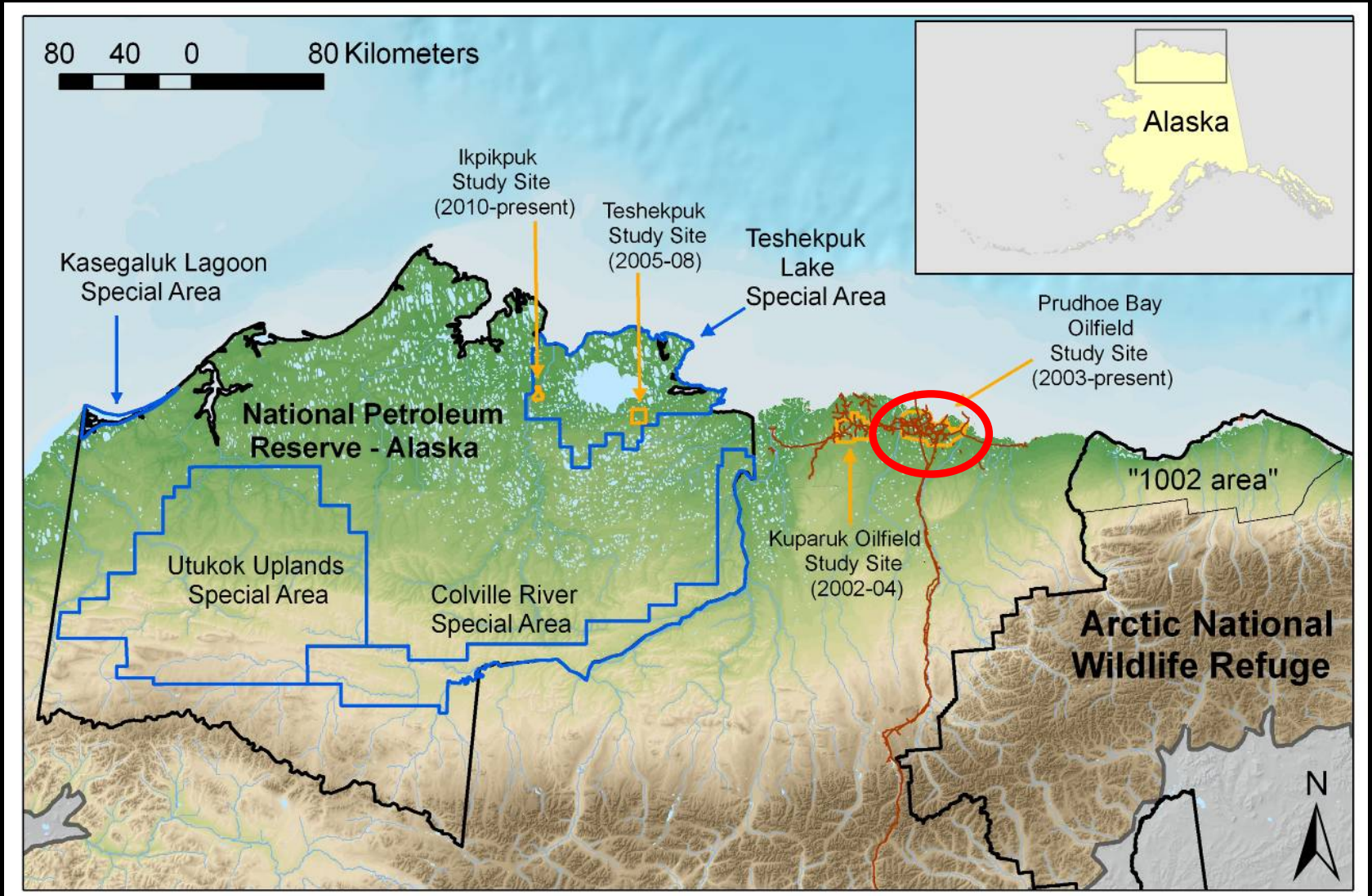
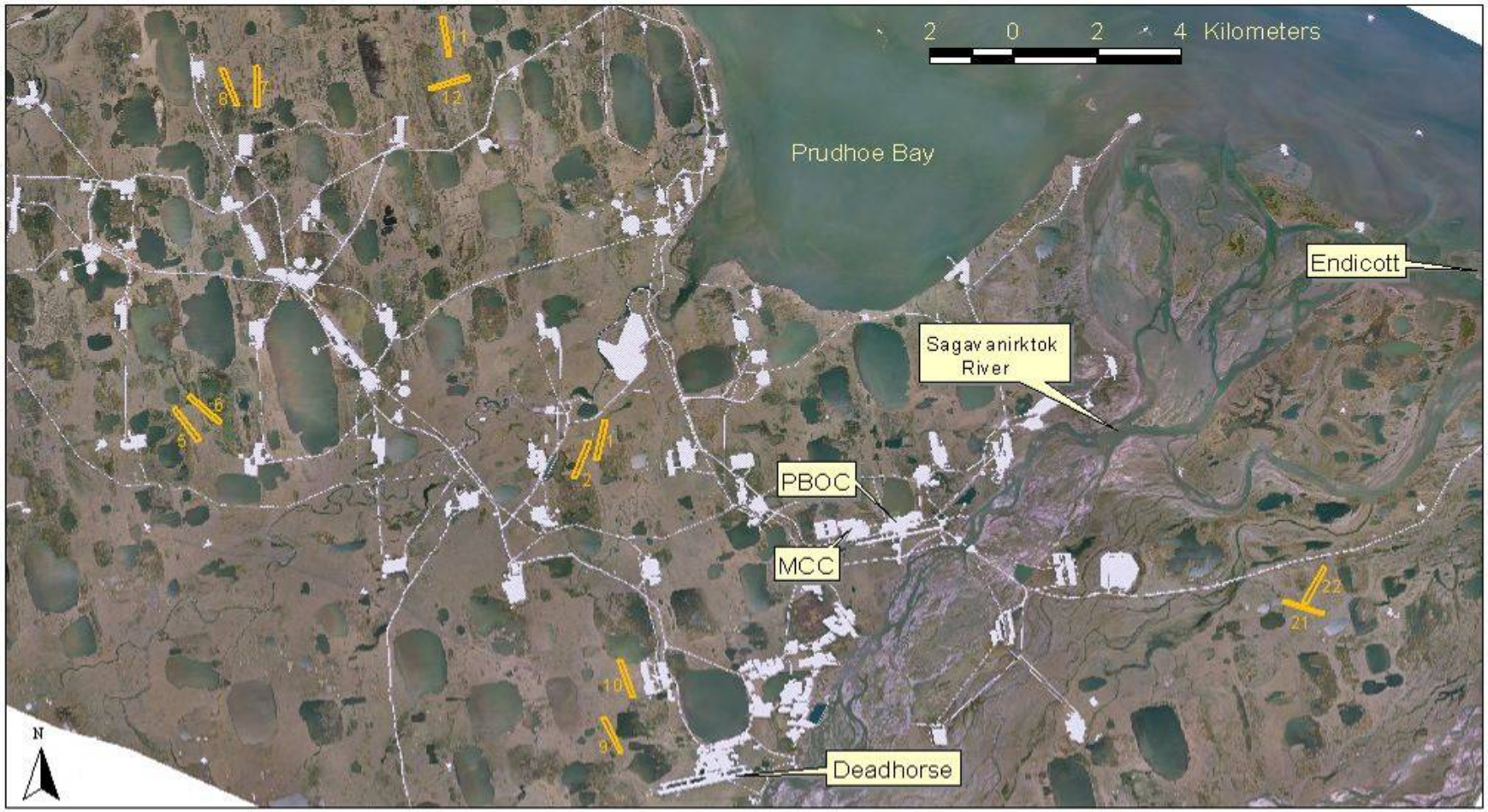
Long-term monitoring of tundra-nesting birds in the Prudhoe Bay oilfield, North Slope, Alaska

Rebecca Bentzen

Martin Robards


80 40 0 80 Kilometers
Alaska
Ikpikpuk
Study Site
(2010-present)
Teshekpuk
Study Site
(2005-08)
Teshekpuk
Lake
Special Area
Kasegaluk Lagoon
Special Area
Prudhoe Bay
Oilfield
Study Site
(2003-present)
National Petroleum
Reserve - Alaska
"1002 area"
Kuparuk Oilfield
Study Site
(2002-04)
Utukok Uplands
Special Area
Colville River
Special Area
Arctic National
Wildlife Refuge
N

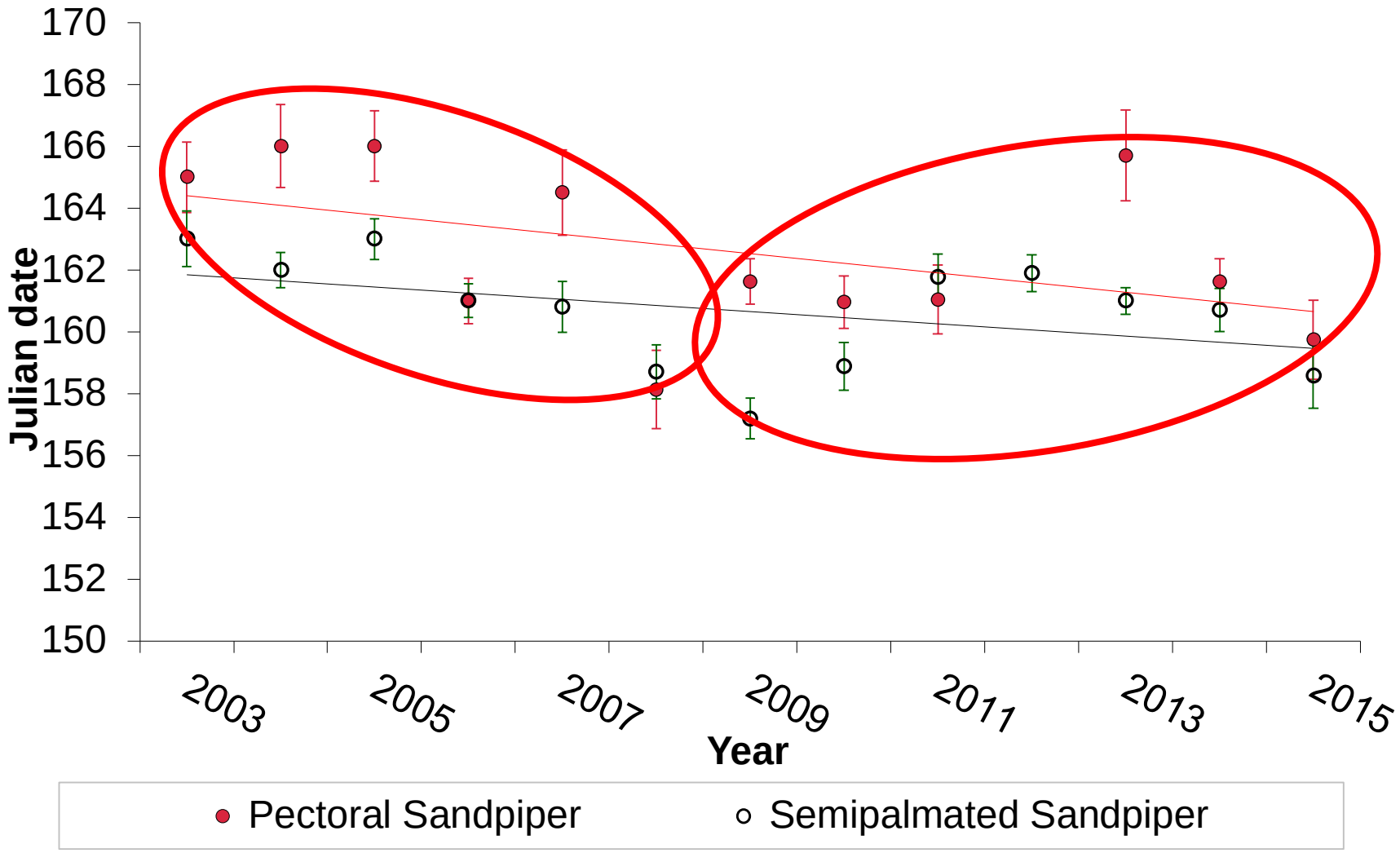


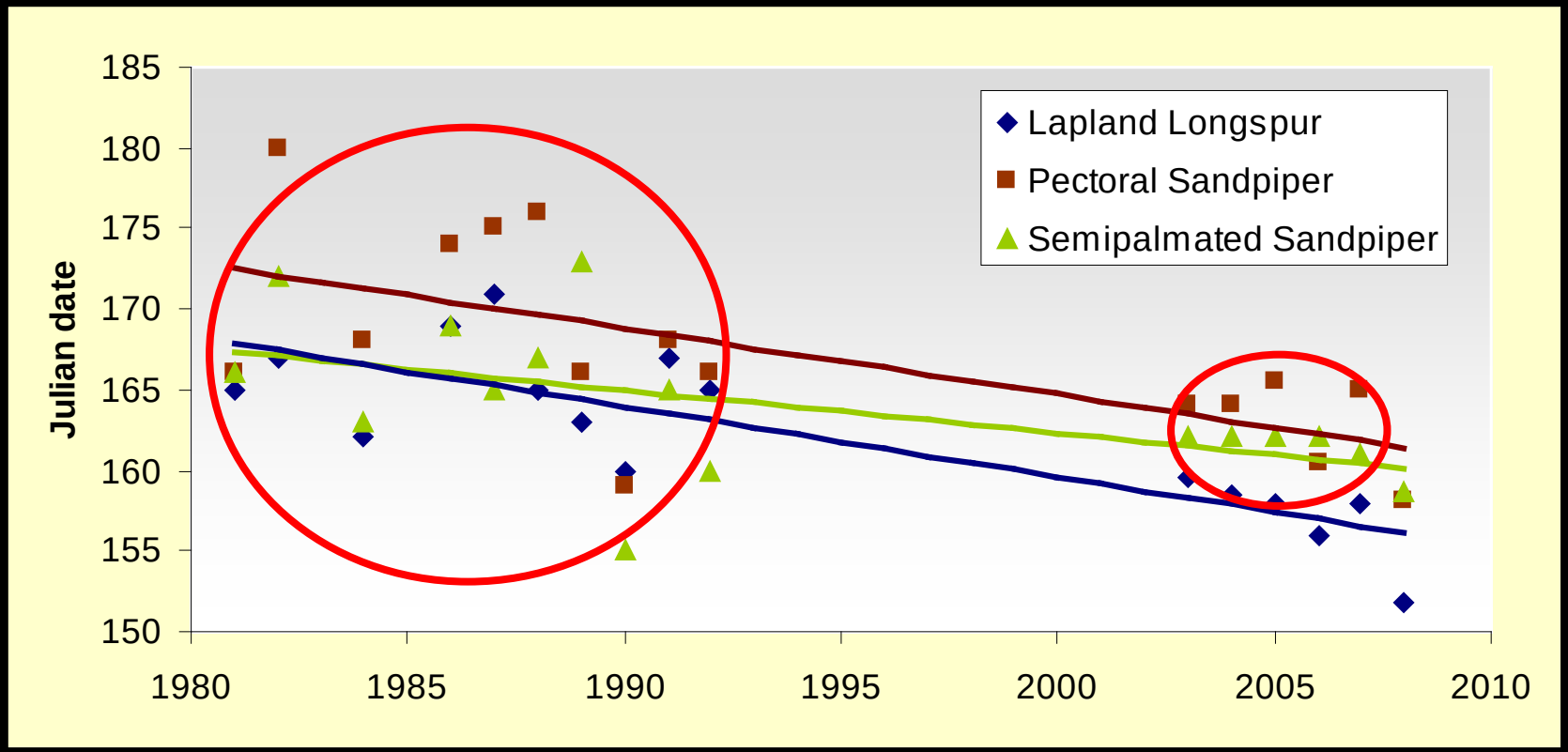
Prudhoe Bay Study Site

Study plots (w/ plot #)
Oilfield Infrastructure

2003-2015

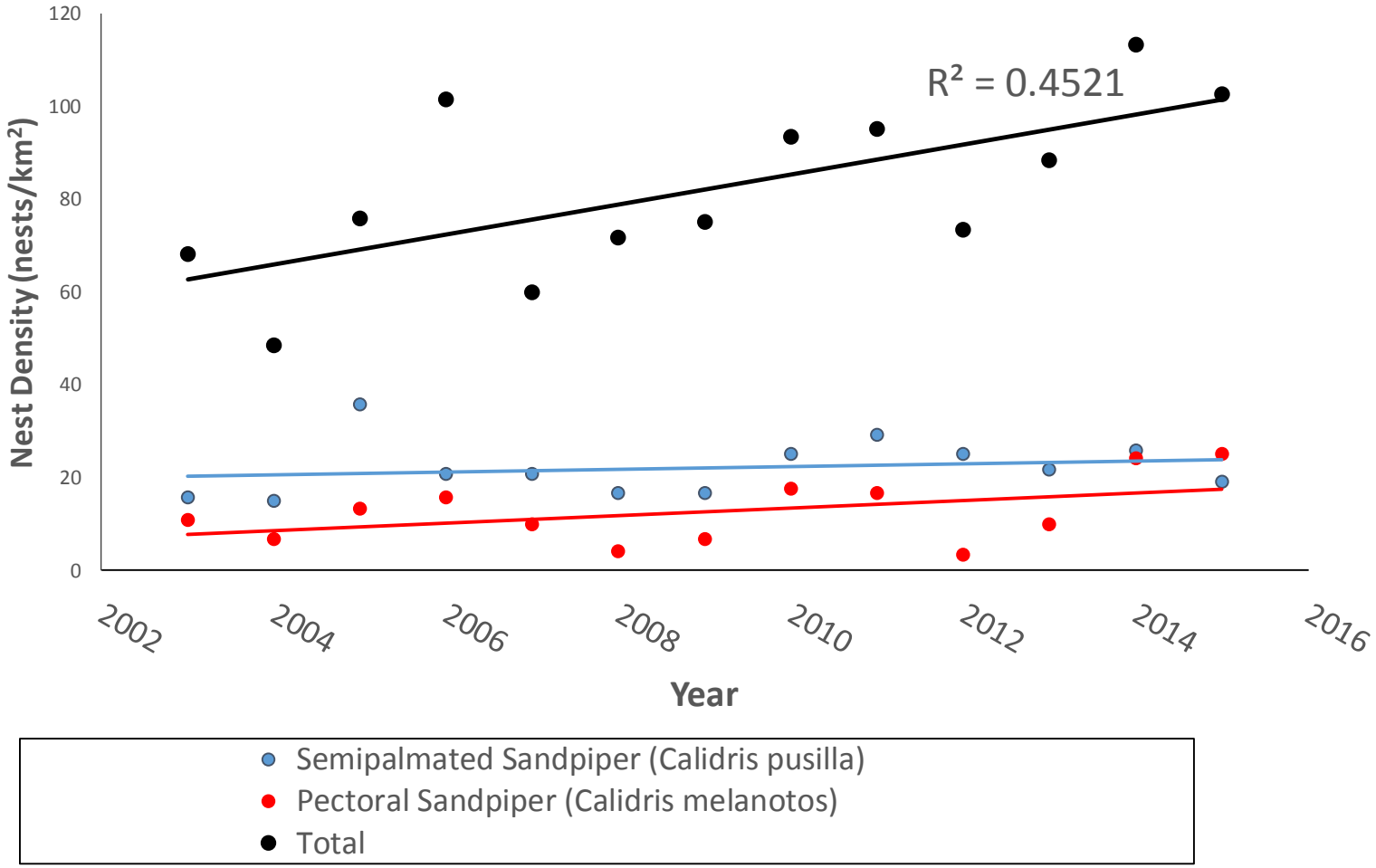
Nest initiation





1981-1992 data from Declan Troy

Nest Density



Pad Rehabilitation

Pad rehab methods and goals

- Paired rehab and tundra sites, distance sampling
- How do birds use rehabilitated pads and strips?

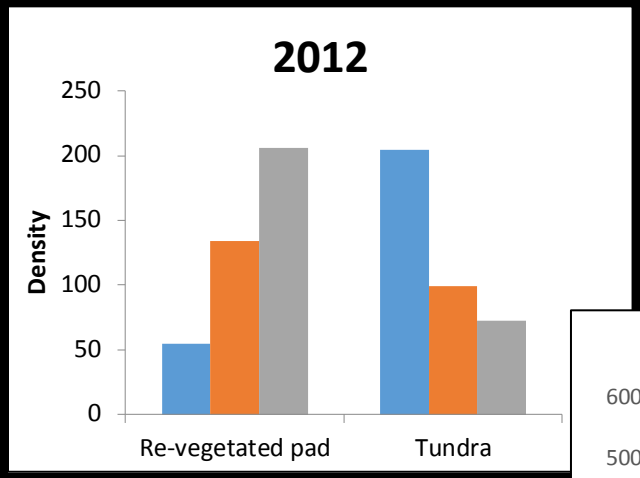
Undisturbed Tundra

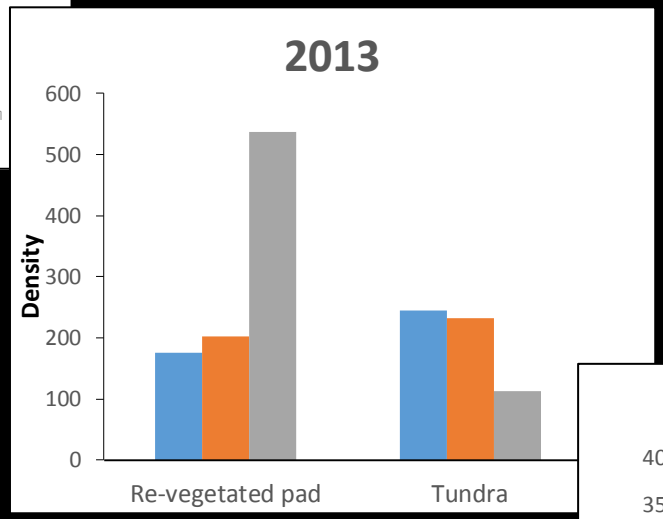
Rehabilitated Tundra

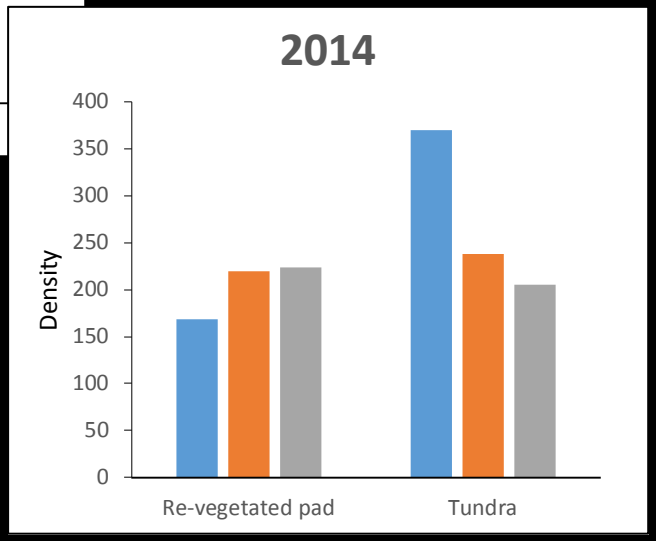
Results

Shorebird densities did not vary significantly between rehab and tundra sites

Results


2012
Density
250
200
150
100
50
0
Re-vegetated pad
Tundra


2013
Density
600
500
400
300
200
100
0
Re-vegetated pad
Tundra


2014
Density
400
350
300
250
200
150
100
50
0
Re-vegetated pad
Tundra

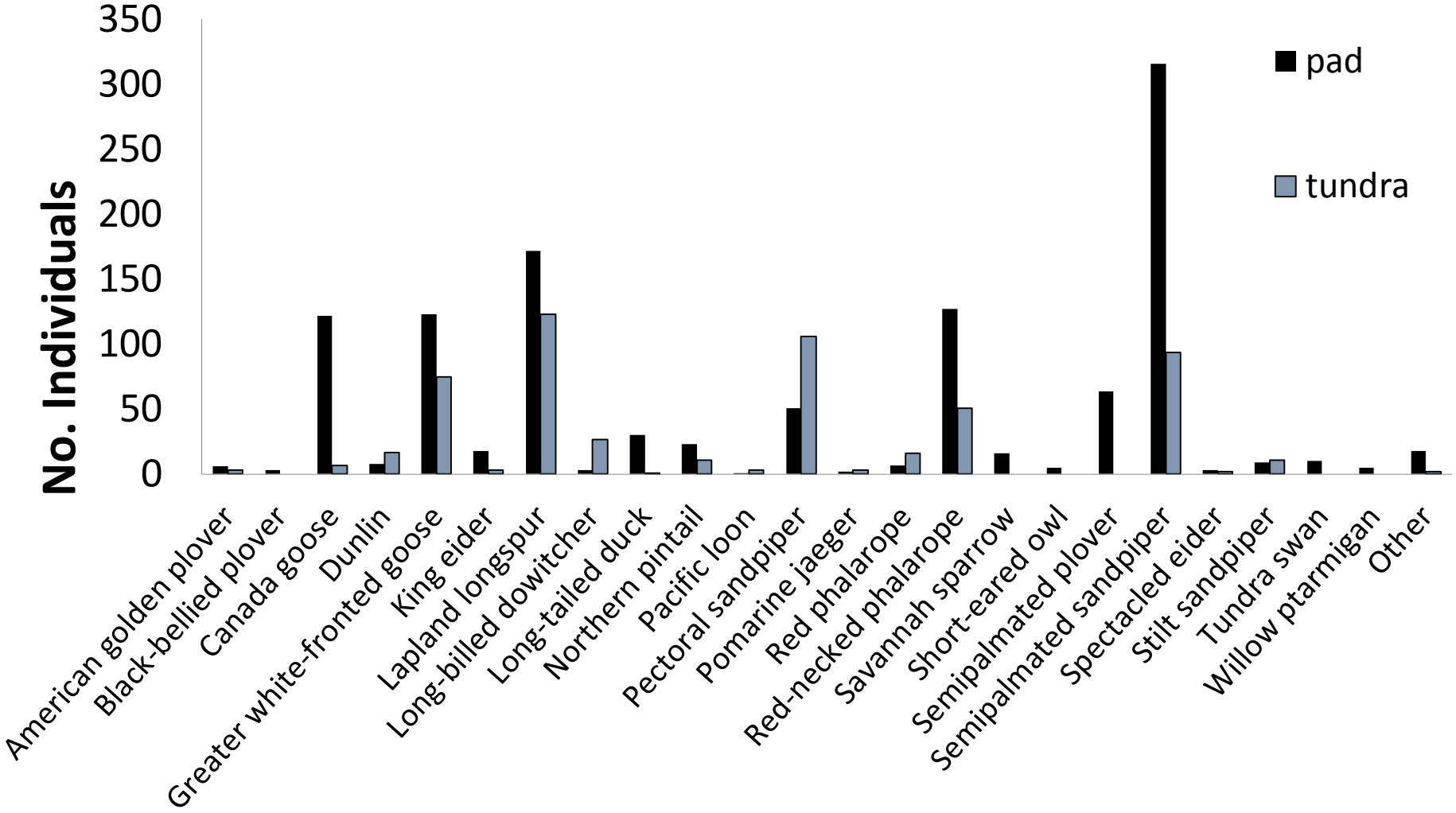
Results

Nest densities (all species) were higher on tundra sites in all years

Results

	Rehab	Tundra
Foraging	413	204
Loafing or perched	581	330
Preening	18	19
Attending brood	18	9
Displaying	18	59
Nest	35	76
Aggressive interaction	30	29

Results


No. Individuals
350
300
250
200
150
100
50
0
pad
tundra
American golden plover
Black-bellied plover
Canada goose
Dunlin
Greater white-fronted goose
King eider
Lapland longspur
Long-billed dowitcher
Long-tailed duck
Northern pintail
Pacific loon
Pectoral sandpiper
Pomarine jaeger
Red phalarope
Red-necked phalarope
Savannah sparrow
Short-eared owl
Semipalmated plover
Semipalmated sandpiper
Spectacled eider
Stilt sandpiper
Tundra swan
Willow ptarmigan
Other

Conclusions

- Densities of birds did not differ between rehab and tundra sites

- Bird use varied between rehab and tundra sites

Photo credits

- Anna-Maria Easley, Young-Jun Kim, Megan Jones, Mandy Klehr, Amy Leist, Joe Liebezeit, McKenzie Mudge, Kevin Pietrzak, Zak Pohlen, Emily Weiser, Steve Zack, And others…….