

# Shorebirds and highly pathogenic avian Influenza (H5N1): considerations for surveillance in Alaska

Robert Gill  
U.S. Geological Survey

and

Rick Lanctot  
U.S. Fish and Wildlife Service

**PART 2**

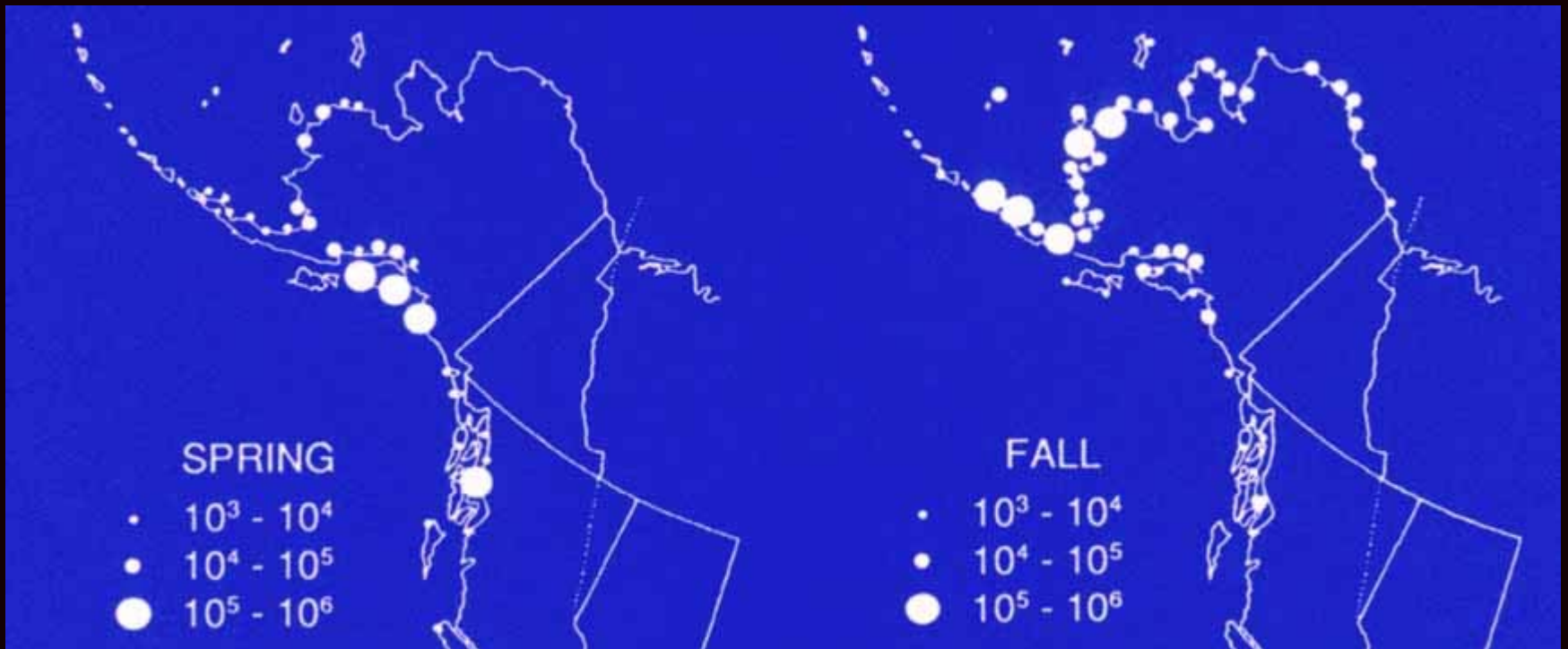


# Objectives

- Where to capture birds within Alaska?
  - Historic and contemporary data sources illustrating abundance and distribution of birds (breeding, pre- and post-breeding)
  - Routes and timing of bird migration as determined by banding and resighting studies
- How to capture birds.
  - Dunlin case study – Barrow, Tutakoke
  - success and effort required



# Shorebird Pre- and post-breeding Concentration Sites

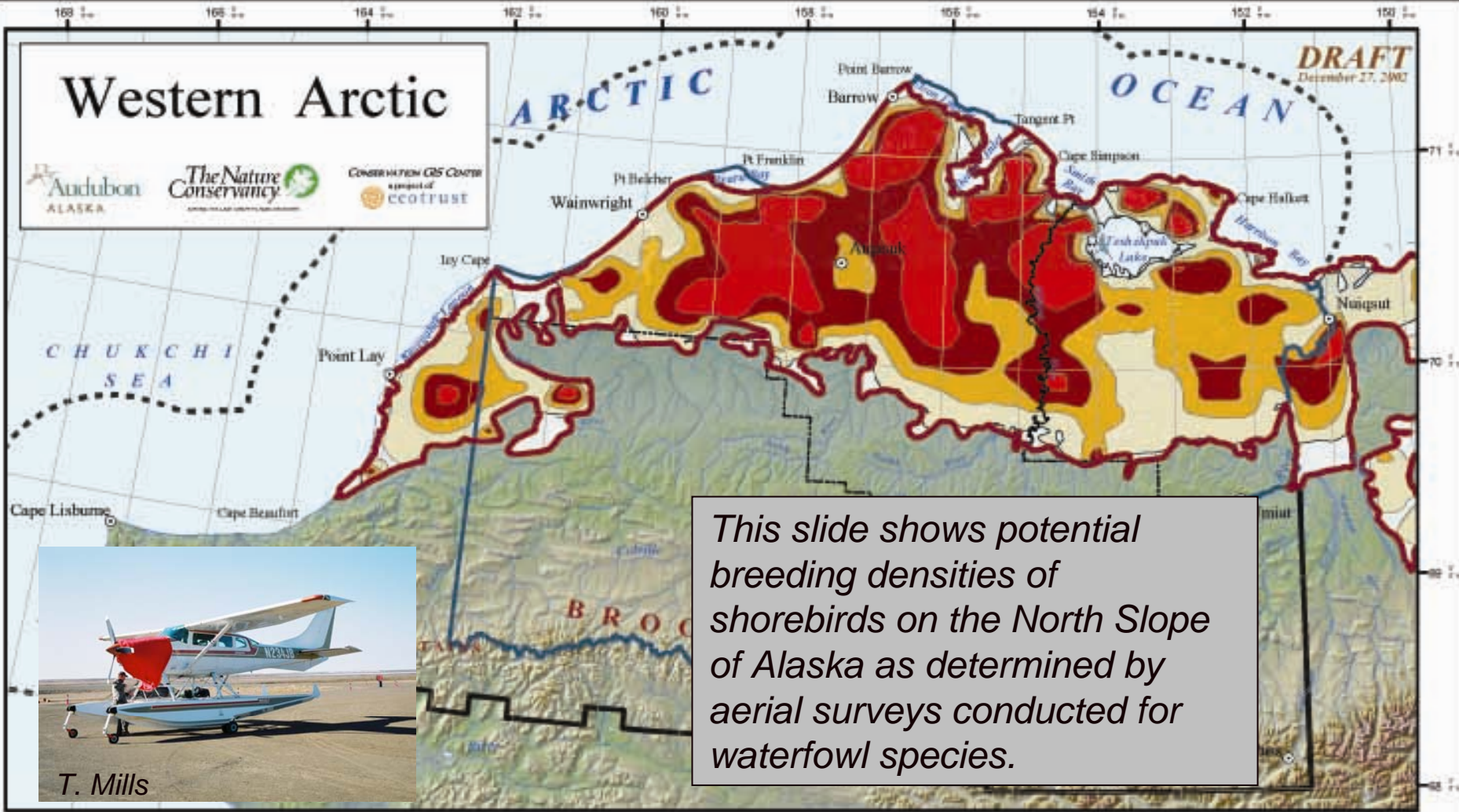


*This slide shows the known spring and fall staging areas for shorebirds in Alaska. The size of the dot indicates number of birds that use an area.*

# Western Arctic

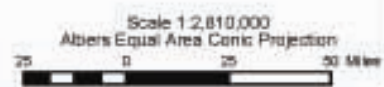
Audubon ALASKA    The Nature Conservancy    CONSERVATION GIS CENTER a project of CCOTRUST

**DRAFT**  
December 27, 2002



*This slide shows potential breeding densities of shorebirds on the North Slope of Alaska as determined by aerial surveys conducted for waterfowl species.*

## Breeding Density of Shorebirds



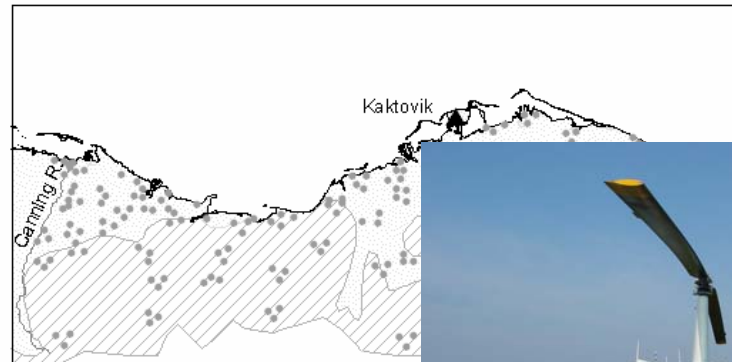
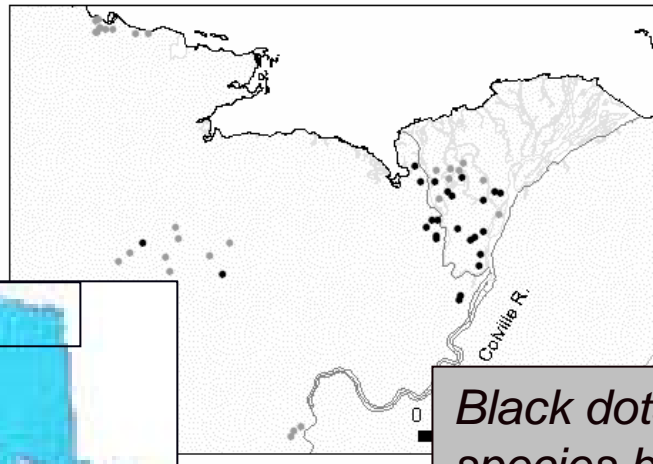
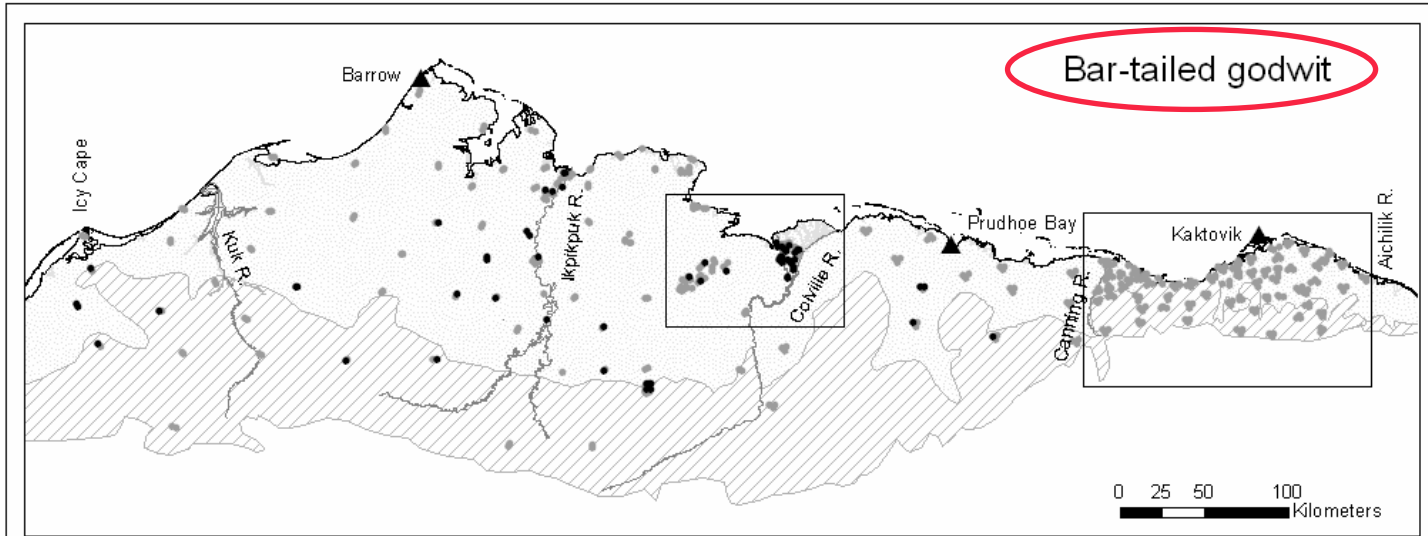
Source: USFWS, Aerial Breeding Pair Surveys of the Arctic Coastal Plain, 1998 - 2001.

*The next slide shows breeding sites for one species of shorebird, the Bar-tailed Godwit, on the North Slope of Alaska as determined by ground surveys. This information is much more reliable than aerial surveys although it is more limited in its scope.*





# Ground Surveys



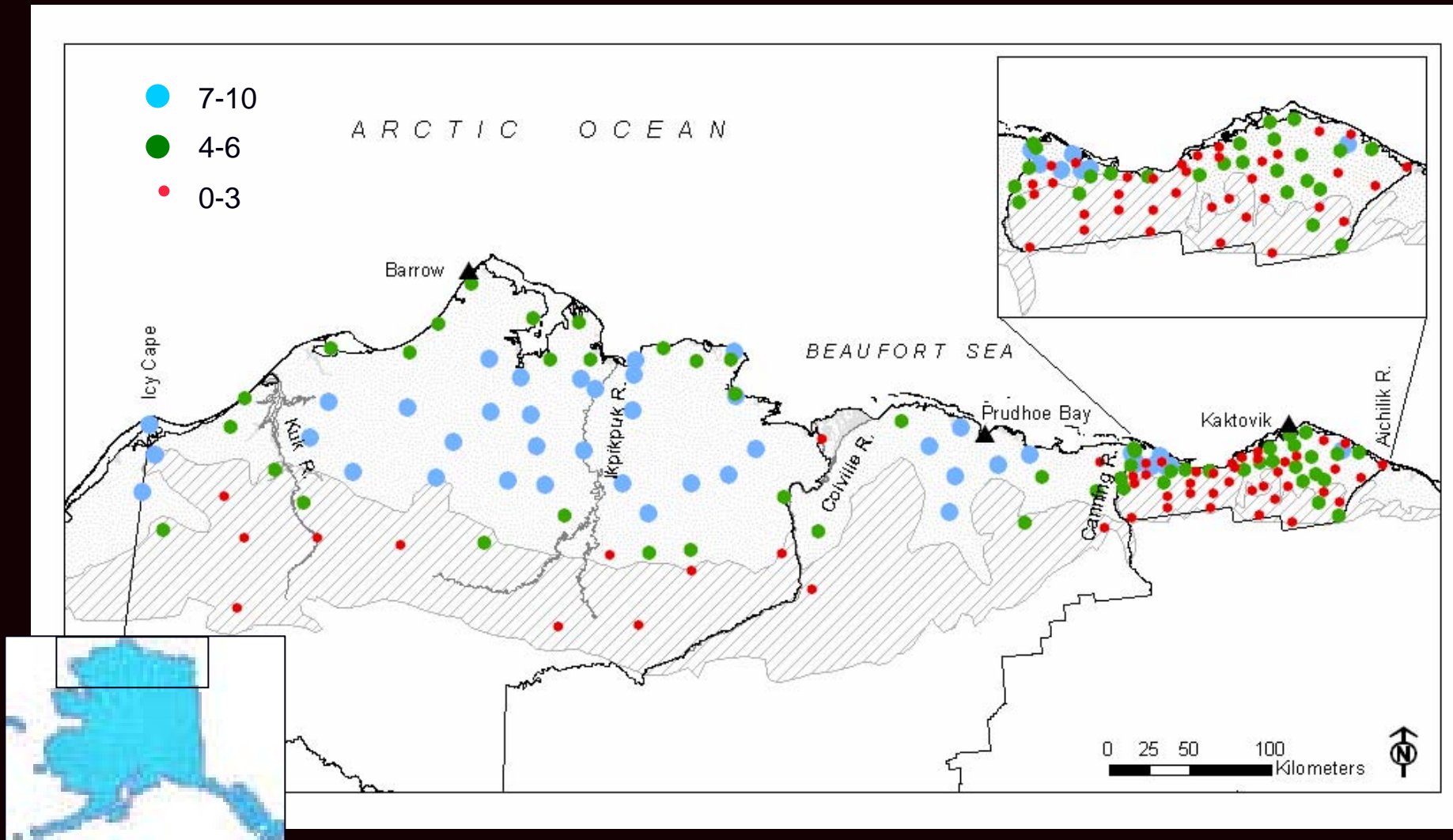
*Black dots indicate the species being present.*



*The next slide shows data on species richness (i.e., total number of unique breeding species) for sites on the North Slope of Alaska as determined by ground surveys. See the upper left corner for the number of species detected at each site.*



# Ground Surveys: Shorebird Species Richness

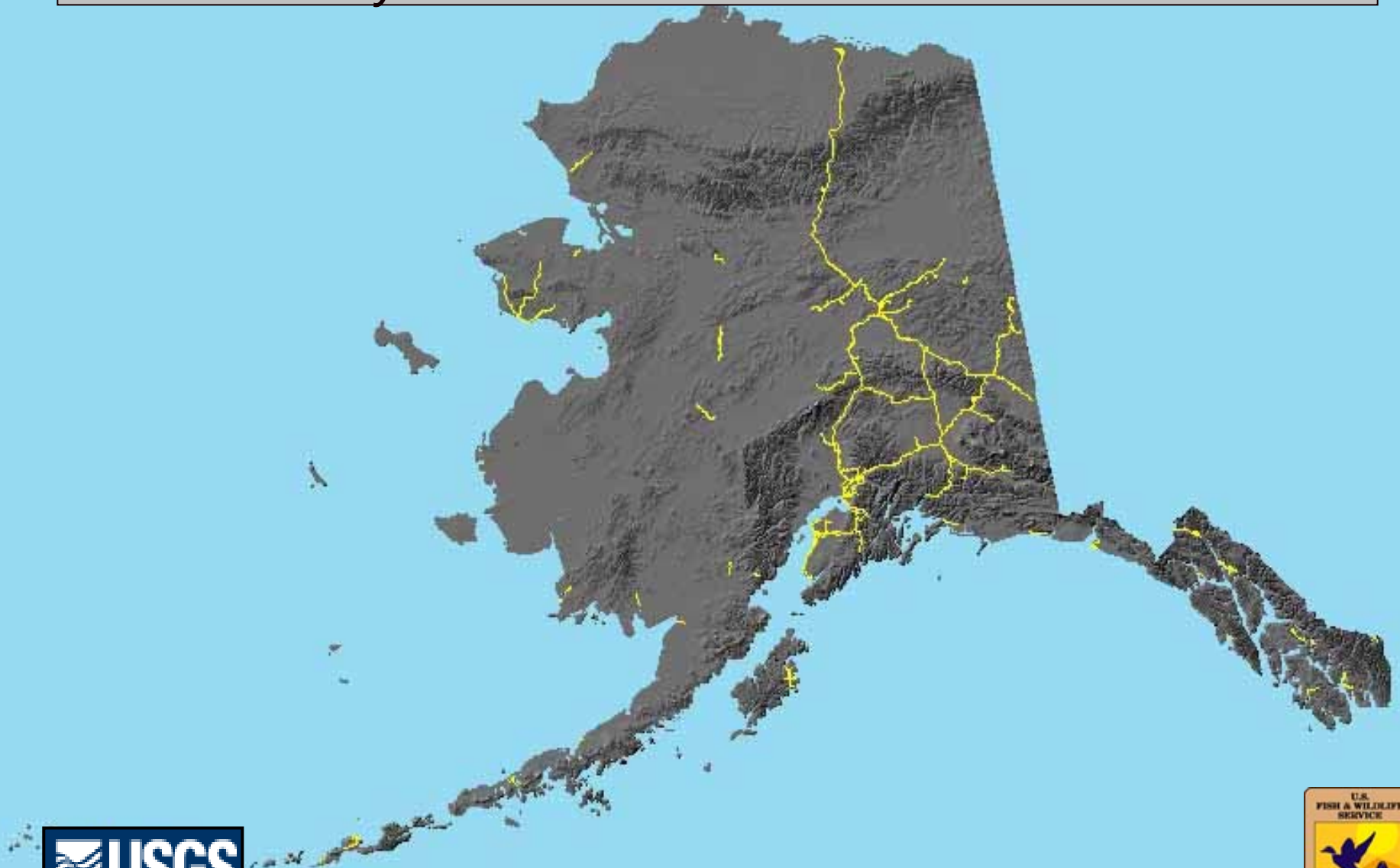




*The next series of slides relays the logistical difficulties associated with getting to, living in, and capturing birds to sample them for avian influenza.*



*It is difficult to access most places in Alaska to sample birds. The yellow lines indicate where roads occur.*



*Getting there requires expensive fixed-winged or ground support ....*



*R. Gill*



*R. Lanctot*







R. G







*Field camps are typically  
in remote locations with  
rustic field conditions.*



*R. Gill*







*Or occasionally relic  
WWII Quonset huts.*

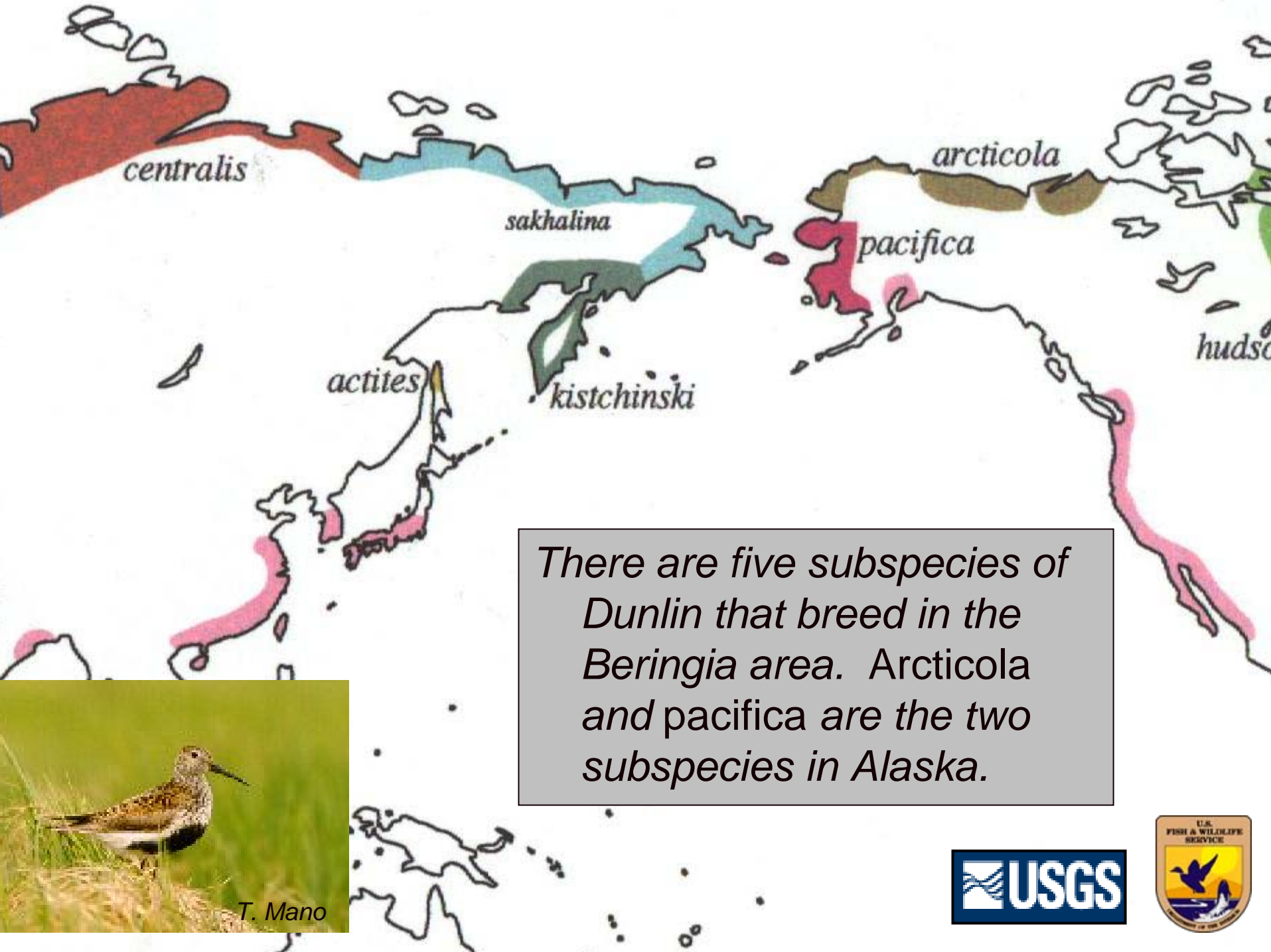


*R. Lanctot*



*The following sequence of slides depicts how we anticipate sampling one subspecies of Dunlin that breeds on the North Slope of Alaska, stages on the Yukon Kuskokwim Delta, and winters in Asia.*





*There are five subspecies of Dunlin that breed in the Beringia area. Arctica and pacifica are the two subspecies in Alaska.*



T. Mano



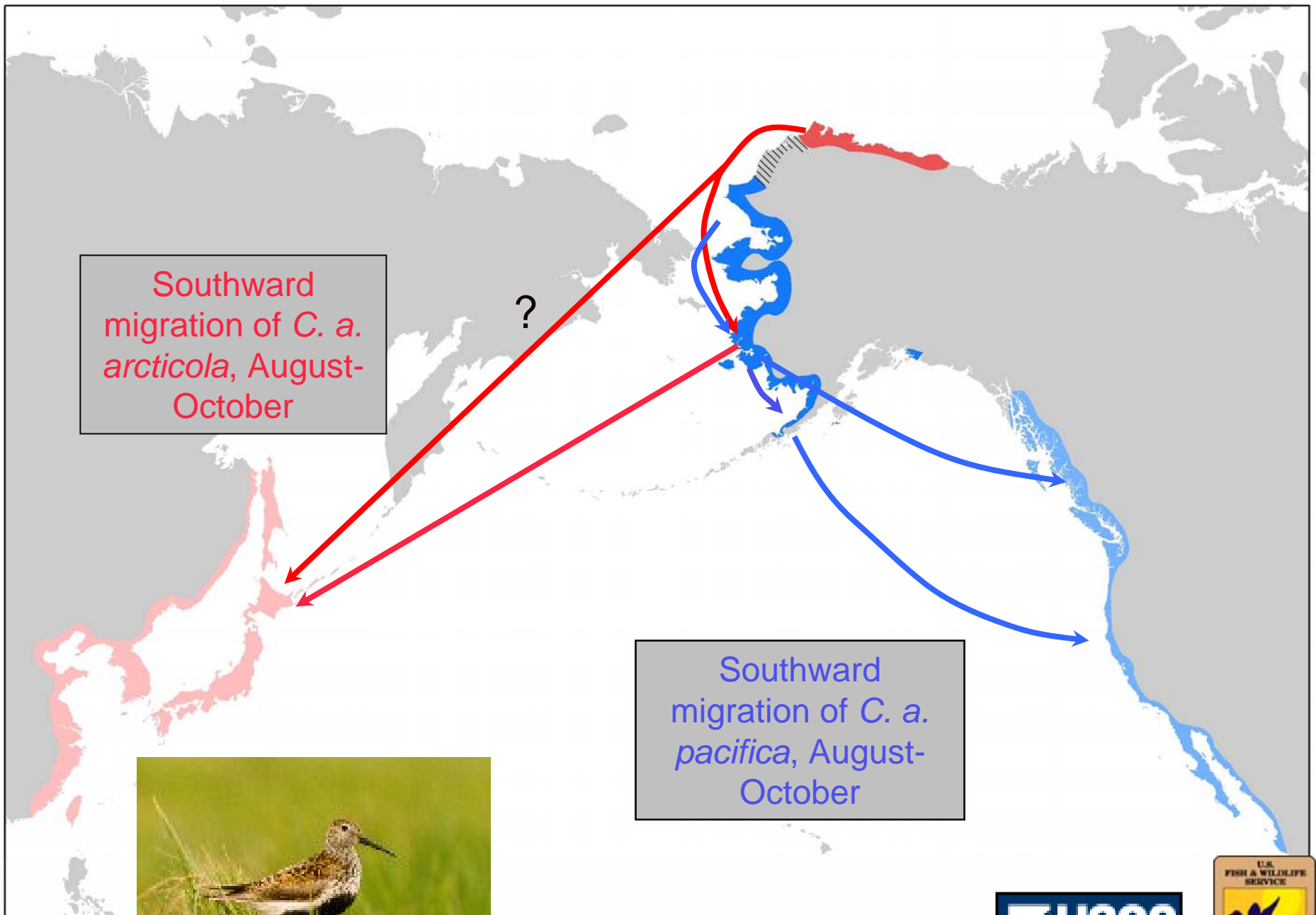


*The arcticola race of dunlin is one that is most likely to carry the H5N1 avian influenza virus.*

Northward  
migration of *C. a.*  
*arcticola*, May-  
June

Northward  
migration of *C. a.*  
*pacifica*, May-June





Southward migration of *C. a. arctica*, August-October

Southward migration of *C. a. pacifica*, August-October



T. Mano





**When and where to sample:** breeding season and North Slope  
Nests initiated early May - June; chicks fledged by mid-July



*B. Trask*







*The following slides describes a study conducted at Barrow in 2005 and how birds were captured in that year.*


## Barrow breeding study



M. Denega







*Rope drags are one way  
used to find cryptic nests.*



*B. Trask*







*Alternatively, people can use bird behavior to locate nest sites.*



R. Lancot

2003 6 11







*R. Lanctot*





*Once found, adult birds can be captured at nest sites using a bow net.*



*T. Mano*







*Adults and chicks can also be captured after hatch.*



*M Denega*







*Adults can be captured during brood-rearing using mist nets.*



*R. Gill*



*The next slide shows the number of adults and chicks of several species captured by a field crew in Barrow in 2005.*







## Barrow Field Studies: 2005 capture results

Dunlin	51 adults, 91 chicks (44 A.I. Samples)
Long-billed Dowitchers	8 adults, 7 chicks
Pectoral Sandpipers	44 adults, 136 chicks







When and where to sample: Spring and Fall Staging in western Alaska  
shorebirds aggregate along coastal estuaries and lagoons



*A Taylor*







*The following slides describes a study conducted at Tutakoke in 2005 and how birds were captured in that year.*

## **Tutakoke Fall Staging study**



*R. Gill*





*During fall staging, birds aggregate in large roosts, allowing large numbers to be caught with a cannon or rocket net.*



*R. Gill*





*Birds can also be caught by luring them close to mist nets using shorebird decoys.*





*Another option is simple traps that catch birds by allowing them to walk into a trap but making it difficult for them to walk out.*



*The next slide shows the number of adults and juveniles of several species captured by a field crew in Tutakoke in 2005.*





## Tutakoke Field Studies: 2005 capture results

Dunlin	618 adults (74 A.I. samples)
Sharp-tailed Sandpiper	210 juveniles (some)
Rock Sandpipers	95 adults (few)
Long-billed Dowitchers	21 adults (few)



*Photos by R. Gill*

*The next series of slides show where we anticipate and propose sampling birds on the North Slope and Yukon Kuskokwim delta in 2006.*

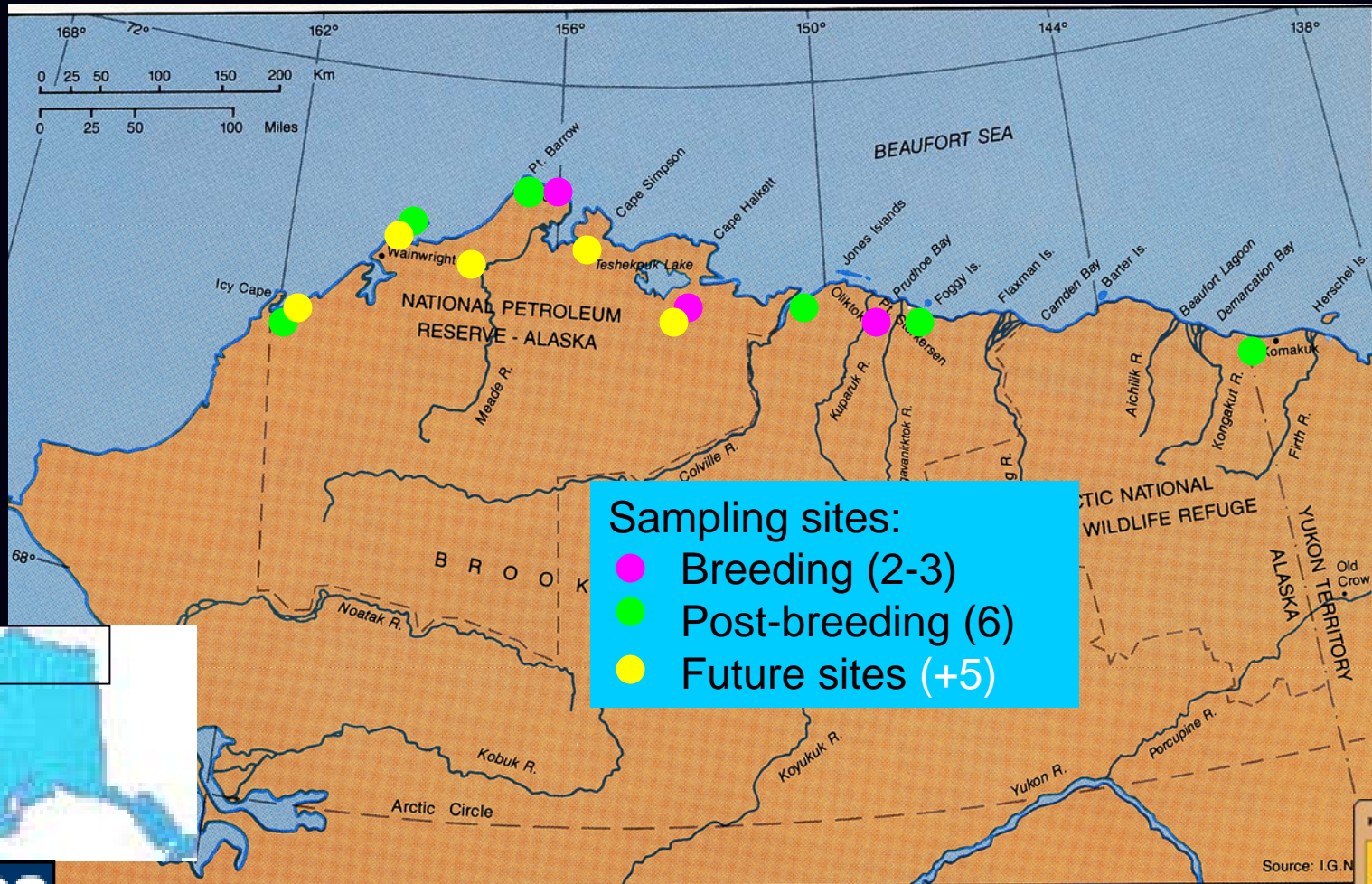






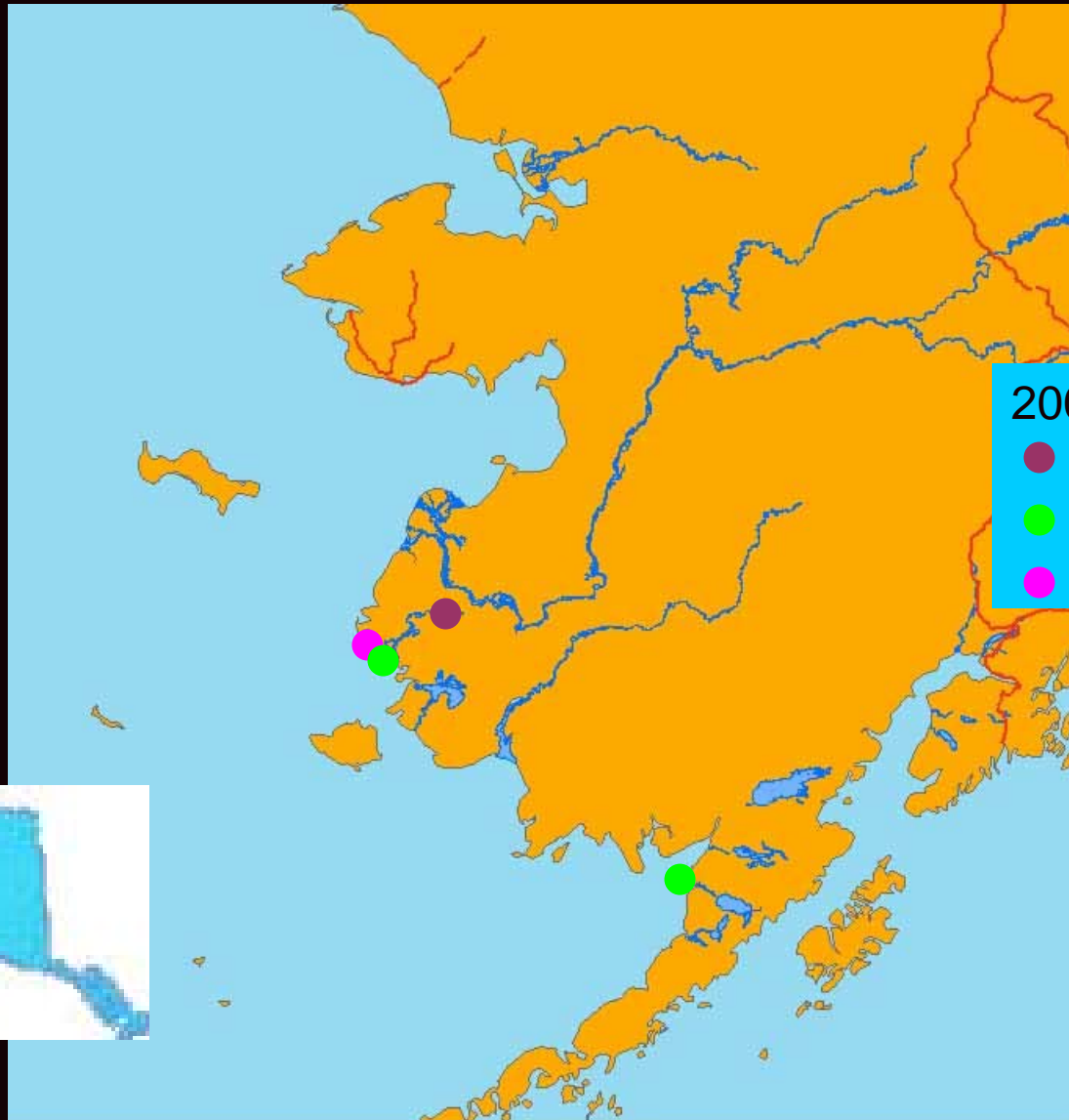


# Additional places to sample???





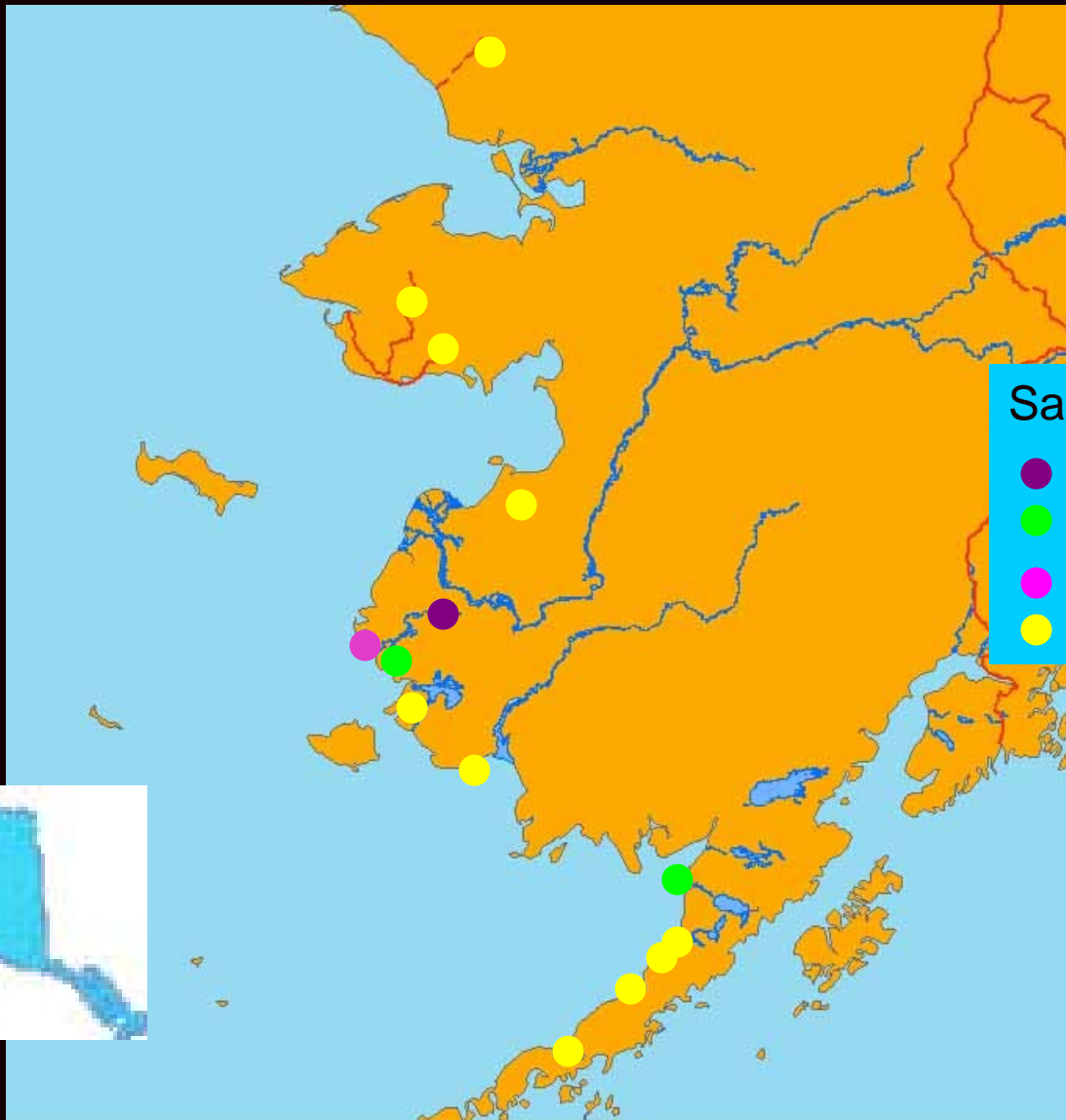
# Shorebird sampling sites in Western Alaska: breeding and post-breeding sites



- 2006 Sampling Sites
- Breeding (1)
  - Post-breeding (2)
  - Spring Staging (1)



# Additional places to sample???



## Sampling Sites

- Breeding (1)
- Post-breeding (2)
- Spring Staging (1)
- Future sites (+10)





*This last slide shows the time of year, and the effort required, to sample each of the ten shorebird species listed as likely candidates for having the highly pathogenic influenza (H5N1) virus.*



	Spring Staging	Breeding	Fall Staging	Effort Required <sup>1</sup>
DUNL				1
SHSA				1
BARG				2
RUTU				2-3
PESA				2-3
REKN				3
LBDO				2-3
ROSA				1-2
PAGP				2-3
BBSA				3

<sup>1</sup> A value of 1= easy, 2 = moderately difficult, and 3 = difficult.