Bird Conservation Regions in Alaska**

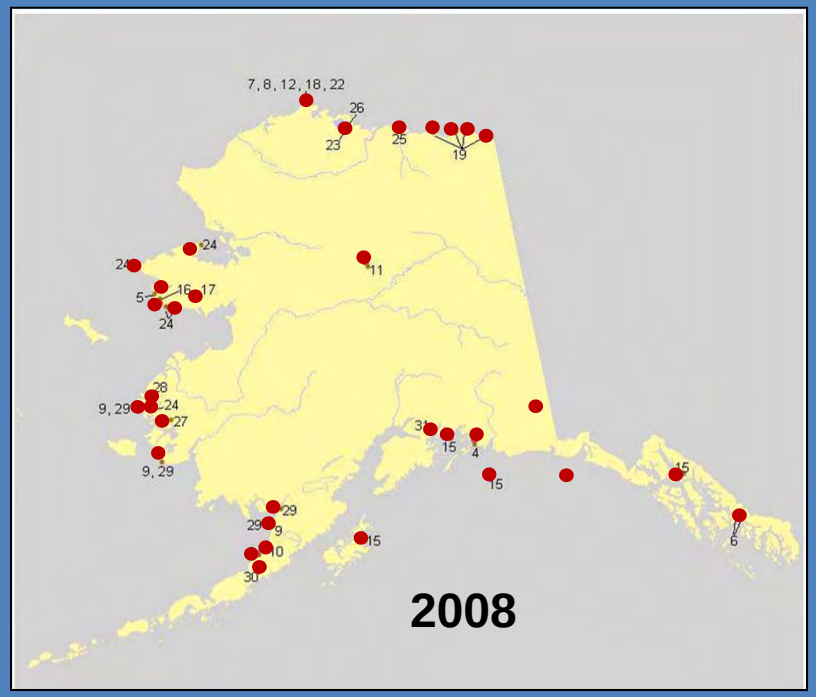
Whimbrel breeding distribution in North America

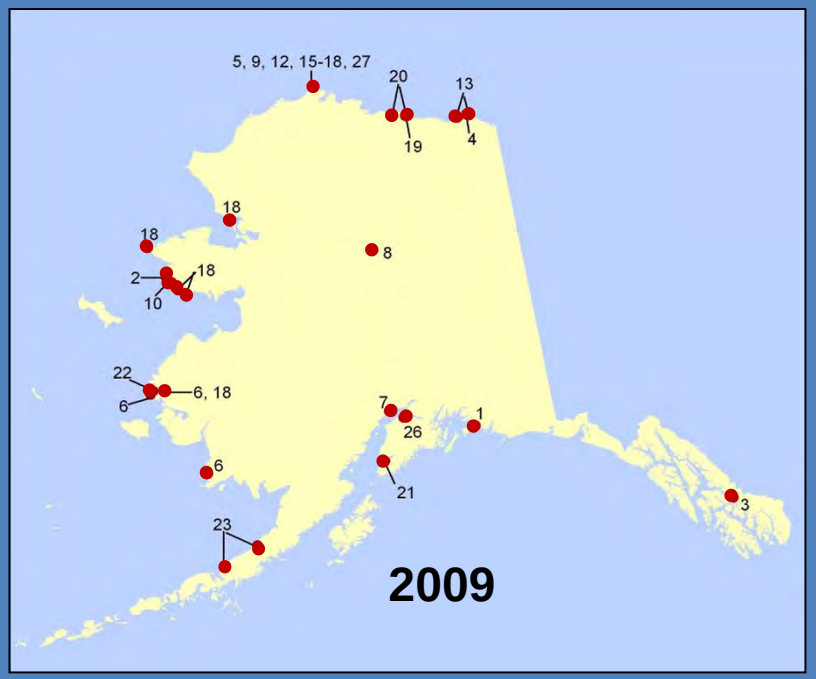


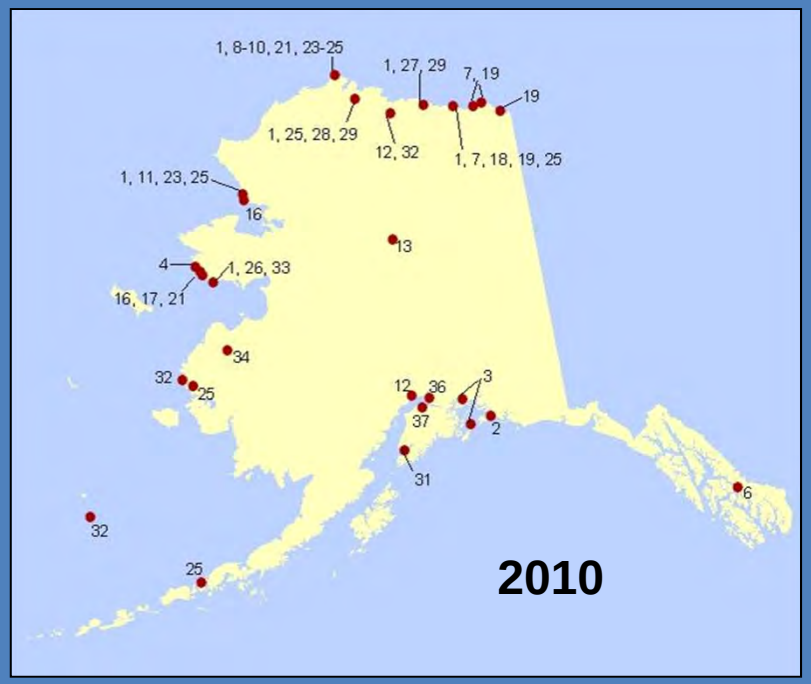
Map modified from Skeel and Mallory (1996)

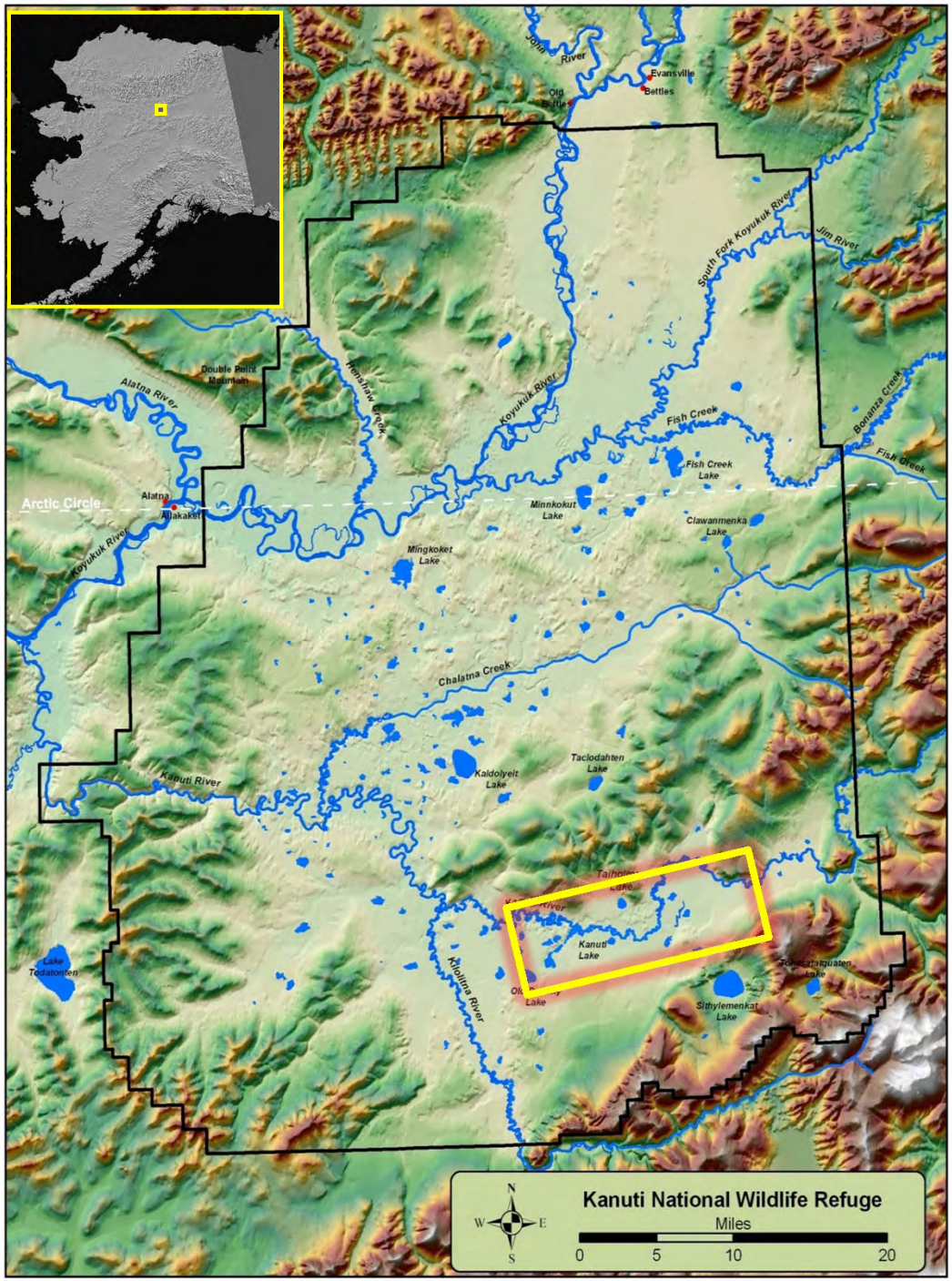
Locations of shorebird studies in Alaska, 2008-10

(AK Shorebird Group 2008, 2009, 2010)





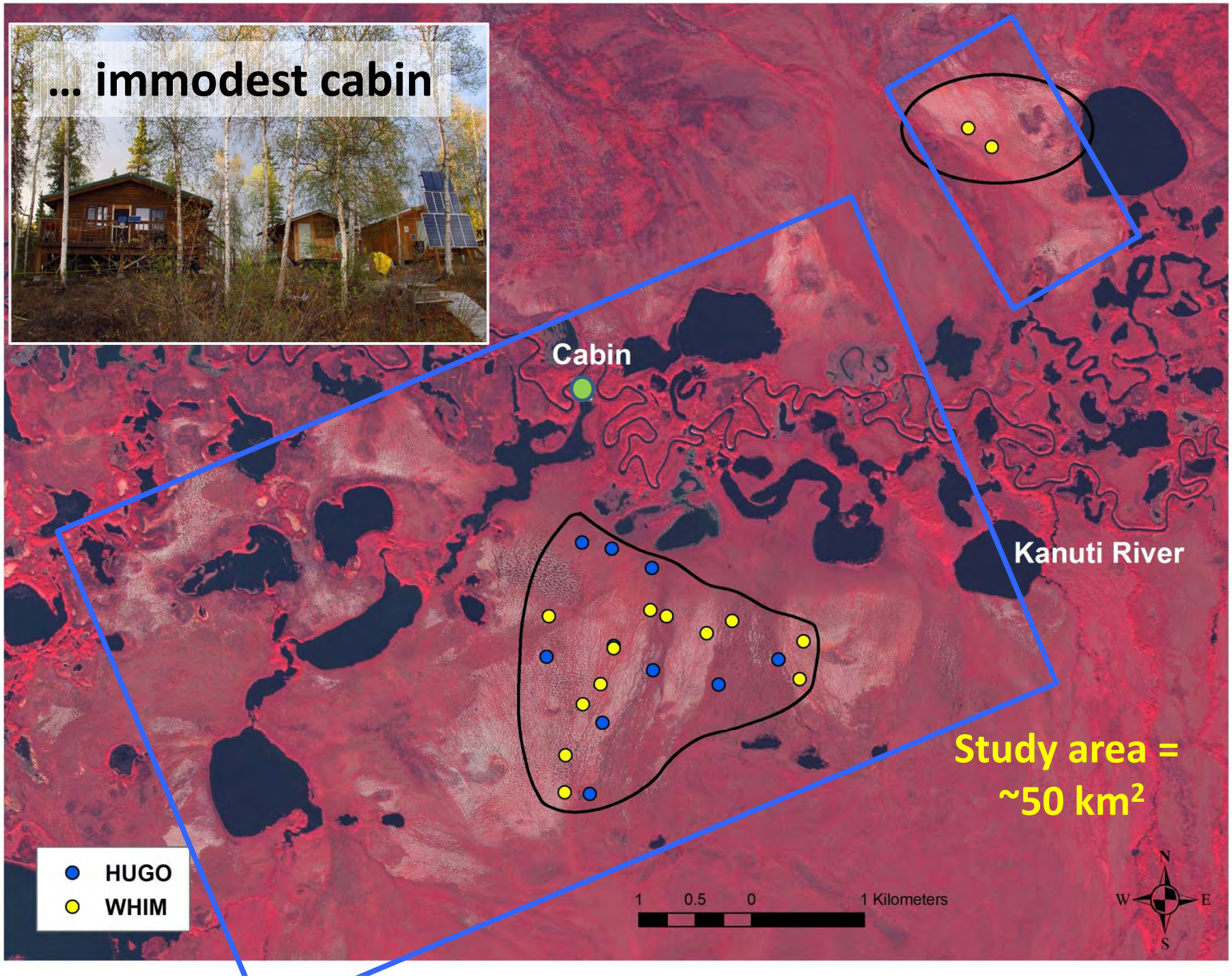


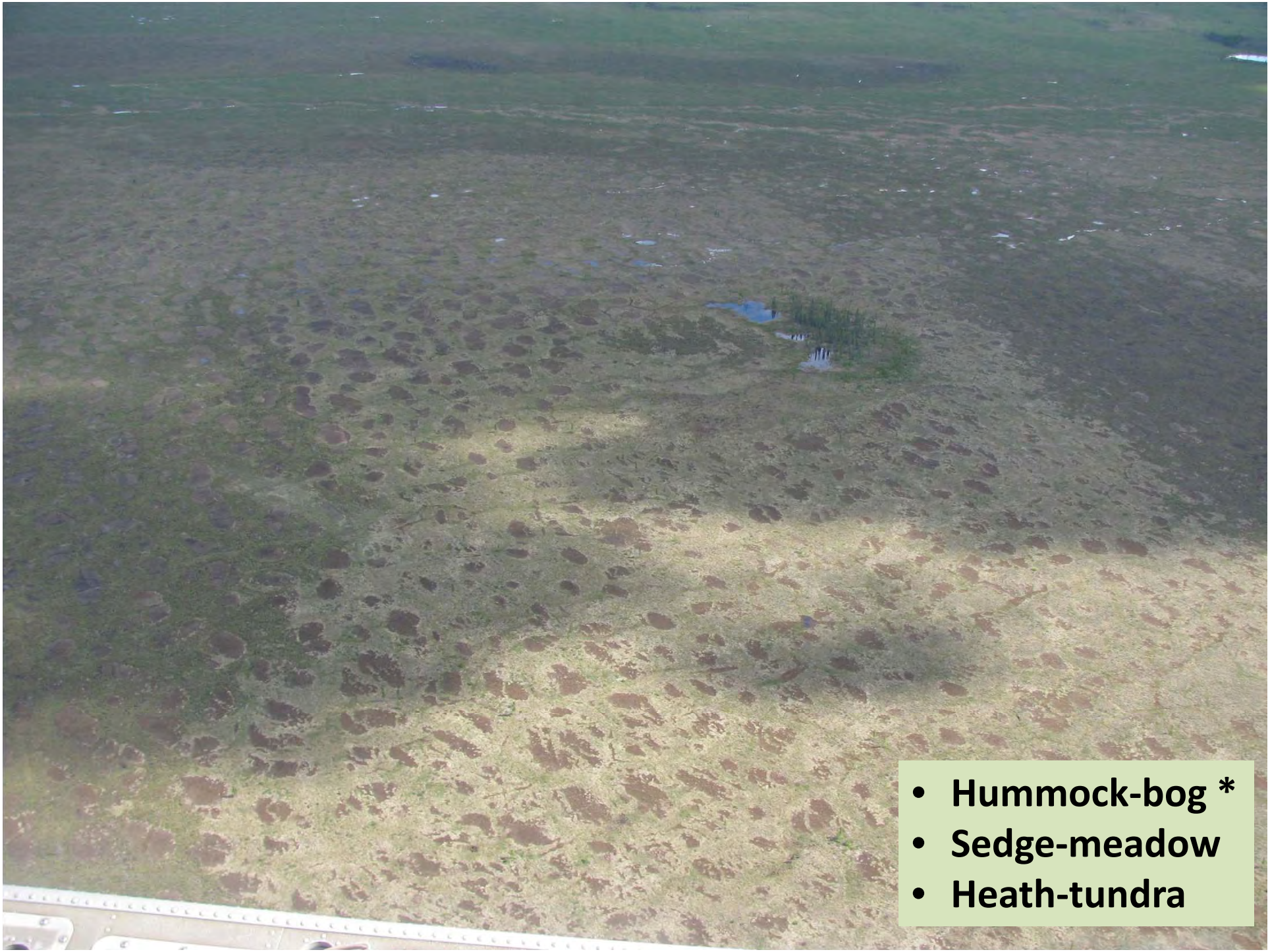


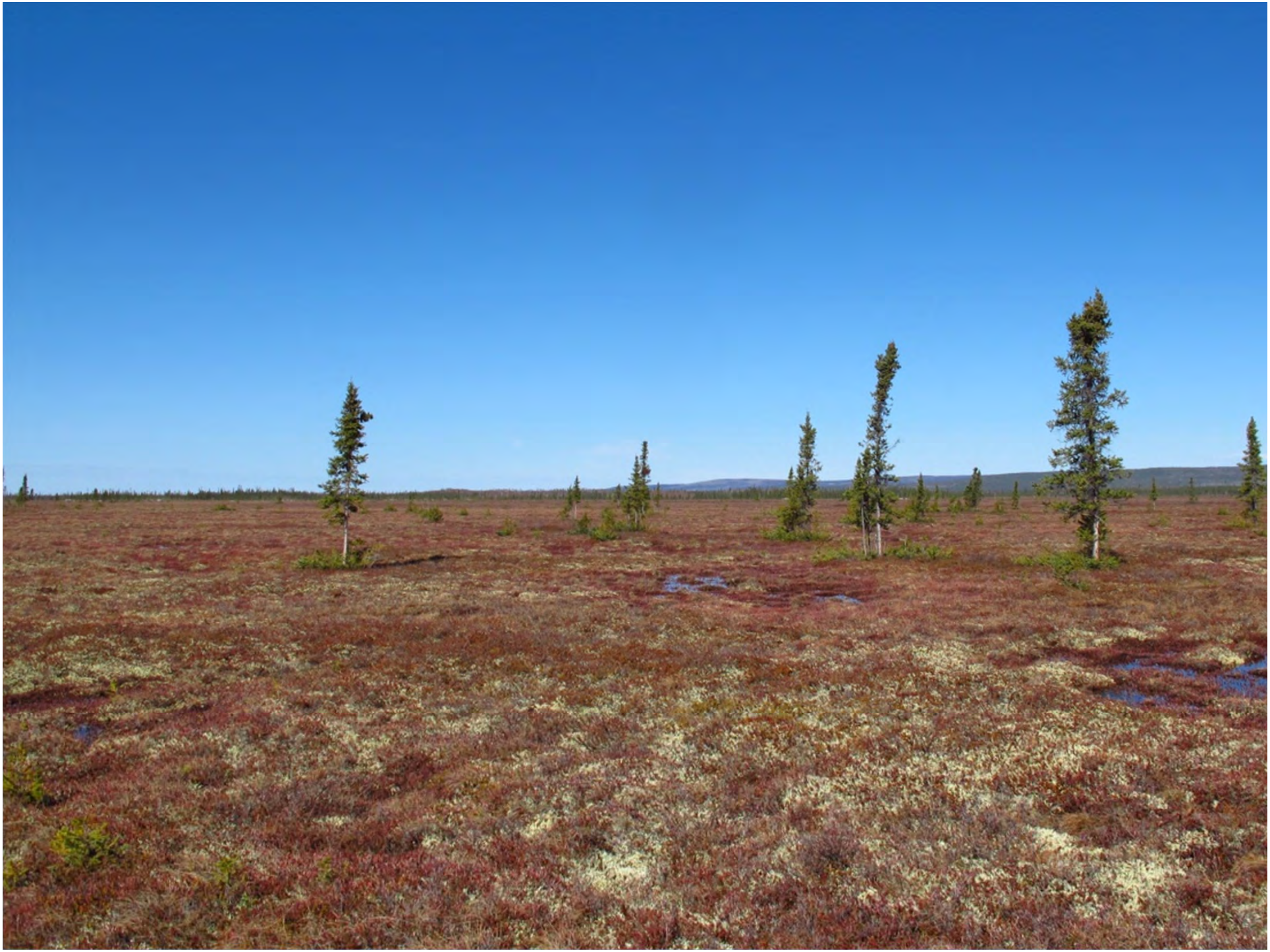
Boreal Wetlands

Black Spruce Forest

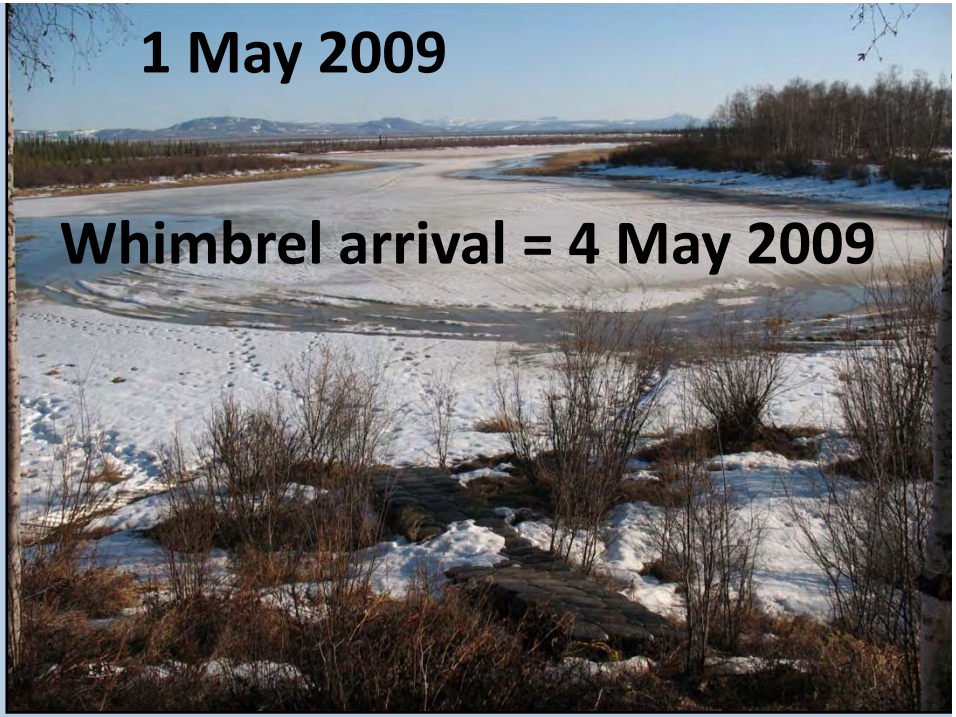
Lowland Tundra


… immodest cabin
Cabin
Kanuti River
Study area =
~50 km²
HUGO
WHIM
1 0.5 0 1 Kilometers
N
W
E
S


• Hummock-bog *
• Sedge-meadow
• Heath-tundra

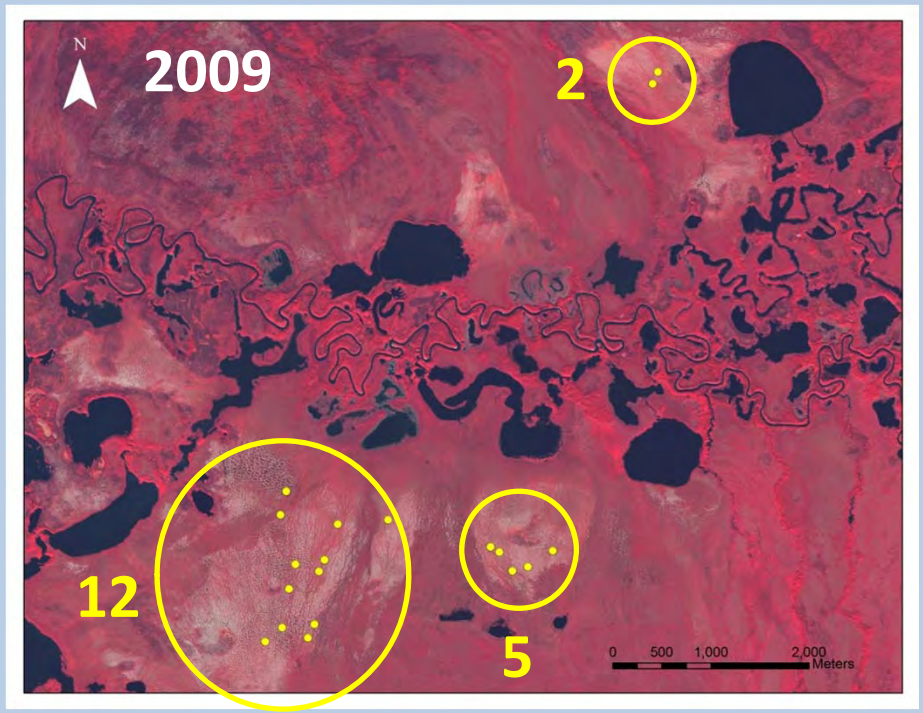


1 May 2008 (photo date)
Whimbrel arrival = 6 May 2008


1 May 2009
Whimbrel arrival = 4 May 2009

2 May 2010
Whimbrel arrival = 8 May 2010
Nest initiation begins 2 wk later

3 May 2011
Whimbrel arrival = 6 May 2011



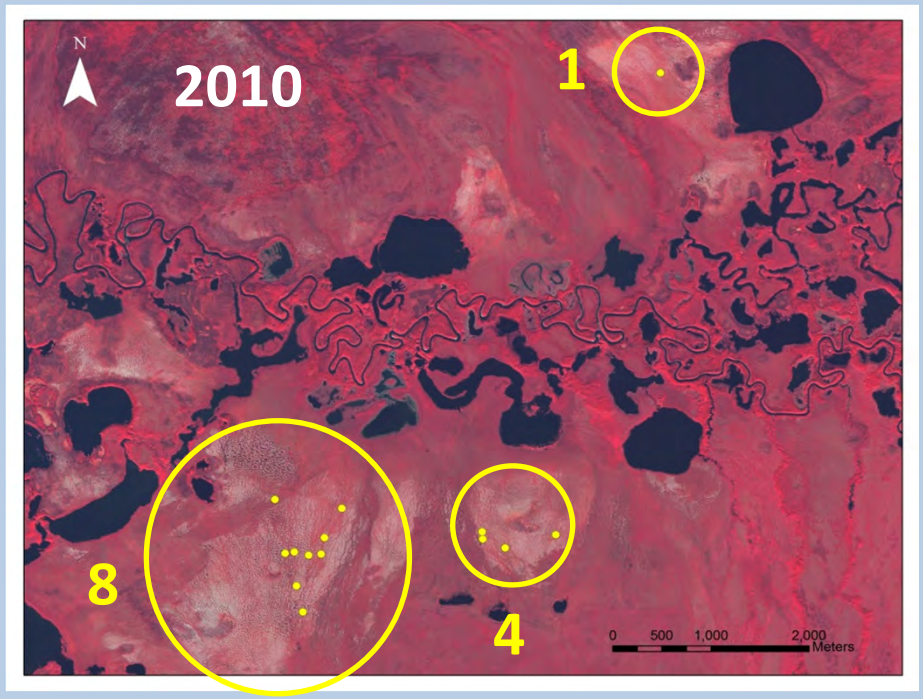
Decline of nesting pairs

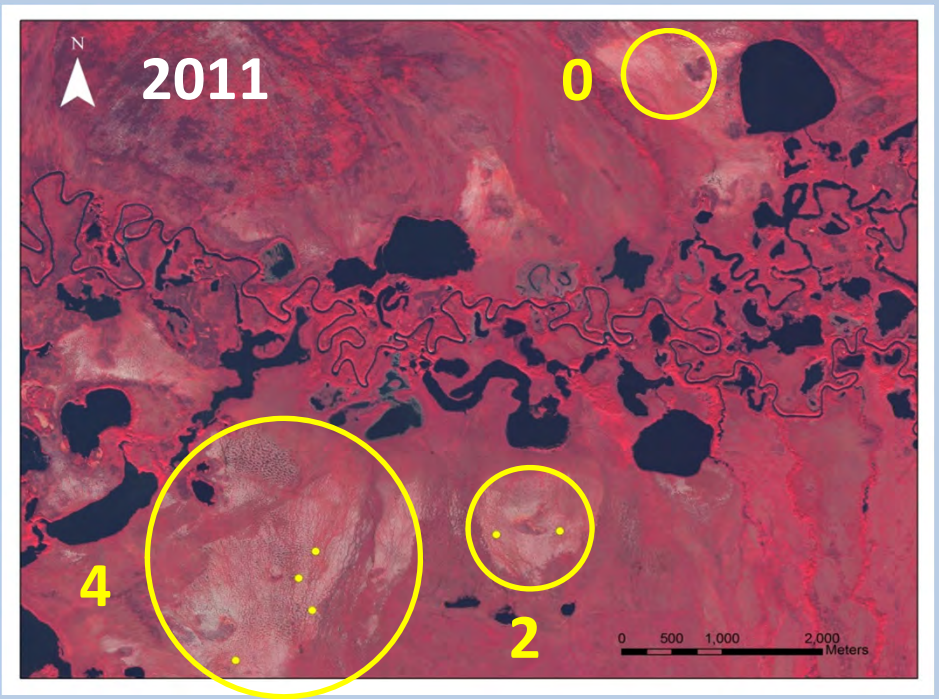
19 → 13 → 6

(cause(s) unknown)

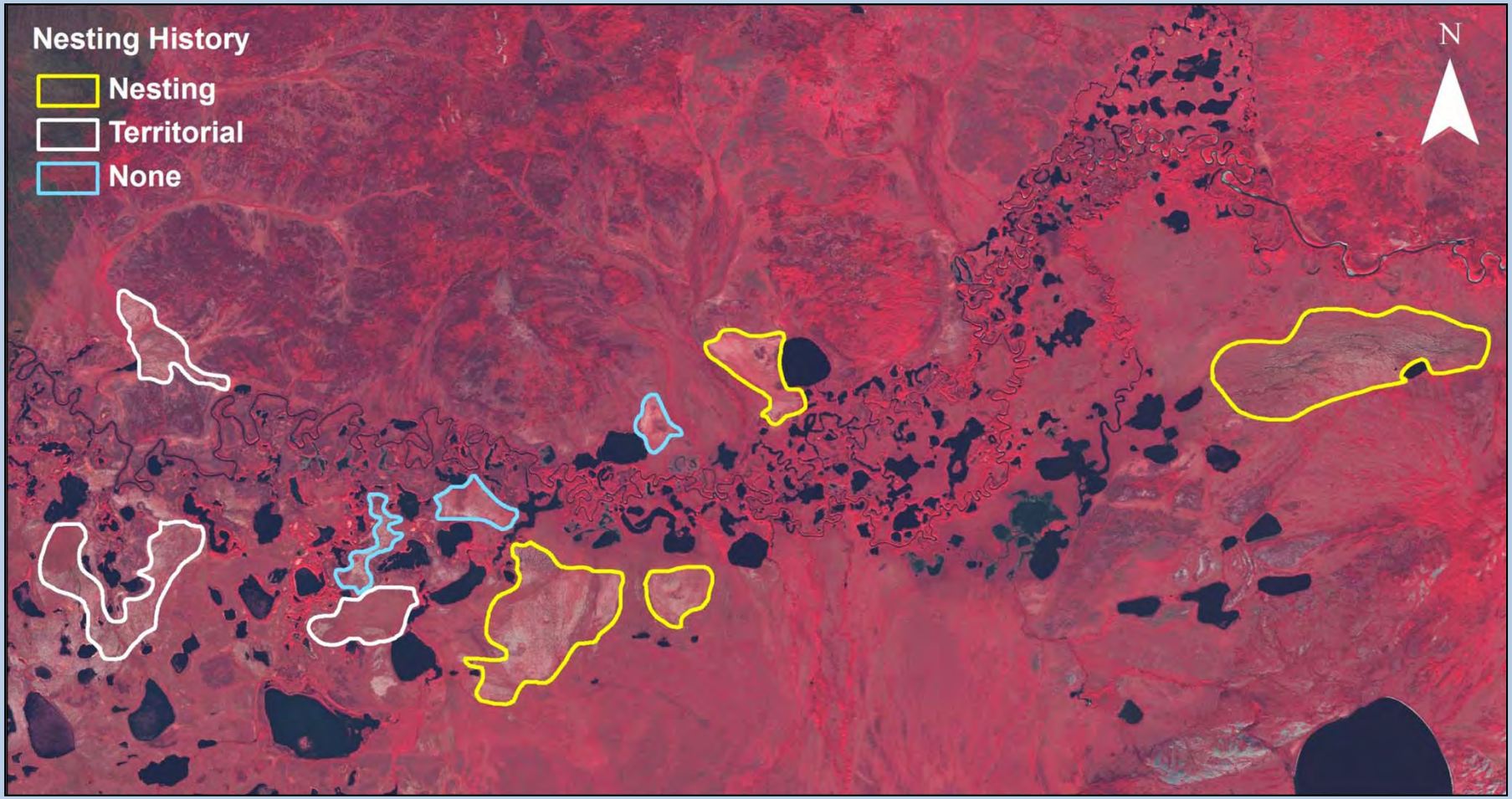
Increase in average nearest nest distance

212 → 233 → 536 m

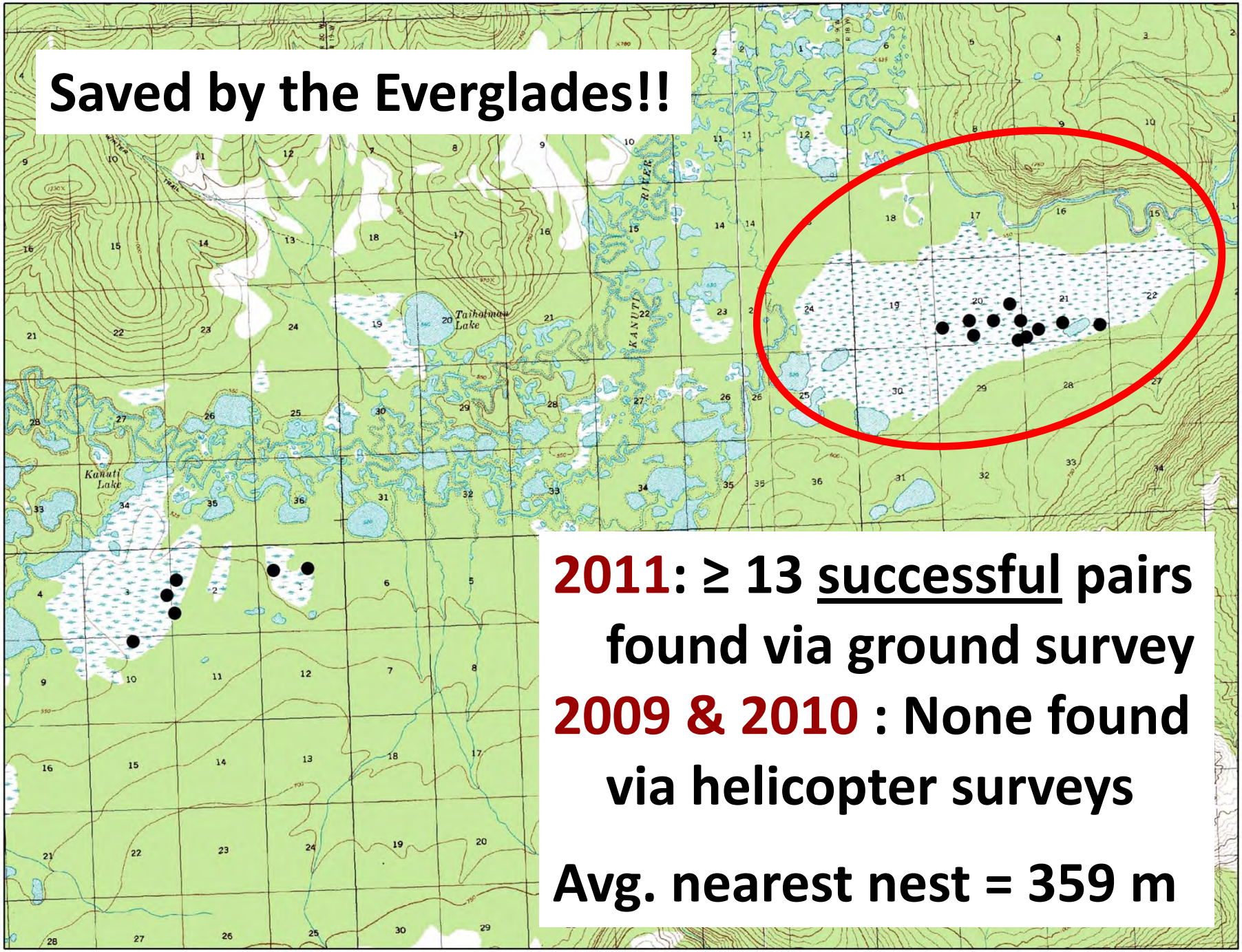




A possible “submetapopulation” within a metapopulation?



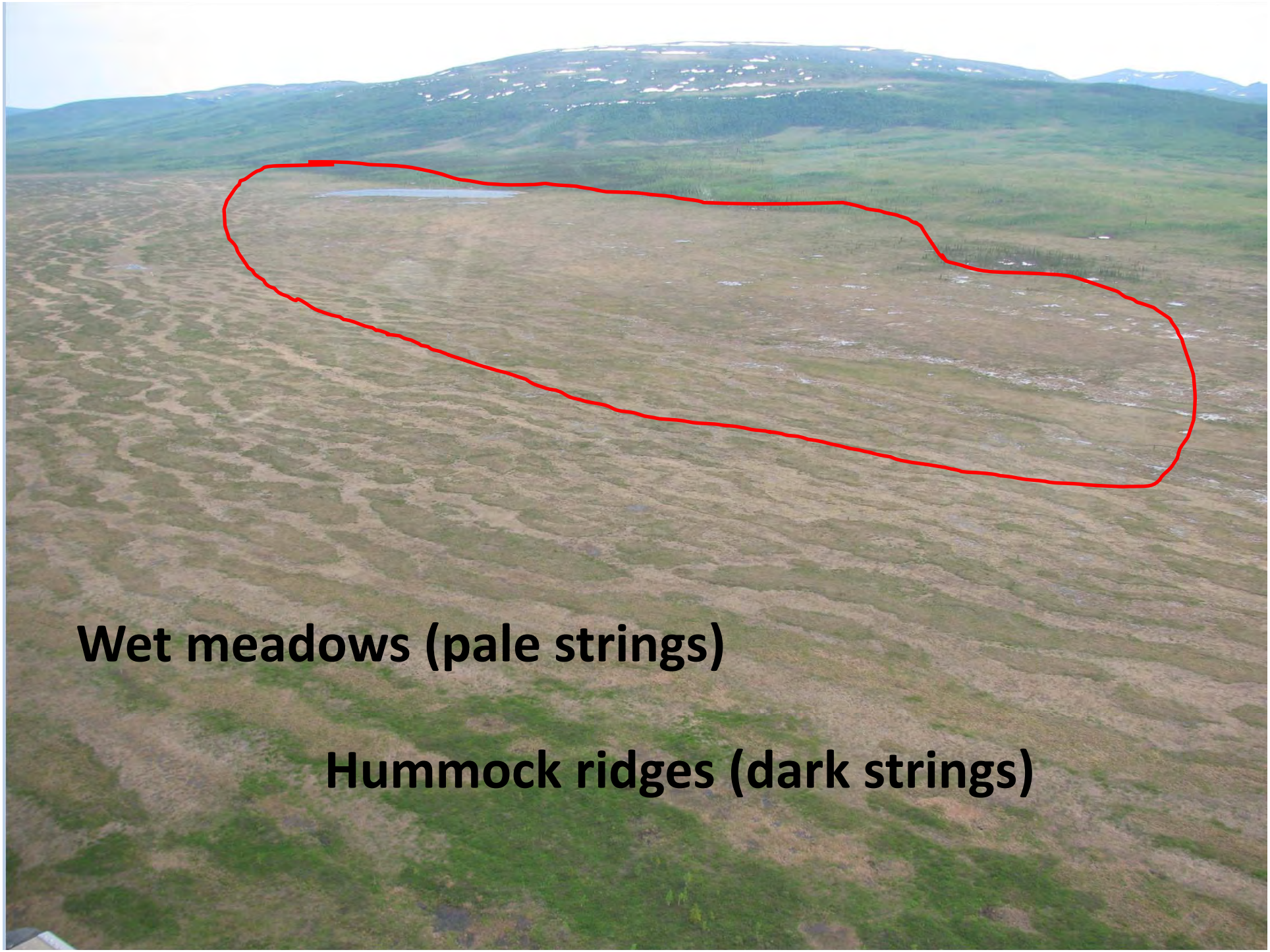
Saved by the Everglades!!

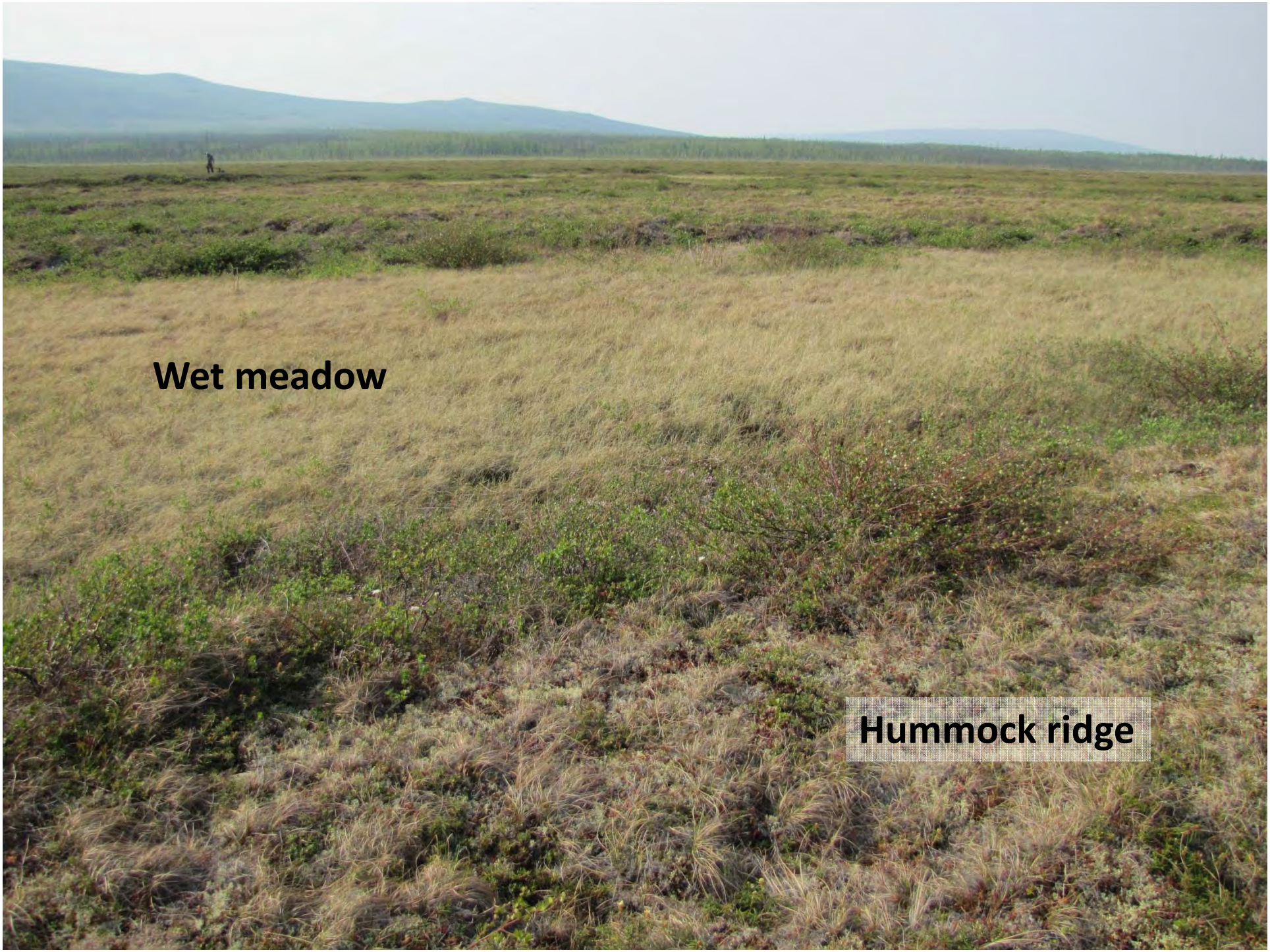


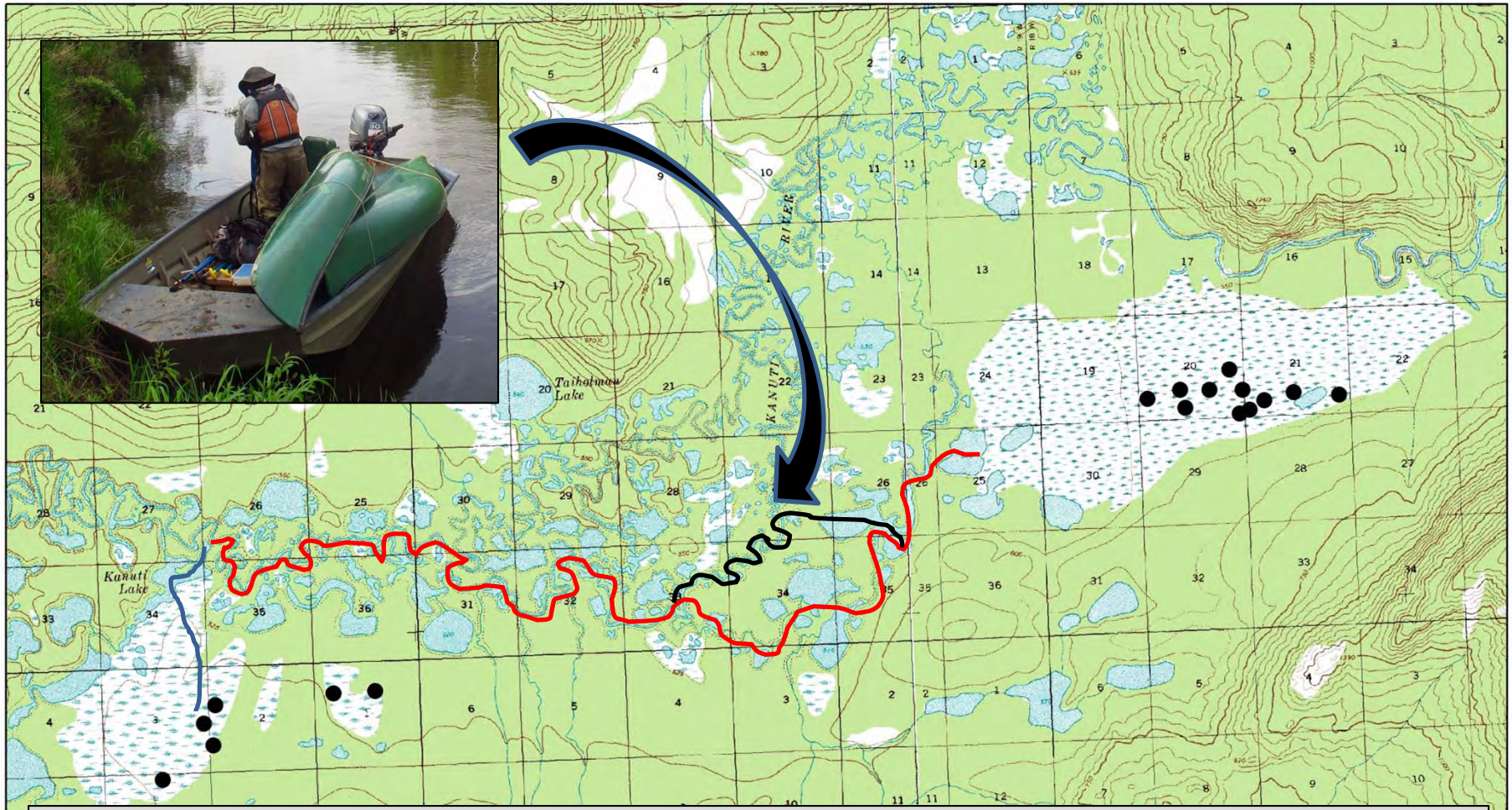
2011: ≥ 13 successful pairs found via ground survey

2009 & 2010 : None found via helicopter surveys

Avg. nearest nest = 359 m


Wet meadows (pale strings)
Hummock ridges (dark strings)


Wet meadow
Hummock ridge



Cabin areas = short canoe ride & short hike (1 hr)

Everglades = long boat ride & long hike (3 hr), *OR*
boat ride, 2 portages, long canoe ride, & long hike (5 hr)

… the challenge of finding & studying small, remote populations

Nest Success Estimates

Year	Estimate from Daily Survival Rate with 95% CI (28 day exposure)	Apparent Estimate (successful nests per nests found)
2009	0.59 (0.28 – 0.80) (*n* = 19)	0.72 (*n* = 18)
2010	0.20 (0.05 – 0.44) (*n* = 14)	0.21 (*n* = 14)
2011*	0.60 (0.26 – 0.82) (*n* = 16)	0.76 (*n* = 17)

Capture and Marking

2009 & 2010:
Black flag

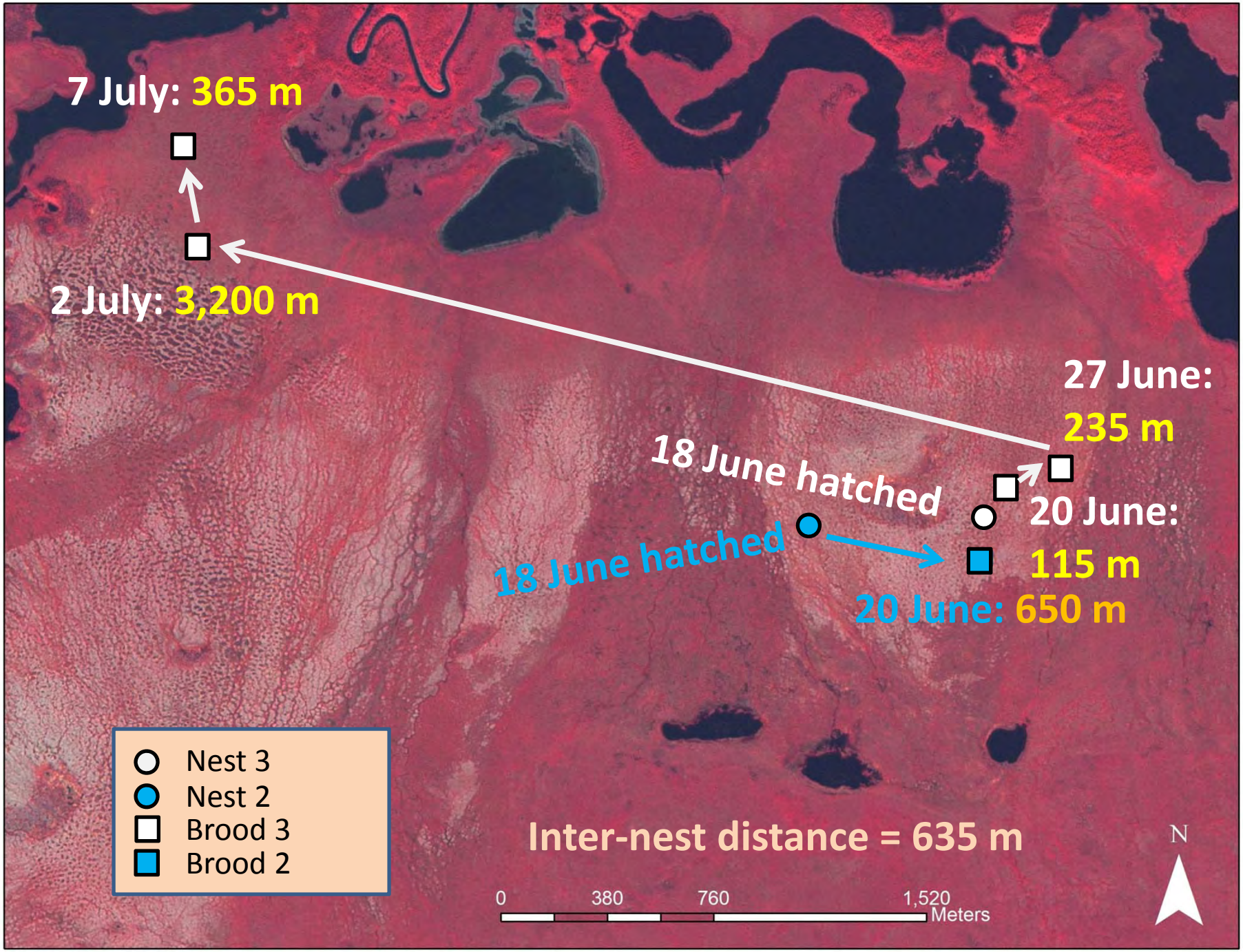
2011:
Green flag/ring

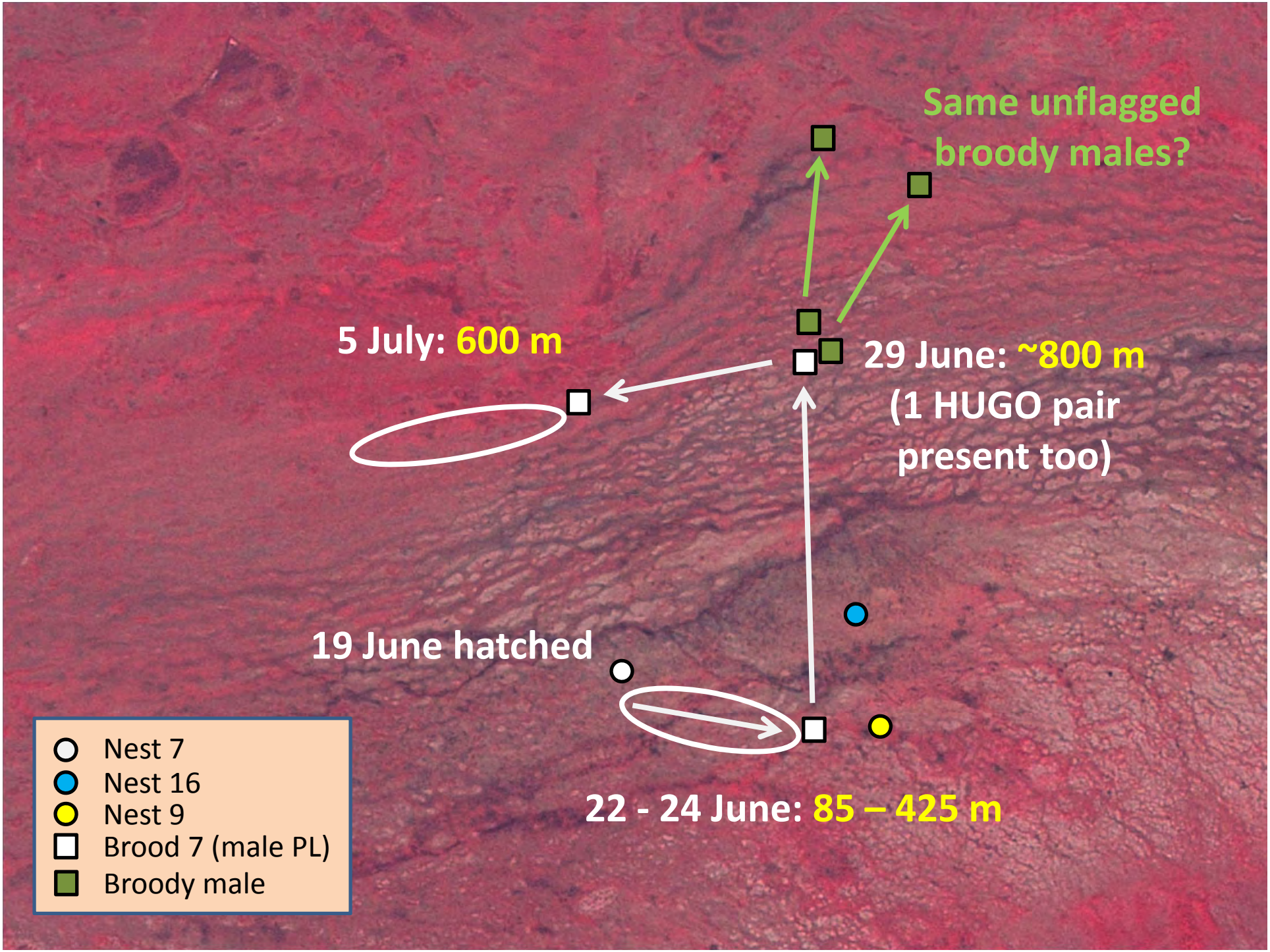
Marking, Resightings, Nesting Propensity

	2009	2010	2011
2009 cohort (adult only)	21 marked 15 w/ PTT/flag 6 w/ flag only	10 resighted 6 w/ PTT/flag 4 w/ flag	1 resighted 0 w/PTT/flag 1 w/ flag
		4/6 nested 2/4 nested	1/1 nested
2010 cohort (adult only)		12 flagged	6 resighted
			2/6 nested
2011 cohort (adult only)			20 flagged & ringed

Brood movements

Photos by USGS/D. Ruthrauff

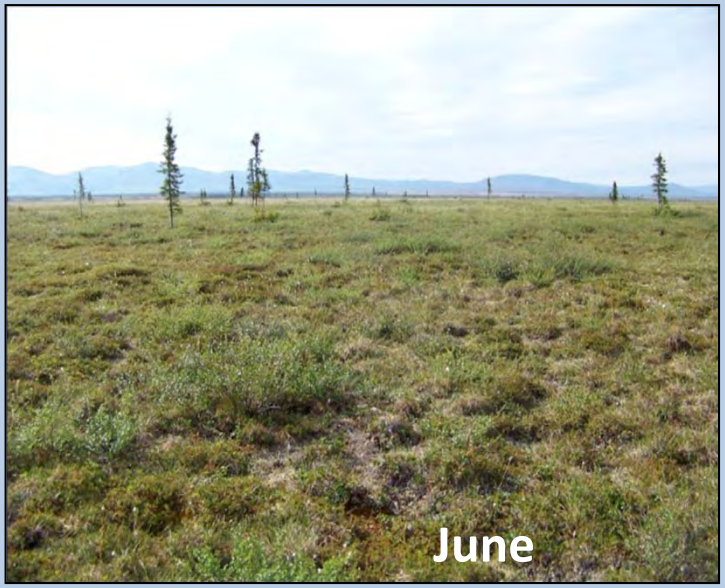

7 July: 365 m
2 July: 3,200 m
27 June:
235 m
18 June hatched
20 June:
115 m
18 June hatched
20 June: 650 m
Nest 3
Nest 2
Brood 3
Brood 2
Inter-nest distance = 635 m
0
380
760
1,520
Meters
N


Same unflagged broody males?
5 July: 600 m
29 June: ~800 m (1 HUGO pair present too)
19 June hatched
22 - 24 June: 85 – 425 m
Nest 7
Nest 16
Nest 9
Brood 7 (male PL)
Broody male

Breeding habitat investigation

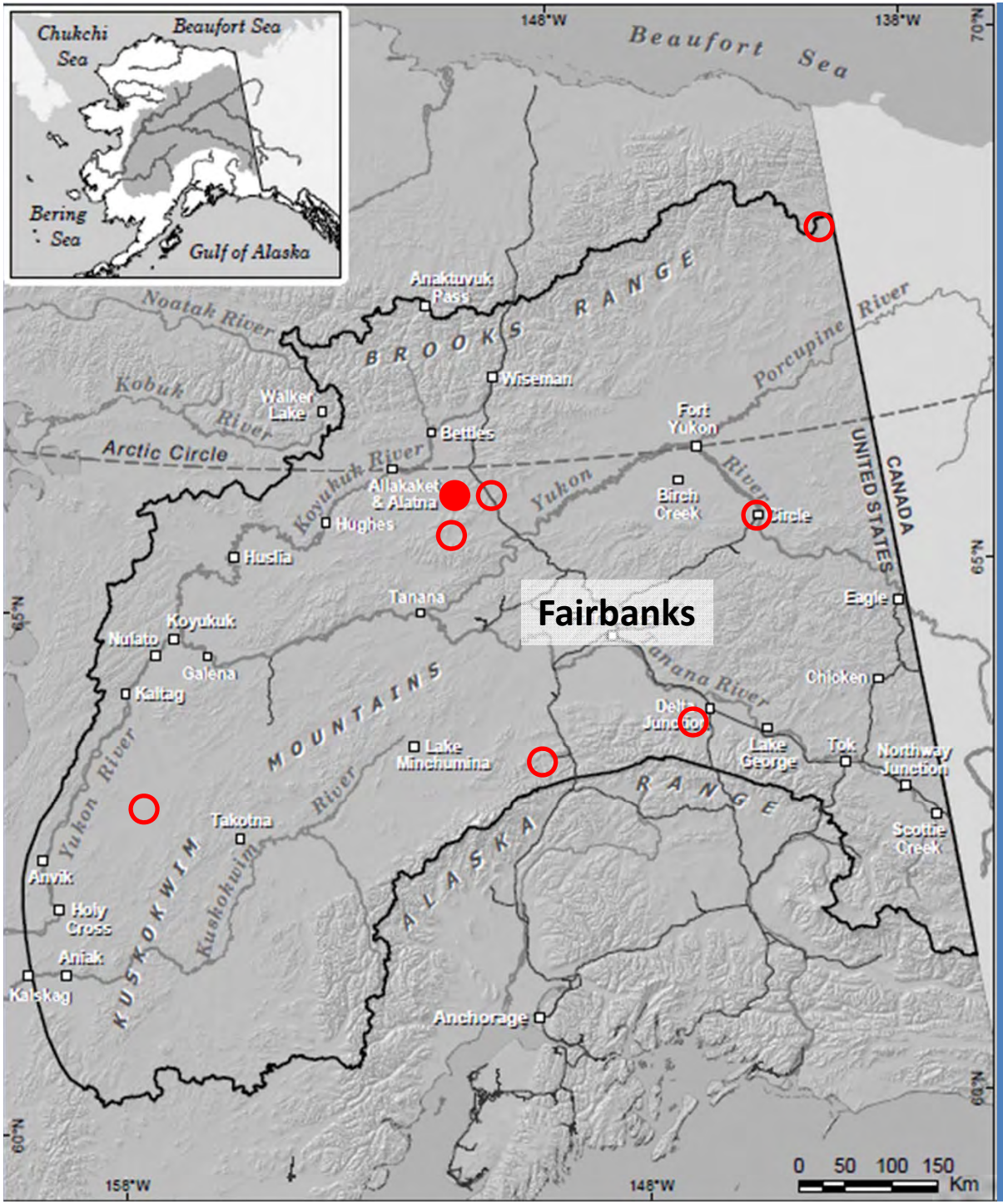
Select Habitat Features:

- 2 spatial scales: nest site and territory/landscape
- 2 time periods: nest discovery and nest fate
- measured at nest <u>and</u> random non-nest site



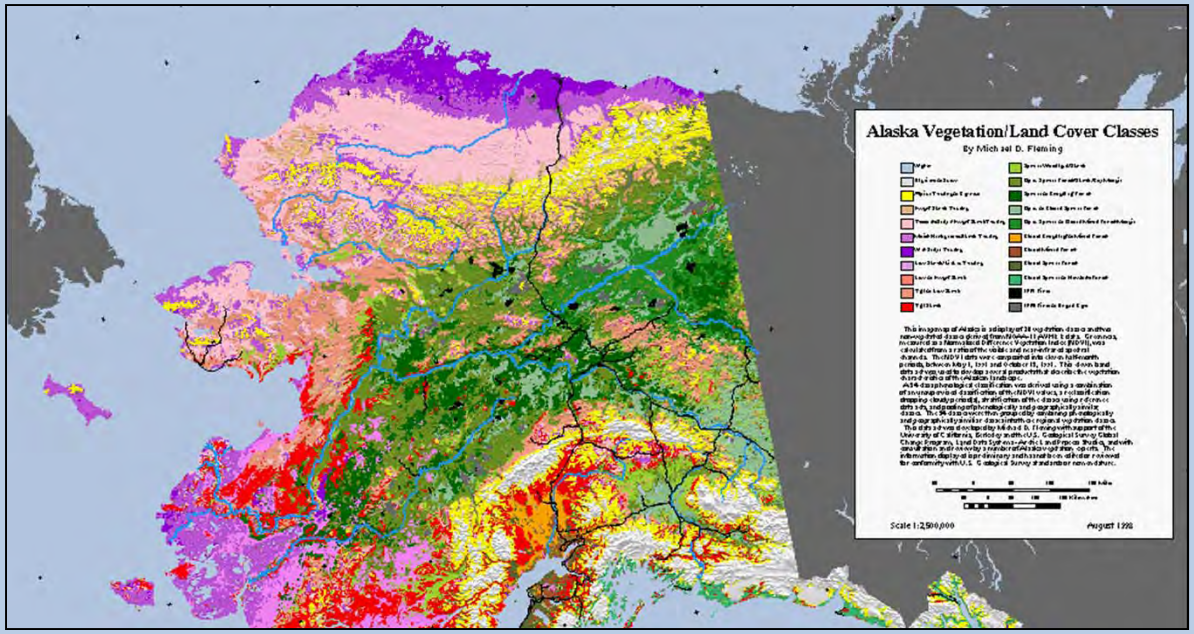
Onset of incubation…

…right after hatch/fail

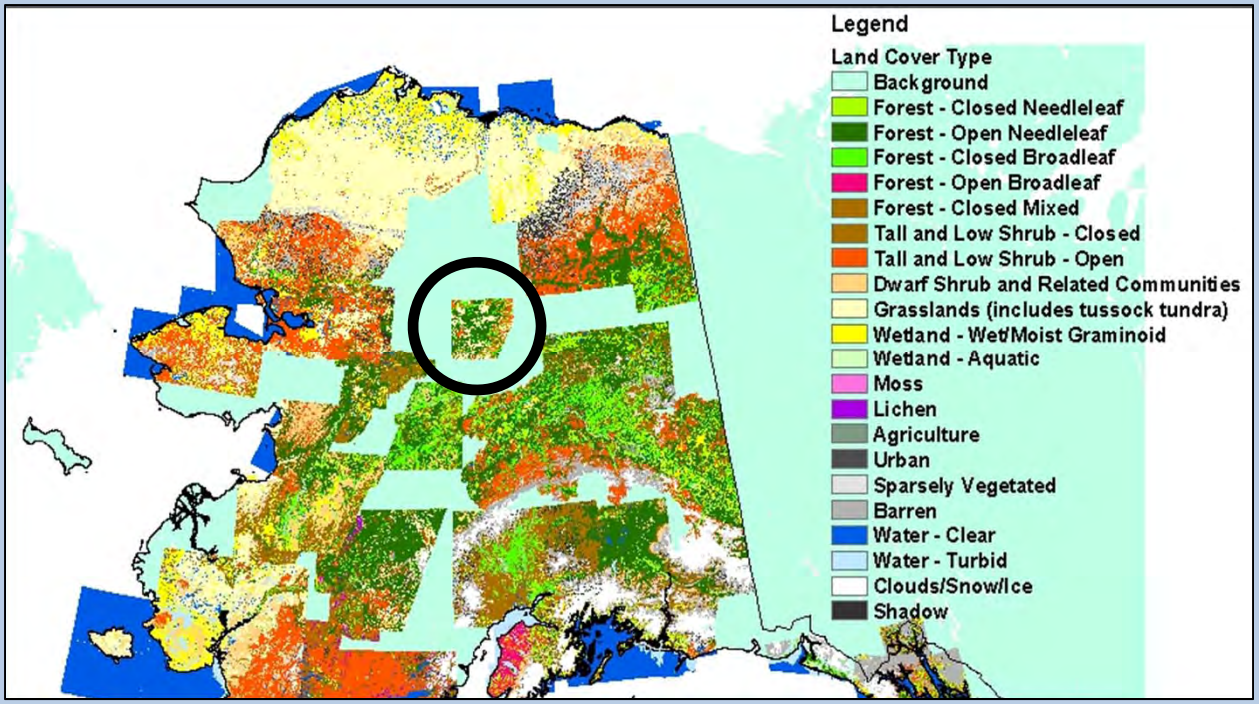


Breeding Season Location
Kanuti River
Circle
Denali NPP
Old Crow Mountains
Ray Mountains
Firth-Mancha RNA
Caribou Mtn./Finger Rock/Dalton Highway
Donnelly Training Area
Innoko NWR

Interior Alaska boundary map
Courtesy of D. Gibson and ABR.



1000-m pixel resolution



50-m pixel Resolution (Kanuti area)

Acknowledgments

This project has been generously funded by the U.S. Fish & Wildlife Service. Special thanks to the staff at Kanuti NWR for their continued support of this research.

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Special thanks to...

Questions ???