

COMPARING MANAGEMENT PROGRAMS TO REDUCE RED-TAILED HAWK/AIRCRAFT COLLISIONS AT ORD



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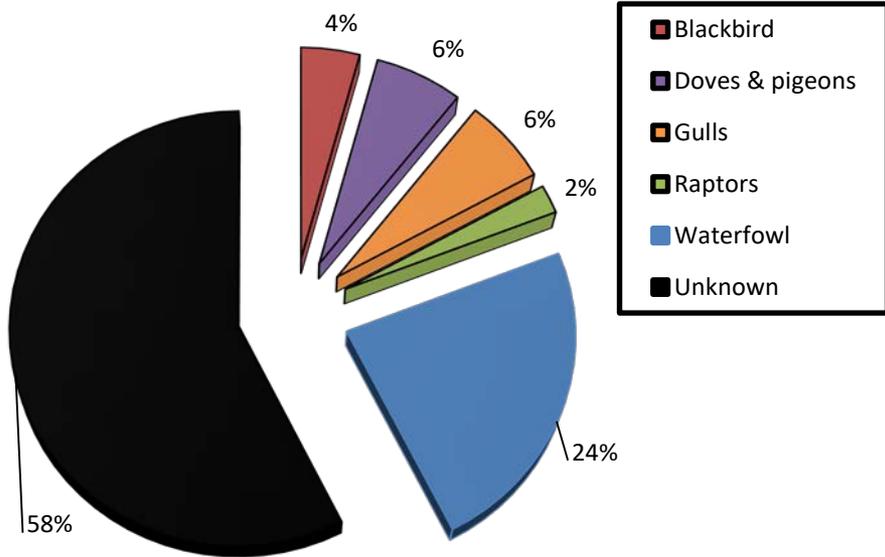
USDA APHIS

Wildlife Services

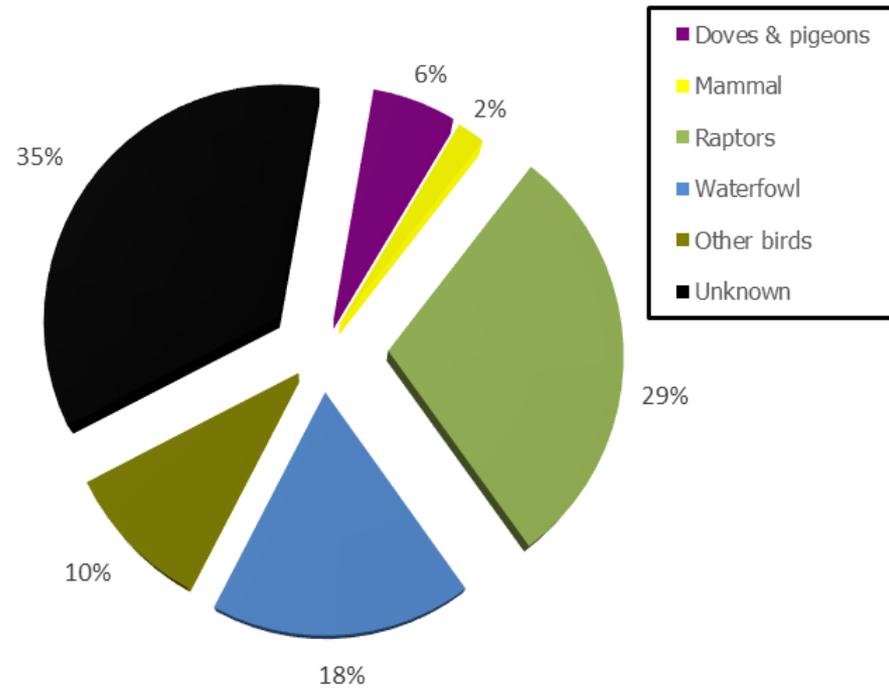


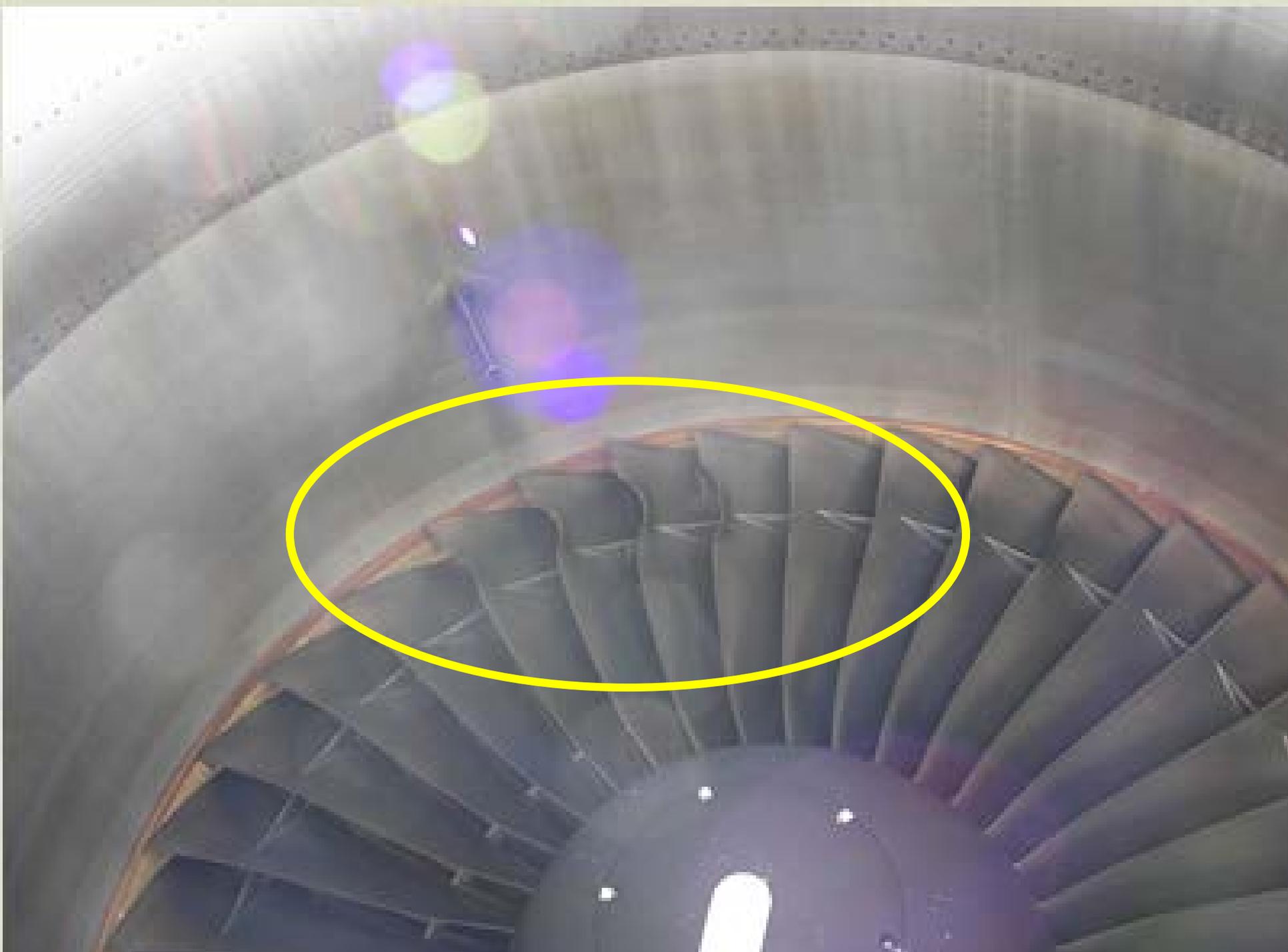
Guild Changes in Damaging Strikes

Damaging Strikes 2000-2006



Damaging Strikes 2007-2014





Raptor Capture / Translocation



RTHA Research



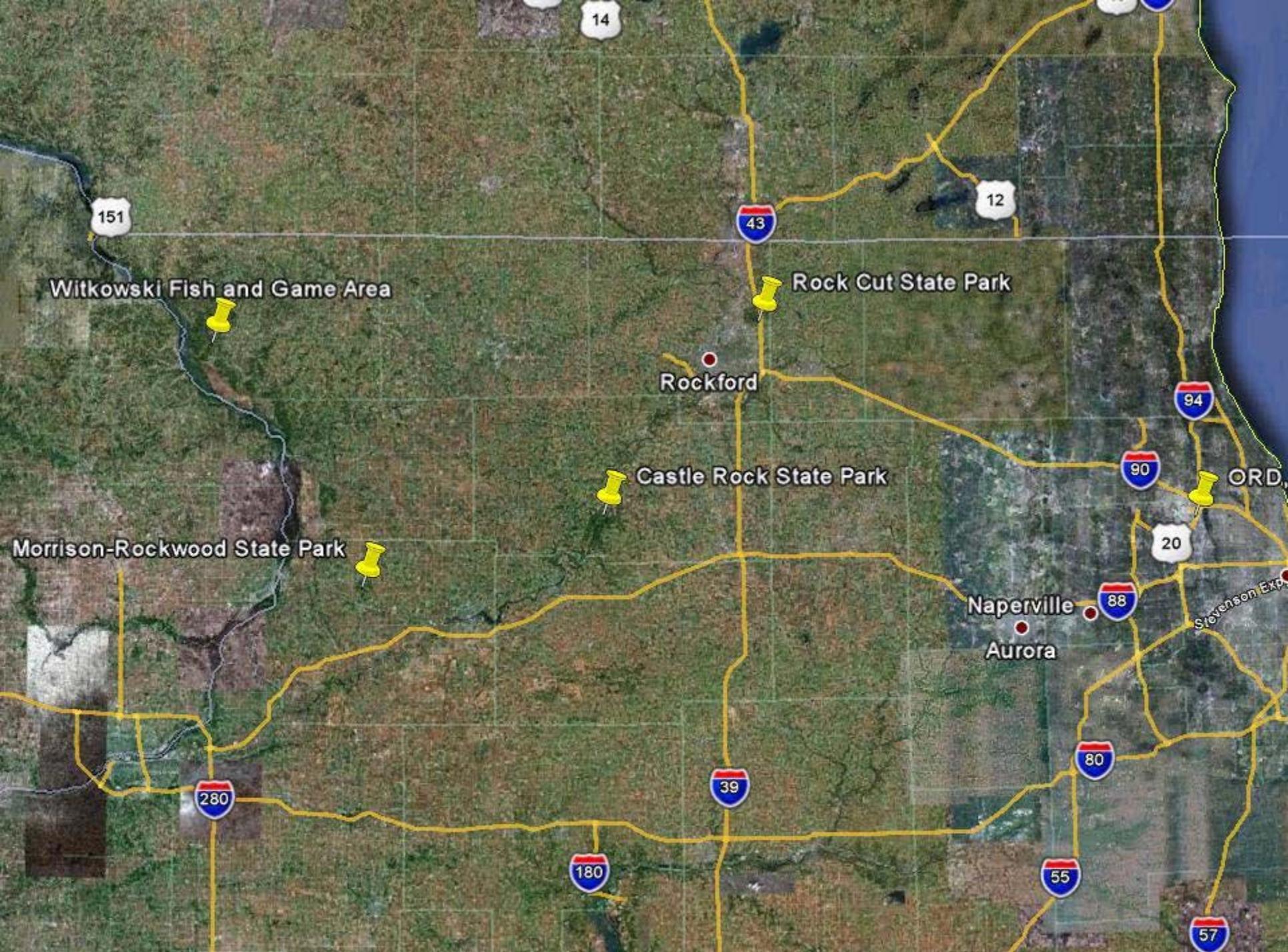
Objective - Phase 1

- Determine factors that influence Red-tailed Hawk return rate to ORD after translocation
- Factors included:
 - Translocation distance
 - Translocated during or outside of the breeding season
 - Age of bird when translocated
 - Trip number (i.e. first time translocated, ...)

Methods

- Attached uniquely numbered patagial tags to all age class RTHA's from August 2010 - July 2013
- Used a different color tag each year





151

14

12

43

Witkowski Fish and Game Area

Rock Cut State Park

Rockford

94

Castle Rock State Park

90

ORD

Morrison-Rockwood State Park

20

Naperville

88

Aurora

Stevenson Exp

280

39

80

180

55

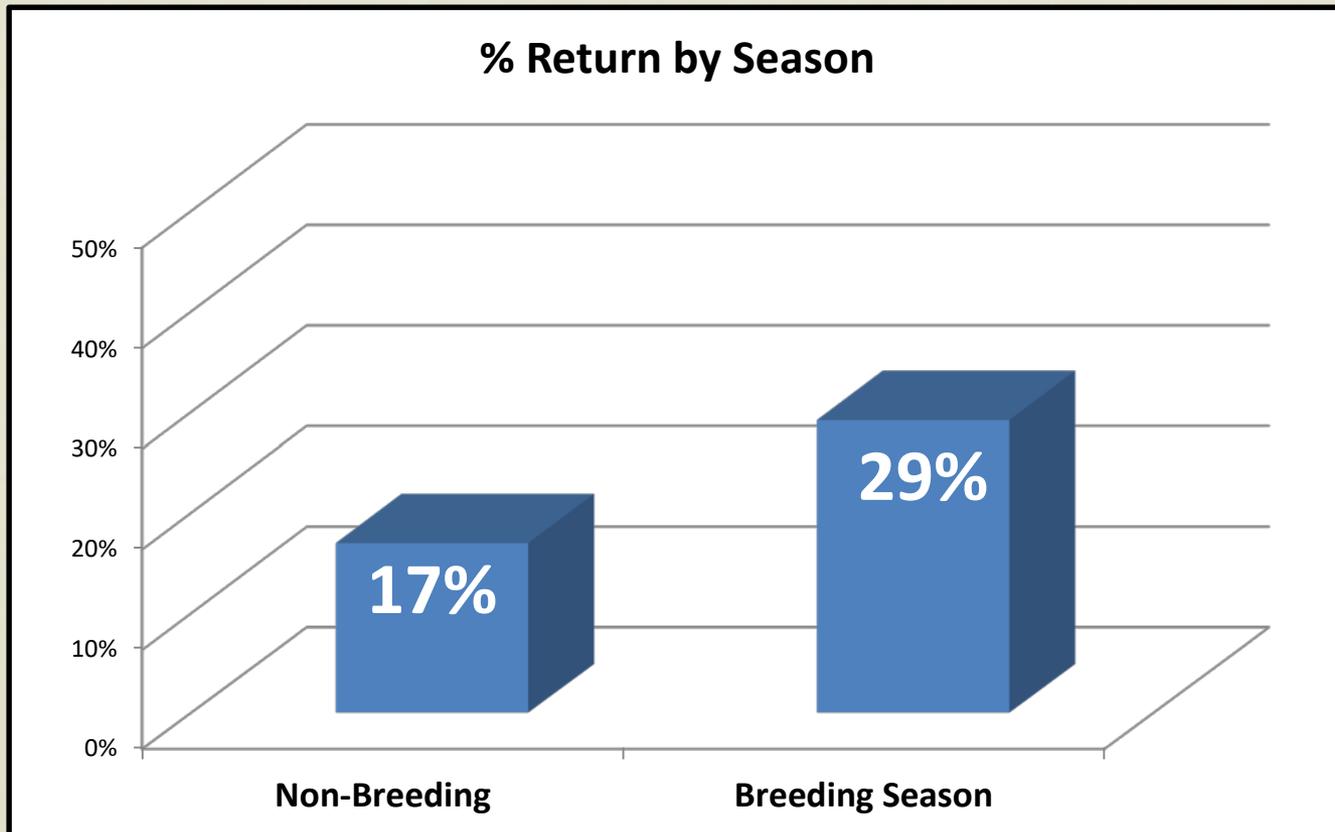
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Return Results- Phase 1

- 610 total birds translocated and 124 returned to ORD
 - **20.3% return rate**
- 471 hatch-year birds translocated with 80 returns
 - **17.0% return rate**
- 139 after-hatch-year birds translocated with 44 returns
 - **31.7% return rate**

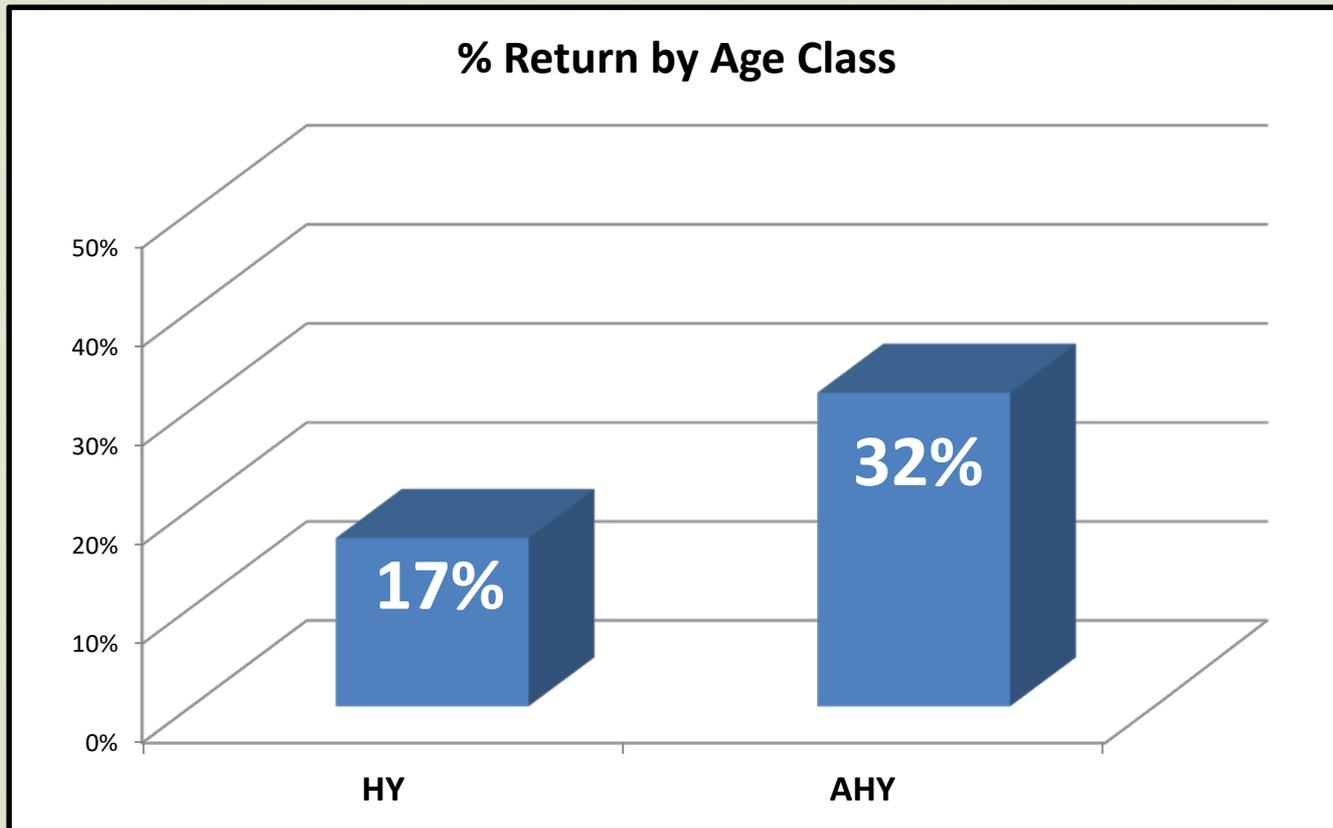
Best Fit Model

- Model variables
 - Breeding season (B)
 - Age (A)
 - Trip # (T)



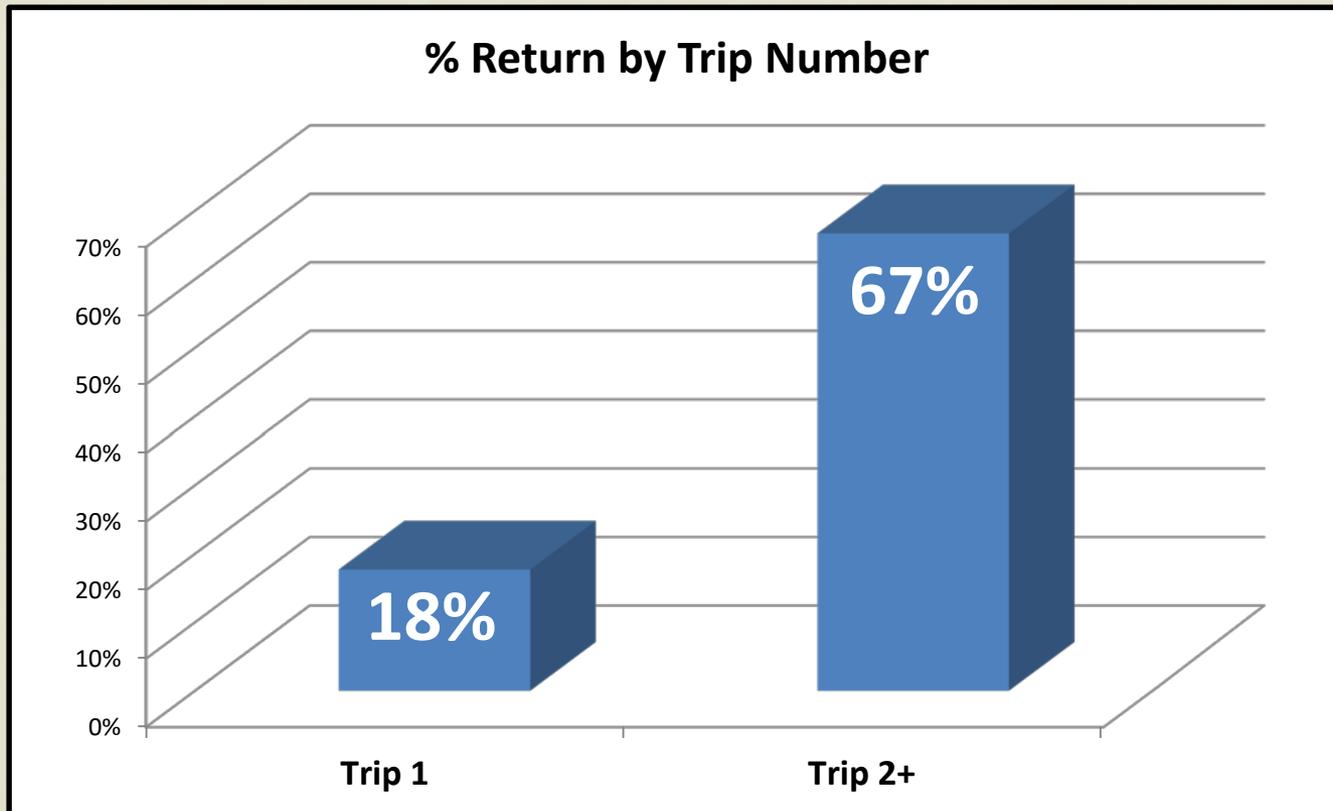
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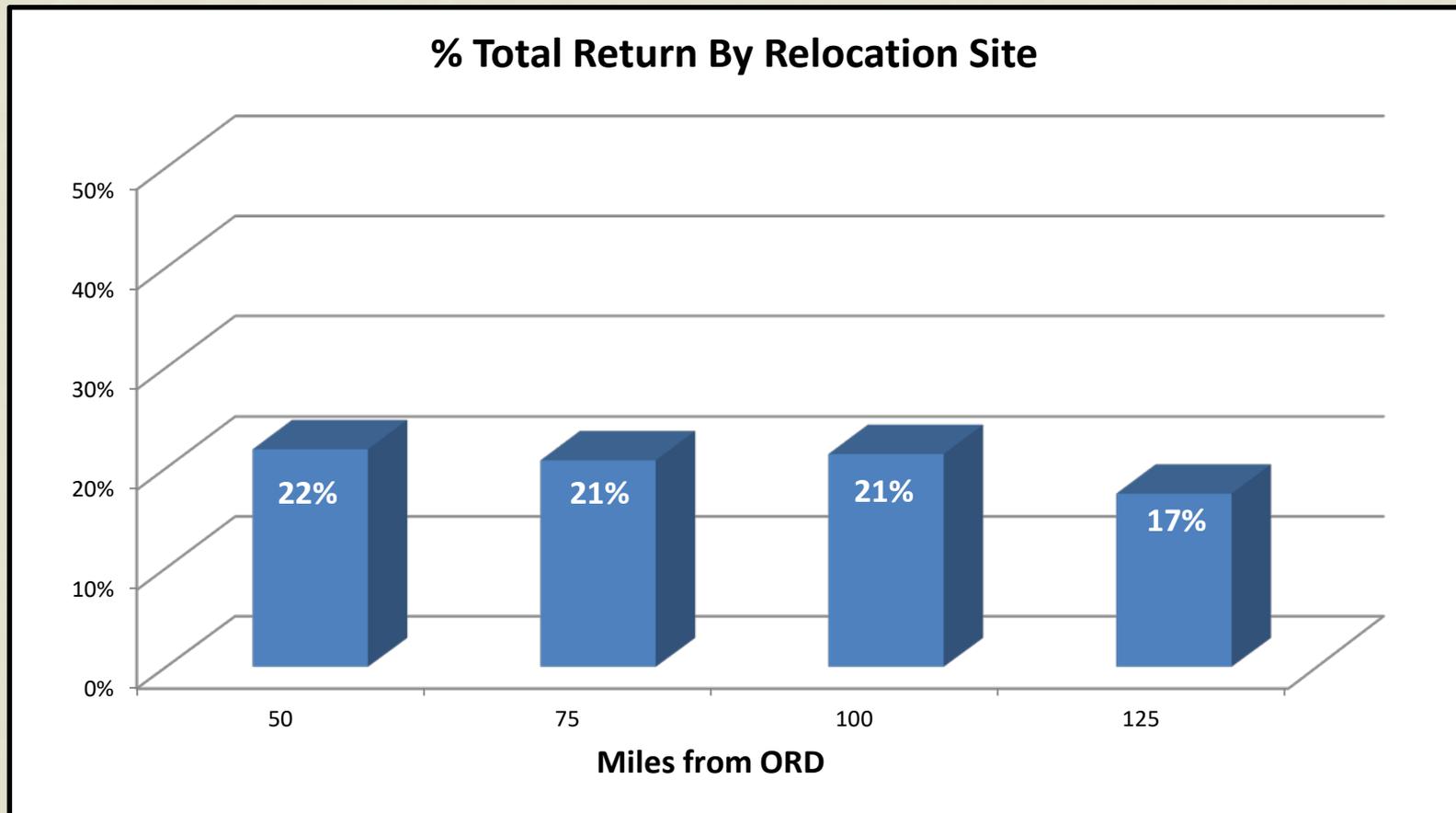
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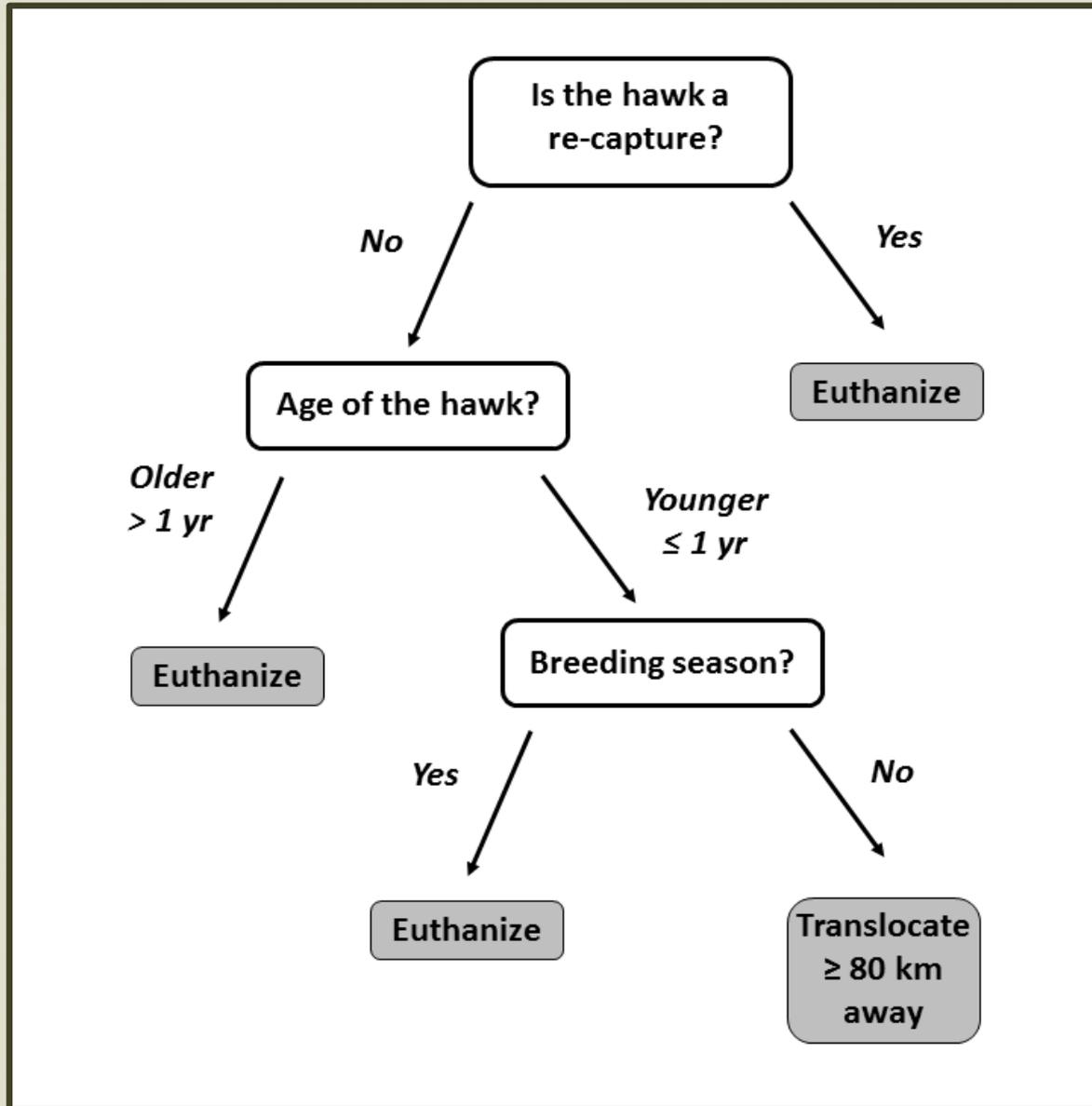


Model Results

- Model with only Relocation Distance (D) variable explained less variation than the null model



Decision Matrix





Research Article

Mitigation Translocation of Red-Tailed Hawks to Reduce Raptor–Aircraft Collisions

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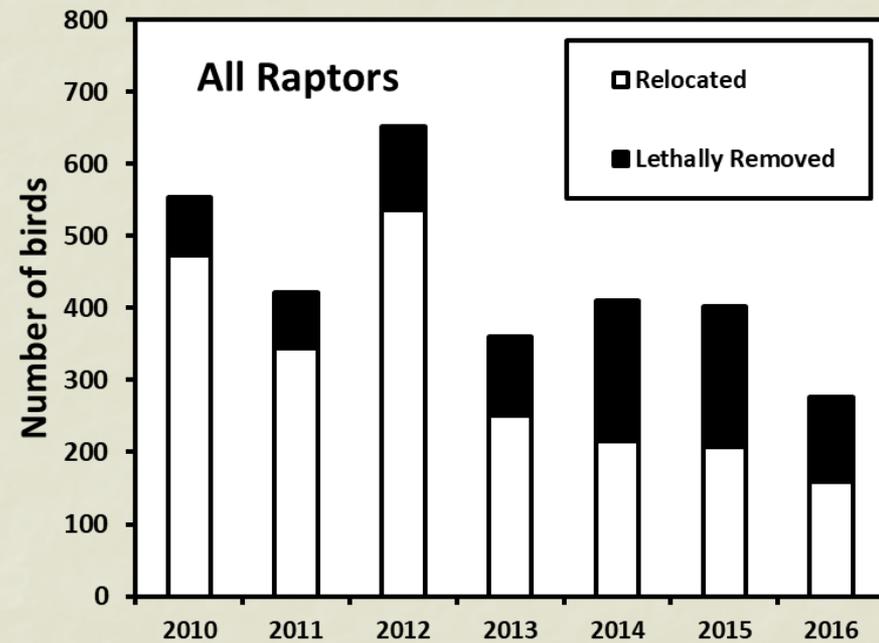
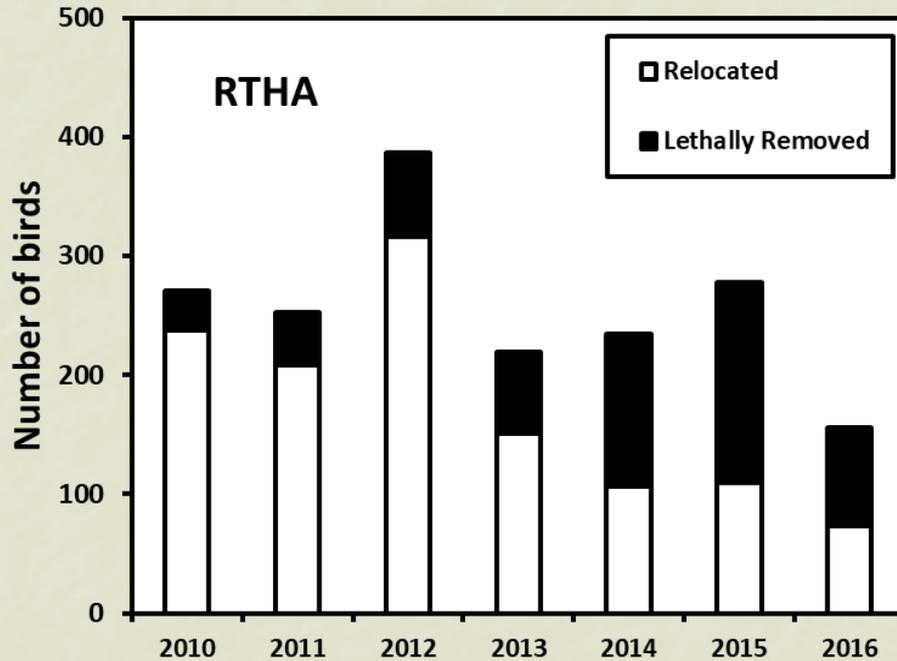
ABSTRACT Translocation of problematic individual animals is commonly used to reduce human–wildlife conflicts, especially to reduce the presence or abundance of raptors within airport environments, where they pose a risk to safe aircraft operations. Although this method has strong public support, there have been no scientific evaluations of its efficacy or to determine which factors might influence the return of translocated birds to the airport. We conducted a study to determine which biological and logistical factors might influence the return of red-tailed hawks (*Buteo jamaicensis*) translocated from Chicago's O'Hare International Airport (ORD) during 2010–2013. We live-captured and translocated red-tailed hawks various distances from the ORD airfield and monitored for returning birds. We found the odds of hawk return increased by 2.36 (95% CI = 0.99–5.70) times for older birds (> 1 yr of age) relative to younger birds (\leq 1 yr of age). Odds of hawk return went up 4.10 (95% CI = 0.75–22.2) times when translocations were conducted during the breeding season relative to the non-breeding season. The odds of hawk return increased 11.94 (95% CI = 3.29–43.38) times for each subsequent translocation event involving the same hawk. The cost of 1 translocation event to the release sites that were 81, 121, 181, and 204 km from ORD was \$213, \$284, \$362, and \$426, respectively. Management programs that use release sites 80 km from the airport minimize translocation events to include only younger birds during the non-breeding season, and undertake only 1 translocation event for an individual hawk would increase program efficacy and greatly reduce program implementation costs. The decision matrix regarding the use of a raptor trapping and translocation program involves a variety of biological, logistical, economic, and sociopolitical variables. This study represents an important first step in providing a scientific foundation for informing such management decisions. Published 2017. This article is a U.S. Government work and is in the public domain in the USA.

KEY WORDS airport risk, bird strikes, *Buteo jamaicensis*, movements, raptors, red-tailed hawks, translocation.

Phase 2 Management Strategy

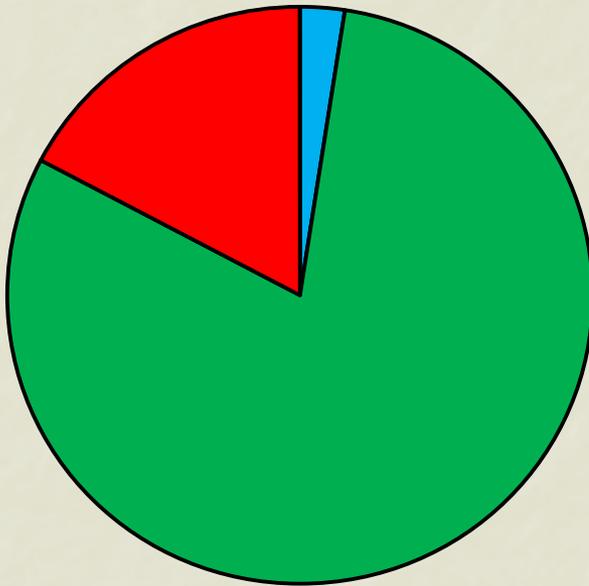


Raptor Take Numbers

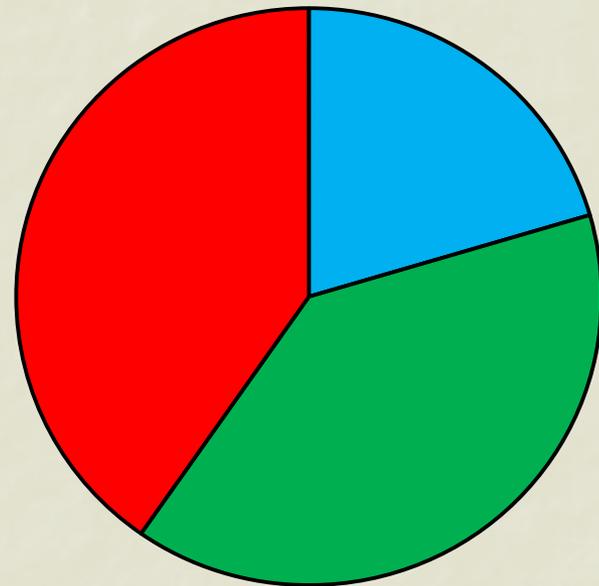


RTHA Management Actions

Phase I



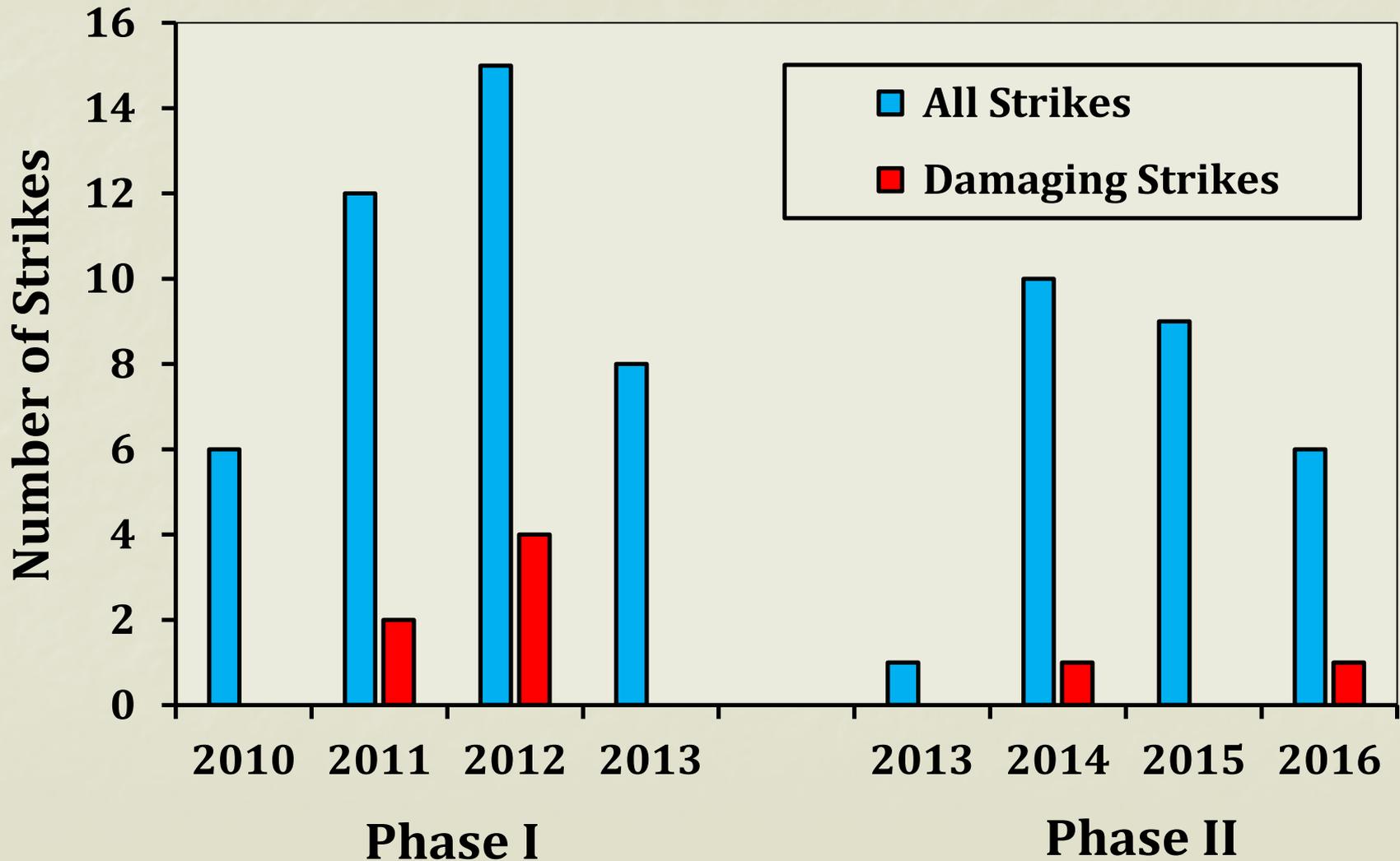
Phase II



RTHA Results - Phase 2

- 316 total birds translocated and 33 returned to ORD (25 Recaps, 8 Resights)
 - **10.4% return rate**
 - **Compared to 20.3% return rate (all birds) from Phase 1**

Results - Reduced Strike Risk



Economics

- Phase I – Translocation cost ~ \$44,500
- Phase II – Translocation cost ~ \$28,220
- Biologist time “off the airfield”

In Summary

- Phase 2 showed a reduced return rate of RTHA compared to Phase 1

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- During Phase 2 we observed a reduction in RTHA strikes at ORD
- There are economic benefits to a more balanced management approach for RTHA's at ORD

Questions?

