

# Winter Observations of Great Lakes Piping Plover 1993-2004:

## *Conservation & Management Implications*

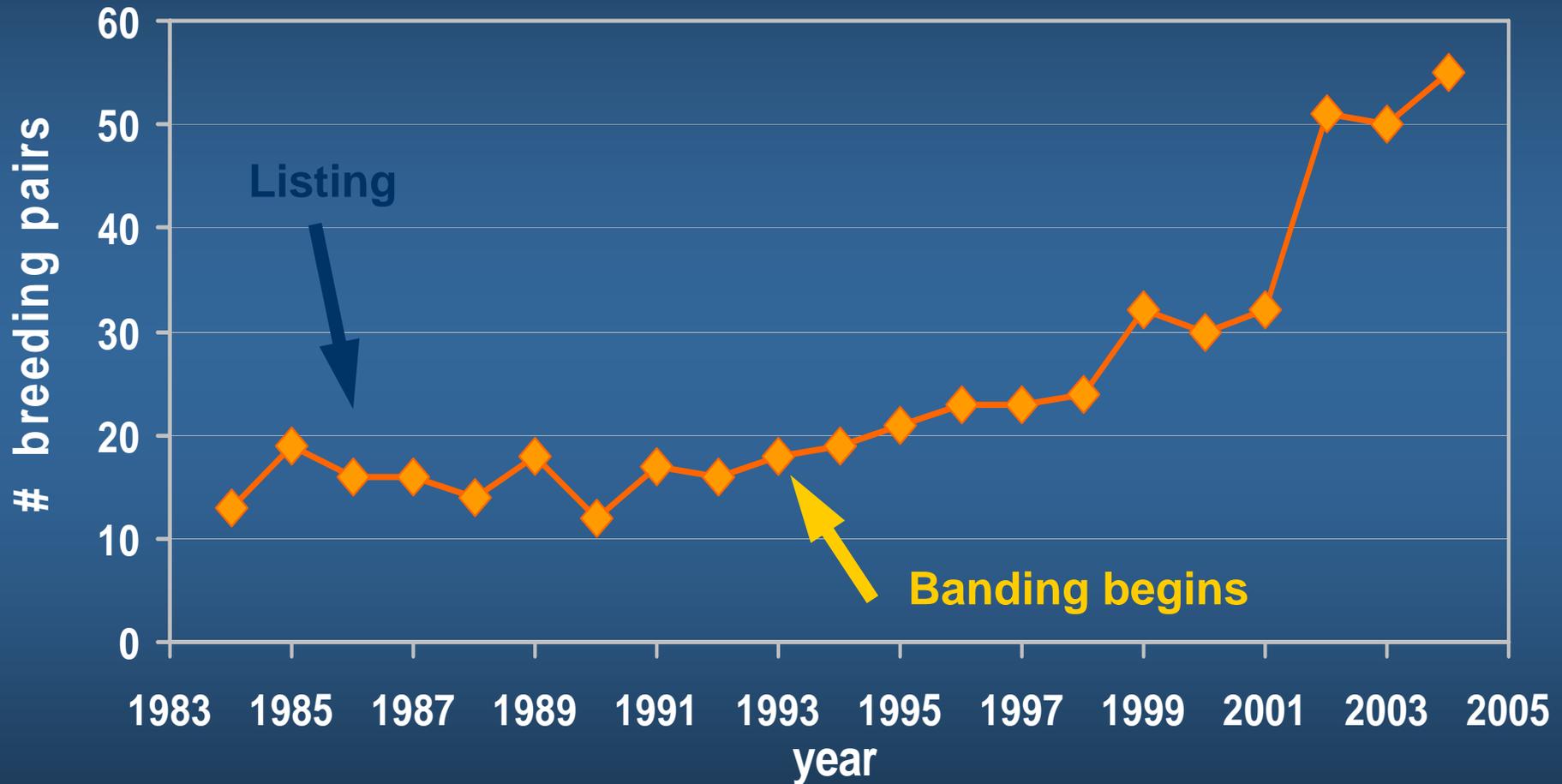


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# Great Lakes Population Estimate



# Goals of Banding Program

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- Determine if Great Lakes young return to breed YES
- Obtain more accurate population estimates YES
- Determine population specific demographic parameters YES
- Determine if Great Lakes birds dispersed to other populations YES – none known to disperse
- Determine where Great Lakes birds winter

# Methods: Banding

## Adults

- Middle 2 weeks of incubation
- Potter or fall trap
- Clay eggs used in place of real
- Incoloy (1B) or aluminum band (1A)
- 3 Darvic color bands (XCL) – at least one orange



## Chicks

- By hand, after 3 days of age
- Brood marked by nest location
- Incoloy (1B) or aluminum band (1A)
- 1 Darvic color bands (XCL)



# Results: Banding

Adults and young 1993-2004

202 uniquely marked  
650 young brood marked



Since 1997

85% breeding adults had unique marks  
95% of fledged young, marked  
100% captive reared young uniquely marked

# Results: Sightings

## Great Lakes Sightings:

n=491

## Rules:

Only positive IDs used for analysis n=354

## Sighting windows

**Fall:** July – September n=109

**Winter:** October – February n=206

**Spring:** March – May n=36



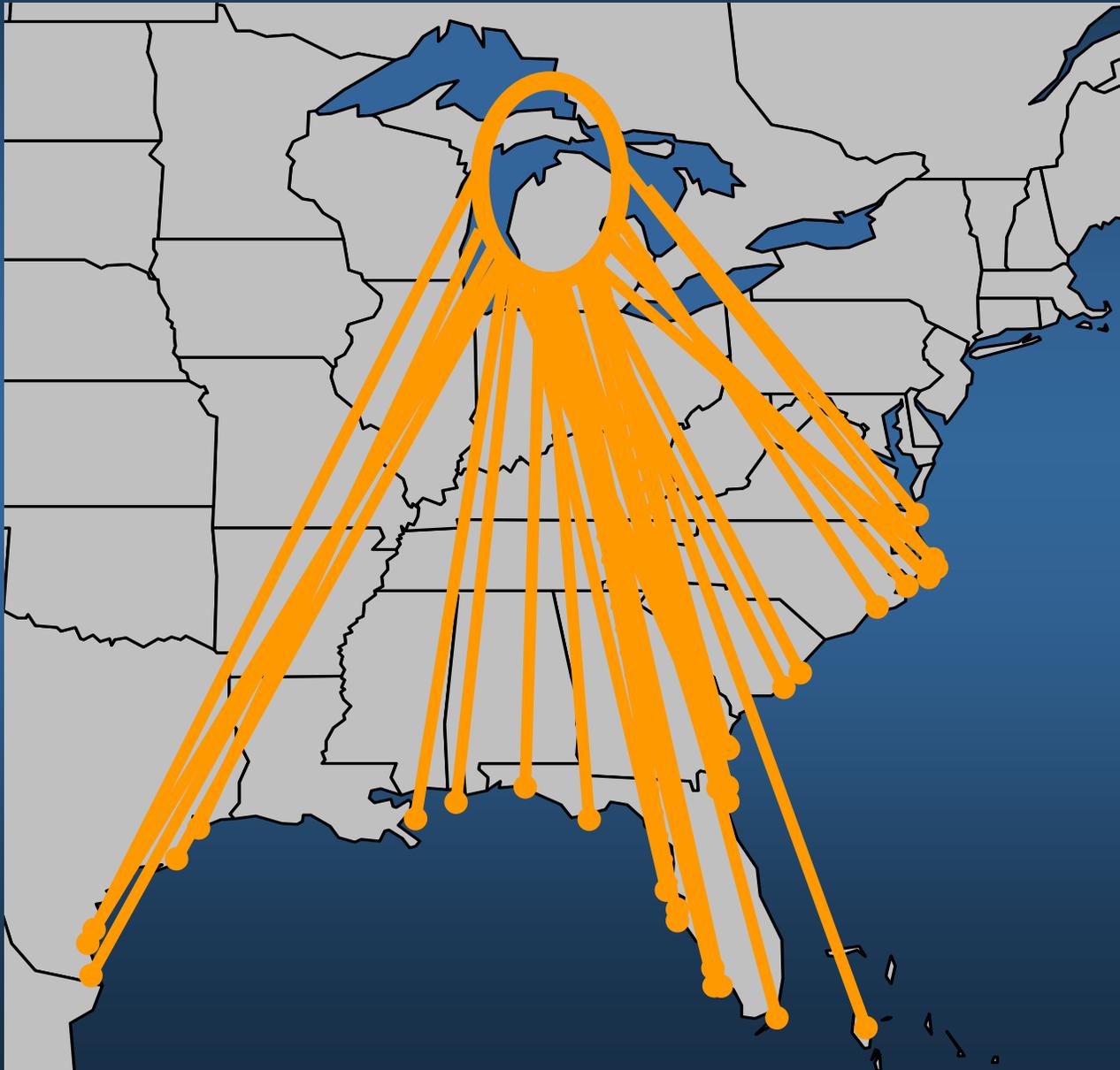
# Results

## Great Lakes Piping Plovers

- **Exhibit broad distribution in winter**
- **Demonstrate winter site fidelity**
- **Pairs and offspring do not winter together**
- **Survival a concern**
- **Migration**
  - southward - variable (slow, fast)
  - northward - more rapid
  - some may follow Atlantic coastline (NJ to FL)

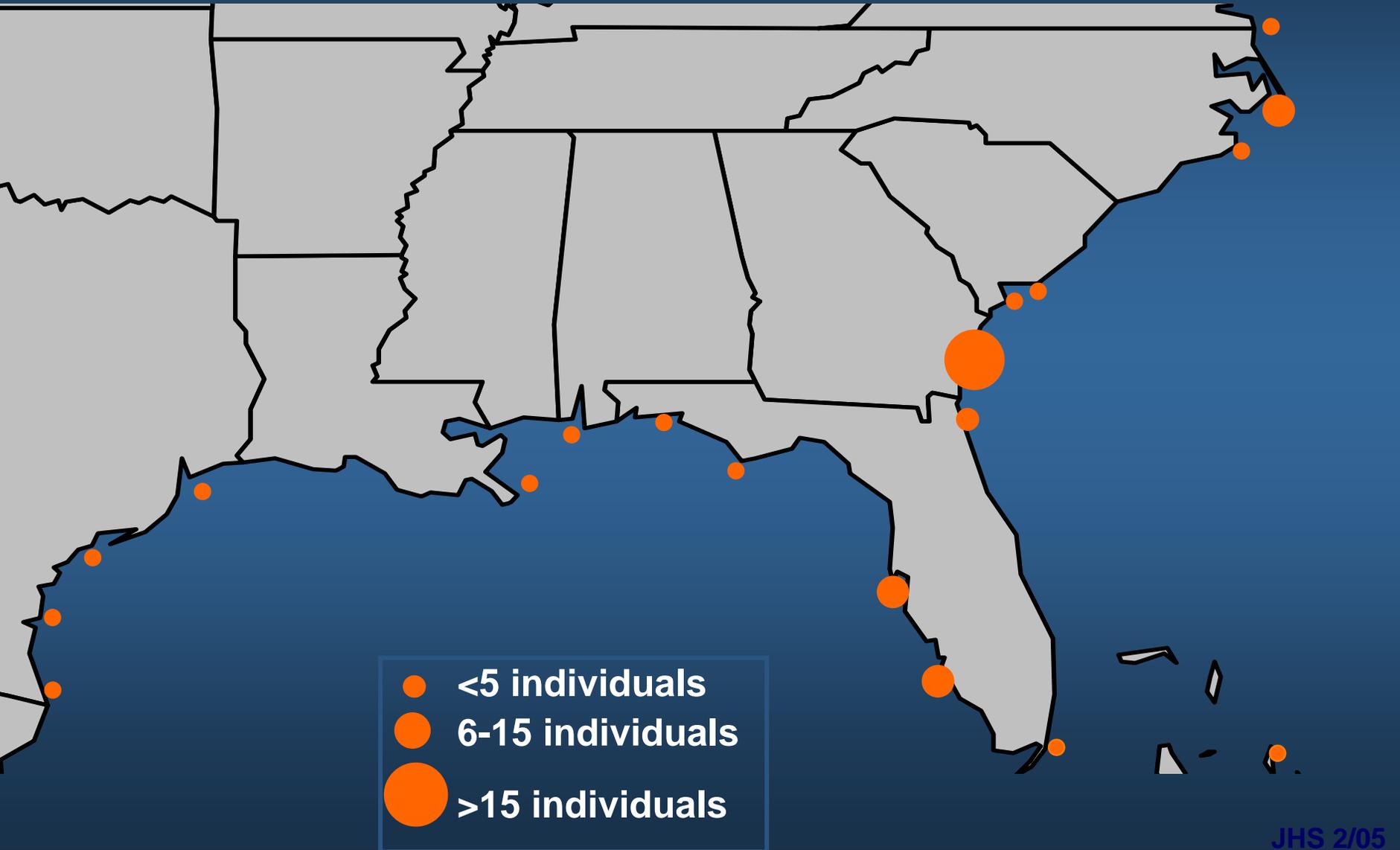
# Results

Exhibit broad distribution in winter



# Results

## Density distributions



# Results

## winter site fidelity

- 28 unique individuals resighted
- 2-10 winters after initial sighting and within 2 km



# Results

## Great Lakes Piping Plovers

Pairs with known winter locations,  $n=13$

- Mean distance  $547 \pm 684$  km (0 - 2,300 km)

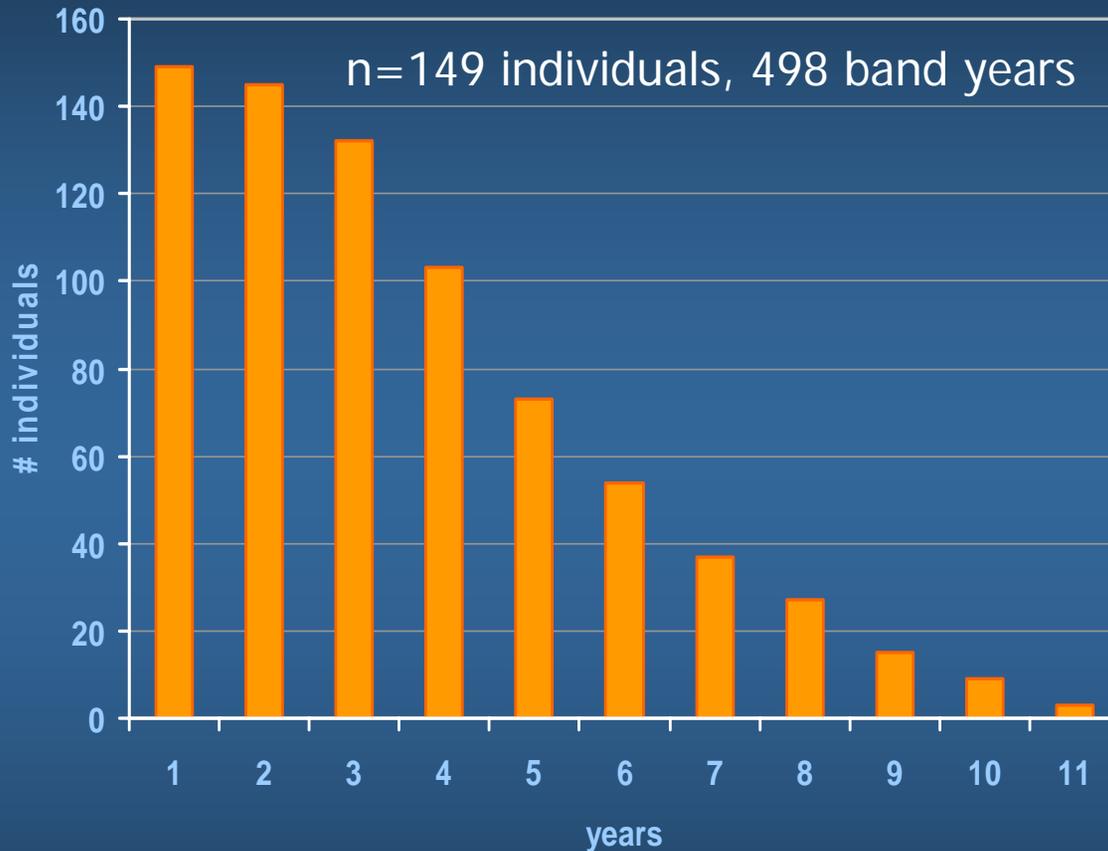


Parents and offspring,  $n=17$

- Mean distance  $507 \pm 468$  km (2 - 1,660 km)
- Though not significant, mean distance between offspring and father < offspring and mother

# Results

## Survival a concern?

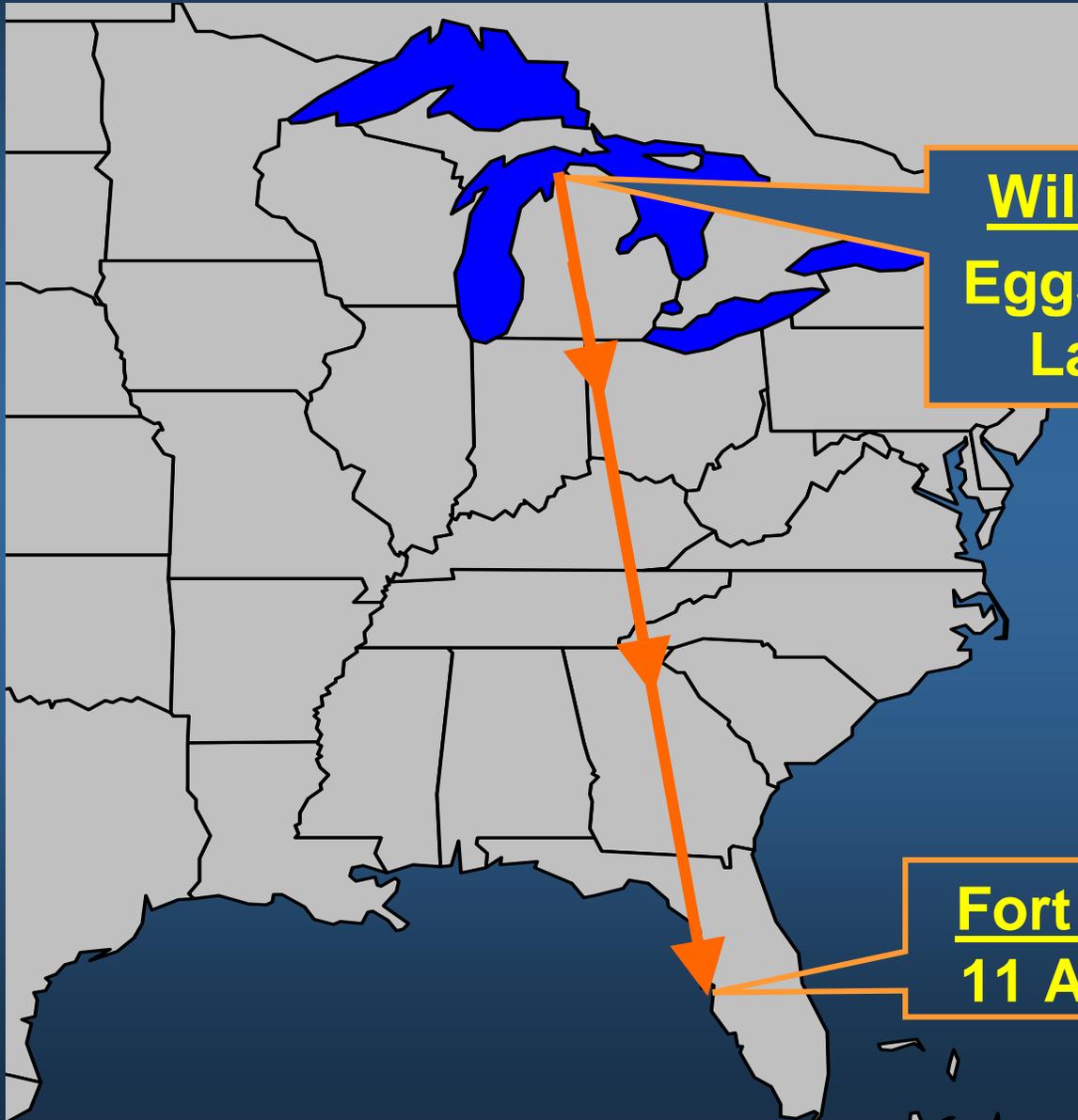


- Survival of adults year 2+ is ~75% per year. But, majority of mortality in winter.

- 25-50% of fledglings survive 1<sup>st</sup> winter to breed in Great Lakes.

# Results

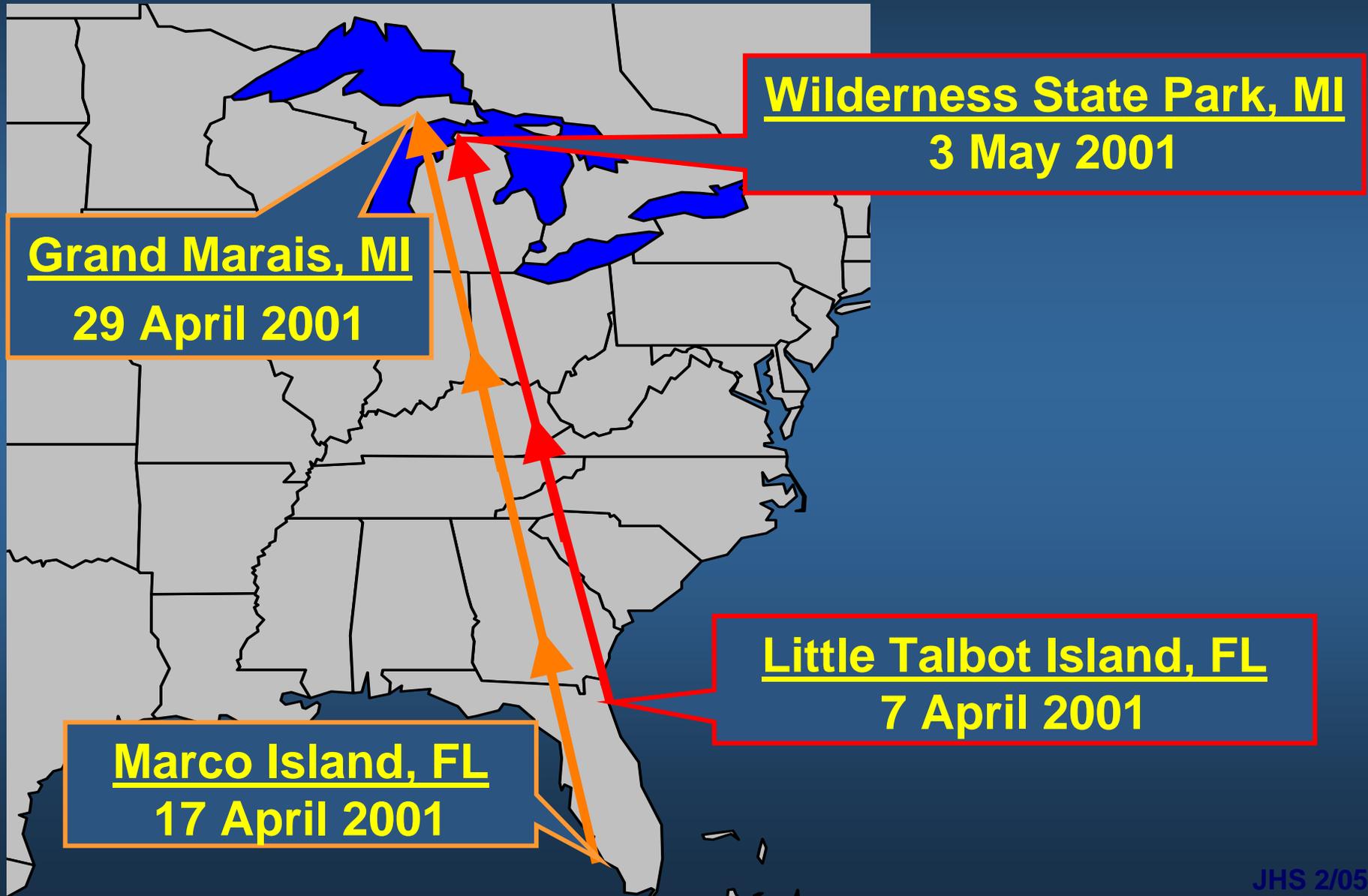
Migration southward - variable



Wilderness State Park, MI  
Eggs hatched, 22 July 2001  
Last seen 29 July 2001

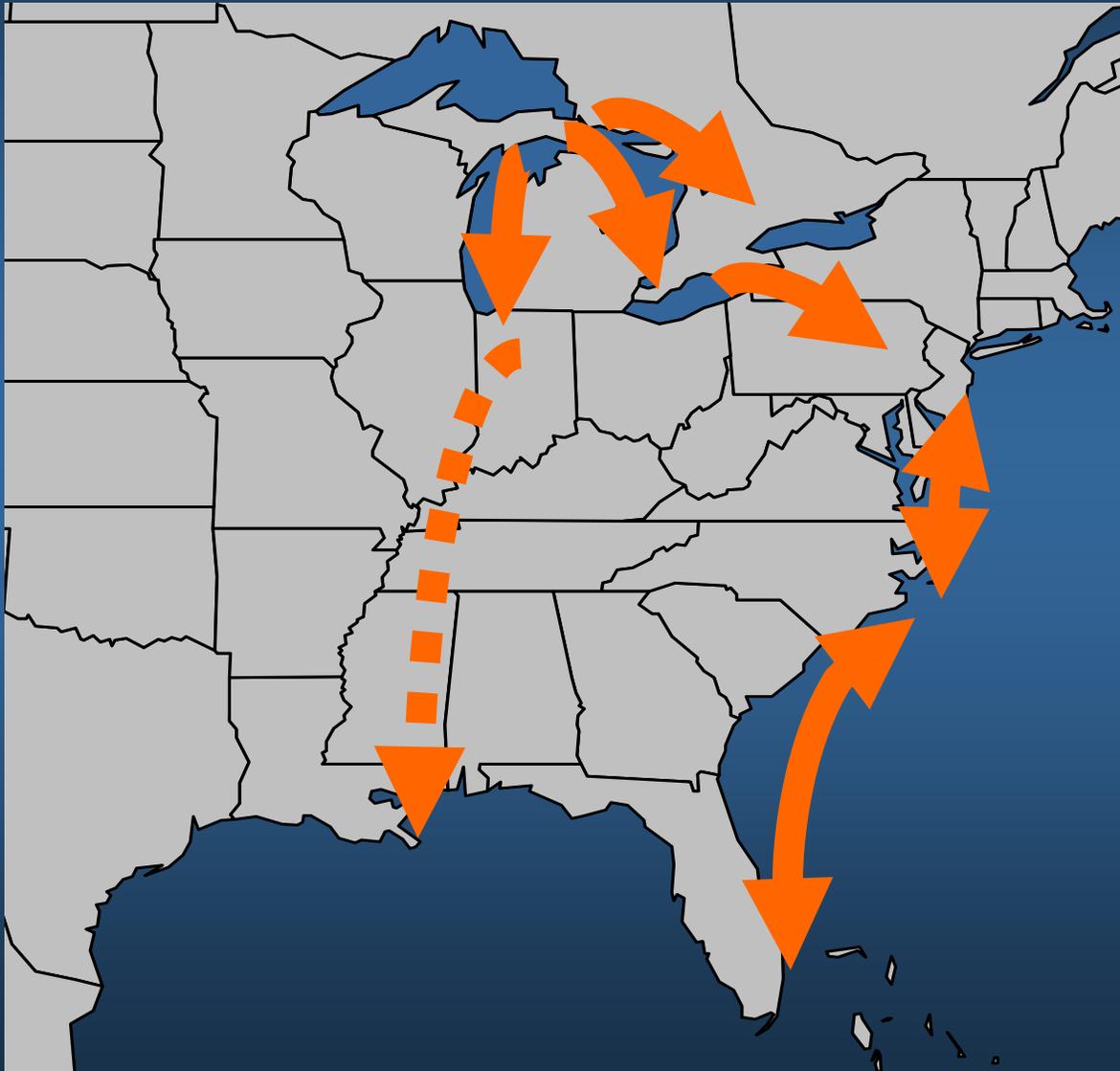
Fort DeSoto, FL  
11 August 2001

# Results Migration northward - more rapid



# Results

## Migration pathways



# Results

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# Results

## Great Lakes Piping Plovers



# Acknowledgments: Great Lakes

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- Sleeping Bear Dunes & Apostle Islands Nat'l Lakeshores
- Hiawatha and Huron-Manistee Nat'l Forests
- Michigan and Wisconsin DNRs
- U of MN, UMBS, Central Michigan University, Lake State University
- Canadian Wildlife Service & Ontario Ministry of Natural Resources
- American Zoo & Aquarium Association and participating ZOOS
- Tribes: Little Traverse Bay, Traverse Bay & Bad River
- Non-governmental Organizations (e.g. Whitefish Point Bird Observatory, TNC)
- Citizens

# Acknowledgments: non-breeding

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