

Port of Portland



ICAO/ACI Wildlife Strike Hazard Reduction Symposium
May 17th, 2017
Montréal, Canada

PDX Wildlife Program

Presentation Overview:

- Program Background
- Eco-regional Context
- PDX Risk Assessment Model
- Raptor Trapping & Translocation
- Engaging the Community
- PDX Strikes
- Incorporating Lethal Removal
- Adaptive Management



PDX Wildlife Hazard Management Program



Mission Statement:

To control aviation wildlife hazards with non-lethal means when possible by focusing on daily dispersals and long-range habitat modifications.

PDX Wildlife Program

- 1. Short-term: Operational Strategies**
Intensive hazing, trapping & translocation



- 2. Research & Development**
Prey base studies, deterrents, other research as needed



- 3. Long-term: Management Strategies**
Compatible land-use planning, habitat management



- 4. Information & Education**
Bird Strike Committee USA/Canada, ACRP, public events, Western Airports Raptor Research & Management



Portland International Airport

18.9 million passengers in 2016



PDX is Located on the Pacific Migratory Flyway



Eco-regional Context



Portland International Airport

Columbia River

Willamette River



Eco-regional Context



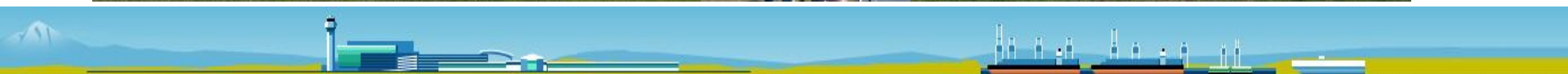
Eco-regional Context



Eco-regional Context



Navigational Aids/Raptor Perches



Prey base/Food Source



Gray-tailed Voles, *Microtus canicaudus*



PDX Risk Assessment Model

PROBABILITY

| | Very High | High | Moderate | Low | Very Low |
|-----------|------------------|-------------------------------|---|----------------------------|--|
| Very High | | Mallard | Osprey Canada Goose | | Green-winged Teal Northern Pintail Turkey Vulture Wood Duck [Bald Eagle] [Deer] |
| High | Red-tailed Hawk | Great Blue Heron | Rock Pigeon American Crow Gull spp. | Coyote Great-horned Owl | |
| Moderate | | | | | |
| Low | | Barn Owl European Starling | | Short-eared Owl | Killdeer Northern Harrier |
| Very Low | American Kestrel | Swallow spp. | | | |

*Risk evaluation approach builds on the body of work of Dr. J. R. Allan, adapting it to site-specific issues at PDX.



USA Civil Aircraft Strikes 1990 – 2015



164,444 bird strikes nation wide

10,999 total raptors strikes (13% of identified species)

Red-tailed hawks:

- 2,243 strikes,
- 8 human fatalities
- ≈\$27,637,113 in damage to aircraft

Source: Wildlife Strikes to Civil Aircraft in the United States, 1990–2015



PDX Raptor Trapping & Translocation Program



2,530 raptors captured & translocated since 1999
13 different species

PDX Raptor Trap & Translocation Program (1999 to present)



142nd Fighter Wing “Redhawks”



Red-tailed hawks were so abundant at PDX that the Oregon Air National Guard adopts them as a logo.

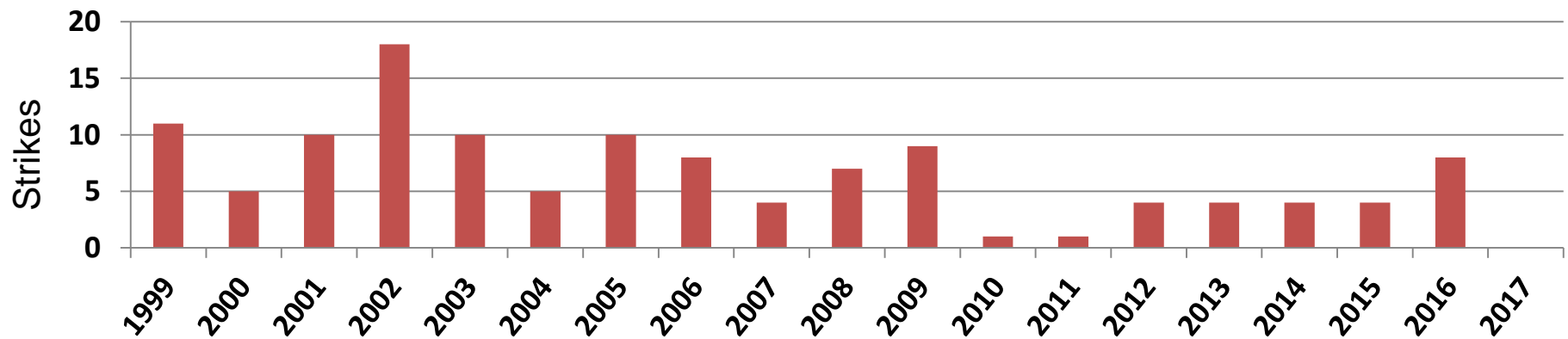


Red-tailed hawks,

Buteo jamaicensis



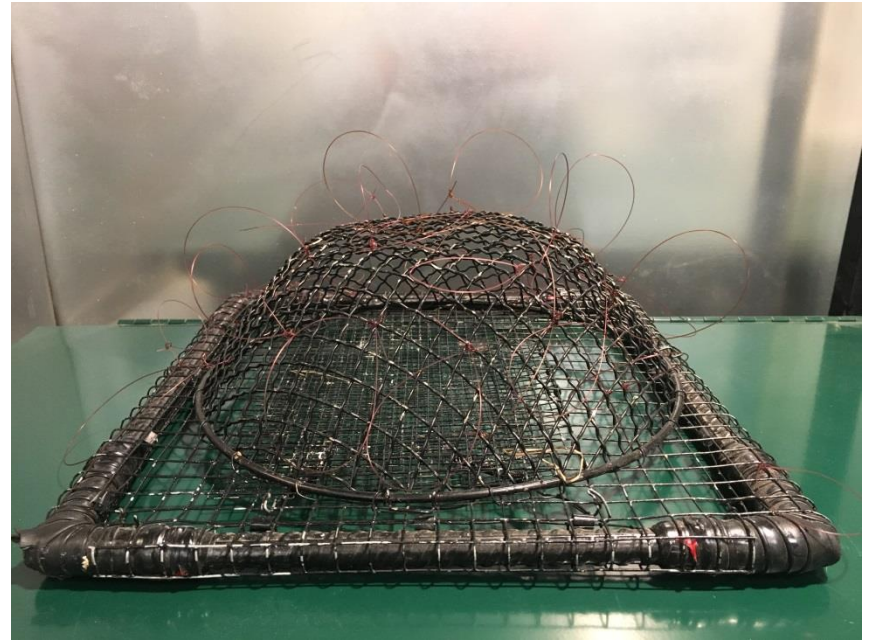
- 19 year stats (1999-2017)
 - ≈106,000 RTHA observed on the airfield
 - 123 RTHA strikes, 9 resulted in aircraft damage
 - 1,579 trapped & translocated, 26% return rate
- 6 Resident pairs on the airfield
- 5th most struck species at PDX



Primary Traps Types used at PDX



Goshawk



Bal-chatri

Other traps to consider: Dho-Gazza, Bownet, Verbail, & Nest box traps

Trapping & Translocation Program



Marking Techniques

Wing tags



Transmitters



Tarsus bands



Captured birds are measured, weighed and fitted with a uniquely numbered silver federal band on their right leg. They also receive an orange plastic band with a black unique code on their left leg.



Band/Marking Equipment



- Mark individuals
- Collect resighting data
- Evaluate data
- Adapt as needed

Individuals also identified by age class, plumage, behavior, & location.

Role of Resident Hawks

- What they do...

- Serve as placeholders
- Defend high affinity perches
- Respond to hazing
- Predictable behavior

- What they don't do...

- Push all migratory raptors out
- Defend territories year round
- Contact tower before crossing

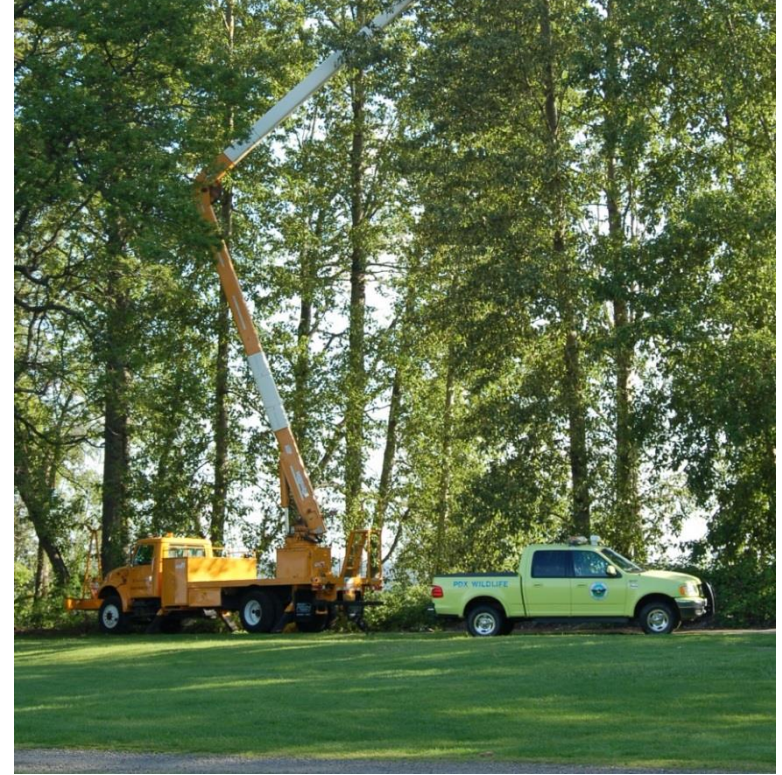
- 6 Resident pairs
- Long duration at the airport
- Some banded in 1999



Approximate Red-tailed Hawk Territory Boundaries at PDX



Hawks Nesting on Aviation Property



Captive Rearing



Least preferred strategy due to resource commitment.



Nest Intervention



Red-tailed hawk hatchlings

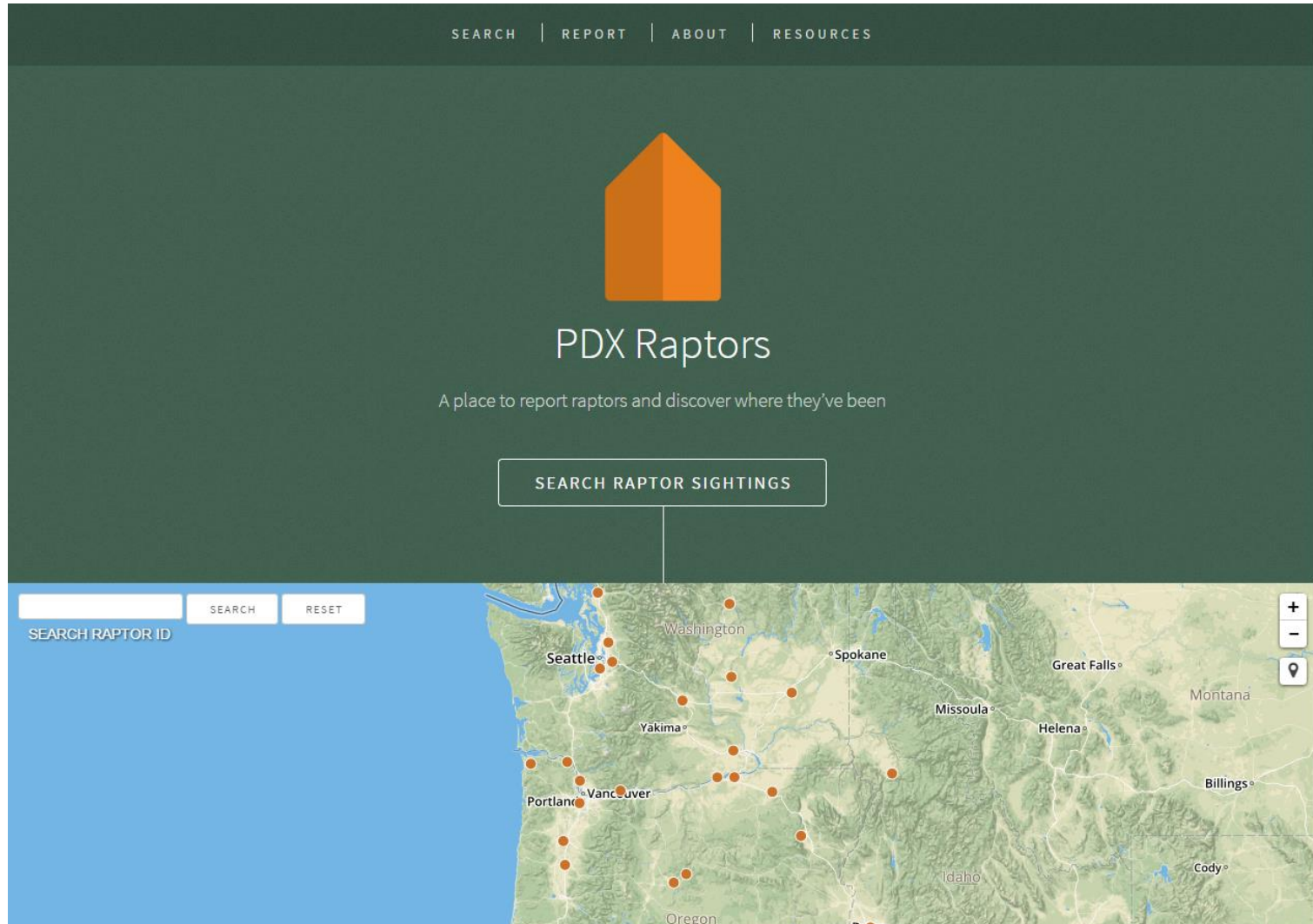
Off Site Flight Cages



Release Sites



Engaging the Community



Website designed for the public to submit & track sightings of translocated raptors

Engaging the Community



REPORT A RAPTOR

NOTE THAT THE TAGS IN THE IMAGE ABOVE REPRESENT DIFFERENT BIRDS. FOR EXAMPLE, 1A IS DIFFERENT THAN 1/A. PLEASE REPORT THE ID EXACTLY HOW IT'S REPRESENTED ON THE ORANGE BAND OR WING-TAG. ALL SUBMISSIONS ARE SUBJECT TO THE WEBSITE TERMS OF USE.

| | |
|--|---|
| <input type="text" value="Wing-tag or Band ID"/> | <input type="text" value="- Condition -"/> |
| <input type="text" value="Location (address, or lat/long)"/> | <input type="text" value="mm/dd/yyyy"/> |
| <input type="text" value="Comments (optional)"/> | |
| <input type="text" value="Email (optional)"/> | <input type="text" value="Share a Photo..."/> |

SEND REPORT

- HOME
- RAPTOR MAP
- RESOURCES
- MORE INFO



Where have they been seen?

Portland/Vancouver metro area

Found:

≈400 north of PDX (Canada)

≈1000 south of PDX (Mexico)

≈450 NE of PDX (Montana)



Some do return...

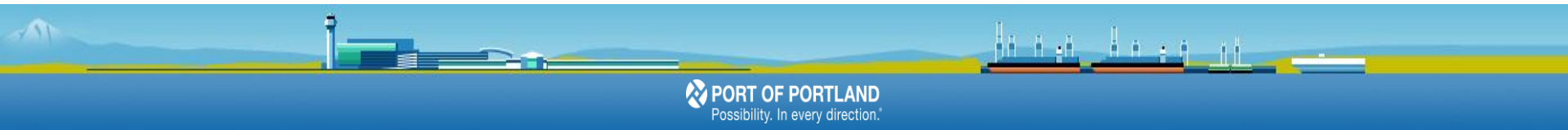


Airfields/Large Open Spaces





Available open habitat & located on the Pacific Migratory Flyway creates an ongoing challenge.

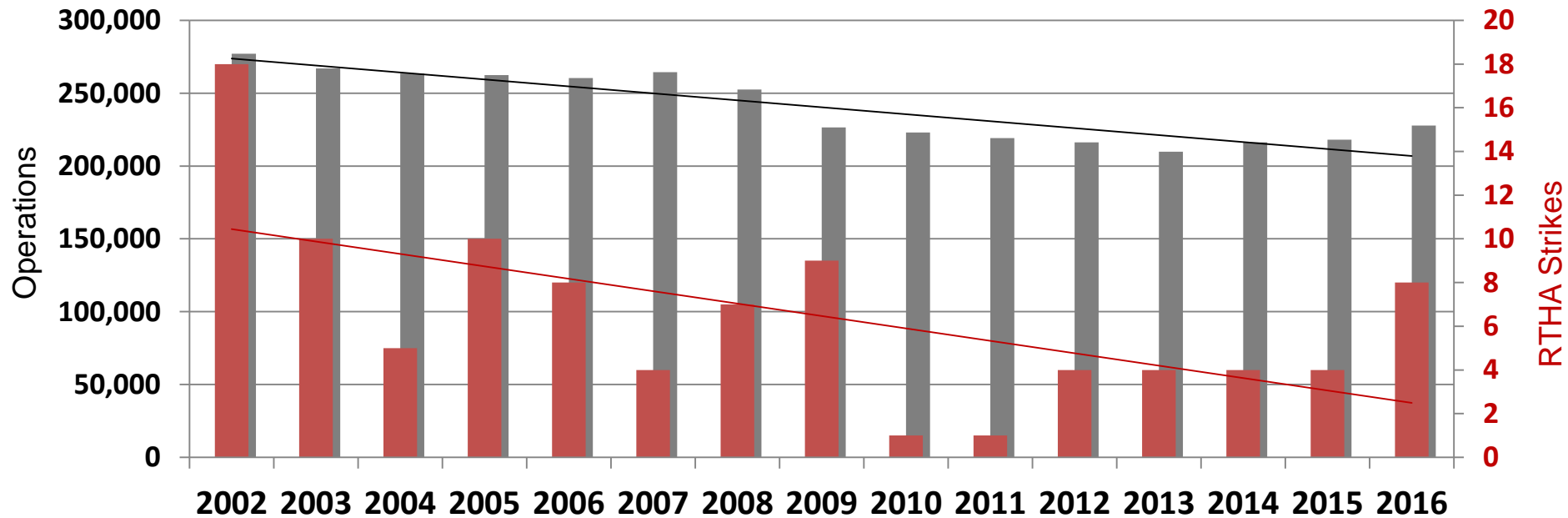


PDX Red-tail Strikes 1999 to present:



- 123 total RTHA strikes
 - 7% resulted in damage (9 of 123)
 - 5% were residents (6 of 123)
- 1,573 total RTHA captures
 - 2% returned & struck

RTHA Strikes vs. Operations at PDX

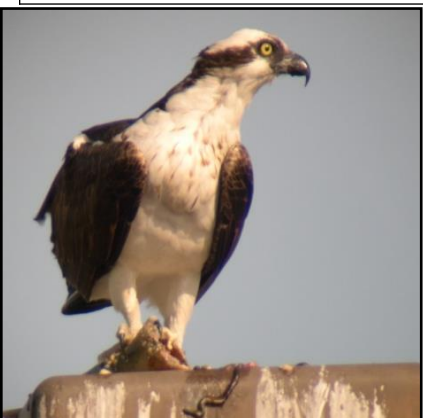


PDX Damaging Strikes



| |
|--|
| 2004 - MALL, GBHE, OSPR total cost ≈ \$2,908,000.00 |
| 2005 - MALL total cost ≈ \$130,085.00 |
| 2006 - GBHE, MEGU, and RTHA total cost ≈ \$327,285.00 |
| 2007 - MEGU, VATH, GBHE, CAGO total cost ≈ \$69,522.00 |
| 2008 - GBHE, GRWT, RTHA total cost ≈ \$36,409.00 |
| 2009 - RTHA total cost ≈ \$8,645.00 |
| 2010 - NOPI, VATH total cost ≈ \$88,916.00 |

| |
|--|
| 2011- GWGU total cost ≈ \$252,000.00 |
| 2012- CAGO, AMCO, RTHA, CAGO total cost ≈ \$2,146,992.00 |
| 2013- GWGU, CAGO, Unidentified total cost ≈ \$91,600.00 |
| 2014- RTHA, OSPR, CAGO total cost ≈ \$251,581.00 |
| 2015-NOPI total cost ≈ \$5,452,320.00 |
| 2016-OSPR, CAGU total cost ≈ \$35,000.00 |
| 2017-NOPI total cost ≈ \$5,778.00 |



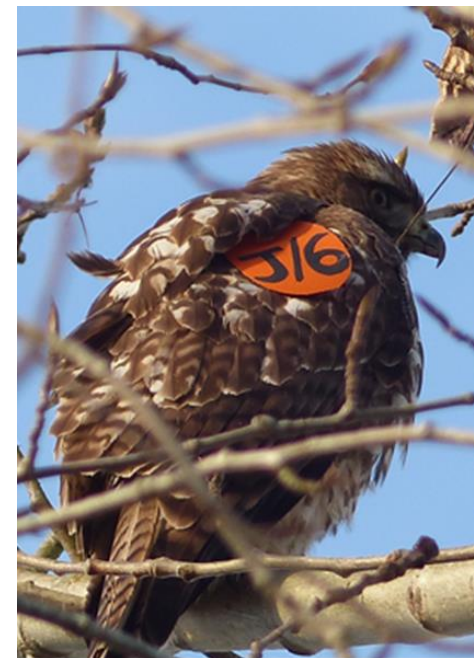
Incorporating Lethal Removal

- Trapping & translocation programs need to consider lethal removal
 - When trapping & hazing strategies are ineffective
 - Raptor poses an unacceptable risk to safe airport operations
 - Establish thresholds that trigger lethal removal based on species, location, and overall risk to operations
- Both lethal & translocation will result in territory gaps that are continuously filled by birds unfamiliar with the airport environment
 - Both require ongoing reactive management
 - Lethal may not be as readily accepted by the public



Raptor Trap & Translocation programs need:

- Qualified Staff/Biologists
- Permits/Authorization
- Training
 - Trap techniques; trap types, monitoring, etc.
 - Raptor handling
 - Marking; tarsus banding, wing-tagging; transmitters, etc.
- Appropriate traps for the intended target species
- Appropriate lures for environmental conditions & intended target species
- Husbandry
 - Clean conditions
 - Holding containers (travel kennels, size depends on species)
 - Ability to offer food & water
- Vehicle & driver to translocate to a suitable release site



Adaptive Management

- Need to consider risk exposure time
- Return Rates
 - Days from release: Quick returnee, Season of release, Season after release
- Several release sites dependent on seasons
- Community Involvement
- Trap Techniques (targeted species, weather)
- Lures (targeted species, weather)





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