

Scriffiny Open Space with US36 Bikeway

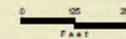


Parks & Open Space



Legend
Boulder County Open Space
Broad Ownership Category Name

- County Open Space
- Joint County and Municipal Open Space
- County Conservation Easement
- County Miscellaneous Easement
- Open Space Option
- Conservation Easement Option



Proposal

Recommend the BOCC to make exceptions to Rules 9 and 17 for the Scriffiny Open Space US36 Bikeway to the following BCPOS rules and regulations to allow E-bikes and recognize this trail corridor to be open 24 hours per day:

- 9. Vehicles

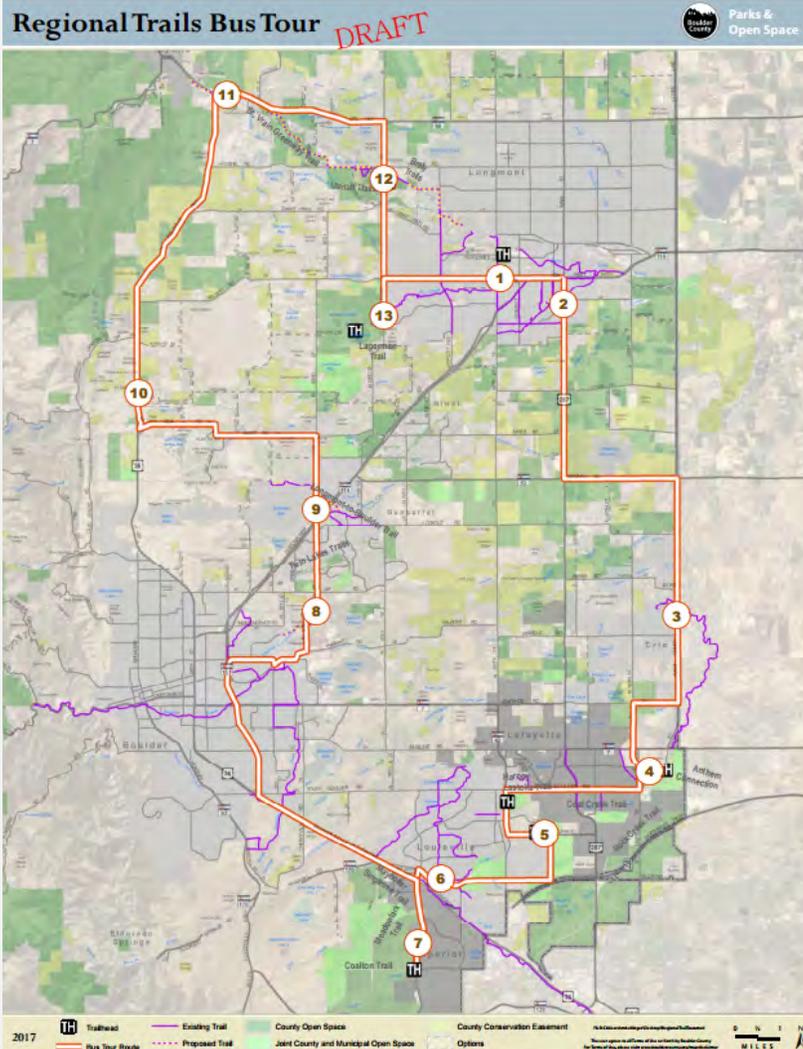
(a) No person shall operate a motor vehicle, including a car, truck, motorcycle, minibike, snowmobile, four-wheel drive or other recreational vehicle, within any County Parks and Open Space area, unless the area is specifically designated and posted to permit the operation of such vehicle in that area. County and emergency vehicles on official business are excepted from this Rule. For exceptions related to disabled access refer to Rule 9(b).

- 17. Hours

County Parks and Open Space areas shall be open for daytime use only, between the hours of sunrise and sunset, with the exception of the trail corridors for the Longmont-to-Boulder (Lobo) Lobo Trail, Coalton Trail, Coal Creek Trail, Rock Creek Trail, Meadowlark Trail, and Mayhoffer-Singletree Trail, which trail corridors and neighborhood connecting spurs shall be open 24 hours per day. Further exceptions are permitted only by obtaining written permission from the Director or the Board.

Action Requested: Recommend the BOCC support use of E-bikes on the Scriffiny Open Space for the US36 Bikeway and to allow use of the path 24 hours per day through exceptions to BCPOS Rules 9 and 17





All-county open space advisory committee regional trails bus tour

- Does the proposed May 20 date work for you?
- Is the itinerary too ambitious?
- Are there specific talking points you would like to cover and discuss?
- Other thoughts?

Bald Eagle Population Changes in Boulder County- Landscape Changes, Increase in Territorial Pairs, and Management



Bald Eagle Description

Haliaeetus leucocephalus



- Live 20-25 years
- 6 ½ foot wingspan
- 2 ½ feet tall
- Lay 1-3 eggs
- Incubate 35 days.
- Fledge at 3 months
- 4 years to maturity
- Females larger than males
- Fish and Waterfowl



Protection History of Bald Eagles

1967- Listed as Endangered Species under the Endangered Species Act.

1972- DDT banned in United States.

2005- 7,100 pairs nested over 48 States.

2007- Delisted- 9,700 pairs

Bald Eagle Single Protection Act

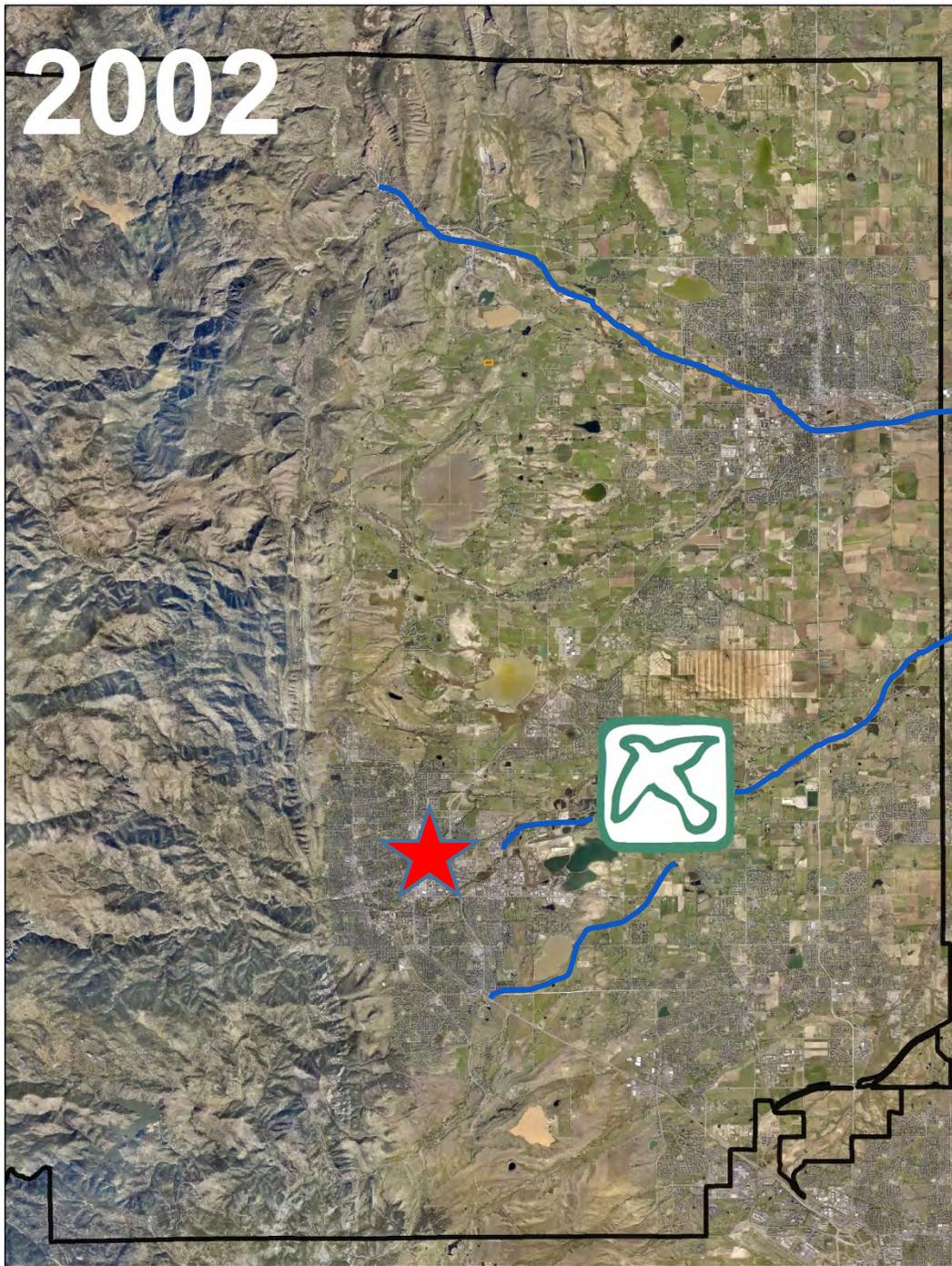


Colorado Nests by Year

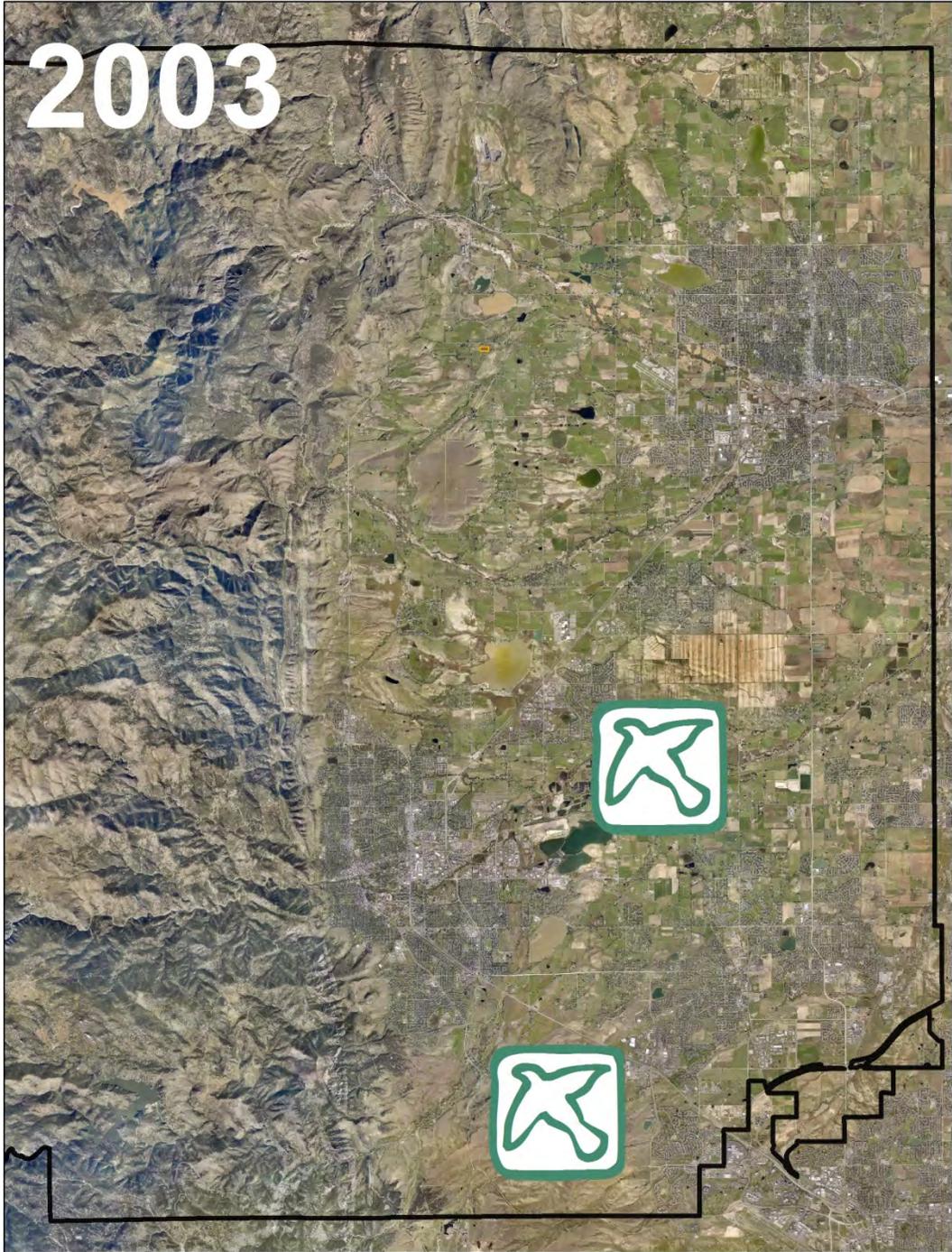
Year	1990	1994	1998	2002	2015	2016
Nesting Pairs	11	18	27	45	139	180



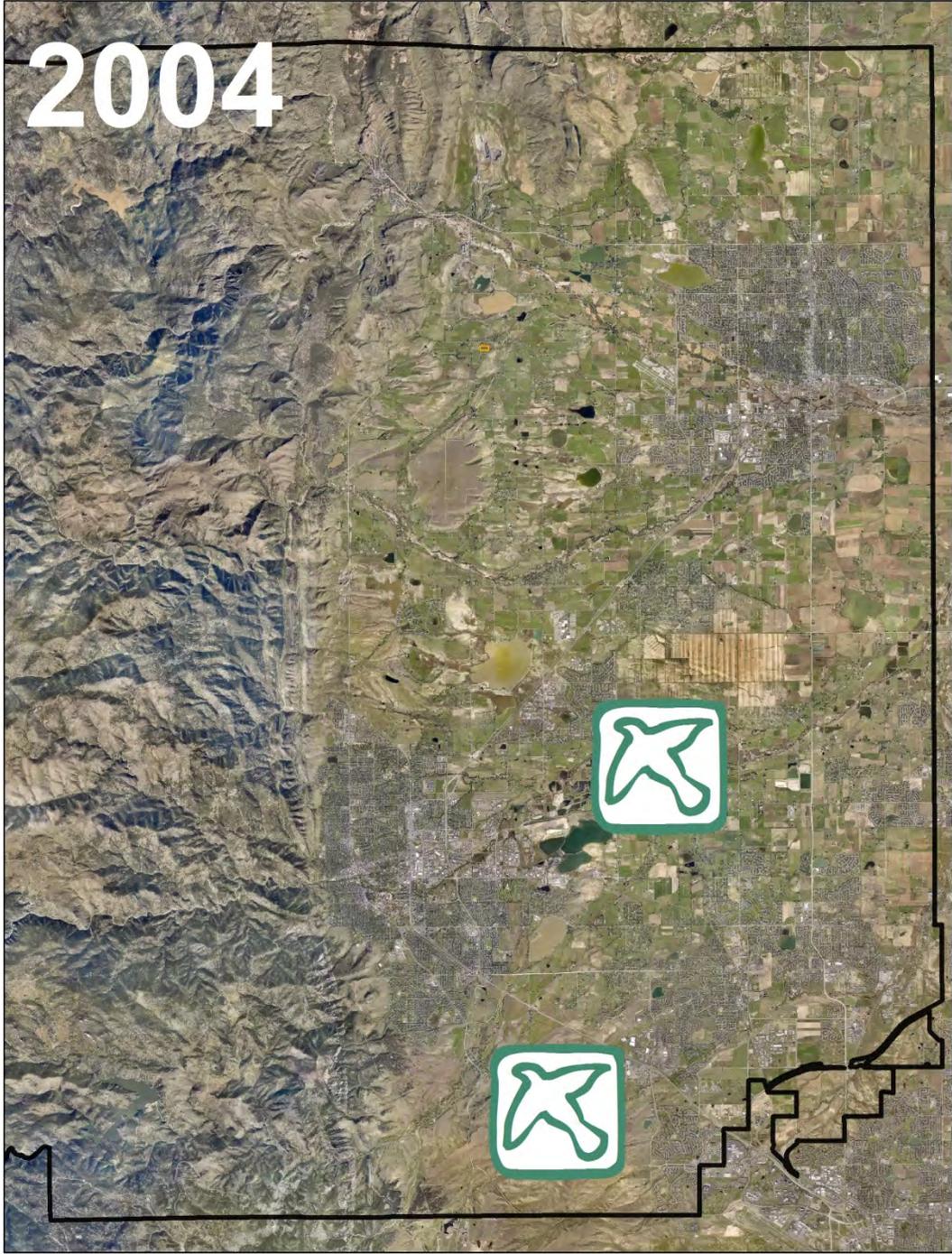
2002



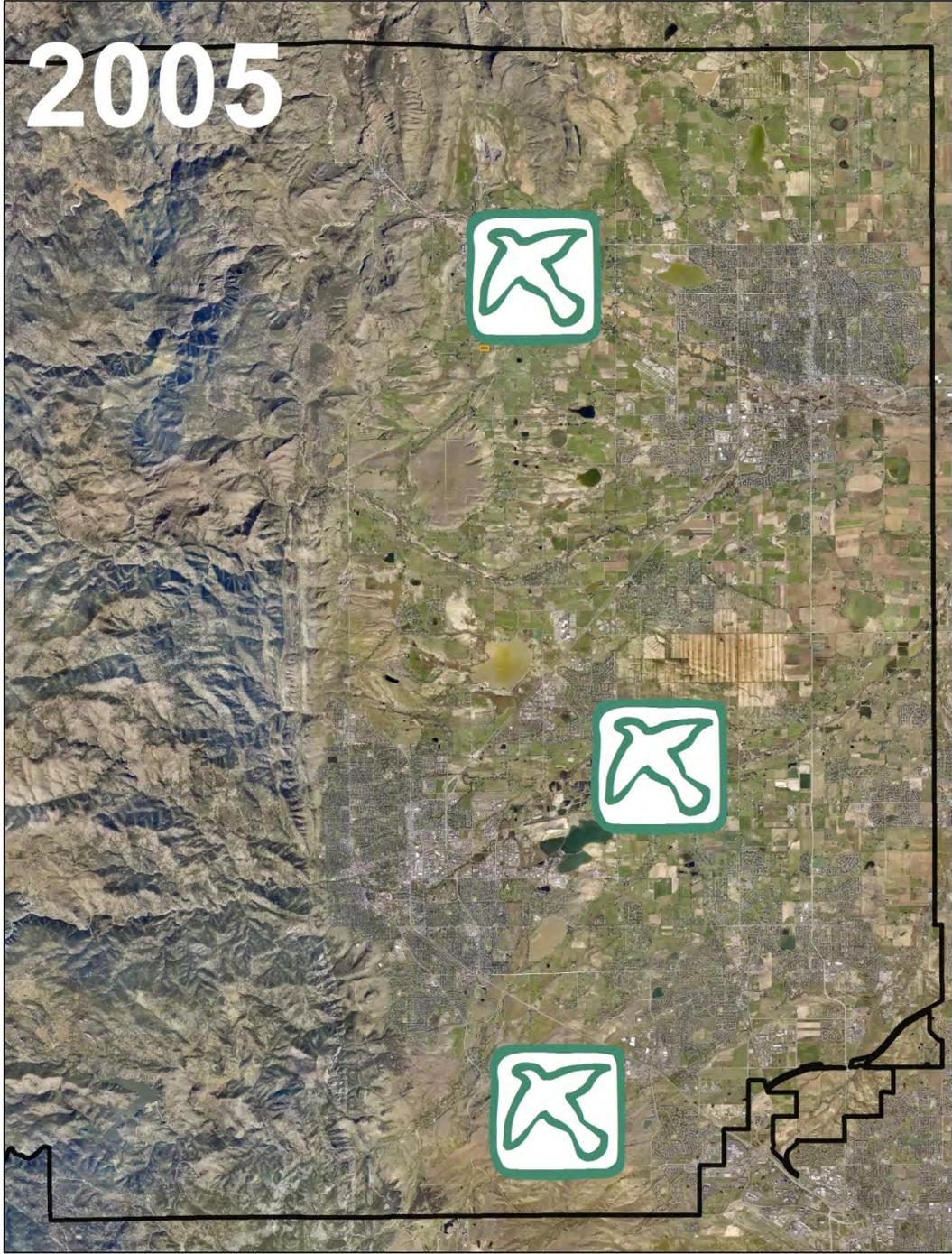
2003



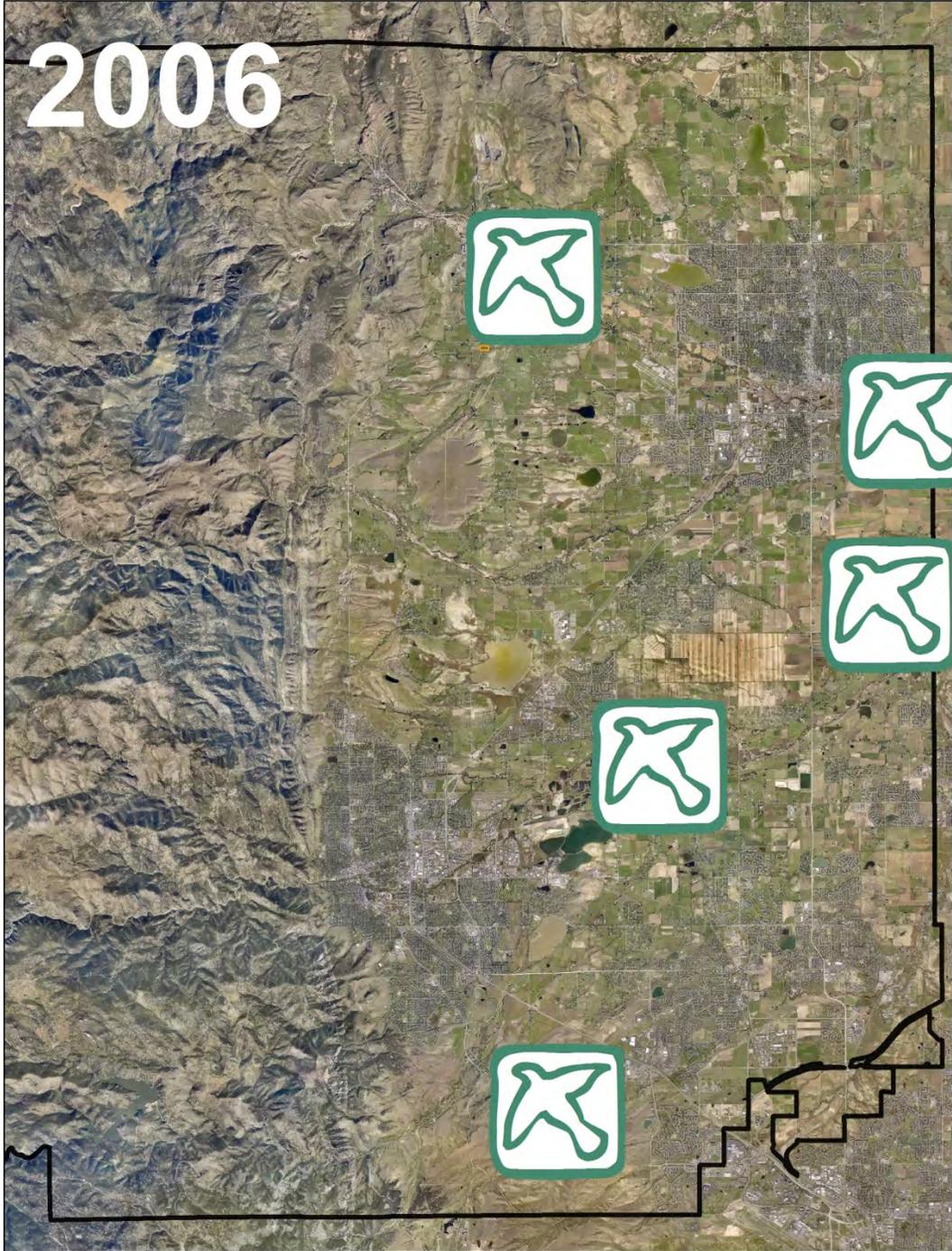
2004



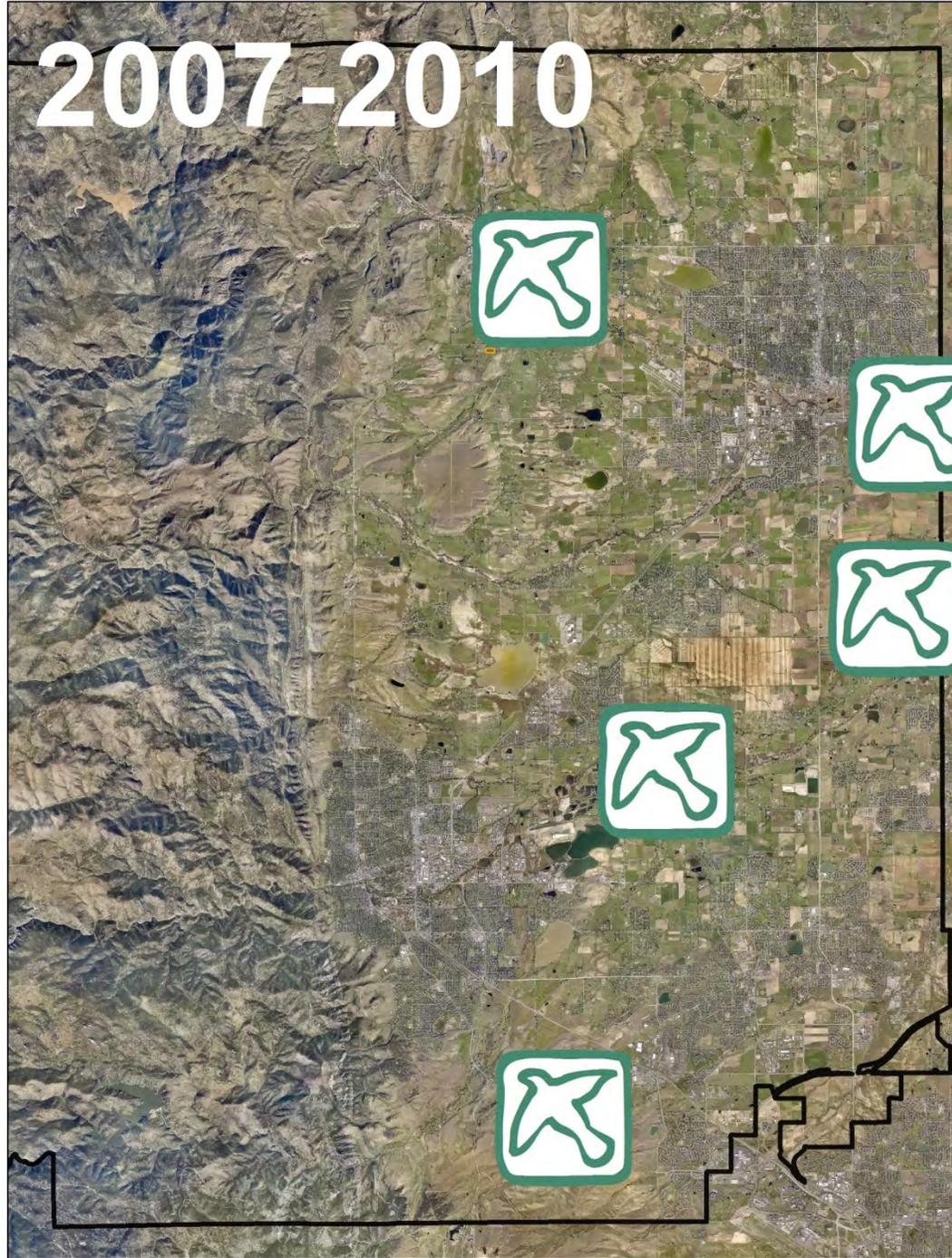
2005



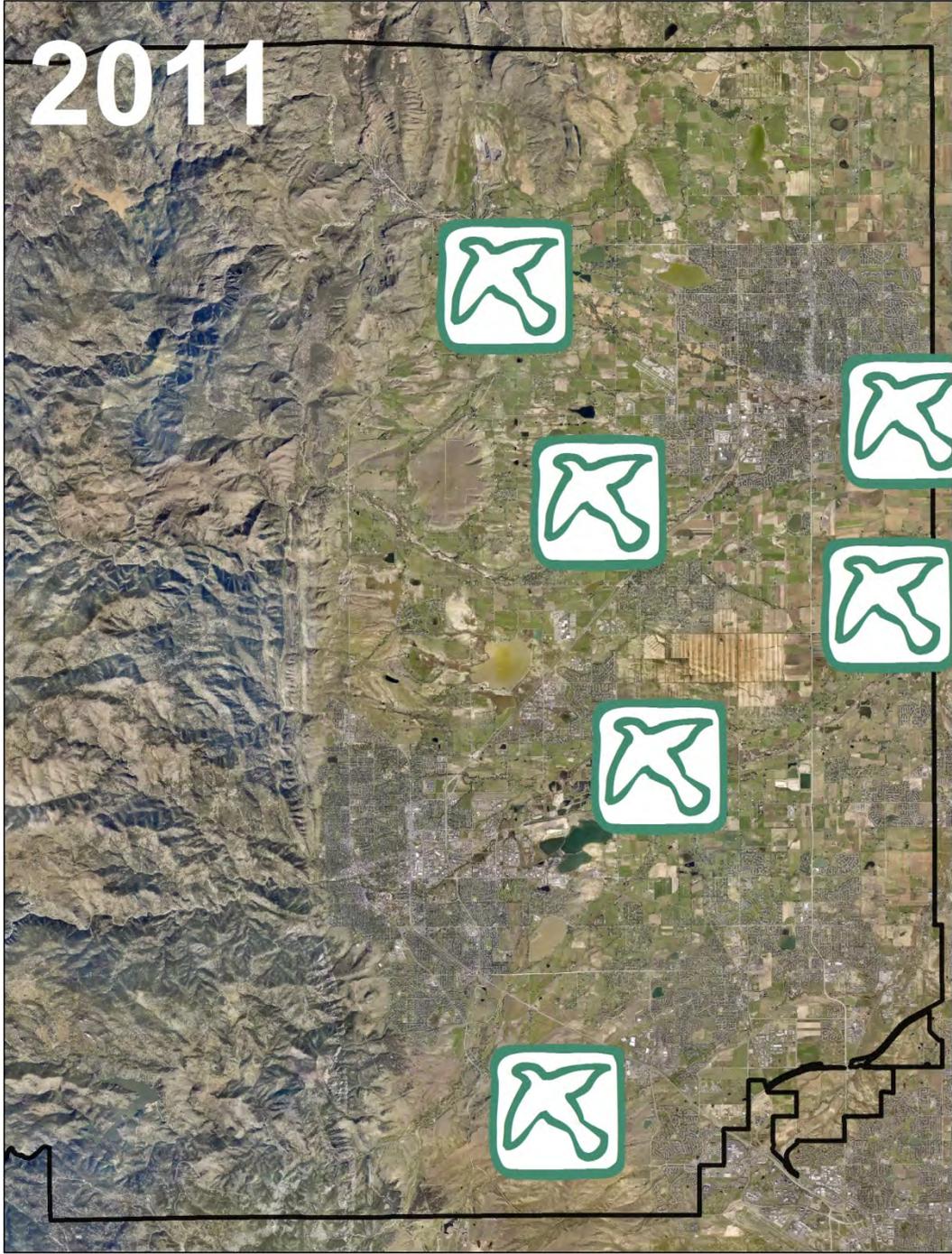
2006



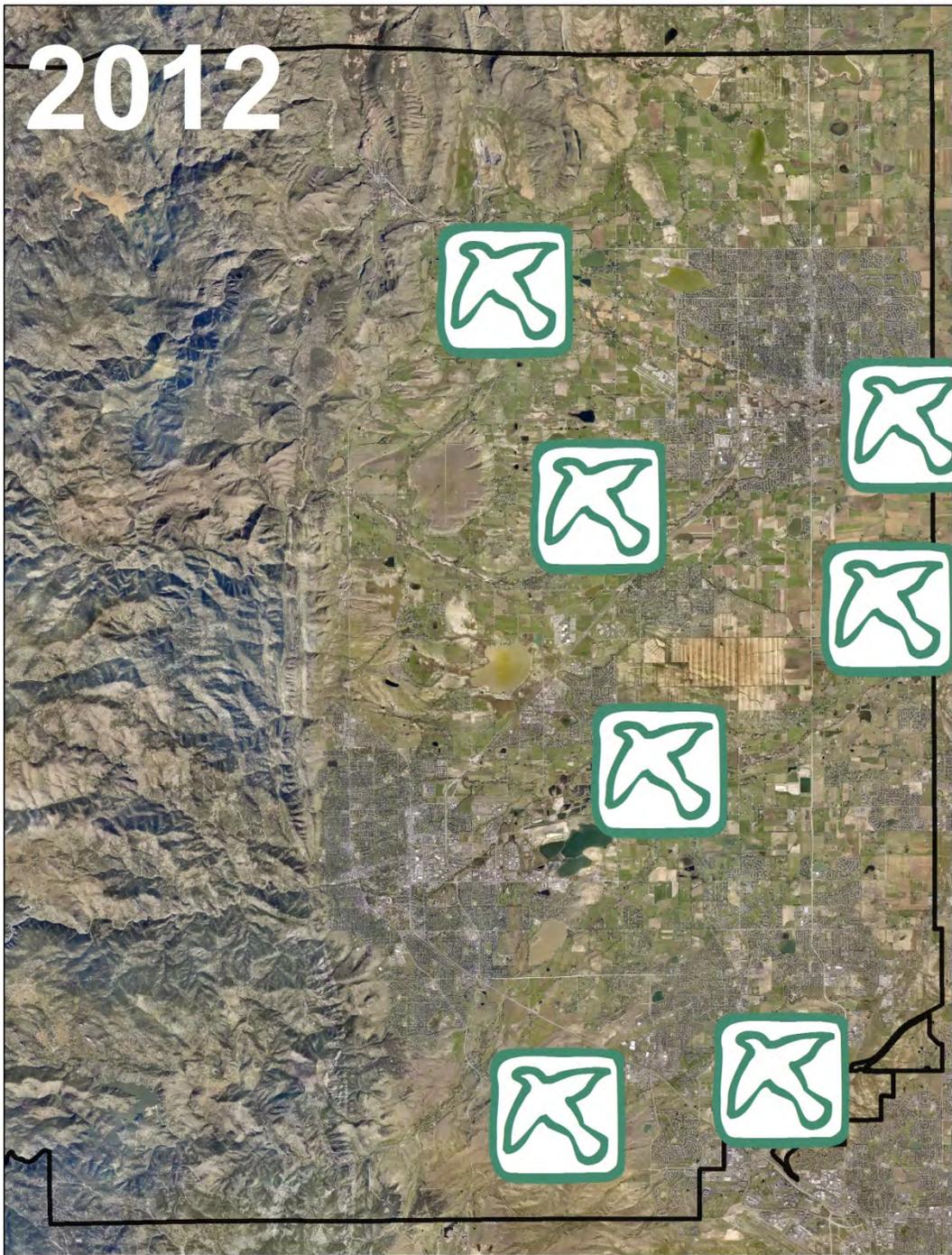
2007-2010



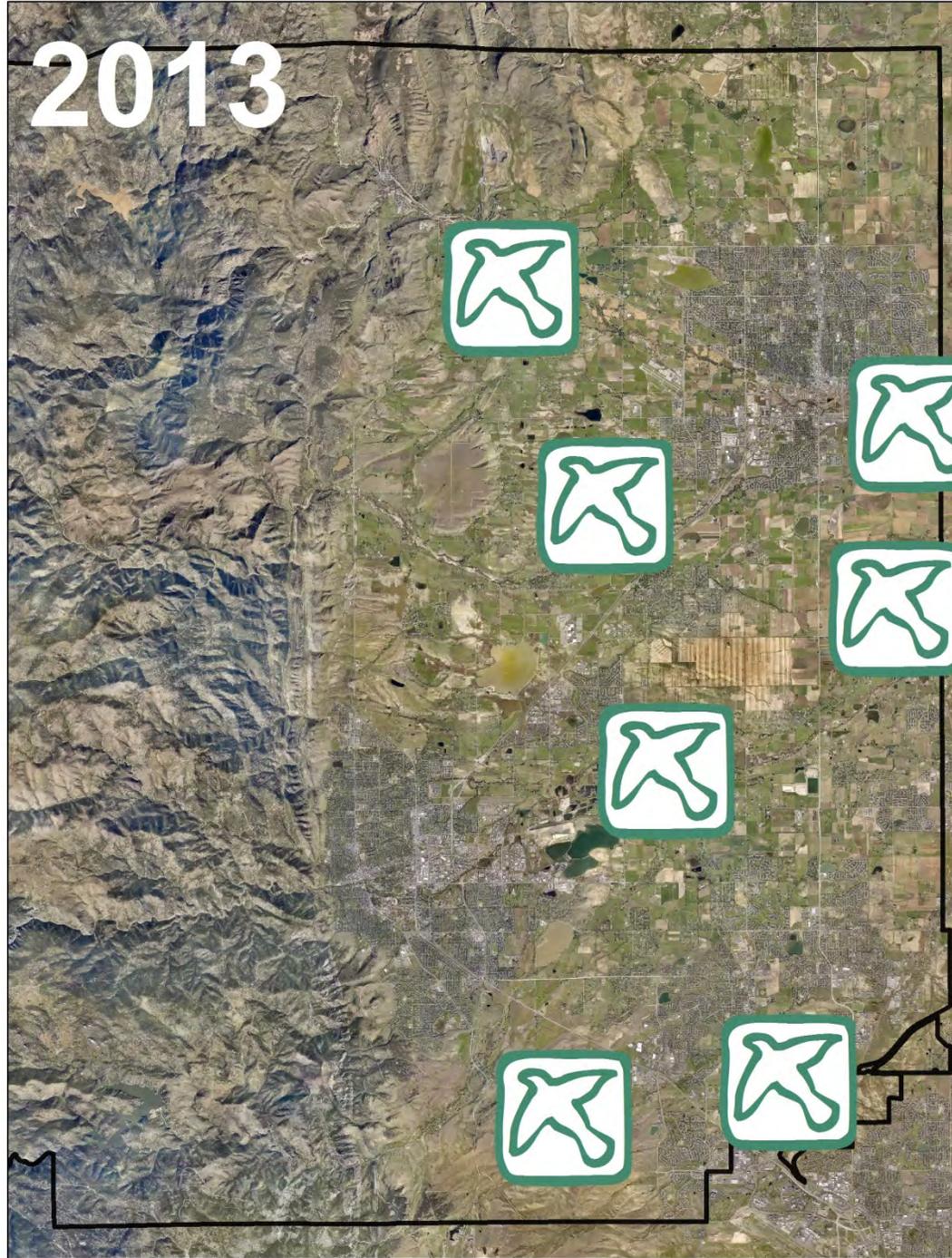
2011



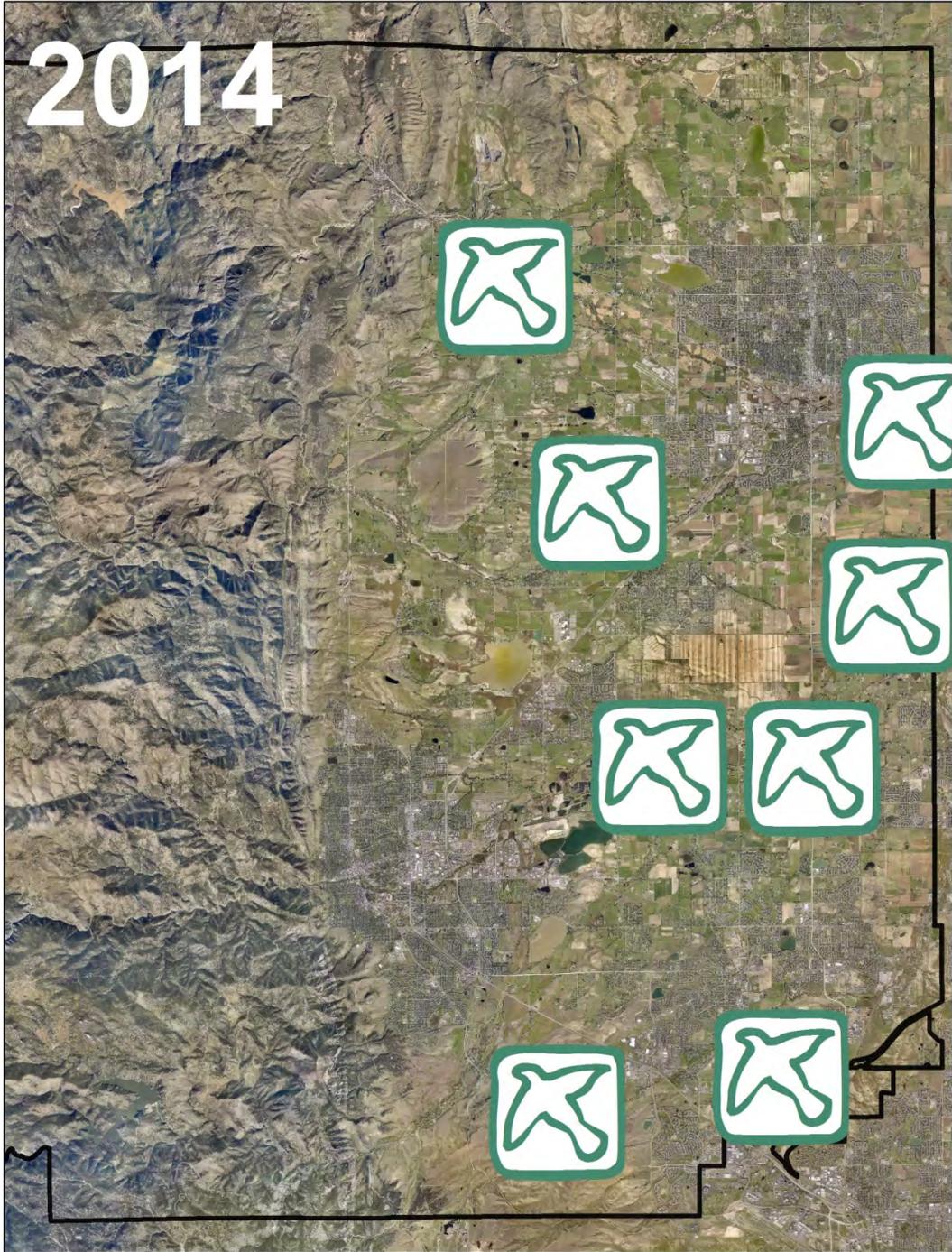
2012



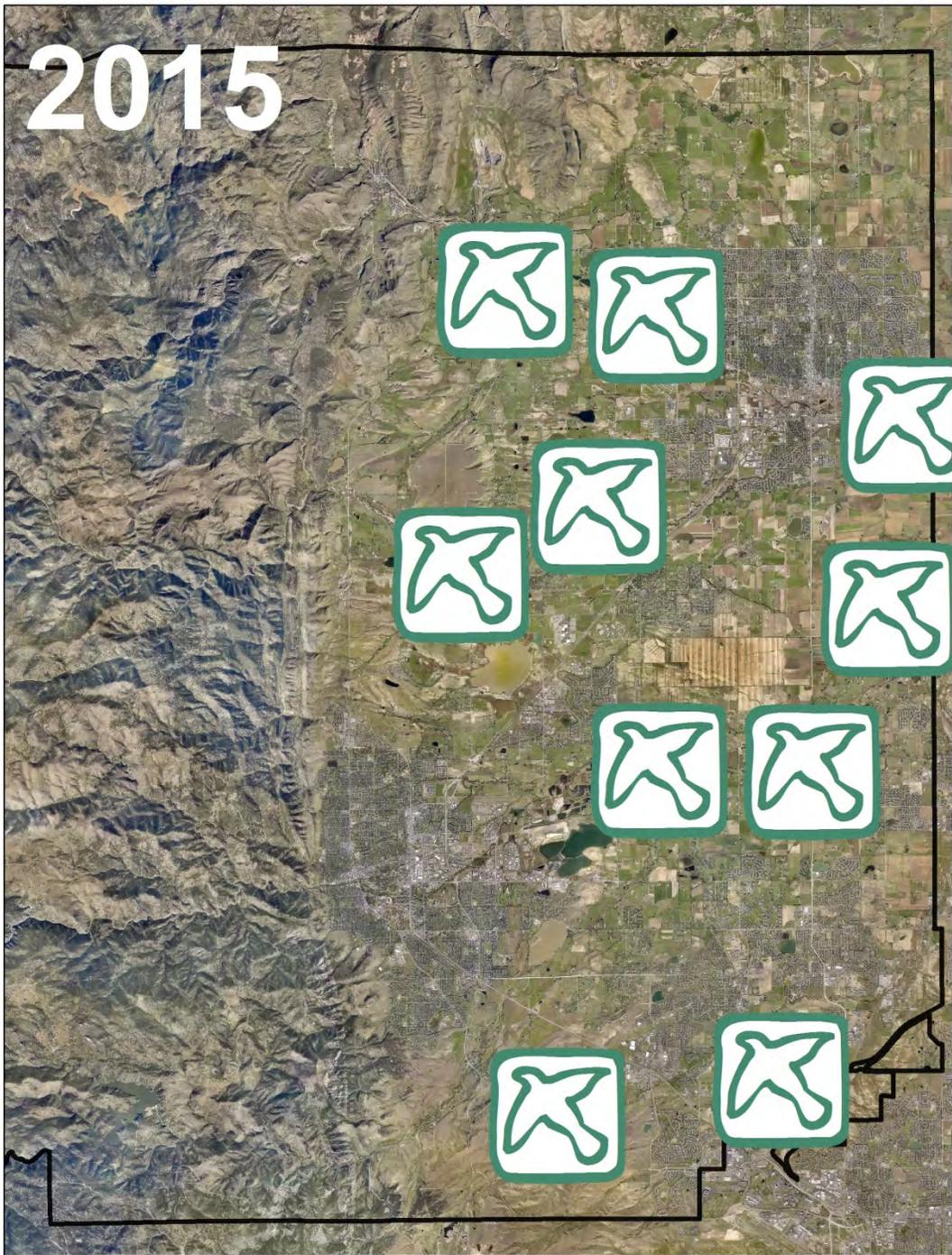
2013



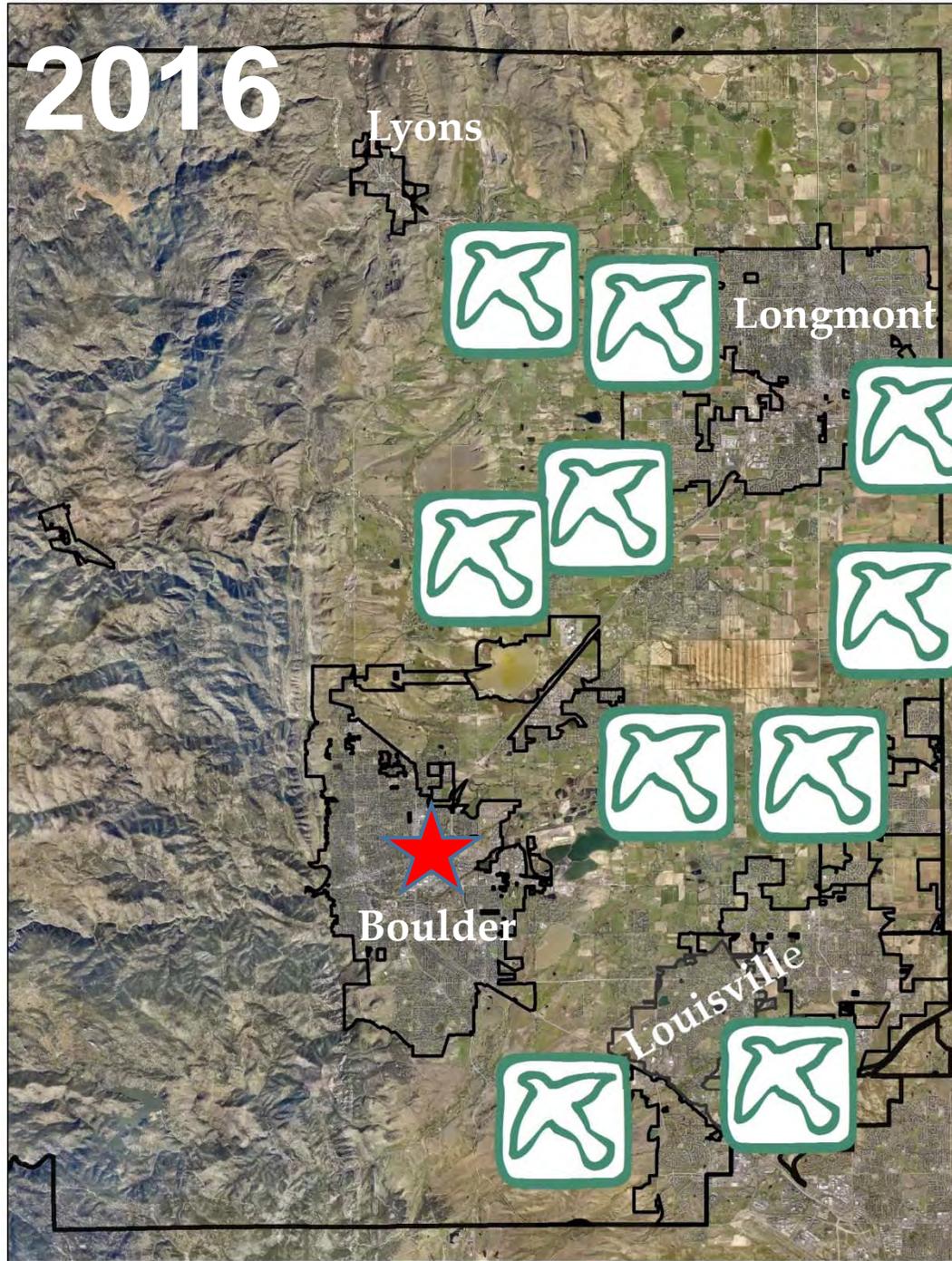
2014



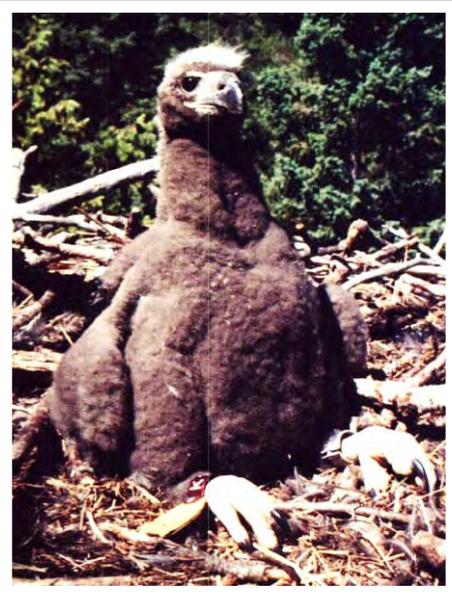
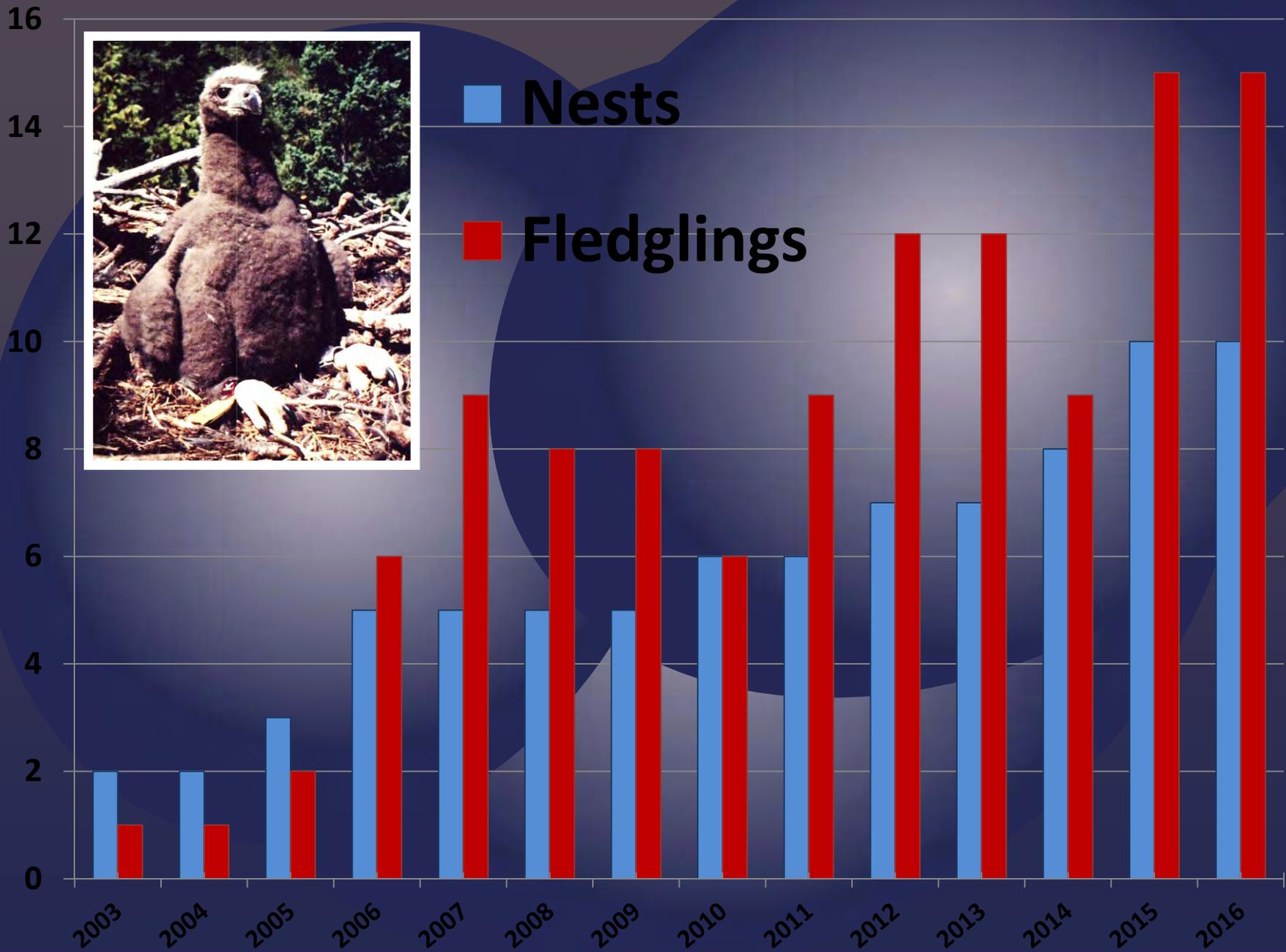
2015



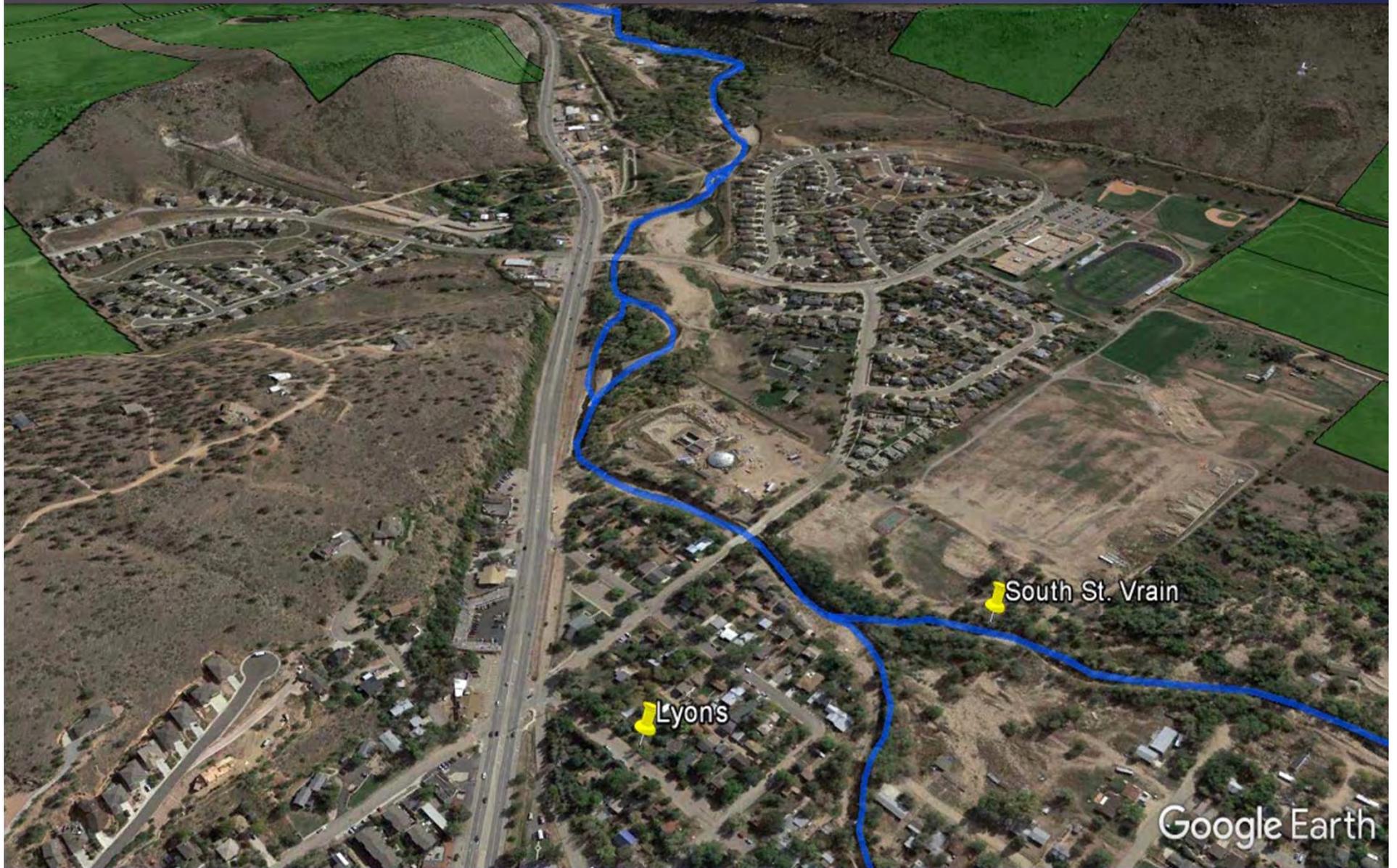
2016



Boulder County-Bald Eagle Nests and Fledgling-2003-2016



Saint Vrain River Fly-Over





- Pirating Aggression
- Opportunistic



Photos-Dr. Kerrie Bryan

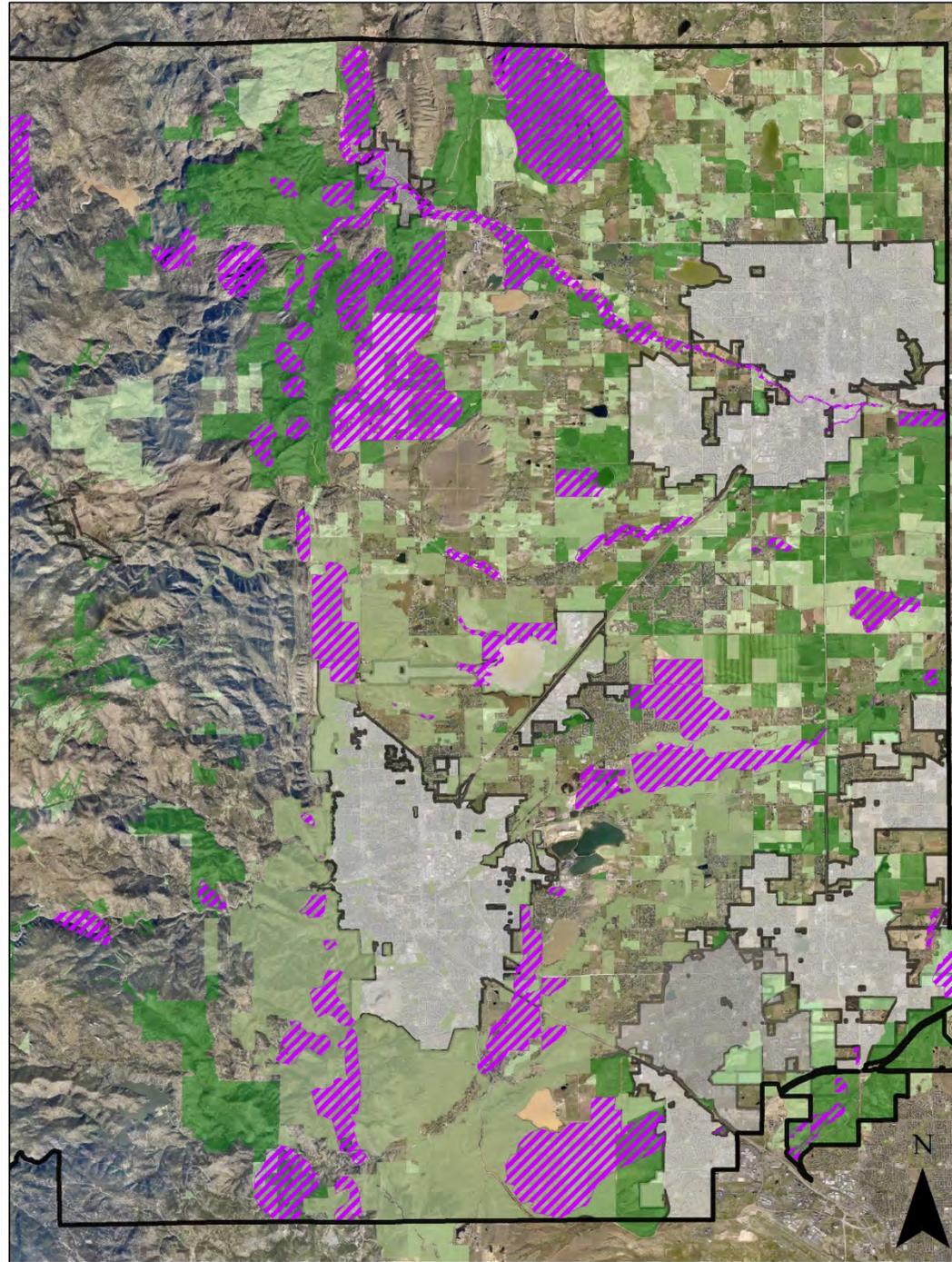


Interspecific
Competition



Intraspecific Competition

City and County Open Space and Designated Critical Wildlife Habitat

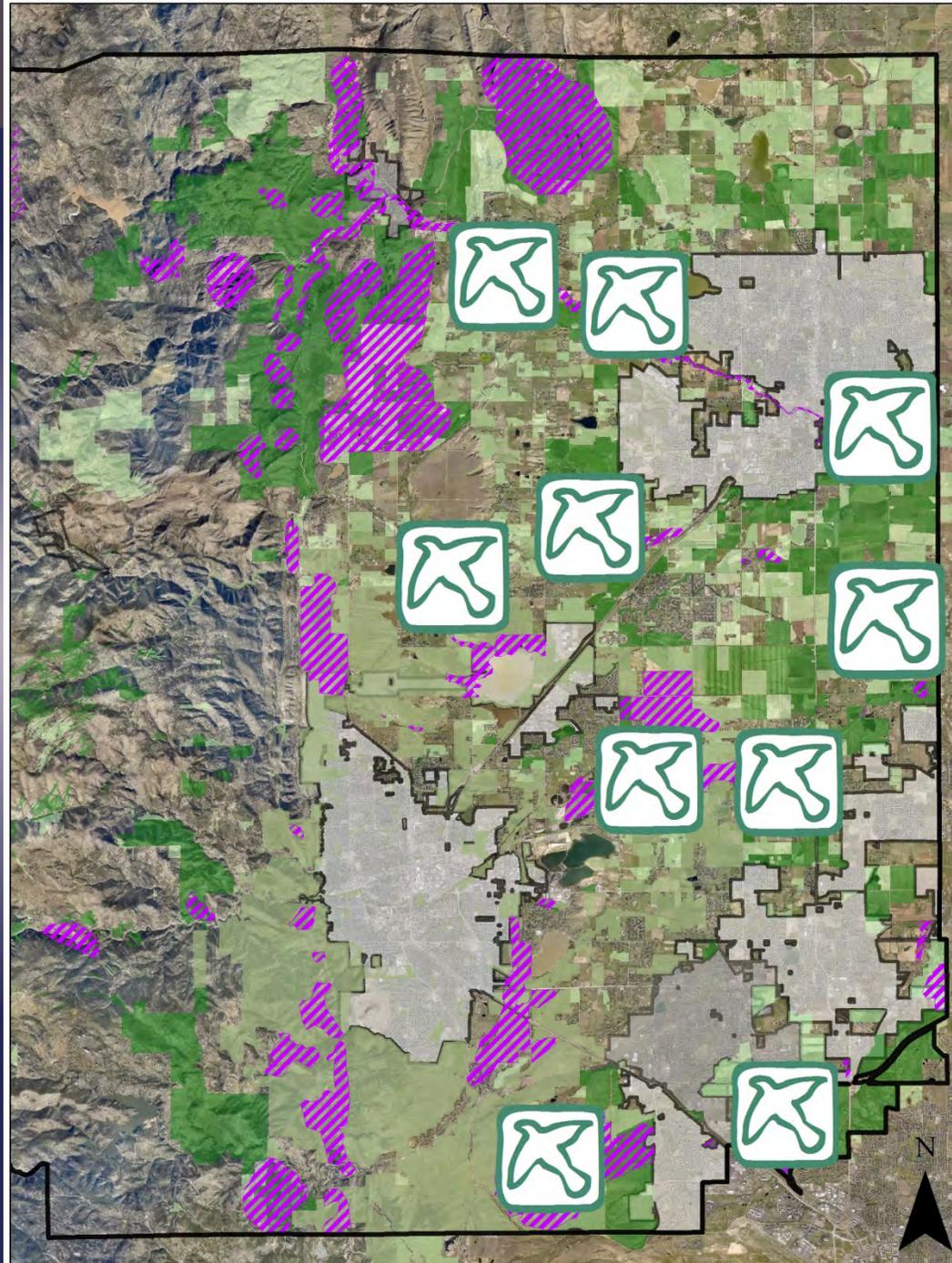


Boulder County Comprehensive Plan Plan

Goals, Policies, & Maps
Element



BCPOS uses Colorado Parks and Wildlife Guidelines on Timing and Spatial Buffers.



Breeding Season Closure
Oct 15-
July 31

1/2 Mile
Buffer

TAKE PERMITS OVERVIEW

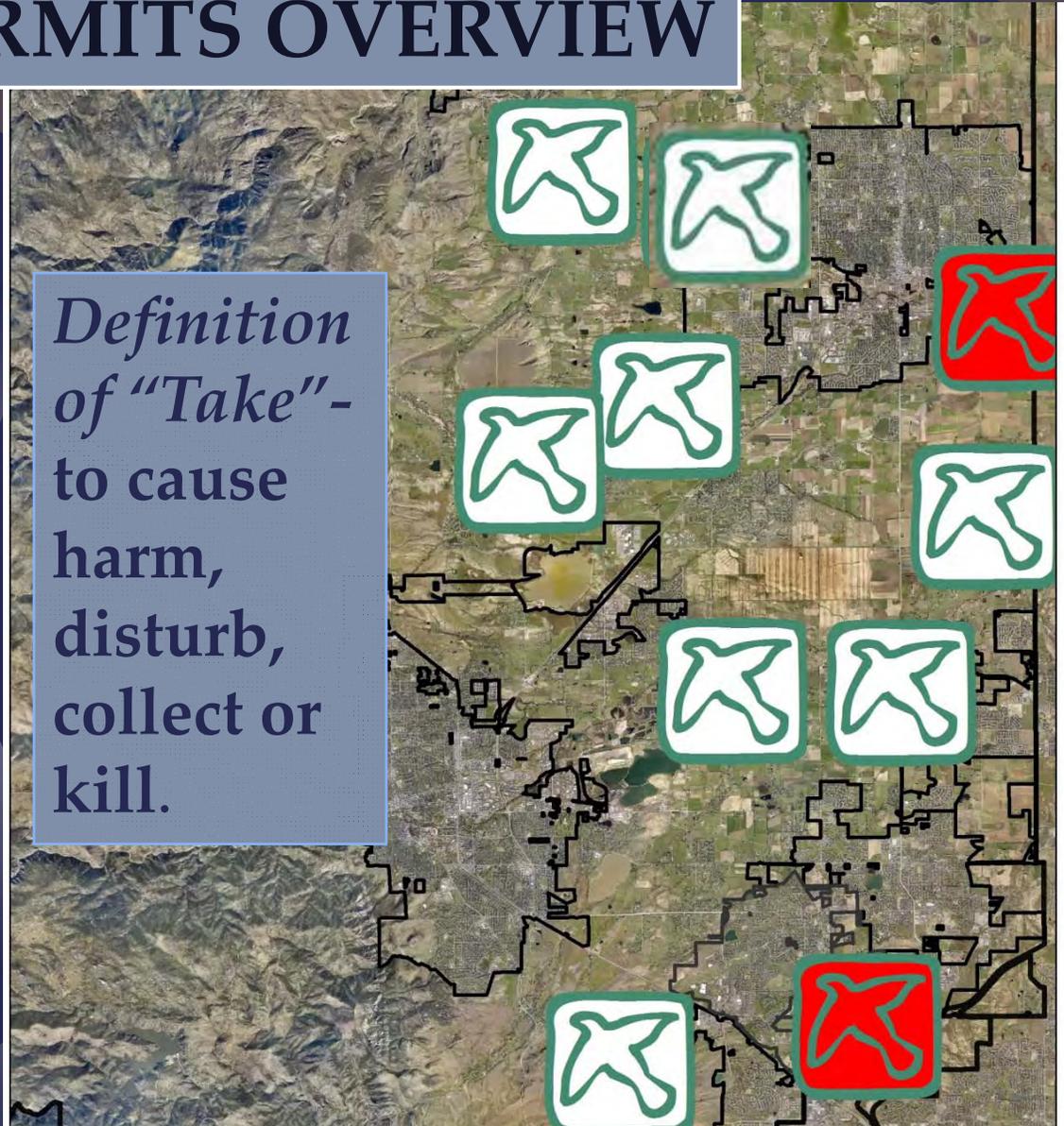
Purposeful/Non-Purposeful

Bald Eagle Delisted
August 8, 2007

USFWS Final Rule
Related to Take
Permits September 11,
2009

Revised December 15,
2016

*Definition
of "Take"-
to cause
harm,
disturb,
collect or
kill.*

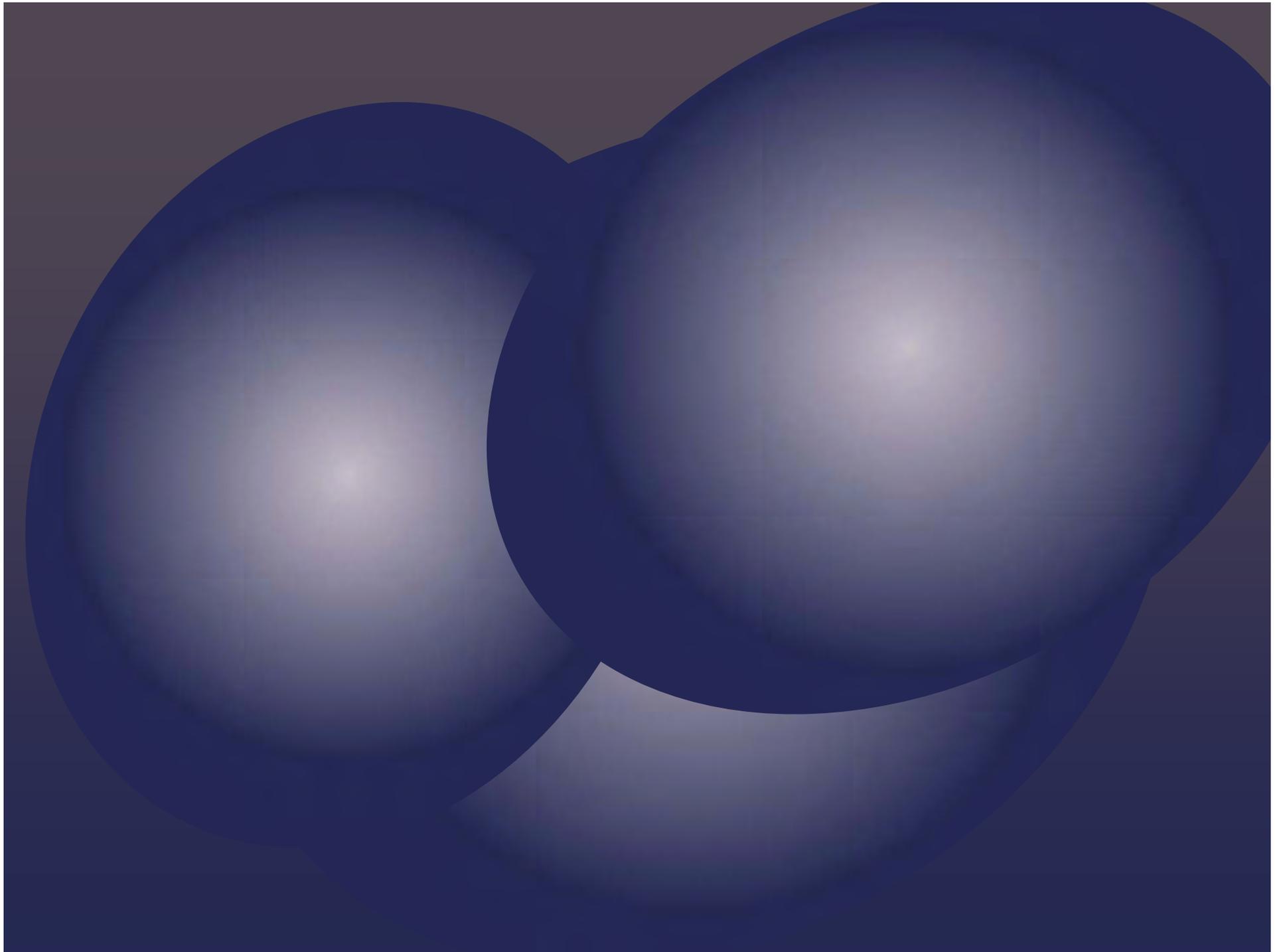


<https://www.fws.gov/migratorybirds/pdf/management/FINAL-PEIS-Permits-to-Incidentally-Take-Eagles.pdf>

Acknowledgements:

Photo credits: Long-term raptor volunteer monitors for Boulder County. Thank you!







01/27/2015

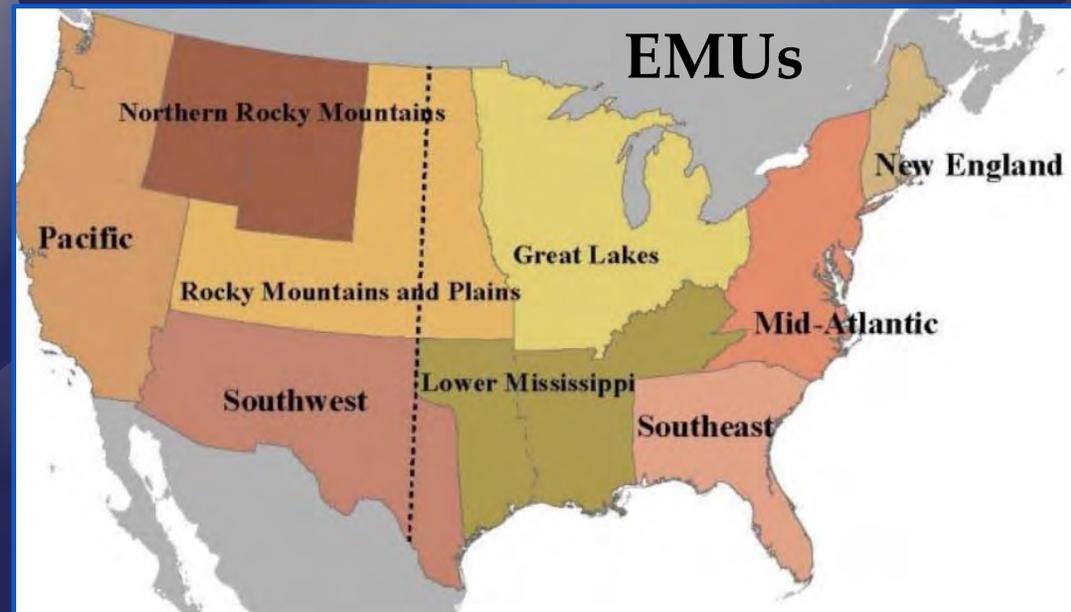
Must be “compatible with the preservation of the bald eagle and the golden eagle” means “consistent with the goal of stable or increasing breeding populations.

Under current regulations, 3,742 take permits for bald eagles can be issued per year in the U.S., based on population size and projected growth.

“In order to manage the population impacts of these new take permits, each Eagle Management Unit (EMU) will have a cap of no more than 5 % of the regional populations.”

EMUs defined at: <https://www.fws.gov/migratorybirds/pdf/management/FINAL-PEIS-Permits-to-Incidentally-Take-Eagles.pdf>

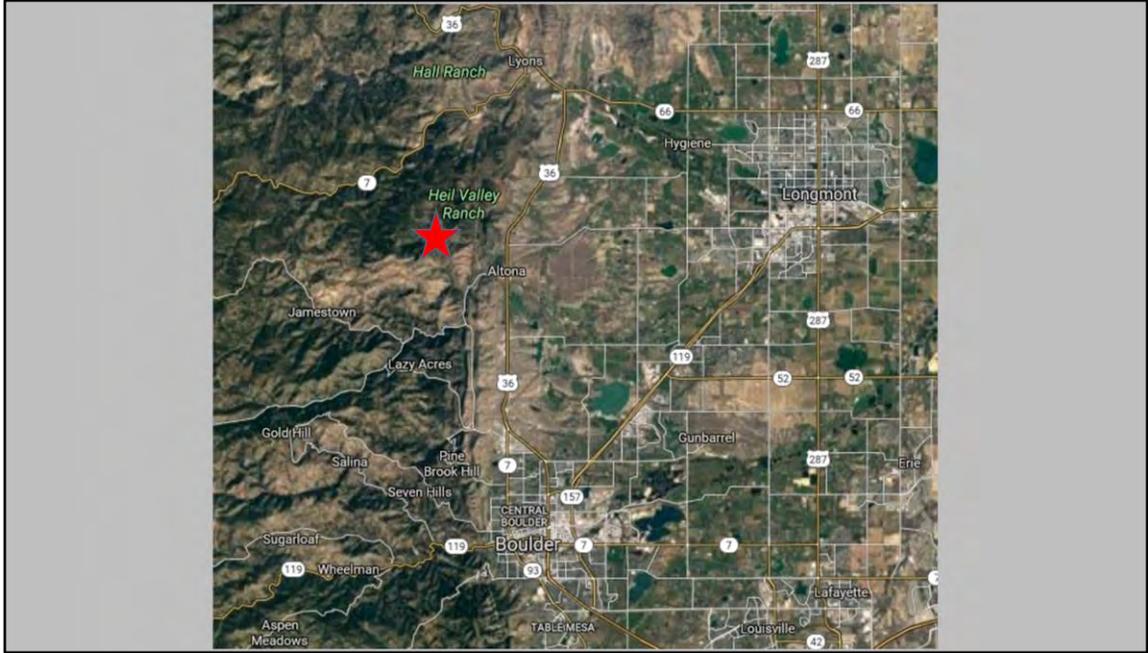
<http://eagleruleprocess.org>



Forest Raptors at Heil Valley Ranch: Research and Monitoring Aid Development of Conservation Goals

Kevin Grady, Heil Ranch Caretaker, Boulder County Parks and Open Space
Karen Blaugrund, Volunteer





- I. Northern Saw-whet owls**
 - i. Life history**
 - ii. 2016 breeding season on Heil Ranch**
- II. Accipiters—forest hawks**
 - i. Cooper’s hawk life history**
 - ii. 2015 and 2016 Cooper’s hawk breeding seasons on Heil Ranch**



30 seconds

Northern Saw-whet Owl (*Aegolius acadicus*)



arguably the cutest owl on the planet.

Northern Saw-whet Owl (*Aegolius acadicus*)

Life-History

Size

- 7-8 inches tall
- 16-19-inch wingspan

Habitat

- mature coniferous forests in western U.S.
- dense conifers and shrubs to roost
- **edge habitat with open meadow adjacent to closed canopy for nesting/hunting**



60-75 seconds

Here's a brief overview of the life history of the Saw-whet, with the key points highlighted in red. Habitat—they prefer edge habitat with an open understory, like a meadow or burn area nearby for hunting, adjacent to a closed canopy for nesting. Breeding biology—they have a low breeding site fidelity, meaning of course that they are not known to return to the same area year after year to breed, nor do they return to their birthplace to breed. They are secondary cavity nesters, and will typically occupy an old woodpecker cavity, like a Hairy woodpecker or Northern Flicker. Food—the key point here is that their choice of breeding site is strongly linked to their prey, which is primarily deer mice and voles, so they follow their prey.

Groce and Morrison (2010). Documented saw-whet owl distribution in relation to habitat characteristics in the Lake Tahoe Basin (1,900-3,315m) on USFS land. One of their conclusions was that starting surveys in March yielded a much higher probability of detecting owls than surveys beginning in May; surveys beginning in January or February might even be more successful. Occupancy rate increased with elevation and presence of Jeffrey pine and red fir; decreased with presence of white fir. There was a strong positive correlation between saw-whet occupancy and open canopy in the microhabitat (20 ha= 49.4 acres).

Ebird.org: note reports of saw-whets in Spring Gulch near Lyons in January 2016; Teller Farms in December; Gregory Canyon in December; downtown Boulder in February

Marks, Nightingale, and McCullough (2015). Concluded that breeding site fidelity is very low in this species, since they recaptured only 1 out of 109 fledglings that were banded between 2012-2014. They recaptured 2 nesting females in subsequent years.

Bowman et al. (2010). Central Ontario. Rate of increase of breeding saw-whet owls was directly related to red-backed vole abundance (and less to deer mouse abundance at 3%). 55% of variation in owl rate of increase was attributed to vole abundance. Saw-whet owls exhibit an immediate response to prey abundance (as opposed to a lag response like Great Horned owl), since they're nomadic (high fecundity, low adult survival, high juvenile survival).

Northern Saw-whet Owl (*Aegolius acadicus*)

Breeding biology

- will begin courtship and nesting as early as February/early March
- low breeding site fidelity and natal philopatry
- secondary cavity nesters



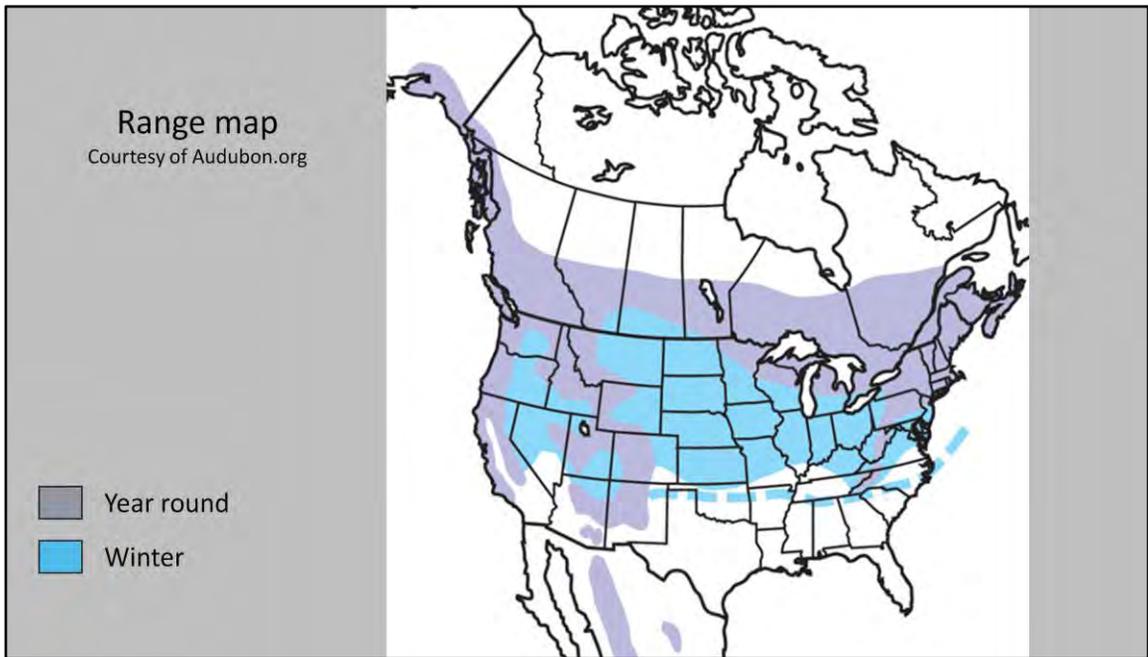
Northern Saw-whet Owl (*Aegolius acadicus*)

Food

- primarily small mammals (deer mice, voles); sometimes songbirds
- choice of breeding site strongly linked to prey abundance



Image courtesy of nps.gov



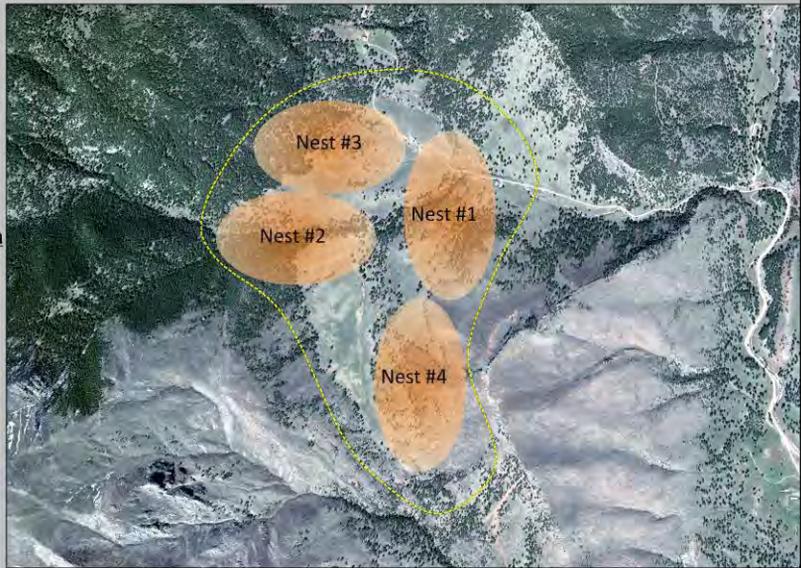
They are mostly a migratory species, but are known to sometimes stay in their summer territory. They have been seen and heard in Boulder County in the winter, so the best we can say is that some leave and some don't.

Northern Saw-whet Owls at Heil Ranch



Revisit obs methods and say we averaged 30 m away and stood in the same spot, even though some of these photos look like they were taken inches from the owl's face.

Northern Saw-whet Owls
in Geer Canyon Conservation Area



Home range size: approximately 400 acres,
Maximum nesting density: 1 pair/40 acres

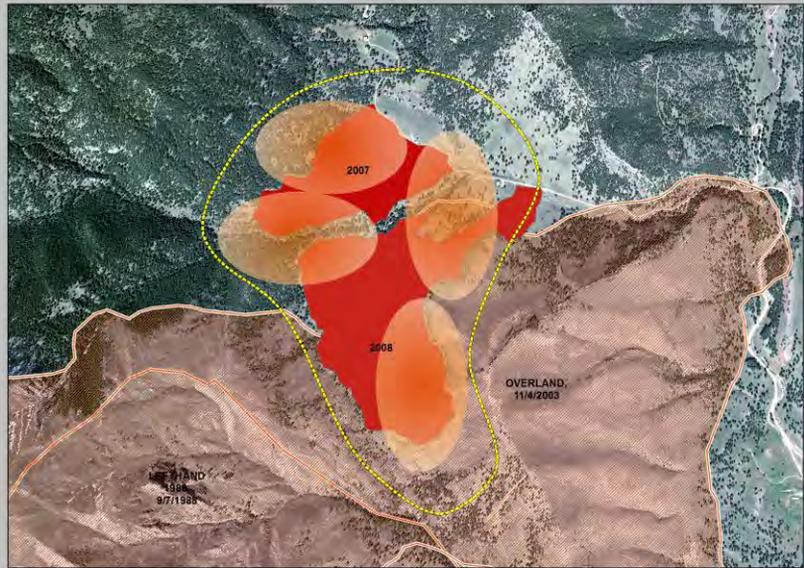
Date: 1/13/2017

45 seconds

- **First nest found March 1 in Geer Canyon; three more nests found Spring 2016**
- **2016 was first ever documented nest on Boulder County Open Space property**
- **Nests in close proximity: average distance 0.5 mile between them**

So we asked ourselves, what is so special about this area, and this habitat that attracted so many Saw-whets in one breeding season? And Kevin has more on that...

Fire History in Geer Canyon
Conservation Area



Wildland and Prescribed Fire Events

Date: 1/13/2017

45 seconds

- Ideal edge habitat
- Fire history: 2003 Overland Fire
 - Rx fires: 2007 and 2008

Habitat Characteristics of Geer Canyon

- Density and size of snags
- Closest water, meadows, closed canopy
- Presence of downed trees
- Shrubby and developed understory

Emphasize that even though we said the breeding site depends on prey abundance, the habitat also needs to be there for them to breed successfully.

Nest #1



30 seconds

Now we're going to describe the habitats at each of the four nests, with some photos of the adults and owlets from each nest. Here we have nest #1 in a Ponderosa stand, and that red arrow is pointing to the cavity in a dead Ponderosa. This is a closed canopy with an open understory behind it, remnants of a burn area, in fact. And it was about 100m to the closest water source.





Here's an owlet



5 seconds



This was the last we saw of either an adult or fledgling from any nest, on May 19.



I think you folks can see why these are arguably the cutest owls.

Nest #2



Nest #2 is right on a creek on a flat bench, with thick shrubbery around it and an open meadow right in front of it.





These were the shiest ones of the four nests, however Kevin did capture an image with his camera of a fledgling out of the nest.



Nest #3



Nest 3 was on another flat bench, with a meadow right in front of it and some canopy cover behind the nest. The closest water we had to estimate was 250m away.



Here is an image of an adult, taken with Kevin's camera.



Owlet



Nest #4



Nest #4 was on the edge of the Overland fire from 2003. You can see the canopy cover in the background, and the closest water was about 15m away. We weren't expecting to see a Saw-whet pop out of this cavity when we checked, because this hole was smaller than the others.





Owlet



Kevin measuring the cavity at nest #1

20 seconds. After the nesting seasons were over in mid-August, Kevin and I went around to all the nests and took some measurements and recorded some observations about the habitats. And we have that raw data if anyone is interested.



30 seconds



Northern Flicker
June 29

Don't cut down this tree!

Accipitridae Accipiters: Family of the forest-dwelling hawks

Northern Goshawk (20-25 in)



Cooper's Hawk (14-15 in)



Sharp-shinned Hawk (9-13 in)



Photo courtesy of Mass Audubon Society



Sexual dimorphism (1/3 larger)

Goshawk: 3.5-4 ft wingspan

Coop., 2-3 ft wing

Sharpie: i n, 1.5-2 ft wingspan

Moving on to the Accipiters, which are the forest-dwelling hawks. Starting on the left, we have the Northern Goshawk, then the Cooper's hawk in the center, and the Sharp-shinned hawk on the right. They occupy slightly different niches, the goshawk being the largest and an apex predator of the forest, targeting snowshoe hare, larger birds like grouse, and small mammals. The Cooper's hawk is the second largest of the accipiters, targeting medium and small birds and small mammals, and the sharp-shinned is the smallest, targeting exclusively songbirds.

Cooper's Hawks: *Accipiter cooperii*



We'll be focusing on the Cooper's hawk, the species we've documented on Heil ranch the past two years.

Cooper's Hawks: *Accipiter cooperii*

Life-History

Habitat

- mature coniferous forests in the western U.S.
- edge habitat with meadow or open canopy nearby for hunting; closed canopy for nesting

Breeding biology

- will begin courtship and nesting in April/May; mate for life
- high breeding site fidelity
- construct stick nest in the crux of a tree

Food

- primarily small- and medium-sized songbirds; small mammals

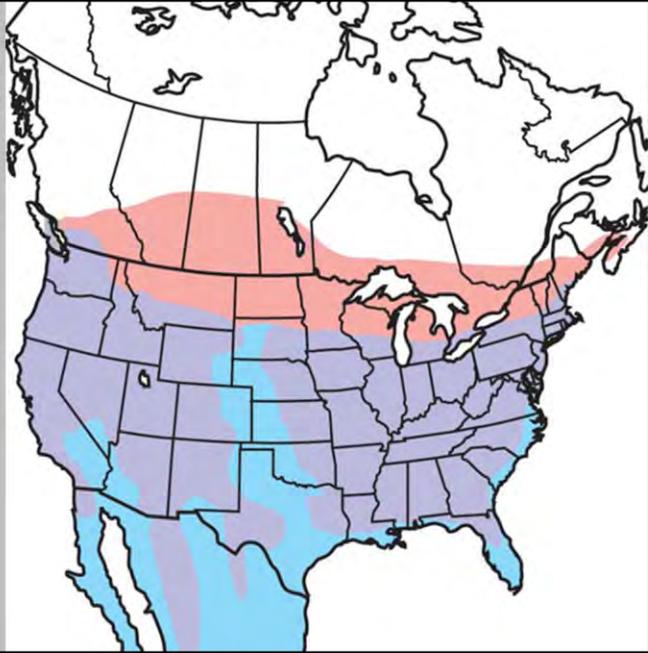


Here's a bit about the life history. The key point about habitat is that they prefer edge habitat, like the Saw-whet. On breeding biology, they have a high breeding site fidelity and tend to return to the same nesting area each year. They construct stick nests. And food, they primarily eat songbirds birds and small mammals.

Range map

Courtesy of Audubon.org

- Year round
- Winter
- Summer



Cooper's Hawks at Heil Ranch



Mention there are two nests, Pyrite and Roadside

Pyrite nest



60 seconds

Discuss Pyrite habitat and management, post-fledging area

Highlight that this area is closed to public use for entire nesting season- could explain why this pair is more territorial and aggressive



Here are images of the male, female, and one of the fledglings from this nest. The female is in the lower right and the male is on the left. They were definitely the fiercest of the two pairs we observed. The photo in the upper right is the only one we could get of a fledgling, since the adults were so defensive and aggressive, possibly due in part to the seasonal closure that Kevin mentioned before. So it seems like these hawks are not habituated to humans.



This slide compares the nesting seasons from 2015 and 2016, and highlights variations in timing of nesting due to weather or other variables. You can see as of August 19, 2015 there were still four fledglings in the stand, however as of August 10, 2016 there was no activity in the stand. So clearly there is variation from year to year, even for the same mating pair of adults, and we were fortunate to have documented this on Heil.

August 10, 2016
No activity in nest stand

Fledged and departed



Roadside nest



Picture Rock Trail

45 seconds

Discuss Roadside habitat and post-fledging area

Discuss behavior affected by proximity to trail



These are images of the roadside family. The female is in the upper left, some nestlings in the lower left, and the male is on the right. Like Kevin said, these hawks were much more approachable, not vocal like the other pair, and they watched us as we watched them sort of thing.

July 20, 2015



July 19, 2016



Again, comparing the 2015 and 2016 nesting seasons, you can see the difference in development between the nestlings. The 2016 nest was perhaps 2 weeks behind the 2015 season, same mating pair of adults.

July 20, 2015



Significance of post-fledging area



Behavioral differences between the two nesting pairs



Conclusion



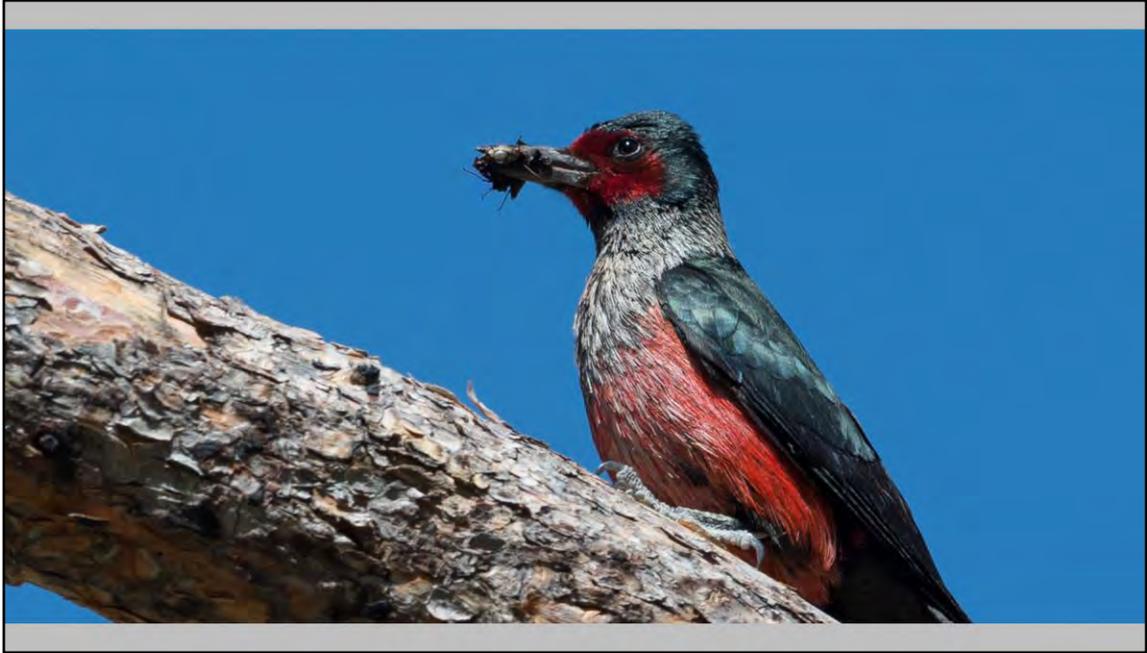






















Resource Management 2016 Summary

Presented to POSAC

February 23, 2017

Therese Glowacki

Resource Management Division

41 Full Time Staff

25 Seasonal Staff

6 Work Groups

- *Education and Outreach*
- *Forestry*
- *Plant Ecology*
- *Resource Protection*
- *Weed Management*
- *Wildlife*



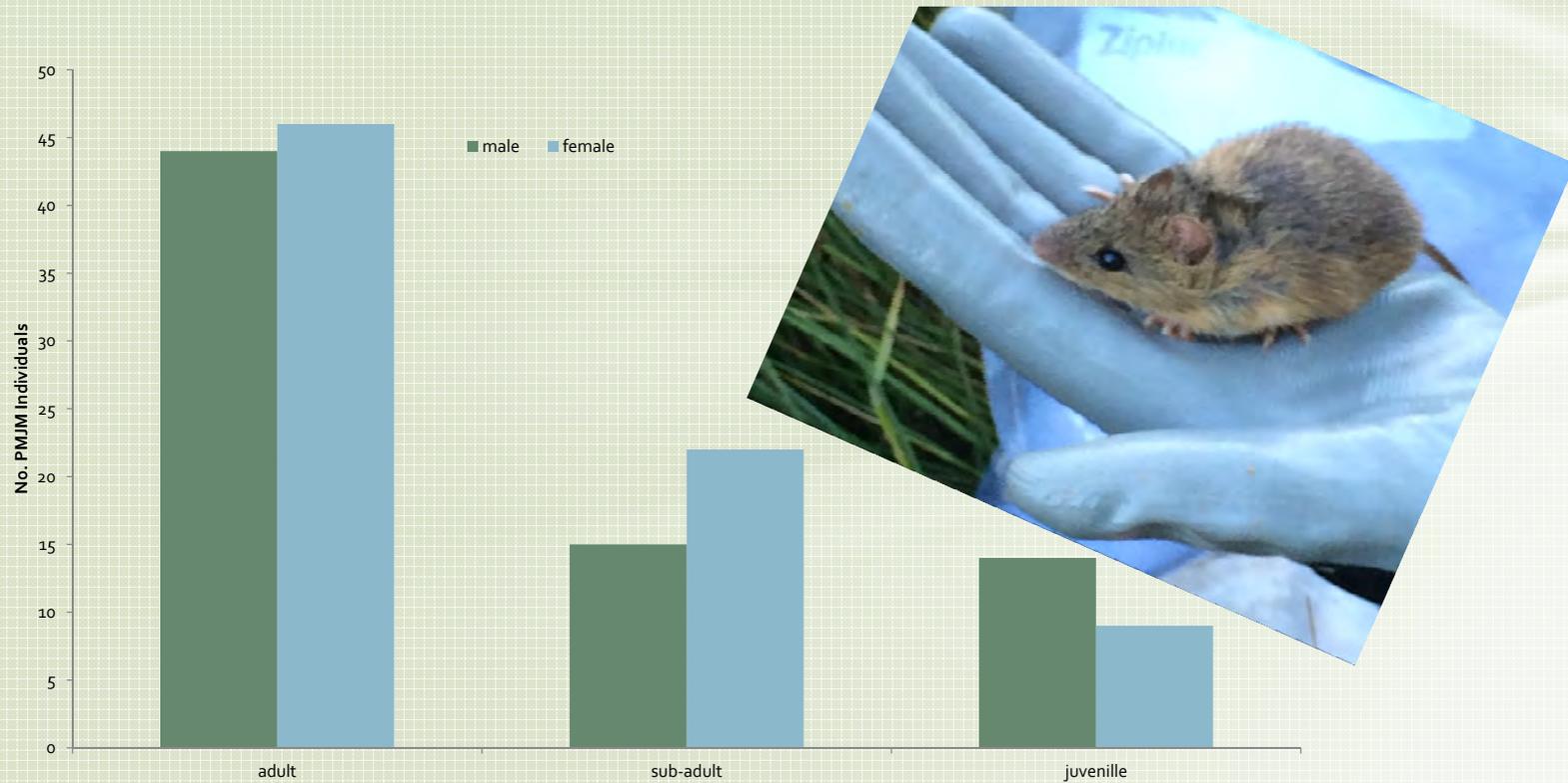
Wildlife

Small Mammal Trapping

- 5,000 trap nights
- 1,886 small mammals captured
- 154 individual Preble's (PMJM)
- Bakeman & Meaney (2005): 17 per 1,000 trap nights
- BCPOS (2016): 63 per 1,000 trap nights.

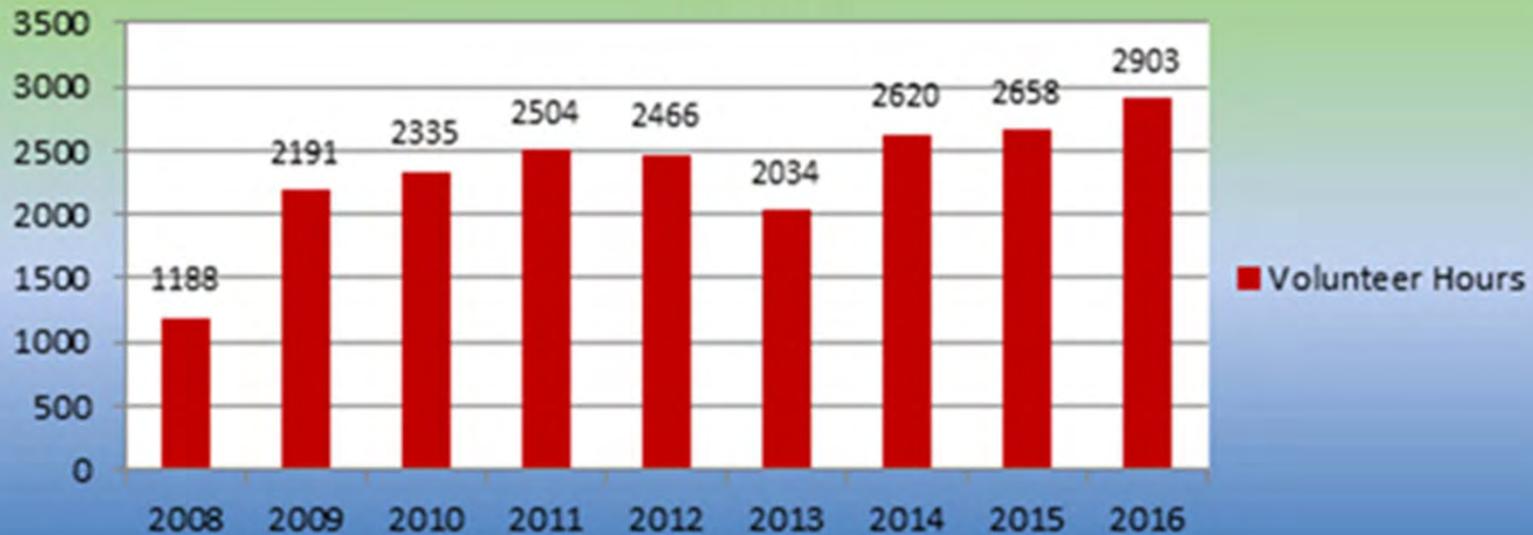


Preble's Meadow Jumping Mouse



154 Preble's Caught

Long-Term Wildlife Projects Volunteer Hours



- **18% Increase hours in 5 Years**
- **45% Increase in Volunteers**
 - 2015 – 86
 - 2016 – 125

Long-term Volunteers



Monitoring eagle nests

Fish Inventory

- 12 Reaches
- 13, 769 fish
- 86% Native
- Collecting water quality data



Iowa Darter



State Concern

Brassy Minnow



State Threatened

John Lyons

Common Shiner



State Threatened

Orangespotted Sunfish



Tier 1 SWAP



Plains Topminnow

Tier 1 / Considered for ESA

Stonecat



State Concern

Lake Chub



State Endangered

Northern Redbelly Dace



State Endangered



Native Fish



Dace and sucker



Stonecat



Forestry

- **Betasso Helicopter Logging**
 - 190 Acres
 - 2 FEMA grants, 1 CSFS
 - 5 Partners
 - \$1.3 Million
- **Protects Boulder Water Treatment Plant**
- **Cutting Complete in 2.5 days**



Prescribed Fire – Wapiti 2



189 Acres

March
October
December



Community Grinding Event

- Lake of the Pines
- May
- 16 Tons ground
- Part of Grinder Grant
- Example for other communities



Defensible Space Grant

- Assessed 102 structures, 17 properties
- Conducted in-house project at Heil
- 2017 Implement remaining structures: contracts and Youth Corps



Plant Ecology



Creek Recovery 10 years

2016 Native Seed Collection



**Milkweed
collections for
pollinators**

2016 Native Seed Increase

Native Seed Garden at Peck



Yellow coneflower, Sideoats grama, Blanketflower



Yarrow

Harvest



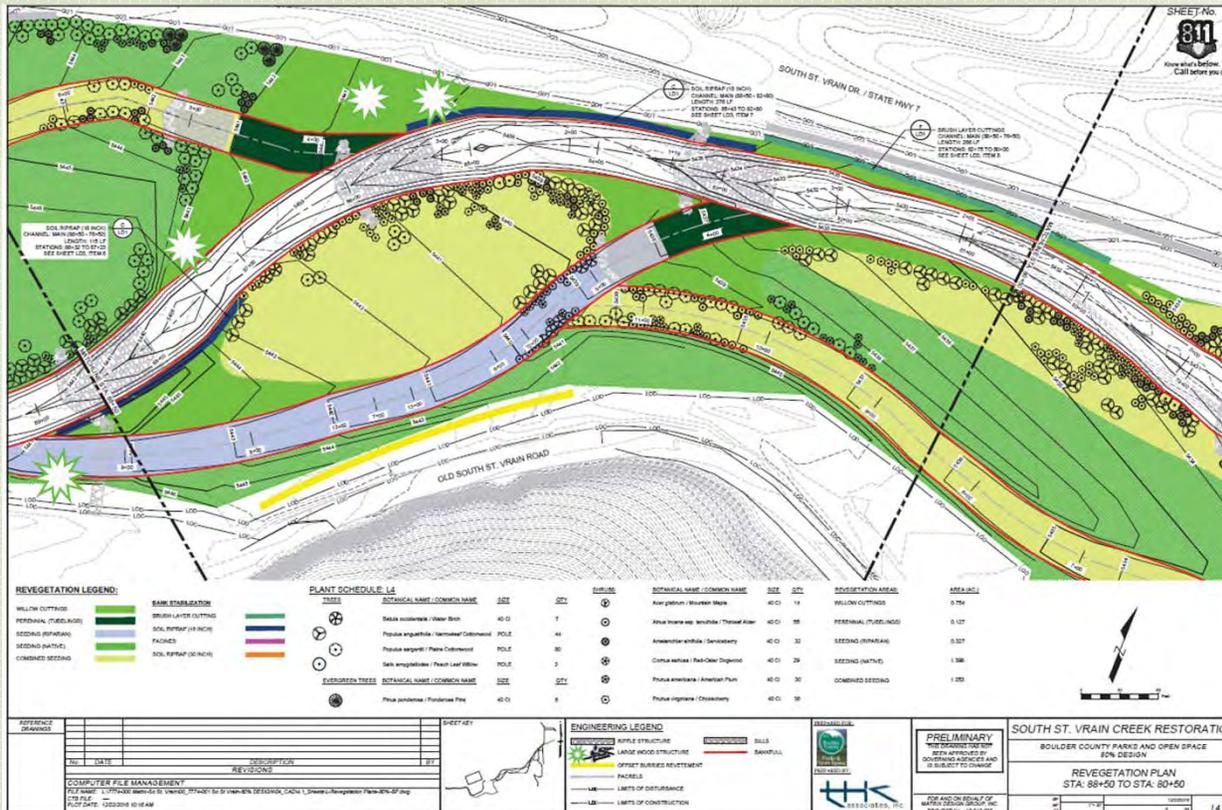
Gaillardia = 49.25 lbs
Ratibida = 17.3 lbs

Lower Boulder Creek Completion



Creek Restoration

Flood Recovery Projects



Weeds



Mowing for Weed Control

Cheat Grass Control at Mayhoffer



Russian olive removal



Gilbert Property

Resource Protection



Resource Protection

Youth Engagement Events

- Junior Ranger Adventures
- Left Hand Outdoor Challenge
- National Night Out
- Boulder County Youth Corps



Left Hand Outdoor Challenge

LHOC





Engaging Youth
Using Technology



Education and Outreach



- 42 Trailhead Displays
- Major Trailheads
- 2000 people contacted
- Mountain Lions, bears, Abert's squirrels

Outreach to Homeschoolers



- Homeschool Groups from Boulder and Lyons
- Natural History Programs
 - 20-40 per program
- Started a wildlife monitoring project at Pella
- Cultural History Program
 - 60 attendees

Nature Detectives



- **Explore nature with kids**
- **No right or wrong**
- **2009 launch**
- **9 properties have guides**



Artist In Residence Continues



Research on Open Space



2017 Priorities

- Elk at Rabbit Mountain
- Creek Restoration
 - St. Vrain
 - Brewbaker
 - Beilins Hock
 - Geer Canyon
- Night Sky Monitoring

