

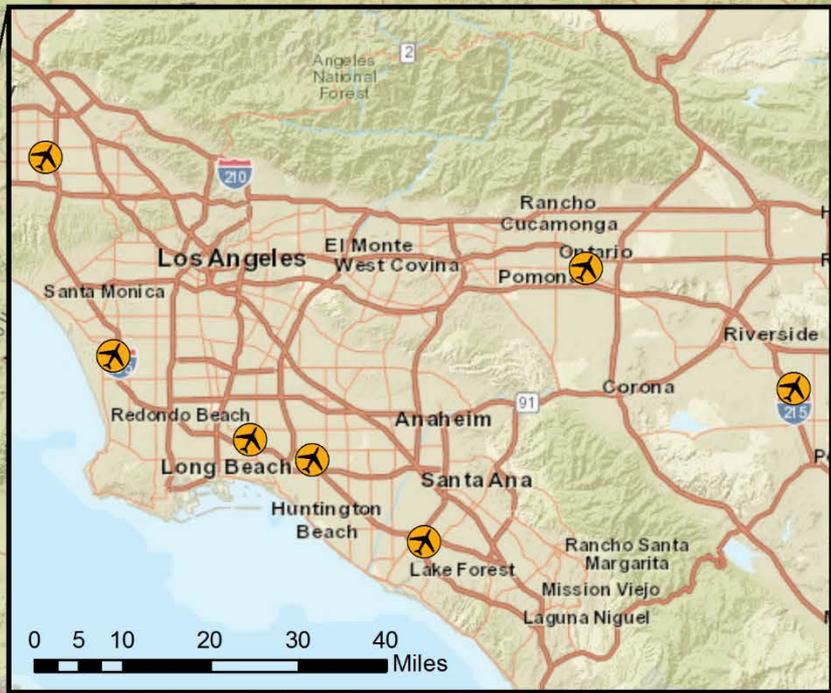
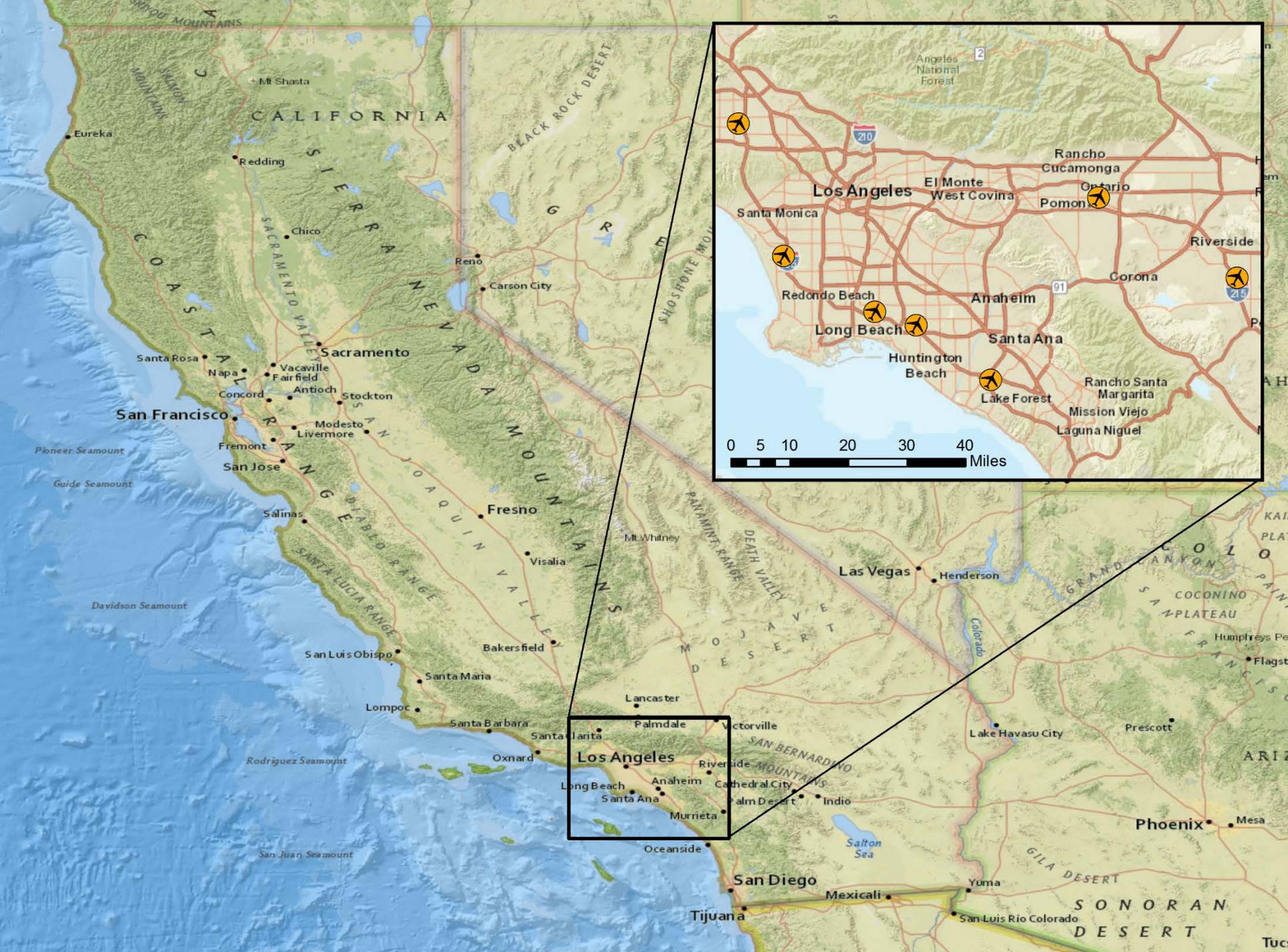
TRANSLOCATING RAPTORS FROM LOS ANGELES AREA AIRPORTS: LESSONS LEARNED AND IMPROVING FOR THE FUTURE

<http://www.aphis.usda.gov/ws/ca>



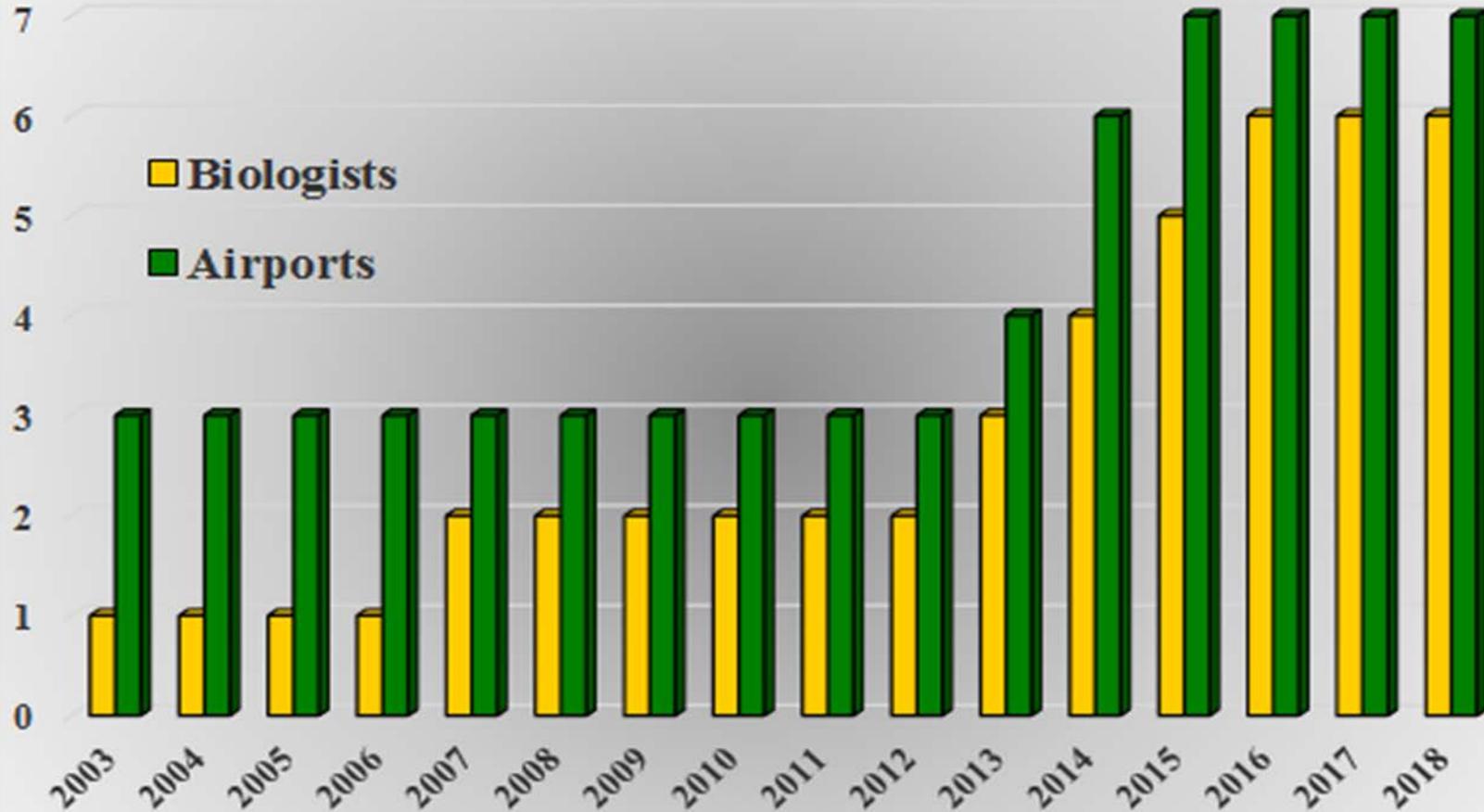
Daniel Biteman, USDA/APHIS/Wildlife Services, CA
Derek Collins, USDA/APHIS/Wildlife Services, CA
Dr. Brian Washburn, USDA/APHIS/NWRC, OH





USDA - Los Angeles Area

<http://www.aphis.usda.gov/ws/ca>



Wildlife Hazards at Airports

<http://www.aphis.usda.gov/ws/ca>

- Wildlife strikes caused 282 fatalities (1988-2017), and cost \$1.2 billion annually (Begier et al. 2017)
- Birds account for 98% of total wildlife strikes (Dolbeer et al. 2016)
- Raptors are among the most frequently struck (13%), and most damaging bird guilds (Dolbeer et al. 2016)



Raptors at LA-Airports

<http://www.aphis.usda.gov/ws/ca>

- Common at airports in SoCal
- Year round hazard



Bird strike caused fatal US Marine helicopter crash in California: investigators



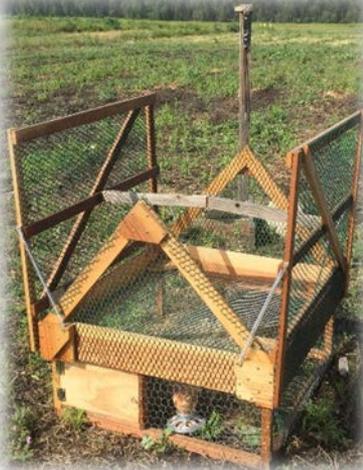
A AH-1W "Cobra" helicopter, the same type of helicopter investigators say was brought down following a bird strike in September. AP

CAMP PENDLETON, Calif. — A state-of-the-art attack helicopter that crashed in southern California last September killing two US Marines was brought down by a bird strike, investigators have concluded.

Hazard Mitigation - Raptors

<http://www.aphis.usda.gov/ws/ca>

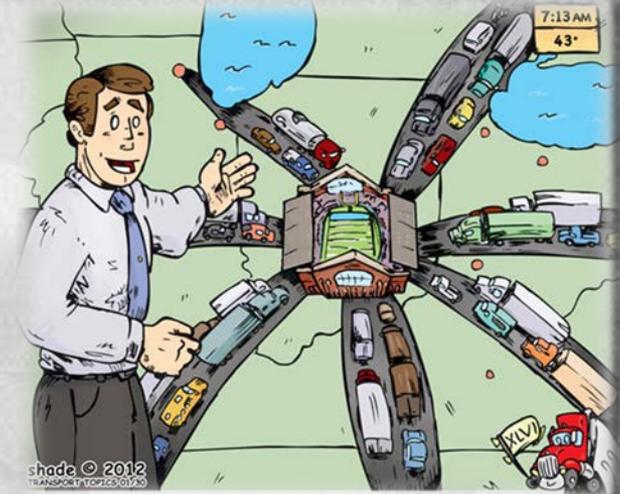
- Habitat modification – prey reduction
- Harassment
- Removal
 - Lethal removal
 - Trap/Translocate



Translocation of Raptors

<http://www.aphis.usda.gov/ws/ca>

- Cons
 - Cost = time AND \$\$
 - Qualifications
 - Returns possible
- Pros
 - Publicly supported
 - Environmentally responsible (especially for sensitive species)
 - If Cons above can be accounted for = Effective
- **IMPORTANT** to maximize effectiveness and reduce cost to the program



Translocation of Raptors - Literature

<http://www.aphis.usda.gov/ws/ca>

Managing Raptor-Aircraft Collisions on a Grand Scale: Summary of a Wildlife Services Raptor Relocation Program

Laurence M. Schafer

USDA APHIS Wildlife Services, Olympia, Washington

Brian E. Washburn

USDA APHIS WS National Wildlife Research Center, Sandusky, Ohio

The Journal of Wildlife Management; DOI: 10.1002/jwmg.21332

Research Article

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

CRAIG K. PULLINS, *USDA, APHIS, Wildlife Services, O'Hare International Airport, AMC Building, Room 241, Chicago, IL 60666, USA*

TRAVIS L. GUERRANT, *USDA, APHIS, Wildlife Services, 3430 Constitution Drive, Suite 121, Springfield, IL 62711, USA*

SCOTT F. BECKERMAN, *USDA, APHIS, Wildlife Services, 3430 Constitution Drive, Suite 121, Springfield, IL 62711, USA*

BRIAN E. WASHBURN,¹ *USDA, Wildlife Services, National Wildlife Research Center, 6100 Columbus Avenue, Sandusky, OH 44870, USA*



Translocation of Raptors - Literature

University of Nebraska - Lincoln

Digital Commons@University of Nebraska - Lincoln

1999 Bird Strike Committee-USA/Canada, First
Joint Annual Meeting, Vancouver, BC

Bird Strike Committee Proceedings

May 1999

Evaluation of controlling Red-tailed Hawks (*Buteo jamaicensis*) through live trapping and relocation to minimize aircraft strikes at Canadian Airports

Martin L. Wernaart

Nature's Advantage Inc., Campbellville, ON, nature@globalserve.net

Terri L. Groh

Nature's Advantage Inc.

Philip J. Roberts

Nature's Advantage Inc.

Historic Data

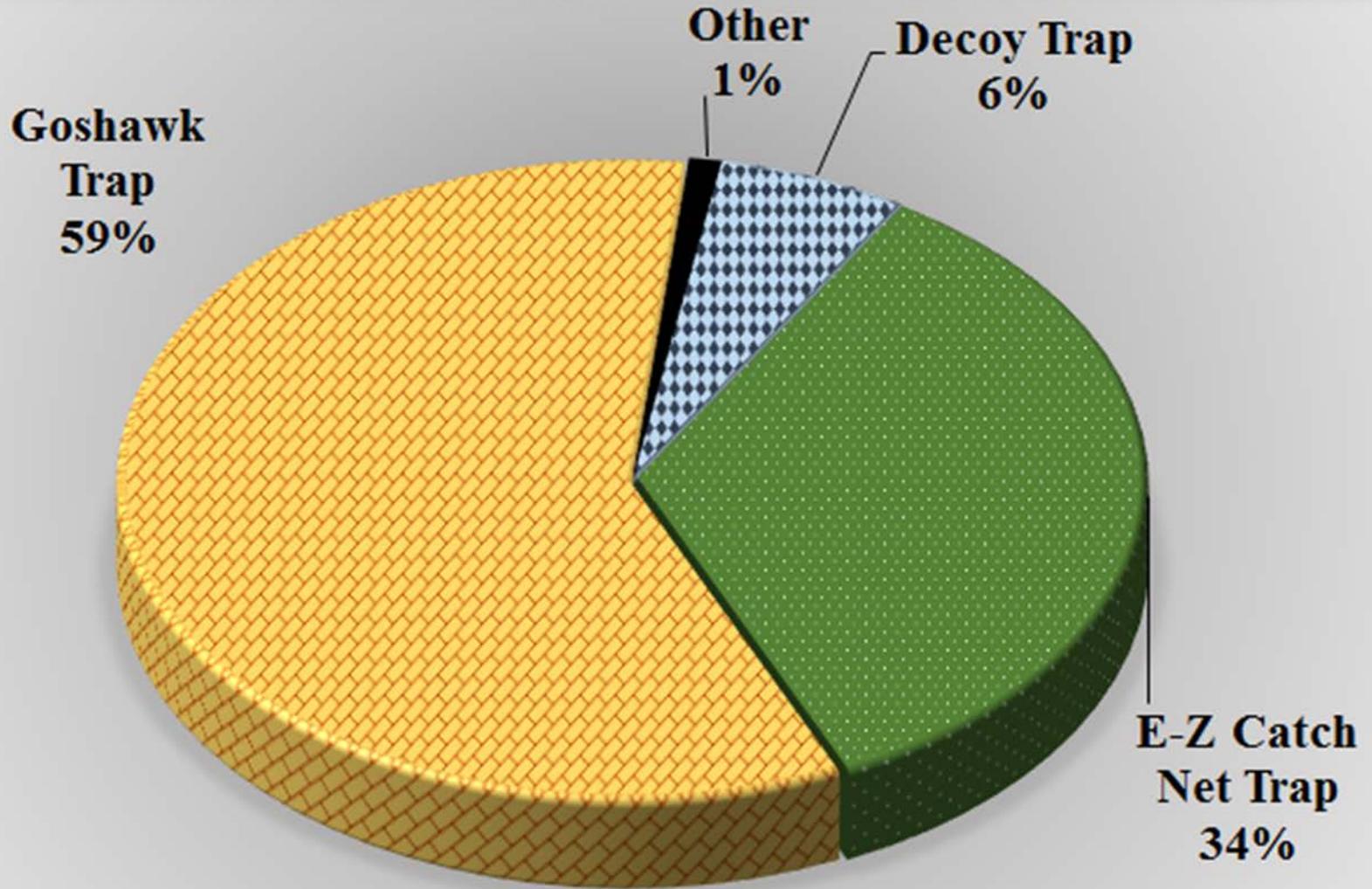
<http://www.aphis.usda.gov/ws/ca>

- Combined trapping and banding data from all airports, and obtained re-sight data



Trapping

<http://www.aphis.usda.gov/ws/ca>



Banding

<http://www.aphis.usda.gov/ws/ca>

- USGS metal bands (March 2016 – present)
- Black/Yellow Auxiliary marker (2009 – July 2017)
- Orange/White Auxiliary marker (July 2017 – present)



Housing and Translocation

<http://www.aphis.usda.gov/ws/ca>

- Initially used licensed rehabilitator to house and translocate
- Cons
 - Could not dictate where birds were released
 - Logistics
 - Cost \$\$



Summary of Operational Data

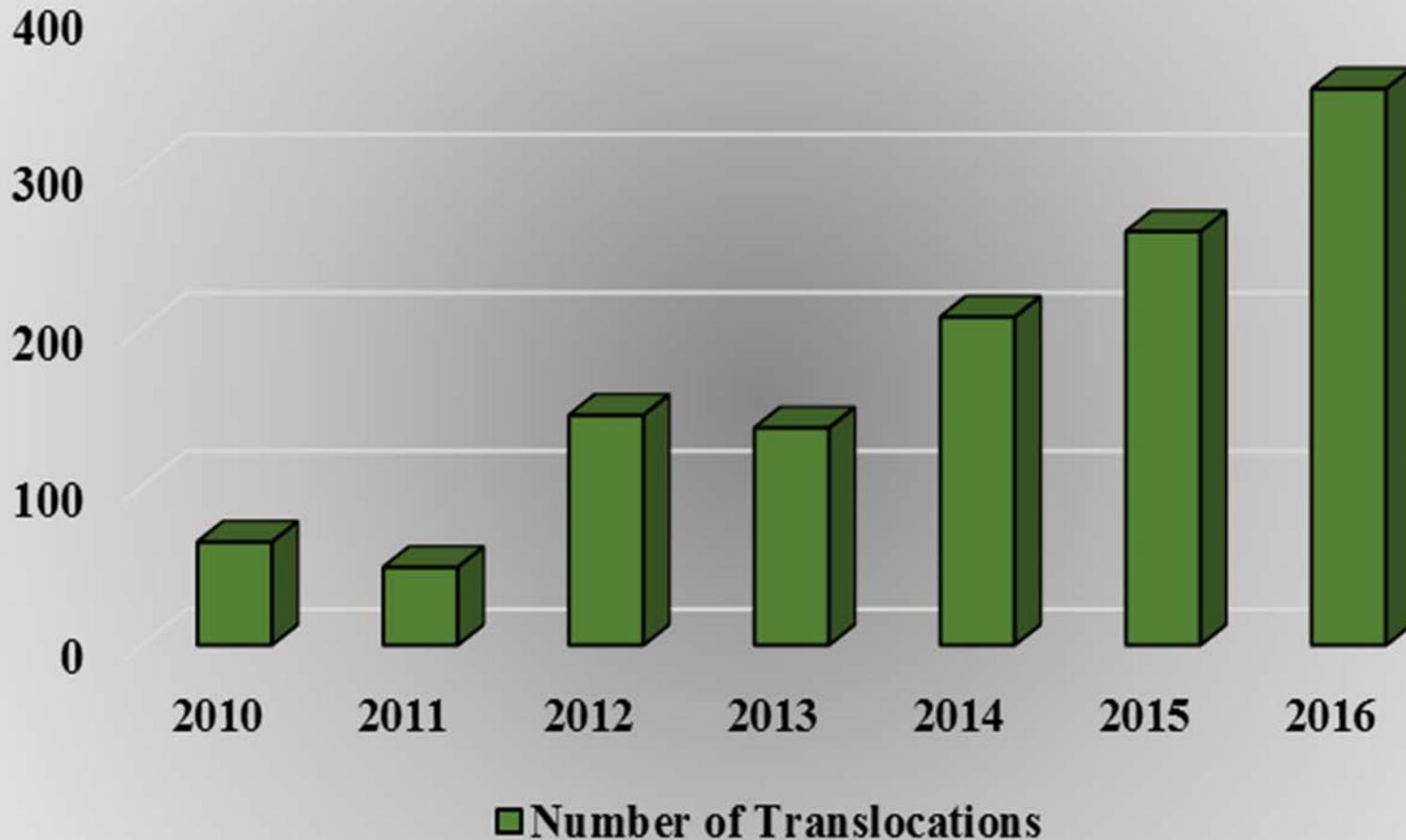
<http://www.aphis.usda.gov/ws/ca>

- Between 2010-2016
- 1,232 birds translocated
- 1,284 translocations



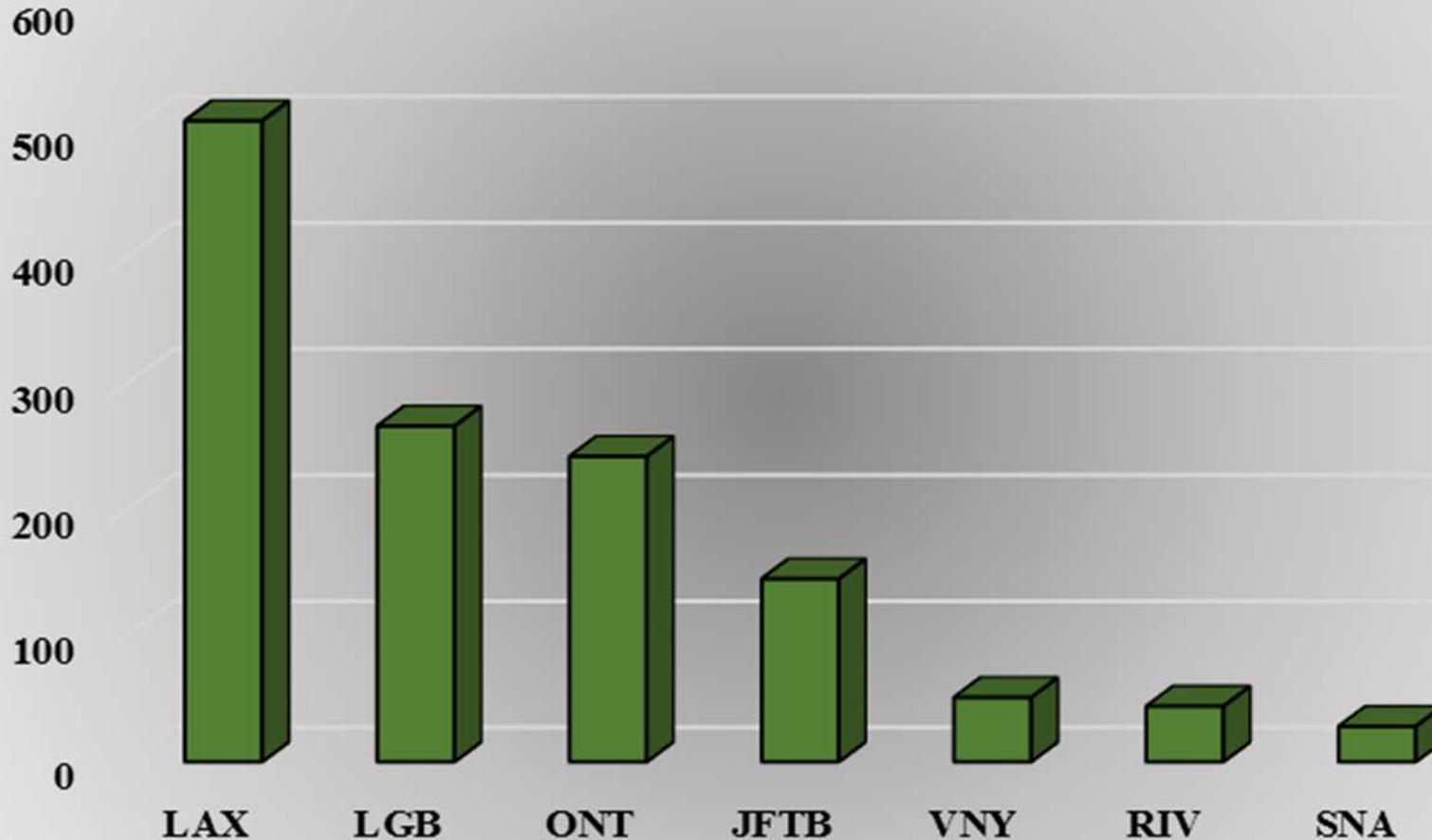
Translocations by Year

<http://www.aphis.usda.gov/ws/ca>



Translocations by Airport

<http://www.aphis.usda.gov/ws/ca>



Translocations by Species

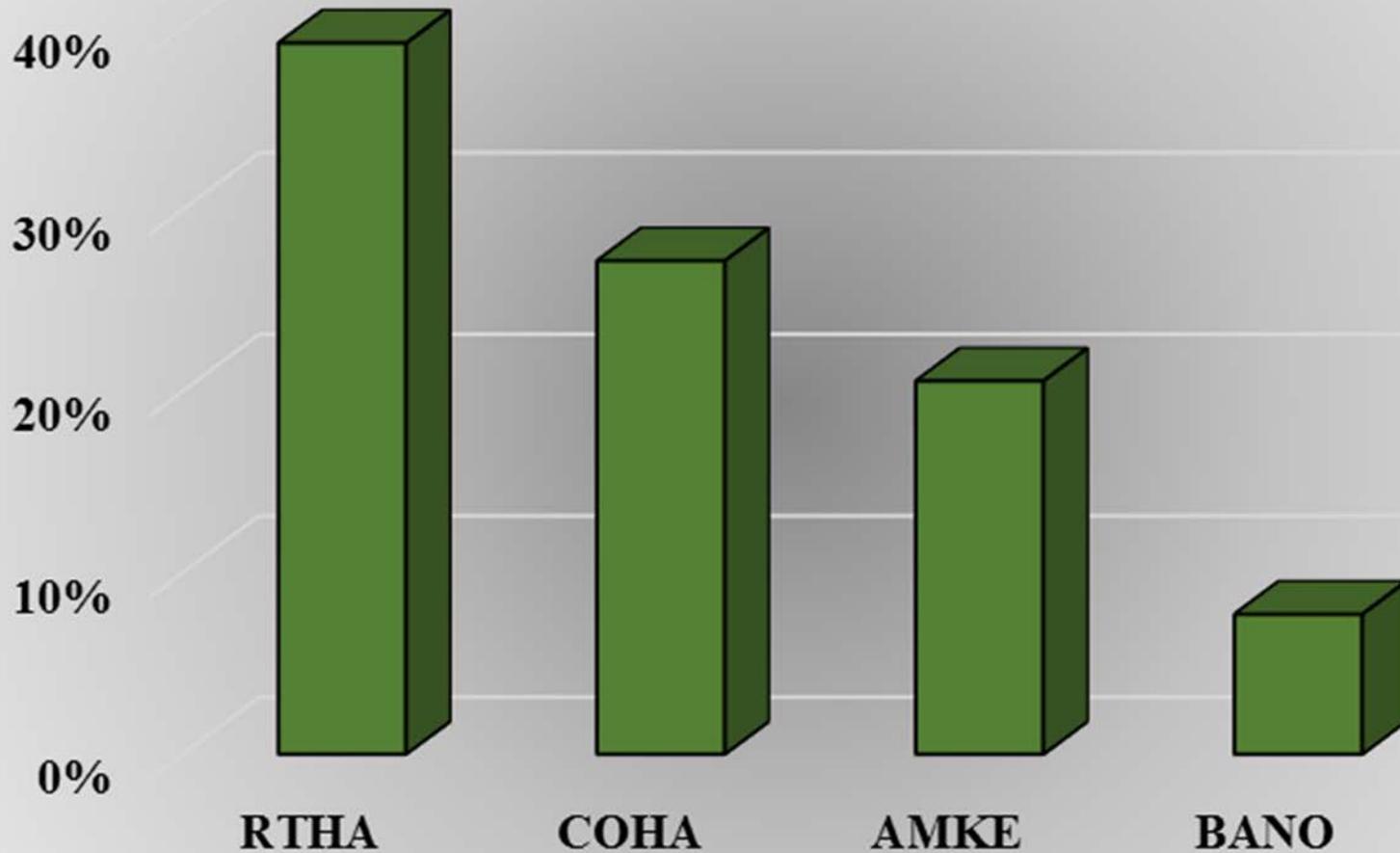
<http://www.aphis.usda.gov/ws/ca>

Common Name	Scientific Name	Number of Birds Translocated	Number of Translocations
Red-tailed hawk	<i>Buteo jamaicensis</i>	479	503
Cooper's hawk	<i>Accipiter cooperii</i>	339	349
American kestrel	<i>Falco sparverious</i>	255	264
Common barn owl	<i>Tyto alba</i>	91	99
Great horned owl	<i>Bubo virginianus</i>	46	47
Red-shouldered hawk	<i>Buteo lineatus</i>	13	13
Sharp-shinned hawk	<i>Accipiter striatus</i>	5	5
Peregrine falcon	<i>Falco peregrinus</i>	2	2
Swainson's hawk	<i>Buteo swainsoni</i>	1	1
Merlin	<i>Falco columbarius</i>	1	1
All species combined		1,232	1,284



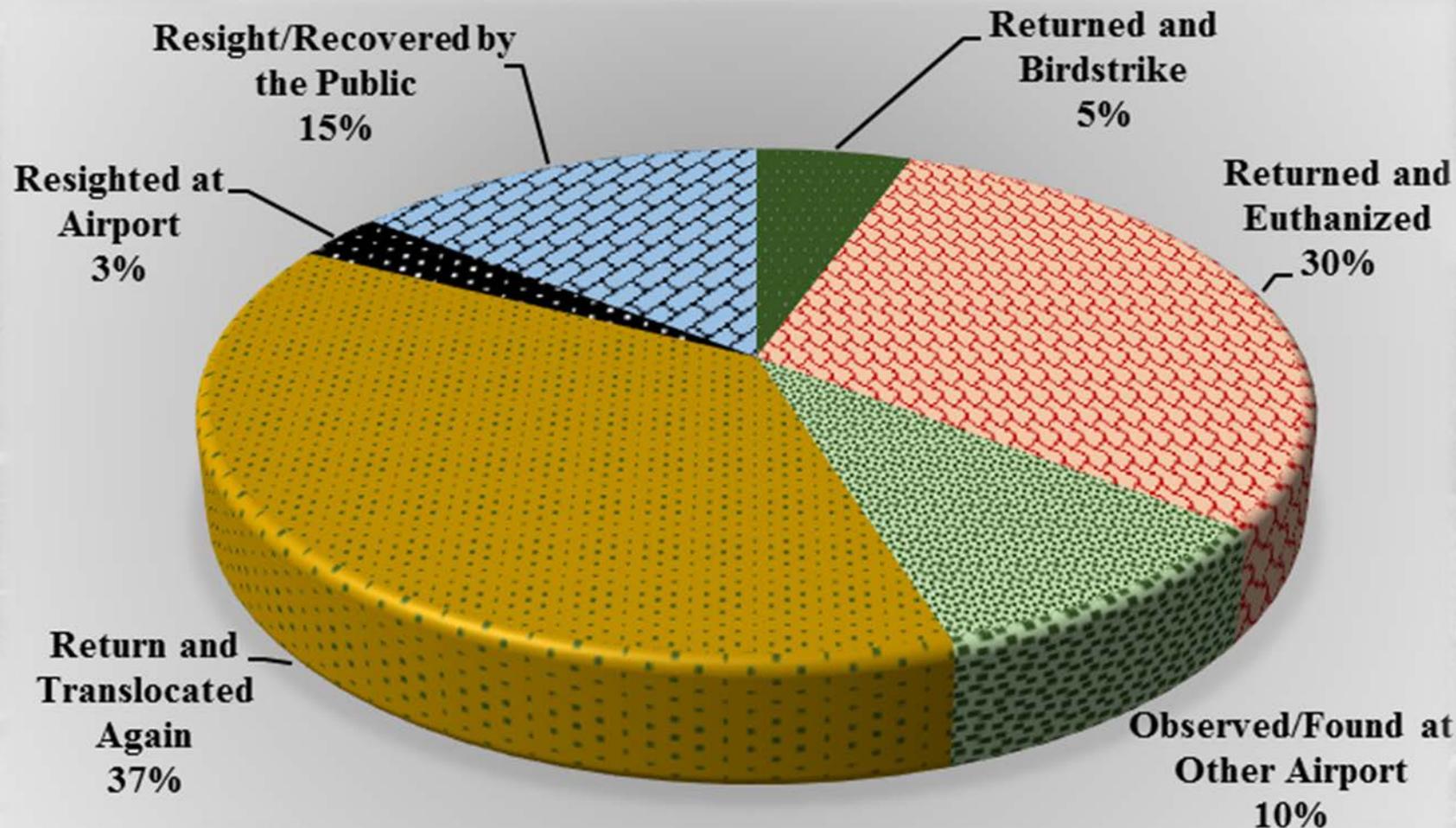
Translocations by Species

<http://www.aphis.usda.gov/ws/ca>



Resight of Translocated Raptors, n = 166

<http://www.aphis.usda.gov/ws/ca>



Return to Airport - Species

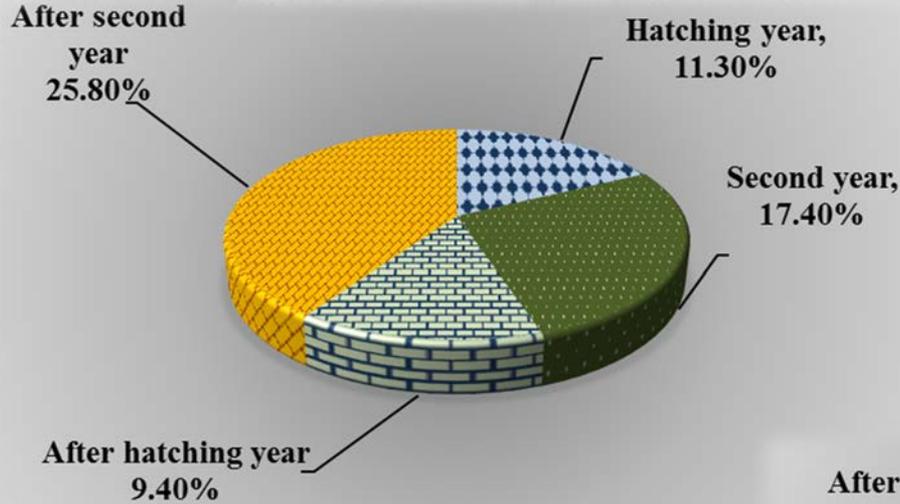
<http://www.aphis.usda.gov/ws/ca>

Species	# of Returns	Return Rate	Days to Return		
			Average	Minimum	Maximum
COHA	18	5.16%	277.6	13	1328
AMKE	14	5.30%	137.4	1	885
RTHA	74	14.71%	214.1	1	1405
BANO	19	19.19%	121.5	5	271

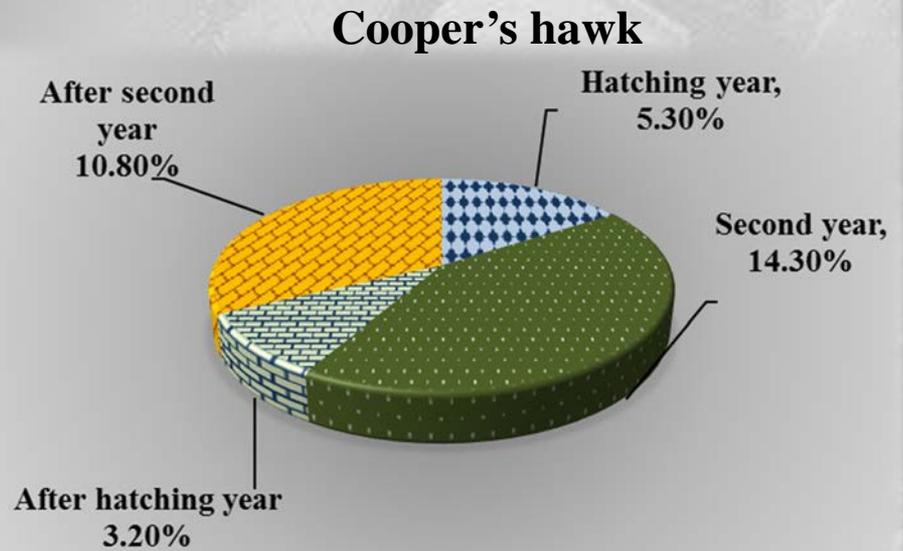


Returns - Age

<http://www.aphis.usda.gov/ws/ca>



Red-tailed hawk



Cooper's hawk



Question

<http://www.aphis.usda.gov/ws/ca>

- In order to minimize cost and maximize effectiveness of translocation effort, **which factors affect return rates?**

- Species
- Distance
- Season
- Age
- How can we improve?



Van Nuys Airport



LAX



Ontario Airport



LAAAF



Long Beach Airport



March ARB



John Wayne Airport

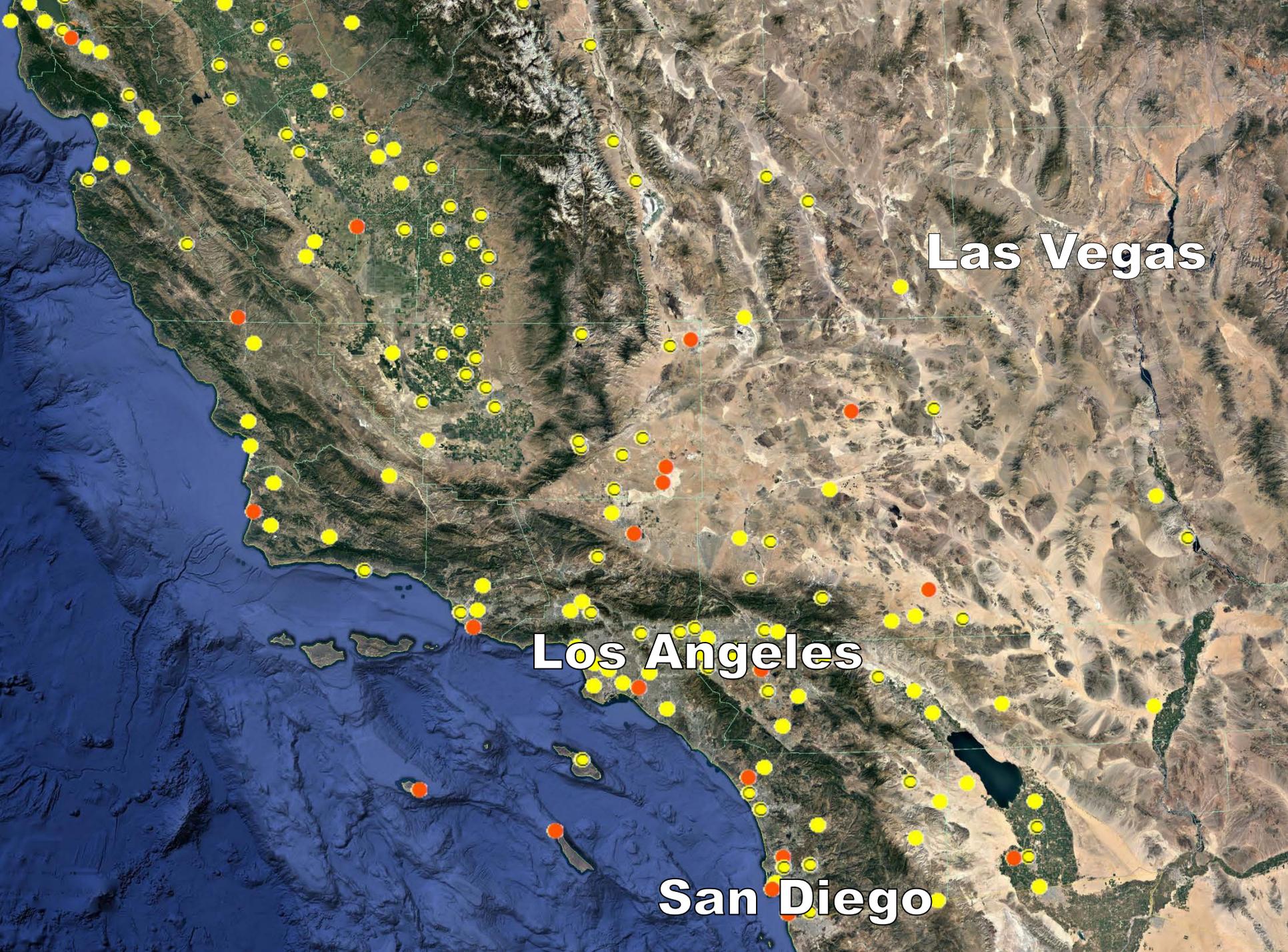


Legend

Housing and Translocation

<http://www.aphis.usda.gov/ws/ca>





Las Vegas

Los Angeles

San Diego

Further Investigation

<http://www.aphis.usda.gov/ws/ca>

- Does ecology influence return rate?
 - Distance
 - Seasonality
 - Direction of translocation in relation to season/time of year
- What trends are visible so far?



Preliminary Data - Distance

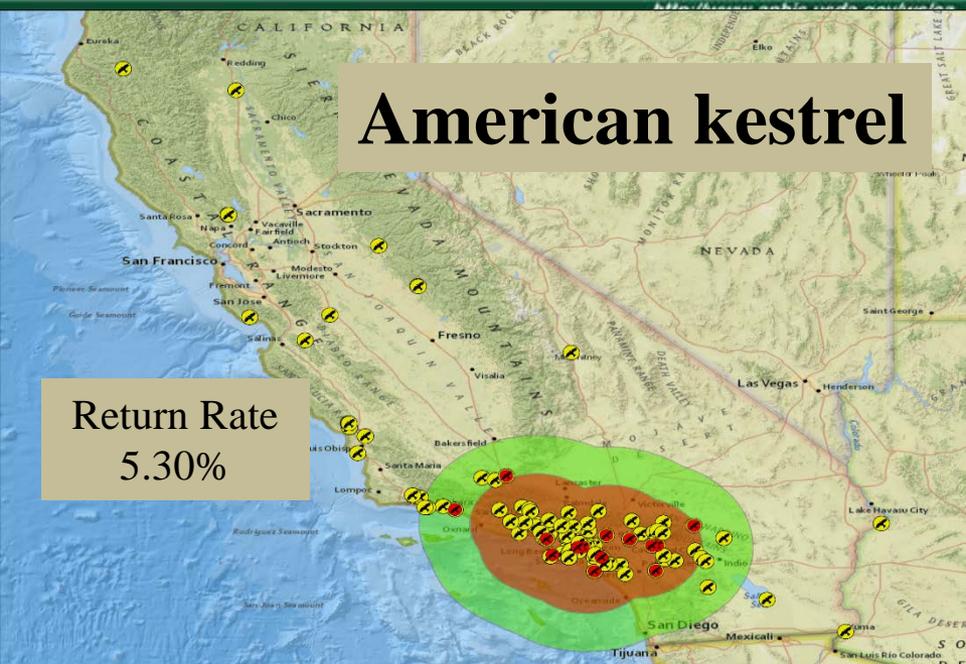
Barn owl

Return Rate
19.19%



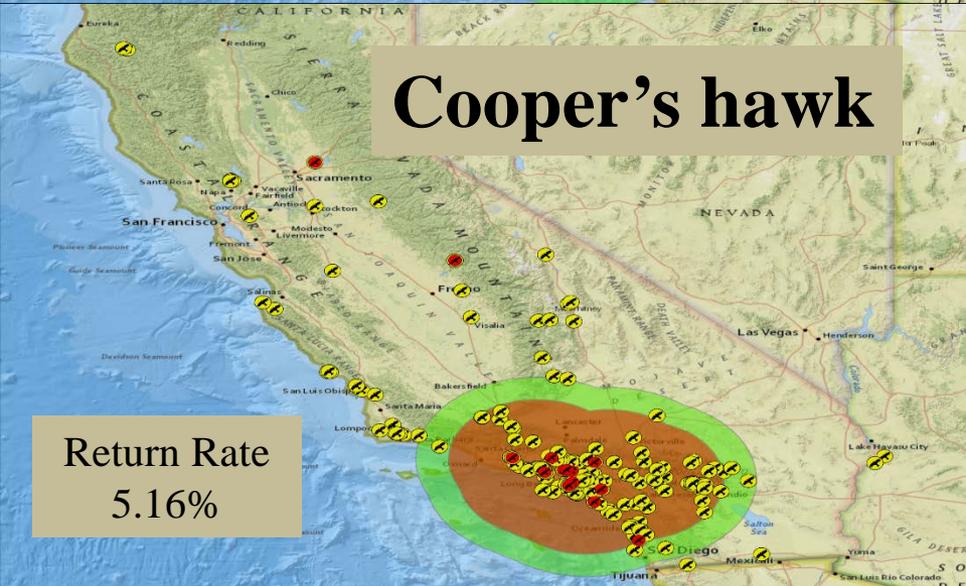
American kestrel

Return Rate
5.30%



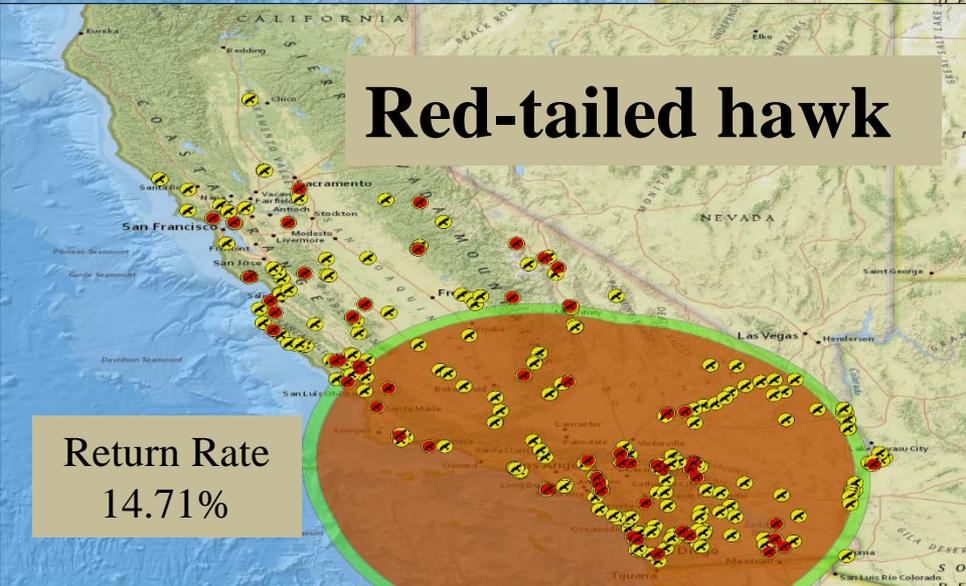
Cooper's hawk

Return Rate
5.16%



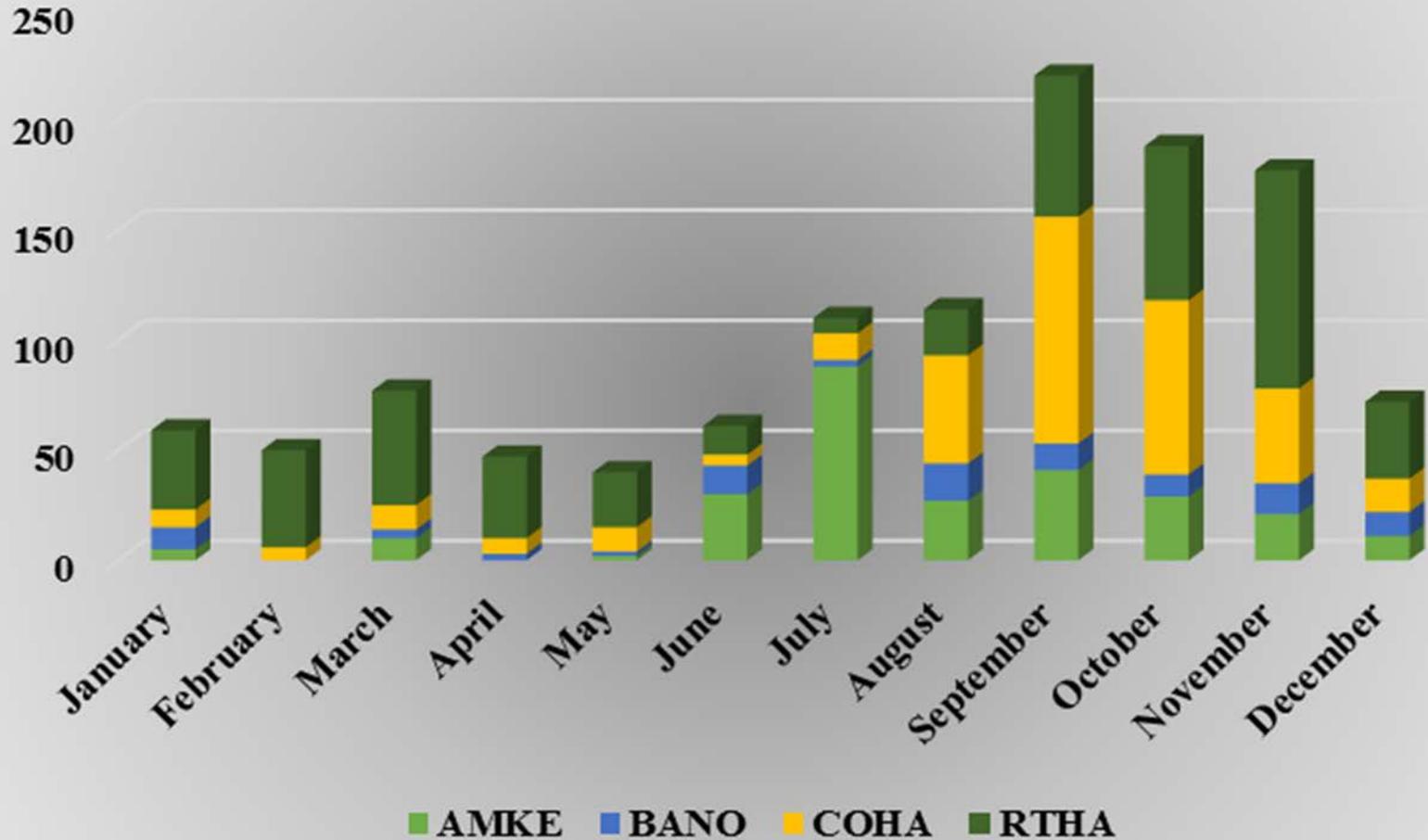
Red-tailed hawk

Return Rate
14.71%



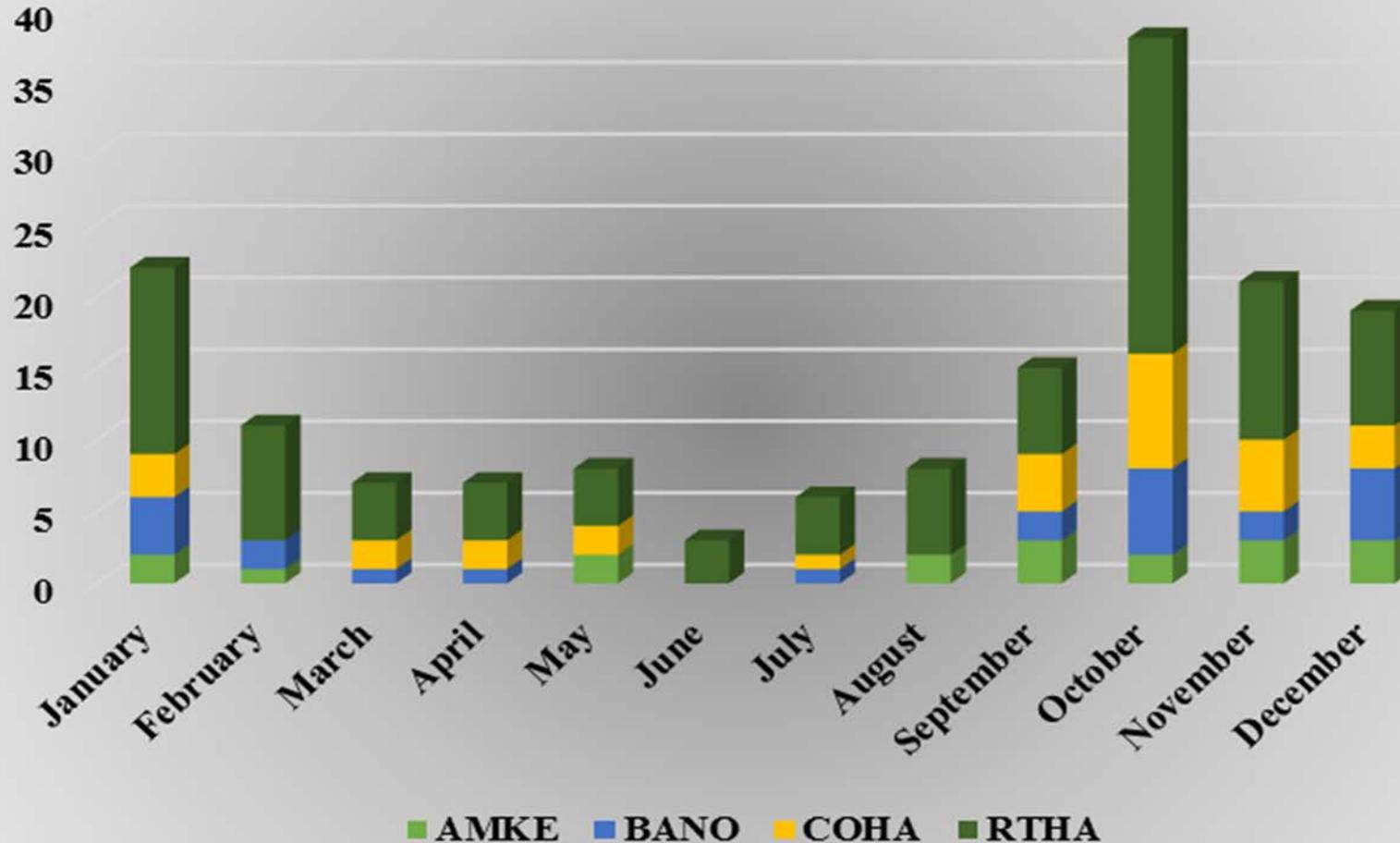
Preliminary Data - Translocations by Month

<http://www.aphis.usda.gov/ws/ca>



Preliminary Data - Returns by Month

<http://www.aphis.usda.gov/ws/ca>



Conclusions

<http://www.aphis.usda.gov/ws/ca>

- We think that ecology does affect return rates and warrants formal study
- We expect that the ecological factors are interconnected
 - Age and season in relation to distance
 - Varying degrees of impact, depending on species
- Survival



Conclusions

<http://www.aphis.usda.gov/ws/ca>

- We devised a system to make translocating birds in a more “affordably” on a per-project basis by sharing the workload
- With more research, we hope to develop a decision matrix to aid airport biologists in the LA Area to make more informed decisions when managing raptors



ACKNOWLEDGEMENTS

<http://www.aphis.usda.gov/ws/ca>

- Los Angeles International Airport
- Ontario International Airport
- Van Nuys Airport
- John Wayne/Orange County Airport
- Long Beach Airport
- March Air Reserve Base
- Los Alamitos Army Airfield
- South Bay Wildlife Rehab



Questions?

<http://www.aphis.usda.gov/ws/ca>



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