

LOS ANGELES RAPTOR STUDY

2024



Red-tailed Hawk Nestlings in Tower Nest. Photo credit: Jenn Rose

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EXECUTIVE SUMMARY

In 2024, we launched Year 8 of the Los Angeles Raptor Study. As of July 2024, we rechecked or discovered more than 650 raptor territories across the study area, representing 239 Cooper's Hawk territories (vs. 222 in 2023), 215 Red-tailed Hawk territories (vs. 184 in 2023), 57 Red-shouldered Hawk territories (vs. 55 in 2023), 105 Great Horned Owl territories (vs. 84 in 2023), as well as a handful of territories of American Kestrel, Peregrine Falcon, Barn Owl and Western Screech-owl. While not all these territories were found to be active in 2024, these numbers continue to more closely reflect the maximum number of territories in the study area, thanks to increased effort and our growing knowledge of local species ecology.

We located additional (i.e., previously-unrecorded) territories for 17 new Cooper's Hawk pairs (12 were newly-found in 2023), 22 for Great Horned Owl (up from 13 new in 2023), 30 for Red-tailed Hawk (up from 15 new in 2023), and 7 for Red-shouldered Hawk (5 new in 2023). While most of these new territories had active nests, in some we observed the presence of pairs that did not appear to be nesting this year, or we found recently-fledged juveniles in areas where we were unable to locate the nest they would have used.

We have re-analyzed nest occupancy, territory re-use, and productivity for each of the four common species. We again compiled examples of nest trees being severely trimmed (or removed altogether), which for Red-tailed Hawks often results in pairs completely abandoning these territories. We also more closely tracked nest takeovers, which we had not compiled in the early years of the study.

We again did not re-analyze nest distribution by subregion, ornamental vs. native tree use, nor nest phenology (i.e., when chicks first appear, and when they fledge) for the 2024 season, as patterns of each seemed to be similar to that observed in prior years. However, these data are available and could be analyzed.

1.0 BACKGROUND

Launched as the “Griffith Park Raptor Survey” in 2017 (Cooper et al. 2017)¹, we renamed our effort the “Los Angeles Raptor Study” in 2021 to reflect the larger current study area now covering most of Los Angeles exclusive of the north and west San Fernando Valley, South Los Angeles, and the Harbor area (**Figure 1**). By documenting and tracking raptor nests across Los Angeles, we hope to understand how ecological dynamics change from year to year in the natural and built areas of Los Angeles, in particular how human activity is impacting wildlife. While a handful of Los Angeles-area raptor nesting sites had been documented by prior work (e.g., Allen et al. 2017), the data contained in our annual summary reports represent the first comprehensive dataset of an entire raptor community in the urban core of Los Angeles.

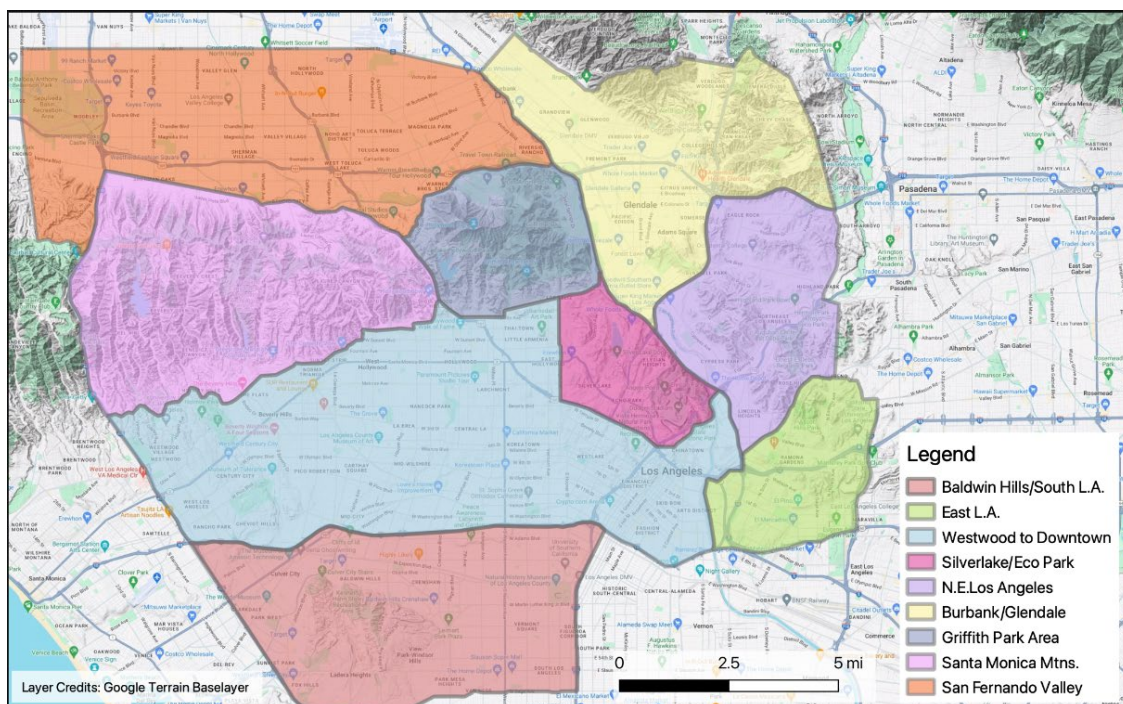


Figure 1. Study area updated in 2024 season. In addition to the areas shown, we monitored a handful of nests outside the study area, but did not include them in the analysis. Map credit: Ahalya Sabaratnam (UCLA IoES Practicum Raptor Team)

Raptors are important apex predators in most of the earth’s ecosystems, and coastal Southern California supports (or once supported) around a dozen breeding species (Garrett and Dunn 1981). Of these, eight are known to nest, or formerly nested in the central Los Angeles Basin covered by this study. Based on recent records (e.g., eBird: www.ebird.org), the study area provides *potentially* suitable nesting habitat for nine resident raptors including Turkey Vulture

¹ Cooper Ecological Monitoring, Inc. has been conducting surveys on the flora and fauna in Griffith Park since 2007, when the Griffith Park Wildlife Management Plan (Cooper and Mathewson 2009) first documented the park’s flora and fauna and suggested best management practices for the future, including improved species monitoring.

(*Cathartes aura*), Red-shouldered Hawk (*Buteo lineatus*), Red-tailed Hawk (*Buteo jamaicensis*), Cooper's Hawk (*Accipiter cooperii*), Great Horned Owl (*Bubo virginianus*), Barn Owl (*Tyto alba*), Western Screech-Owl (*Megascops kennicottii*), Peregrine Falcon (*Falco peregrinus*) and American Kestrel (*Falco sparverius*). Turkey Vulture has not been confirmed as breeding in the study area in modern times, though suitable conditions exist to support its nesting, and summering individuals are present every year, mainly in the Santa Monica Mountains and western Griffith Park.

Former area nesters include Golden Eagle (*Aquila chrysaetos*) and Long-eared Owl (*Asio otus*), both are rare today at any season. Osprey (*Pandion haliaetus*) is frequently seen through the nesting season (mainly along the Los Angeles River) but has not been documented as nesting in the study area (though spring and summer records appear to be increasing). A handful of species of raptors occur locally or sporadically in migration and/or winter (e.g., White-tailed Kite (*Elanus leucurus*), but nesting has not been suspected as occurring in the study area in modern times.

2.0 STUDY AREA AND METHODS

2.1 Location

The “Study Area” originally centered on Griffith Park, was expanded in 2020 to include additional portions of the San Fernando Valley and coastal plain that were not covered in prior years. This year, the Study Area again extended to the 405 Freeway/Sepulveda Pass in the west (with an “extension” to include Sepulveda Basin), Sherman Way/Vanowen Blvd. in the north, Slauson Ave. in the south, and East Los Angeles in the east (see **Figure 1**). As in prior years, a handful of raptor nests just outside this area were monitored by volunteers (e.g., Pasadena and Calabasas), but we did not specifically search for nests in these areas.

The region’s climate is Mediterranean, with low or no summer precipitation, cool winters, and periods of drought. February sees the highest levels of precipitation with annual average rainfall of 14 inches. Fairly regular El Niño events once or twice per decade can result in much higher annual rainfall amounts, and regular droughts can reduce rainfall to half the normal amount (or less in exceptional years). For example, the year of the project launch (2017) followed an exceptional five-year drought in the Los Angeles area, with each year well below average rainfall; however, the 2018 – 2019 rainy season saw a total of 18.82 inches in the downtown Los Angeles area, which was 4.09 inches (>20%) above the seasonal average for the area. The 2019 – 2020 season saw a return to average (14.86 inches), though roughly half of it fell during March and April (2020), which was unusually late, and which coincided directly with the start of our 2020 raptor nesting season. Rainfall in winter 2020-2021 was less than half that of normal (5.0 inches)², with above-average high temperature spikes in late May and mid-June, which is coinciding with local raptor fledging. Rainfall in winter 2021-2022 was below average, but not extremely so (12.4 inches)³. The winter of 2022-2023 saw exceptionally high precipitation, with 28.4 inches recorded in downtown Los Angeles. This prior winter (2023-2024) was again a heavy rain season with 25.2 inches recorded in downtown Los Angeles. As climate change worsens these extreme variations may worsen.

While most nests were found on private property (mainly in residential areas), several public land managers are responsible for raptor nests in the study area. These include the Los Angeles Department of Recreation and Parks, which manages Griffith Park, Elysian Park, Echo Park, Debs Park, and most of the Sepulveda Basin, as well as hiking/open space areas (including Runyon Canyon), golf courses (including Encino and Woodley golf courses) and numerous smaller urban parks; the Los Angeles Department of Water and Power (Stone Canyon Reservoir, Silverlake Reservoir, Hollywood Reservoir); and Los Angeles County Department of Parks and Recreation (Kenneth Hahn Park). Various other agencies and owners manage lands in the remaining open space of the eastern Santa Monica Mountains, notably Mountains Recreation and Conservation Authority (Franklin Canyon). Important large private land owners include various golf courses, which we have gained access to in recent years. However, most nesting

² <https://www.laalmanac.com/weather/we13.php>

³ <https://www.accuweather.com/en/us/los-angeles/90012/may-weather/347625?year=2021>

sites monitored were found in and around single-family homes and yards, and many nests were located in street trees, backyard trees, or along utility easements through residential areas. These street trees are maintained by the various cities in the study area, including Los Angeles, Culver City, Beverly Hills, West Hollywood, Burbank, and Glendale.

As in prior years, we could not access several areas of interest, including Franklin Canyon (closed due to storm damage most of the spring), the large protected habitat area around Stone Canyon Reservoir (LADWP), Hollywood Bowl, and Forest Lawn Cemetery-Hollywood Hills. Coverage of the Los Angeles Zoo could also be expanded.

2.2 Survey Methods

As in prior years, Cooper, Katz, and Gerry Hans (Friends of Griffith Park) conducted opportunistic surveys in the Study Area starting in February to document the status of known and suspected new nests and territories, documenting status on a shared Google Sheet. This continued as time allowed through the spring and summer. We attempted to maintain the increased level of coverage afforded to the Study Area which started in 2020, including regularly checking online bird reporting platforms such as eBird and iNaturalist for reports of adults and juveniles (the latter particularly evident by June), and visiting the reported areas to track down nests, which yielded several new territories/nests.

As in recent years, Katz posted several announcements and updates of the project to social media (Facebook, Instagram, LinkedIn, etc.) and local NextDoor boards, requesting sightings of nests and raptors. Volunteers were also provided outreach materials to share in their neighborhoods. This approach was again fruitful, especially during the end of the Cooper's Hawk nest period when juveniles are loud and visible in neighborhoods. We also again found new nests from receiving rescue calls about fallen nestlings.

Our surveys were performed mostly by foot using 8-10x binoculars, 20x spotting scopes, and "superzoom" cameras to determine nest activity and the presence or absence of raptors. Surveys were timed to avoid undue disturbance to nesting raptors and other birds during the most critical breeding periods later in spring.

We held one virtual (Zoom) training session (Feb. 1) followed by two in-person field trainings which were well-attended by volunteer "community scientists". The first field training took place in Griffith Park on Feb. 10, and the second in Sepulveda Basin on Feb. 17. By the end of March, we had more than 700 potential raptor nests/territories located, and the volunteers had started their bi-monthly visits. We again held a refresher training with a focus on Cooper's Hawks via zoom on April 4 and in the field on April 7.

As in prior years, we assigned nests to one or more volunteers based on their location preferences and birding ability. Volunteers were asked to visit their assigned nests twice per month (and no more than weekly to avoid disturbance) to identify nesting stages throughout

the season, and were asked to complete the data entry form within a week of the visit. Each active nest was confirmed by a project staffer and/by photograph to ensure data reliability and support volunteer training. Staff also met with new volunteers one-on-one in the field for nest orientation, and with existing volunteers if they were assigned a new nest and had difficulty locating it. Data was collected via a Google Form (essentially an online survey), and all data maintained in an online spreadsheet (Google Sheet). GPS coordinates of nests were collected with the Google Maps or Google Earth apps in the field, or later using volunteers' written descriptions and Google Earth Pro. Coordinates were taken as close to the nest tree as possible, but the accuracy of nest coordinates may vary due to access issues, proximity of the edge of a tree to the nest, or the inability to obtain accurate readings under dense tree canopy. Nest locations are not published to avoid disturbance to nesting raptors and to respect privacy for residential area nests. However, locations were again shared with local government agencies and select property owners in order to ensure that maintenance and operations of parks did not disturb the nests.

2.3 Classifying Nest Structures and Territories

We largely maintained our definitions and classification of nests and territories solidified in 2020, which accounted for new information learned through our more intensive monitoring and nest-searching that began that year. Thus, we continued our focus on documenting use of *territories* (i.e., not just on physical nests), attempting to determine breeding activity even where we could not locate the nest structure. Definitions used as follows:

- Active (nest) – A physical nest in good condition with at least one individual of the appropriate species engaged in clear breeding behavior at the nest (e.g., nest-building, incubation, etc.);
- Active (territory) – An area with a pair of adult raptors interacting, or with an individual engaged in breeding activity. Also, “active territory” may refer to an area where we noted recently-fledged young clearly produced locally (e.g., with downy feathers, or incapable of sustained flight), even if the nest structure was unknown;
- Fledged (nest/territory) – Evidence of one or more young having successfully left the nest. Typically, this was confirmed by observations of large young in the nest, then an empty nest shortly thereafter, with copious whitewash and down feathers near the nest, and usually with at least one fledgling (dependent on adults and incapable of sustained/smooth flight) in the area. In some cases, a successful nest was identified based on whitewash/down even if no fledgling was observed nearby.
- Inactive (nest/territory) – A likely or known/historical raptor nest or territory in which no breeding activity was observed at any point in the season;
- Abandoned (nest) – A situation where adults (i.e., a pair) were present – usually only early in the season – within the territory at or near a known nest, but where no nesting activity at the nest was observed thereafter;

- Failed (nest) – An active nest that produced no young, but where nesting activity had been observed in the current season, such as incubating adults, suggesting that eggs may have failed to hatch or that young died in the nest;
- Unknown – Ambiguous observations, typically where we failed to revisit a nest in the study year due to scheduling/access issues, or where we felt we did not have enough observations to make a determination of success or status.

In some cases, we identified a territory based on the presence of a single adult, such as an adult Cooper's Hawk delivering a territorial flight display or a call associated with breeding, but most nests and territories were deemed active by the presence of a *pair during the nesting season*.

As in prior years, we made a concerted effort in "gap areas", those parts of the study area with no known nests, and confirming active nesting where we (or volunteers) had incidentally observed raptors exhibiting breeding behavior such as tandem flights, copulation, stick-carrying, etc. Generally, we considered *two visits during the nesting season, and no reported sightings of the target species in the territory that year, as sufficient to consider a territory "inactive"*. Again, we were able to confirm positive activity within many territories by the presence of recently-fledged young and recently-used nests (particularly Cooper's Hawks), using clues learned while more closely observing known nests.

3.0 RESULTS

3.1 Territory Occupancy

As of July 2024, we rechecked or discovered more than 650 raptor territories across the study area, representing 239 Cooper’s Hawk territories (vs. 222 in 2023), 215 Red-tailed Hawk territories (vs. 184 in 2023), 57 Red-shouldered Hawk territories (vs. 55 in 2023), 105 Great Horned Owl territories (vs. 84 in 2023), as well as a handful of territories of American Kestrel, Peregrine Falcon, Barn Owl and Western Screech-Owl⁴.

We located additional (previously-unrecorded) territories for 17 new Cooper’s Hawk pairs (12 were newly-found in 2023), 22 for Great Horned Owl (up from just 13 newly found in 2023), 30 for Red-tailed Hawk (up from 15 in 2023), and 7 for Red-shouldered Hawk (5 in 2023). Most of these with were located with active nests, but a handful were territories in which we found a pair of adults, but no indication of nesting (this year), or recently-fledged juveniles with no obvious nest structure visible.

We noted 17 cases of “nest turnover”, where one species took over another species’ nest. In 10 of these cases, this involved a raptor using the nest in 2024, while in 7 cases, a Common Raven (*Corvus corax*) or American Crow (*Corvus brachyrhynchos*) was found in the nest.

This year (2024), we made a concerted effort to begin documenting some of the rarer species in the study area for which we have little data. This added three new American Kestrel territories, nearly doubling our prior count; of these, three fledged successfully, one at (or adjacent to) Rio de Los Angeles State Park, another at a small neighborhood park in Boyle Heights, and the third in Sepulveda Basin.

Five Peregrine Falcon territories were confirmed (just three were confirmed prior to 2024); of these, three had confirmed juveniles (Griffith Park, Hollywood, and Mid-City), and scattered juveniles detected outside these areas suggest several more territories await discovery.

Four Barn Owl territories were located (just one was noted prior to 2023), one of which (just west of the study area) produced young.

This year, we used community-science platforms (eBird and iNaturalist) to locate territories for both Barn Owl and Western Screech-Owl; this resulted in our identifying at least 11 potential screech-owl territories (just five had been identified in prior years), most in Laurel Canyon and Mt. Washington, using California walnut woodland. While we visited each of these areas,

⁴ As our nest-searching effort increased greatly starting in 2020, the years 2017-19 may be thought of as preliminary compared to the years 2020-present. In particular, we searched for (and located) few urban Cooper’s Hawk nests in the San Fernando Valley or mid-City area prior to 2020, before we learned some of the “tricks” to finding them there.

including nocturnal visits using playback calls, but we were unable to confirm actual nest sites, fledged young, or other indication of nesting. We also advised a team of UCLA students to identify potential habitat for Barn Owl and Western Screech-owl. More details on this project are included in the rare species section of this report.

At the end of the season, a colleague reported that some installed Barn Owl and Western Screech-owl boxes have been successful, and we will coordinate with them to monitor next year. One screech-owl box at a volunteer's home attracted a pair, but no confirmed young.

Overall, we found that Red-tailed Hawk, Red-shouldered Hawk and Great Horned Owl maintained more active territories across the study area in 2024 than in *any prior year*, while active Cooper's Hawk territories were down from the peak in 2021 (see **Figure 3a**). Because nearly all active raptor nests we've tracked are successful (in that they fledge young), the overall number of nests that fledged in 2024 was also predictably higher than in prior years for all but Cooper's Hawk (this was inferred for Great Horned Owls; few owl nests are found without first seeing juveniles, and as owls don't build their own nests but take over those of other species, there aren't any "unoccupied Great Horned Owl nests" in the study area).

Red-tailed Hawk

This year saw 127 Red-tailed Hawk nests fledge (from 169 active territories tracked). Fledging rates for Red-tailed Hawk territories in 2024 (75%) saw a return to average from the high rates of 2020 and 2021, up from lower rates in 2022 and 2023 ($n = 5$; mean = 76%) (**Figure 2a**).

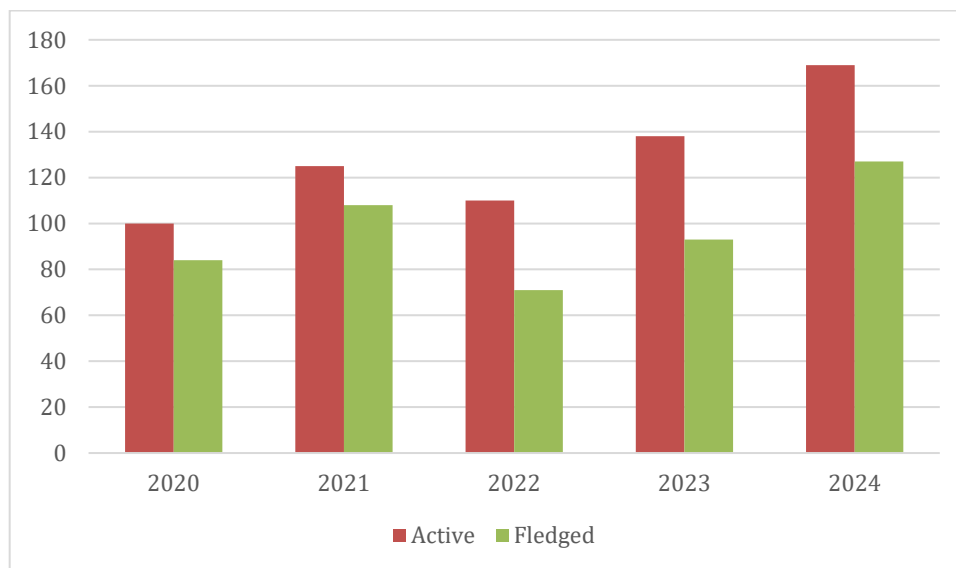


Figure 2a. Red-tailed Hawk active territories and fledging outcome, 2020-24. This year saw the most active territories tracked, and the most fledged nests, of any prior year.

Overall productivity of Red-tailed Hawks increased in 2024, but presumably due to the higher number of active territories/nests, rather than due to increased young production per nest (**Figure 2b**).

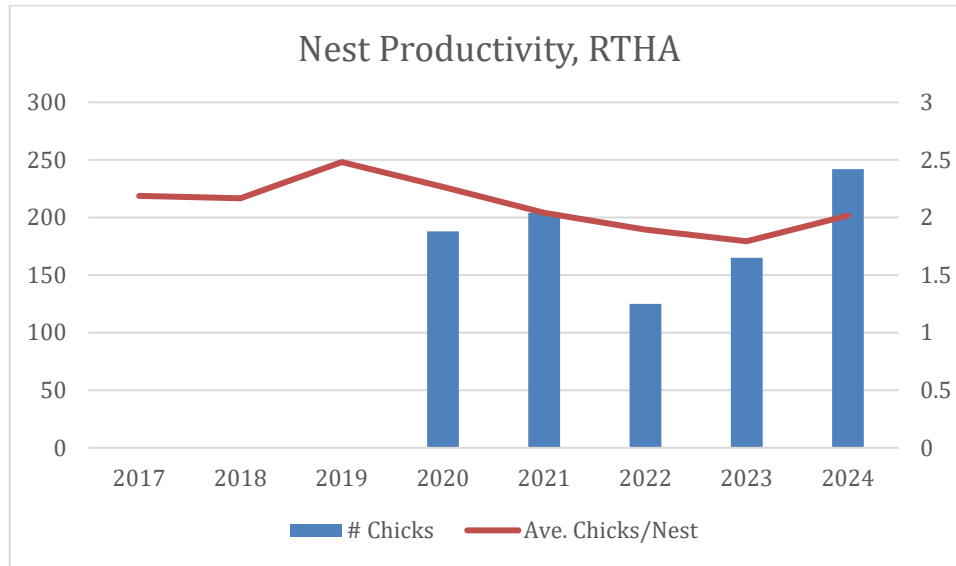


Figure 2b. Nest productivity for Red-tailed Hawk in 2024, expressed as total number of chicks across all nests (blue), and average number of young per nest (red).

Cooper's Hawk

This year (2024) saw the 88 Cooper's Hawk nests fledged from 113 active territories (78%). This proportion was a bit below average across the past five years ($n = 5$, mean = 85%) (**Figure 3a**).

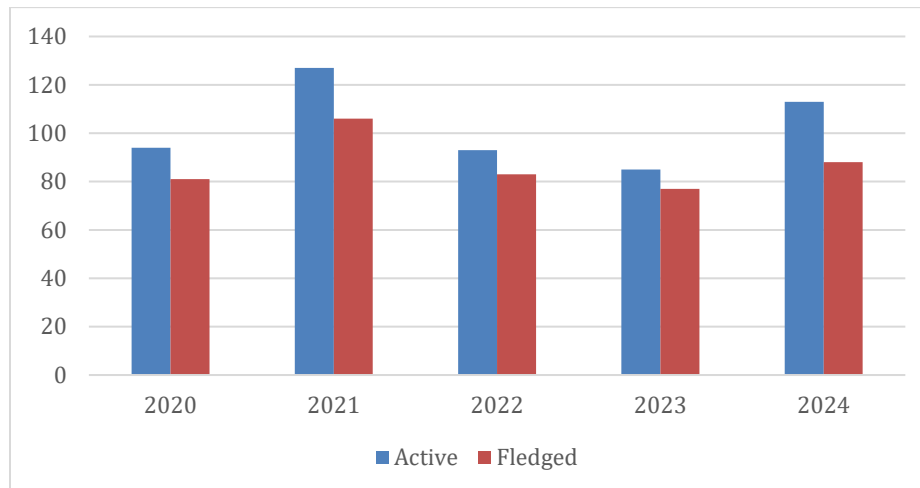


Figure 3a. Cooper's Hawk active territories and outcome, 2020-24. 2024 saw a bump in active territories as compared to the past two years (blue bar), but still lower than the highest year (2021).

In contrast to Red-tailed Hawks, average Cooper's Hawk nest productivity did not increase from 2023 in 2024, yet the total number of chicks produced in the study area increased a bit (**Figure 3b**).

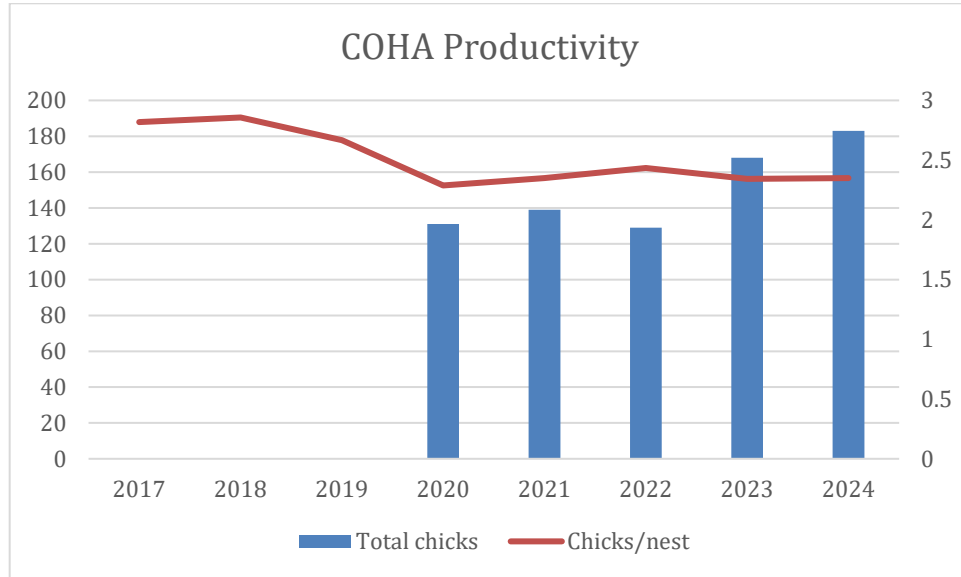


Figure 3b. Nest productivity for Cooper's Hawk in 2024, expressed as total number of chicks across all nests, and average number of young per nest.

Red-shouldered Hawk

This year (2024) saw 27 Red-shouldered Hawk nests fledged from 36 active territories (75%) (**Figure 4a**). This proportion is higher than the prior two years, but lower than in 2020 (five-year mean = 68%).

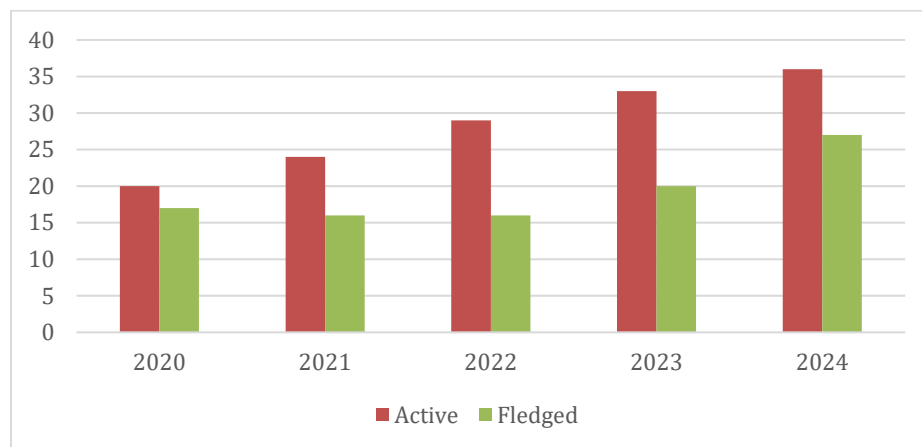


Figure 4a. Red-shouldered Hawk active territories and outcome, 2024. 2024 saw both the most active (and fledged) territories over the past five years, and the most fledged nests.

As with Red-tailed Hawk, the total number of chicks for Red-shouldered increased in 2024, but presumably due to the higher number of active territories/nests, rather than due to increased young production per nest, which was slightly higher than the prior year (**Figure 4b**).

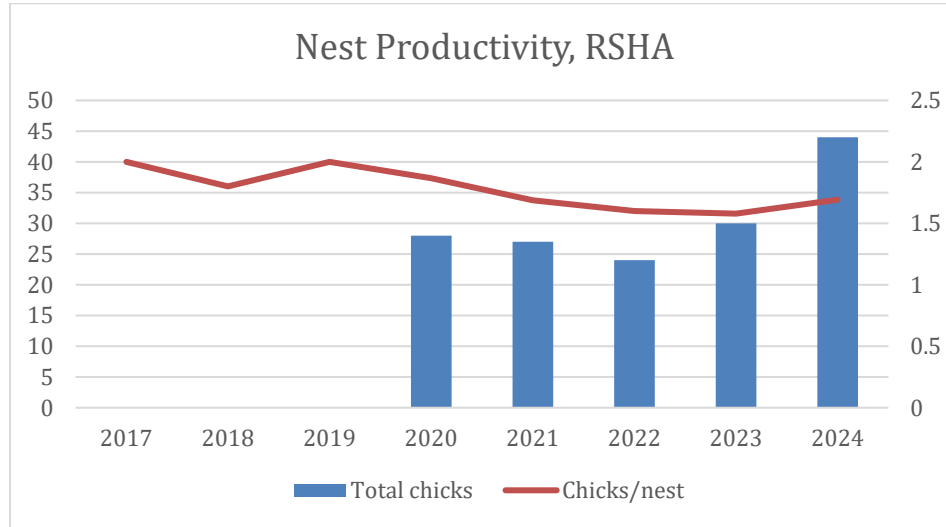


Figure 4b. Nest productivity for Red-shouldered Hawk in 2024, expressed as total number of chicks across all nests, and average number of young per nest.

Great Horned Owl

Our analysis of Great Horned Owl nests changed in 2024 with the addition of several territories based on reported duetting adults (which had not been included in prior years of the study). We found that 40 of 58 active Great Horned Owl territories fledged young, and while this was the lowest rate in all 8 years, it was likely augmented by these reported territories. As in prior years, we did not attempt to specifically search for owls or owl nests in most of these territories (nor anywhere else) during the study, due to the difficulty of finding their nests during the day. However, we located several owl nests in nests that had previously been other raptor species, or ravens, indicating that we should be tracking all raven nests in the study area for future use by Great Horned Owls.

The number of owlets produced in 2024 was the highest recorded, though the number of chicks per nest recorded (2.15/nest) was only slightly higher than the 8-year average (**Figure 5**).

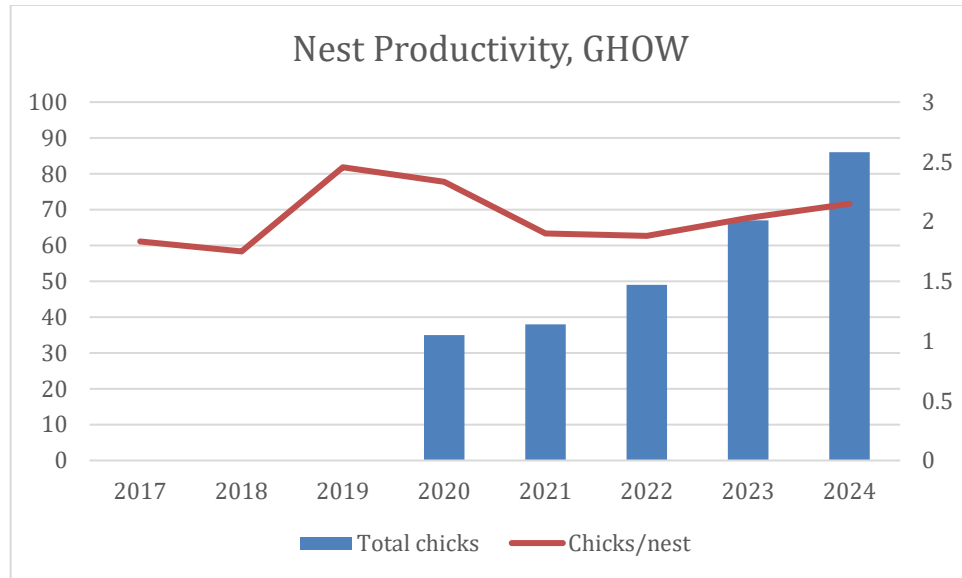


Figure 5. Nest productivity for Great Horned Owl in 2024, expressed as total number of chicks across all nests, and average number of young per nest.

Comparing all species

The number of active (in a particular year) territories that fledged young for all species combined is summarized in **Figure 6**. We note, however, that prior to 2020, our data-collection effort was lower, and no special effort was made to find fledged nests past the end of the nesting season. The “convergence” of fledging rates was unexpected, given how different these rates have been; however, it appears to have occurred once before in the study, in 2020.

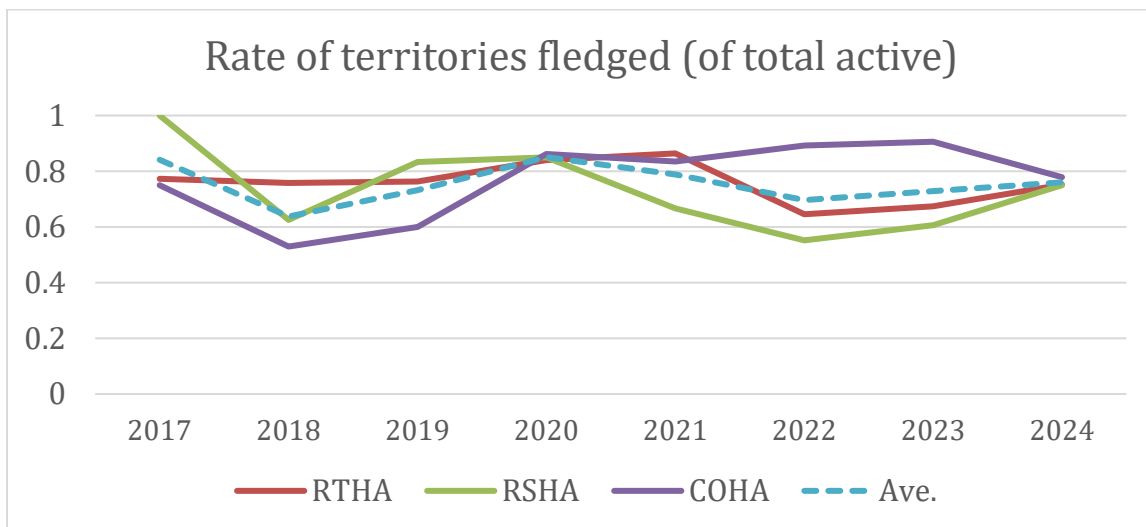


Figure 6. Proportion of territories that fledged young for each species, 2018-2024.

“Re-occupancy rates” of active territories year to year for the three focal hawk species are presented in **Figure 7** (such data were incompletely collected for Great Horned Owl and so are not included⁵). This illustrates the relatively small change in territory re-occupancy rate for Red-tailed Hawk (>80%) as compared to the other two hawk species in the study area, with an average of nearly 80% re-occupancy of territories by Red-tails across the past seven years of the study, vs. an average of c. 50% for Cooper’s Hawks. Interestingly, both these species have seen (slight) rise in re-occupancy since 2022.

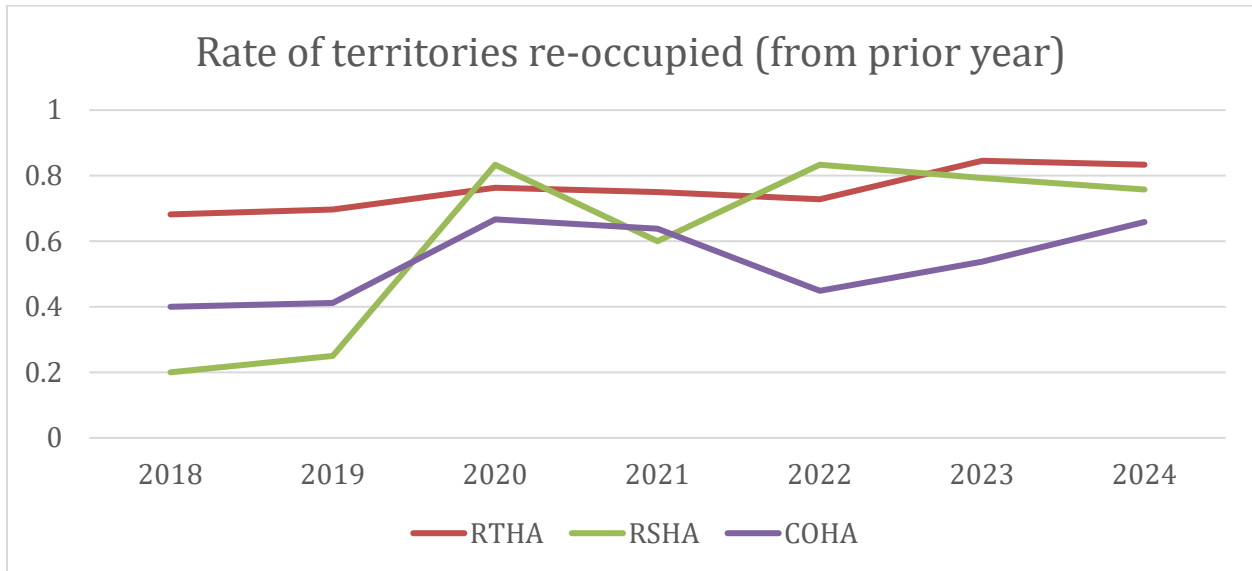


Figure 7. Annual re-occupancy rates of territories for the three focal hawk species, 2018-2024.

Trends in year-over-year territory *success* (as measured by pairs that fledged young in both the prior and current year) were similar to that of territory occupancy (**Figure 8**), increasing a bit since 2022. We plan to explore nest *structure* re-use in a future publication.

⁵ Due to their cryptic behavior, we made no effort to search for Great Horned Owl territories, and most nests found were occupied by an incubating adult or young, hence skewing the nesting territory re-use/success calculation.

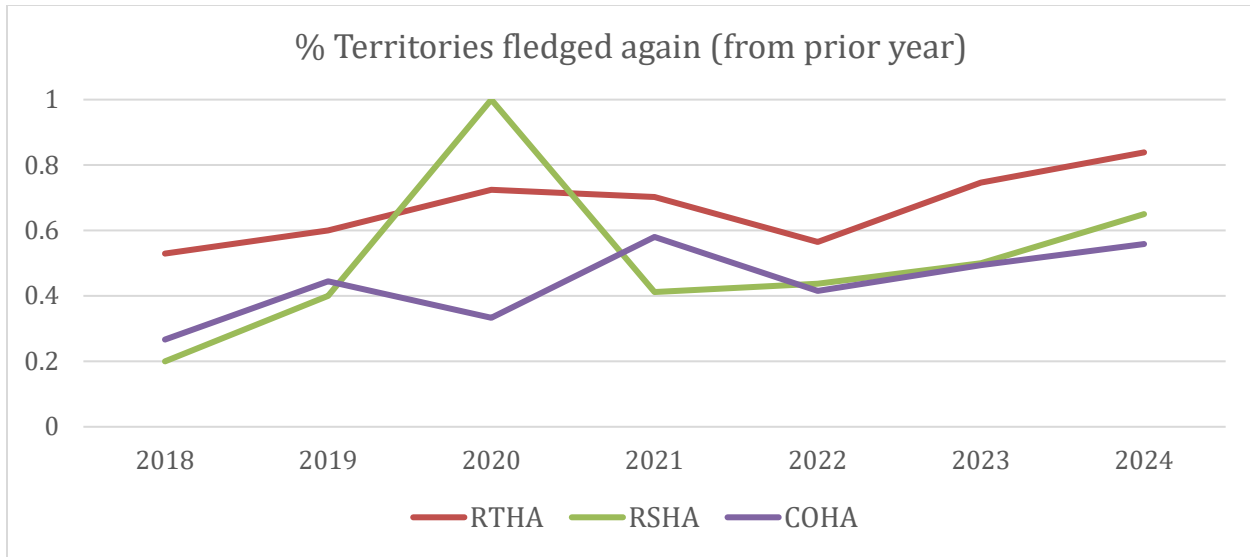


Figure 8. Proportion of territories that fledged for a second consecutive year for the three focal hawk species, 2018-2024.

3.2 Nest Productivity

We present a summary of the total number of young fledged per year since 2020 in **Table 1**. Note that the number of active nests monitored in each year varied, and that larger numbers are not necessarily related to increased reproductive productivity *per nest*.

Table 1. Total number of young produced (either confirmed fledged young, or nestlings close to fledging), 2020-2024.

Species	2020	2021	2022	2023	2024
Red-tailed Hawk	187	204	125	165	242
Red-shouldered Hawk	28	27	24	30	44
Cooper's Hawk	131	139	129	166	184
Great Horned Owl	35	38	49	68	86

Across all focal species, nest productivity rate, as measured in the mean number of chicks hatched from active nests (i.e., failed/abandoned nests excluded) peaked in 2019 (not in 2020, as asserted in prior annual reports, following a re-analysis).

As shown in **Figure 9**, Cooper's Hawk consistently fledged the highest mean number of chicks per (successful) nest⁶, with an average of 2.5 young from 2017-2024. Red-tailed Hawk had the

⁶ Apparently failed and abandoned nests were omitted from this analysis (i.e., those with a chick/fledgling count of zero). Including these was problematic, since we were frequently unsure if a given pair attempted to breed and

next-highest rate (mean = 2.1), followed by Great Horned Owl (2.0), and Red-shouldered Hawk (1.8).

We also note that the overall mean number of chicks has continued to decline from a high in 2019, for which we have no explanation. It is possible it is related to long term drought trends, despite recent wet winters.

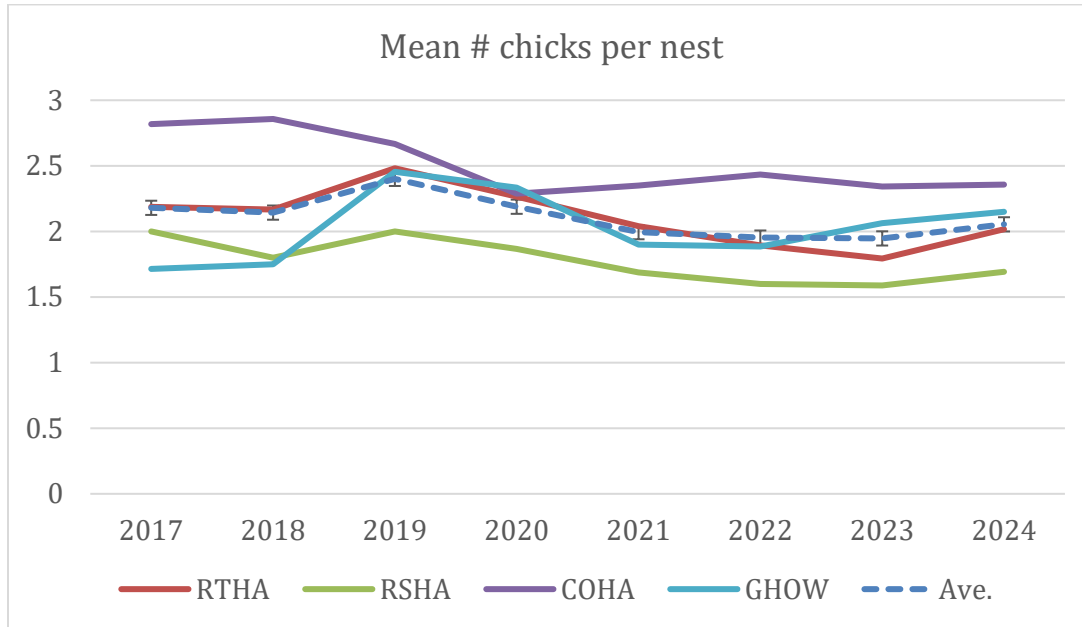


Figure 9. Mean number of chicks per nest⁷, 2018-2024.

Of the many ways to measure nest productivity, another is the proportion of *single-chick nests* (nests where the maximum number of chicks was believed to be just one, versus all other nests where chicks were produced), which could indicate a shortage of food that year. Assuming that Red-tailed Hawks would be most sensitive to change in precipitation (since they take more native prey species from wildland areas than, say, Cooper's Hawk, which are well-distributed in urban areas), we examined the relationship between precipitation the prior year, and the proportion of 1-chick nests in Red-tailed Hawk (**Figure 10**)⁸.

We found that the nesting seasons following the driest winters (i.e., 2018, 2021 and 2022, each with rainfall with a negative deviation from mean), as well as the wettest winters (i.e., 2019,

produced no young, or bred somewhere else, or bred in the territory and we (or our volunteers) simply failed to find the young. And, our assessment was frequently dependent on effort and observer skill, which has varied. Thus, we took a conservative approach and have only included nests with one or more young to assess productivity.

⁷ We include nests with large chicks that were last checked when *nearly* fledged, as well as confirmed fledged chicks (due to the difficulty of confirming fledging at all nests in the study with so many nests being monitored).

⁸ As with assessing the mean number of chicks, we only included nests with one (or more) young in calculating the *proportion* of single-chick nests, and left out nests where we suspected no young were produced.

2023 and 2024) all saw jumps in the proportion of Red-tailed Hawk nests with single chicks. Productivity can drop with drought, according to a study of precipitation and Northern Goshawk (*Accipiter gentilis*) nests (Bangerter et al. 2021), but the effect of extremely wet weather – while seemingly obvious – seems less well documented. Our data suggest that both weather extremes may limit the number of young produced, albeit for different reasons (wet/stormy weather could result in chick loss due to exposure, for example). No such pattern was observed with the other raptor species, however (not graphed).

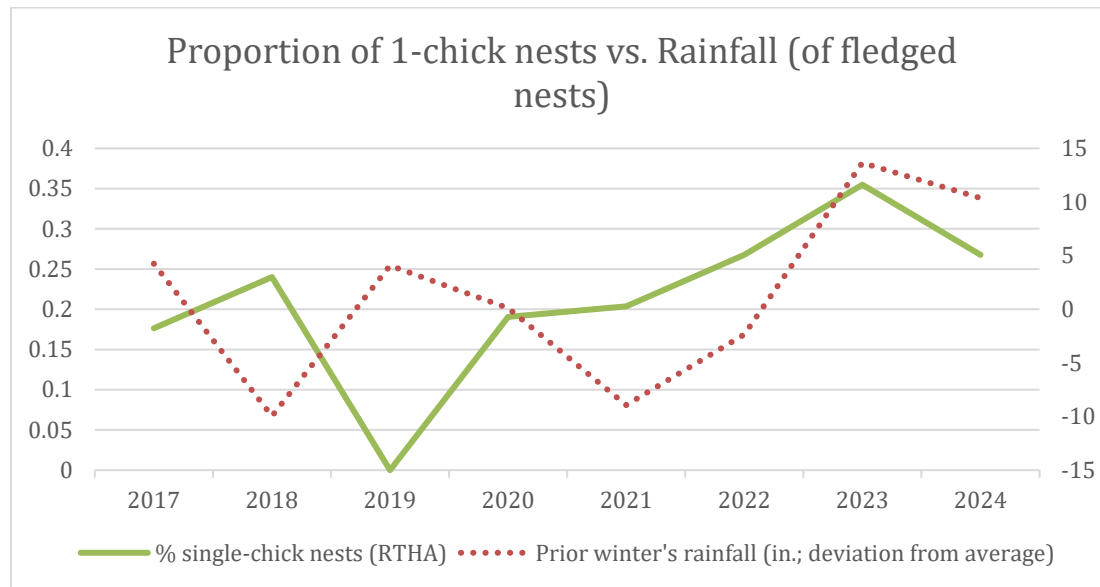


Figure 10. Proportion of single-chick nests of Red-tailed Hawks (primary y-axis) in relation to rainfall the *prior* winter (secondary y-axis). Rainfall measured from Downtown Los Angeles (see “Methods”) and shown as a deviation from the c. 100-year average from the same location.

3.3 Geographic and Habitat Patterns

We intend to re-analyze geographic patterns of nesting in the future, specifically focusing on territories/nests that are active in each year of the study. As in prior years we noted Red-tailed Hawks as most numerous in the more sparsely-developed neighborhoods of the Santa Monica Mountains and Griffith Park, and still a common species in Northeast L.A. and in Silver Lake/Echo Park, with relatively few nests on the floor of the San Fernando Valley and in the urban Los Angeles Basin. In welcome contrast to prior years, we recorded several active Red-tailed Hawk nests in the Sepulveda Basin, suggesting a “recovery” in that area which was (inexplicably) lightly-used in 2022 and 2023.

We also intend to re-analyze nest tree and substrate type, specifically calculating the types of trees used by each species each year. Clearly, nest usage of non-native trees remains very high (in particular, pines *Pinus* spp., *Eucalyptus* spp., and Shamel ash *Fraxinus udhei*), with western sycamore (*Platanus racemosa*) supporting most of the few nests we found in a native tree species, with a handful of others being found in coast live oak (*Quercus agrifolia*).

3.4 Failed Nests

As in past years, it may be instructive to review why the few failed nests did so. In **Table 2**, we summarize all raptor nests believed to have failed in 2024, in that nesting was initiated, but was abandoned mid-season.

Table 2. Observations of failed raptor nests in 2024. This does not include territories with no nesting activity, where nesting was suspected but where no nest was found, or where observation time/number of visits were insufficient to determine success.

Territory	Location	Notes
RTHA-098	Los Feliz (residential area)	Unk. reason; no change to nest area.
RTHA-198	Burbank vic. Warner Bros. Studios	Unk. reason; no change to nest area.
RTHA-273	Downtown L.A.	Nest built on a crane in an active construction site. Loss of nest coincided with initiation of crane movement following period of inactivity.
RTHA-673	Beachwood Cyn.	Unk. reason; no change to nest area.
RTHA-758	Pan-Pacific Park	Nest apparently depredated, with material and broken eggshell on the ground.
RSHA-165	Encino (residential area)	Unk. reason; no change to nest area.
RSHA-791	Burbank Rancho	Tree was trimmed, likely during incubation
GHOW-657	Beachwood Cyn.	Tree removed during incubation (reported to CDFW)



Figure 10. Red-tail Hawk nest on crane in an active construction site in Downtown Los Angeles.
Photo: Nurit Katz

3.5 Tree-trimming and Nest disturbance

Tree-trimming/removal impacts are difficult to analyze since the timing of trimming or nest removal is not always known. Trimming itself, particularly during the fall and winter and not during the nesting season, does not always result in major disturbance to nesting hawks even if it results in the removal of nest structures. Many pairs will renest within the same territory (presumably the same birds as the year prior) following tree-trimming or tree-removal. This nesting may either occur in the same nest structure (if not completely removed), or an alternate nest may be built nearby. In some cases, trimming occurs on territories where no nesting has been detected in recent years, so simply amassing examples of tree-trimming near known nests can inflate its actual impact.

Red-tailed Hawks, on the other hand, often eventually abandon territories following trimming, based on our observations since 2017. Several of these pairs have yet (2024) to return to the territories where nests were “trimmed out”, despite the existence of many seemingly suitable nest trees remaining.

Often, raptor pairs may simply elect not to nest even where no visible trimming or disturbance was detected, and where the prior year’s nest is still present. Or, observers note that the nest is simply be gone from the nest tree, with no sign of human disturbance (perhaps blown out by wind weeks or months before).



Figure 11. Nest tree in Sherman Oaks before and after trimming; a recently-active (2024) Red-tailed Hawk nest was removed during trimming. While the removal was after fledging, this is still against state law, as raptors reuse their nests year over year. Further education of residents, tree-trimming contractors and arborists is needed. Photos: Dan Cooper (before) and Nurit Katz (after)

We hope to track and analyze these disturbances more fully in future years, and to search prior years' notes for clues about nest disturbance. **Table 3** lists apparent disturbances to nests recorded in 2024.

Table 3. Disturbances to nests noted during 2024 season. Some of these instances may have occurred in late 2023, subsequent to our data collection effort that year, and some may not have been the cause of the inactivity of a particular territory.

Year	Nest Number	Location	Impact
2024	COHA-LA-380A	Beverly Hills	Trees in area around nest tree severely trimmed in late March; nest (tree not trimmed) fledged four young.
2024	COHA-LA-562	Studio City	Nest tree trimmed while Cooper's Hawk was incubating. Nest intact but exposed, and fledged 2-4 young
2024	COHA-LA-583	Glendale	Nest tree and other trees severely trimmed prior to season; nest gone, but pair nested nearby and fledged 3 young.
2024	COHA-LA-626	Burbank	Nest gone, believed blown out in storm. Pair not refund.
2024	COHA-LA-686	Highland Park	Nest tree trimmed, nest removed. Pair not refund (crows "moved in").
2024	COHA-LA-786	Northeast LA	Construction and nest removal. One juvenile taken to animal rescue, another juvenile found dead.
2024	GHOW-LA-657	Hollywood	Nest tree removed illegally with incubating owl; pair did not renest
2024	GHOW-LA-679	Glendale	Nest destroyed in storm, pair relocated and fledged one chick.
2024	RSHA-LA-196	Mt. Washington	Nest gone, likely due to storm and winds. Pair not relocated.
2024	RSHA-LA-561	Hollywood Hills	Nest tree fell, other eucalyptus in area removed. Pair renested nearby and produced two young.
2024	RSHA-LA-691	Culver City	Nest tree heavily trimmed, exposing nest. Pair still in area and may have renested.
2024	RTHA-LA-036	Coyote Canyon	Nest tree fell in storm. Pair not relocated.
2024	RTHA-LA-070	Coldwater Canyon	Nest tree trimmed, nest removed. Pair still in area but did not renest.
2024	RTHA-LA-074	Bel Air	Construction in front of nest tree, another pine in area removed. Pair still produced two young.
2024	RTHA-LA-153	Laurel Canyon	Nest tree heavily trimmed, nest gone. Pair still around but did not renest.
2024	RTHA-LA-201	Griffith Park	Nest gone. Pair still in area but did not renest.

2024	RTHA-LA-243	Silverlake	Nest tree trimmed, nest removed. Pair relocated to new nest but apparently did not fledge young.
2024	RTHA-LA-428A	Studio City	Nest tree heavily trimmed, nest removed. Pair still around but did not renest.
2024	RTHA-LA-453	Glendale	Nest tree removed. Pair renested nearby.
2024	RTHA-LA-522	Glendale	Nest tree removed as part of park construction. Pair still in area but did not renest.
2024	RTHA-LA-573A	Hollywood Hills	Nest tree removed late Feb. Pair renested nearby and fledged 2 young.
2024	RTHA-LA-597A	North Hollywood	Wind blew out the nest in mid-Mar. Pair rebuilt the nest and produced a chick (which apparently fell and died).
2024	RTHA-LA-645 (and GHOW-LA-645)	Wilshire Country Club	Prior nest gone due to tree trimming. Pair renested and raised two chicks (nest structure not found).
2024	RTHA-LA-673	Hollywood Hills	Red-tailed Hawk adult and juvenile electrocuted by utility wires in early June (nest last recorded as “incubating”).
2024	RTHA-LA-681	Glendale	Tree trimmed, but pair still nested and fledged 1-2 young.
2024	RTHA-LA-685A	Mt. Washington	lower portion of tree pruned (early/mid-Apr.), but nest still produced at least 1 chick.
2024	RTHA-LA-765	Holy Cross Cemetery	Mowing occurred close to nest, apparently w/o incident (nest produced 2 young).
2024	RTHA-LA-782	Sherman Oaks	Heavily trimmed; nest removed in late May, but apparently after fledging (based on down/droppings in nest).

We note that this list is far from exhaustive, particularly in cases where the nest was gone but the tree remained, which may have been due to some disturbance (e.g., high winds blowing out a nest) that could not be confirmed. In cases above, where both the disturbance and the fate were known, it seems clear that nests were not disturbed in proportion to that of species in the raptor community; while we tracked similar numbers of Cooper’s and Red-tailed hawks, 17 Red-tailed Hawk nests were impacted by disturbance, vs. just 6 Cooper’s Hawks. However, Cooper’s Hawks (and Great Horned Owls) frequently move nest sites in the study area, and volunteers were not asked to report on the condition of the prior year’s nest (though many did). For Red-tailed Hawks, which more frequently renest in the same structure each year, and which use very large trees, disturbance such as trimming is presumably much more noticeable.

In 2024 to address trimming issues, we created a sign which shared with volunteers to place on nest trees that they were able to access that included information about applicable laws protecting the nests. We also wrote a letter for volunteers to place in resident mailboxes to

make them aware of nests on their property, see **Figure 12**. These letters proved helpful, in a few cases residents contacted the study with issues.

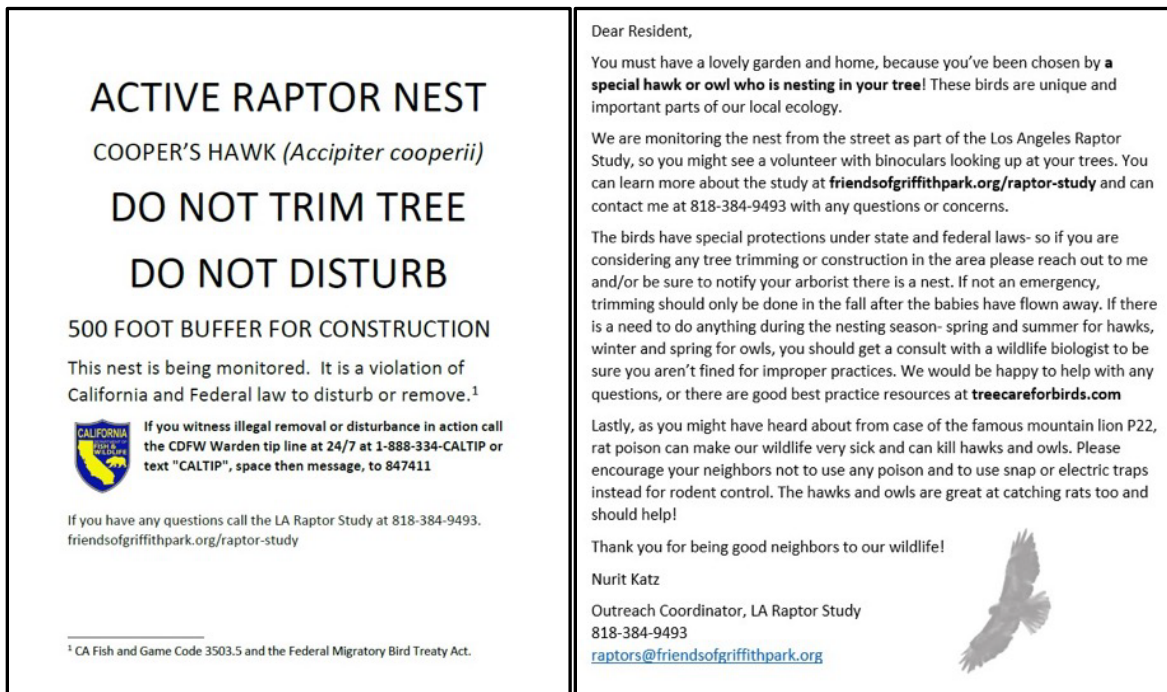


Figure 12. Examples of tree signs and resident letters distributed to volunteers for posting and placing in resident mailboxes.

In addition to these education efforts, volunteer Victoria Dyer wrote an article about tree trimming which was published in the [Summer/Fall 2024 issue of the Griffith Park Reporter](#), and volunteer Moses Aubrey published an [educational article about the Red-tailed Hawks nesting in Exposition Park](#) through the Natural History Museum⁹.

3.6 Nest takeovers

We noted an increase in nest takeovers in 2024, where a nest site hosted a different species than the prior year. This most often occurs with Great Horned Owls taking over Red-tailed Hawk nests, as these owls do not build their own nests but rather take over nests from other species or utilize existing nest like features of trees or buildings. We have also observed Great Horned Owls taking over Cooper's Hawk and Red-shouldered hawk nests, even in less common tree species for the owls, including in a jacaranda (*Jacaranda mimosifolia*) in Sherman Oaks. Great Horned Owls begin their nesting season earlier than other the other raptor species, and it may be that they evolved to begin nesting earlier in order to take over nest sites from other raptors. It is not clear yet whether the increase in Great Horned Owl nest takeovers we

⁹ <https://nhm.org/stories/red-tailed-hawks-nesting-coliseum>

observed is due to longer monitoring and an increase in identified nests, or whether Great Horned Owls are expanding in Los Angeles, as our prior data was more limited. In one case in the Sepulveda Basin a Red-tailed Hawk pair took back their nest for a year and then it was taken back again by Great Horned Owl. These patterns may be more common than our study shows over the long term (e.g., one resident in Glendale reported over 20 years of nesting in his large pine tree, alternating Great Horned Owl and Red-tailed Hawk every couple years). These species takeover patterns will be analyzed in a future report/paper.

3.7 Raptor Mortality, Rescue, and Rehabilitation

One of the leading causes of injury and death for raptors in urban areas are collisions with vehicles and buildings. Dead adults and juveniles have been observed in the street due to vehicle collisions. Sometimes injured raptors survive and are able to be transported to licensed wildlife rehabilitators for treatment and rehabilitation. Katz serves as a volunteer with the Ojai Raptor Center, assisting with capture, transport, and release. In recent years, a successful partnership with LA Animal Services Specialized Mobile Animal Rescue Team (SMART) team (<https://www.laanimalservices.com/about-us-2/smart/>) has led to a decreased need for staff transport and capture, and SMART has been able to assist in more challenging rescues. In 2024, SMART handled a range of raptor rescues including “re-nesting¹⁰” multiple Great Horned Owl nestlings and re-nesting a Red-tailed Hawk nestling in an 80 foot tall tree (**Figure 13**).

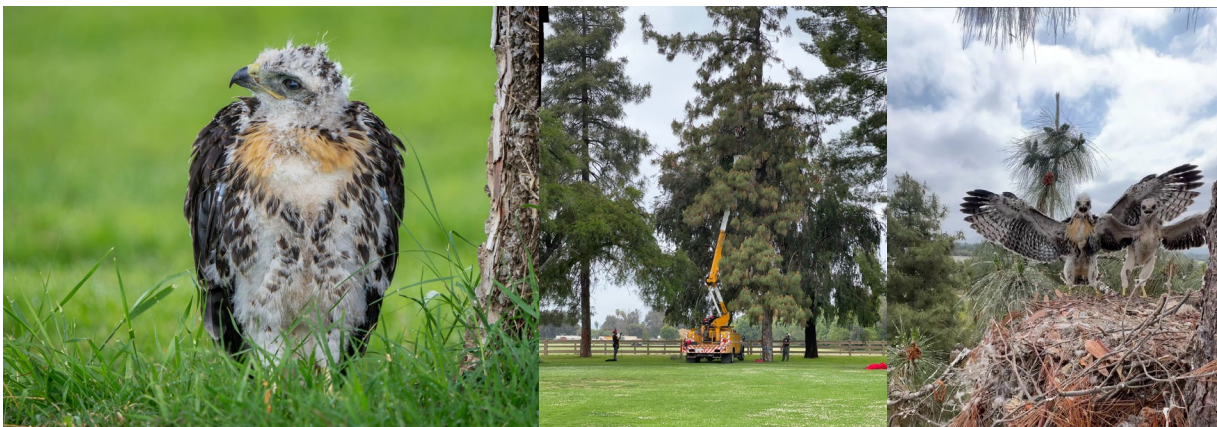


Figure 13. Red-tailed Hawk nestling grounded at Sepulveda Basin (left). Photo: Scott Templeton. SMART team re-nesting effort (middle). Photo: Scott Templeton. View of siblings as the nestling is returned to the nest. Photo: Officer Jose Navarro, LA Animal Services SMART.

¹⁰ “Re-nesting”, as used by wildlife rehabilitators, involves carefully replacing a young chick (still highly dependent on its parents) back into the nest from which it had fallen. These operations are done by trained, licensed professionals, usually with ropes, cranes, and other climbing gear, and are not attempted by Los Angeles Raptor Study staff. This usage is different from “re-nesting” used by ornithologists, which refers to a pair producing (or attempting to produce) a second brood of young in the same calendar year.

In 2024 we received a number of reports of difficult-to-witness mortalities, including a horrific death of a Great Horned Owl which got caught in a gate motor, a Great Horned Owl that drowned in a fountain, and multiple juvenile Red-tailed Hawk mortalities including a dead nestling that may have been removed from the nest by a parent or by a predator. We also observed a notable death of a Cooper's Hawk where the remains were found under an active Great Horned Owl nest that had occupied a prior year's Cooper's Hawk nest (i.e., same nest structure). It is unknown whether the hawk was one of the prior nesting pair, or a previous juvenile from that nest that had returned (or, perhaps less likely, from a different territory entirely). **Figure 14** depicts the Cooper's Hawk wing as found among Great Horned Owl whitewash below the (active) nest. The remains of a raven were also found under the same nest.



Figure 14. Cooper's Hawk wing below Great Horned Owl nest in Westwood. Photo: Nurit Katz

Rodenticide continues to be a major threat to local raptors, and *all* dead raptors in the study area that have been tested (Testing coordinated by Friends of Griffith Park) have had evidence of multiple rodenticides in their system, and in some specimens they were found to be the likely cause of death.

Disease can also impact urban raptors, including trichomoniasis, spread by members of the family Columbidae (pigeons and doves), including the feral Rock Pigeon. In 2022 a juvenile Cooper's Hawk was rescued in Echo Park in July after a window collision and had a burst crop (which can be a symptom of trichomoniasis infection). After transport, this juvenile tested positive for trichomoniasis, and although the injuries could have been repaired, it unfortunately had to be euthanized due to the disease.

Notable rescues in 2024 included two juvenile peregrines from separate territories which led to the confirmation of two nest sites. More details are shared in the rare species section that follows.

3.4 Rare Species

A new tree cavity nest for American Kestrel was discovered in a residential area southeast of Downtown Los Angeles and monitored by volunteers. Additionally, a successful nest of American Kestrel was discovered in the Sepulveda Basin post-fledging, with four juveniles (Figure 14). The nest site was suspected to have been in a large nest box nearby, but this was not confirmed.



Figure 15. Kestrels in the Sepulveda Basin. Pair copulating (top left). Photo: Marc Millstein. Kestrel with prey (top right). Photo: Nurit Katz. Adult male bringing prey to three juveniles (bottom). Photo: Scott Templeton.

Thanks to the two juvenile Peregrine rescues (Figure 15) we were able to confirm the locations and success of two urban Peregrine nests, and a third based on discussions with building management. One of these territories has been active since the 1980s and is referenced in a [1985 L.A. Times article](https://www.latimes.com/archives/la-xpm-1985-01-01-vw-10376-story.html)¹¹. Based on reports and sightings, we believe there are a number of

¹¹ <https://www.latimes.com/archives/la-xpm-1985-01-01-vw-10376-story.html>

other Peregrine nests in the study area on tall buildings, including in Burbank, Beverly Hills, Westwood, and Downtown Los Angeles. Confirming the exact nest site is difficult and requires coordination with building management; we hope to do additional outreach in the coming year.

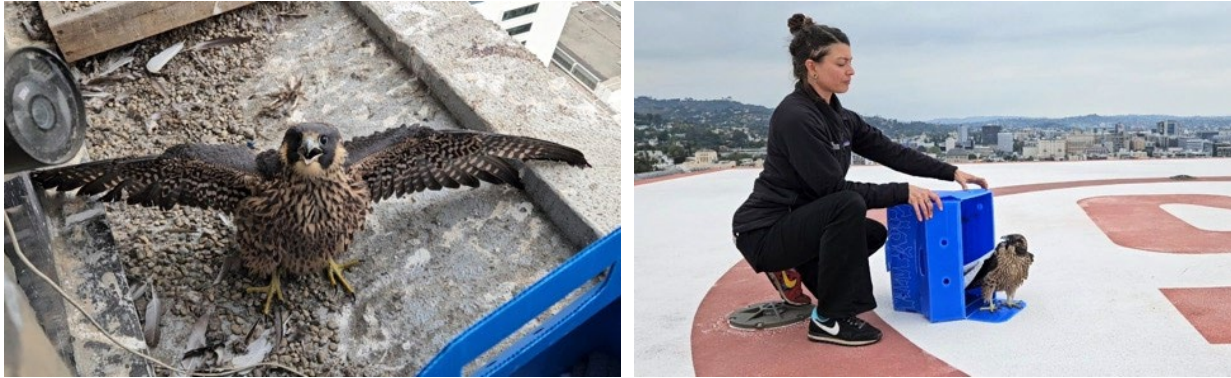


Figure 16. Juvenile Peregrine Falcon returned to building ledge nest site (left) and another juvenile Peregrine Falcon released on a helicopter pad (right). Both recently fledged juveniles were found on the street and taken to rehabilitators by community members. Photos: Nurit Katz

No confirmed territories of Turkey Vultures, Western Screech-Owls or Barn Owls were documented in the study area, but we did identify new territories and potential habitat for Western Screech-Owls and Barn Owls through a student research project detailed below. Additionally we had a successful Barn Owl nest reported and confirmed just outside the study area, which may be included in the study as we expand westward.

UCLA Institute of Environment and Sustainability Senior Practicum: “Assessing Breeding Owl Species Distribution within Los Angeles”

This year, to address gaps in the study, Friends of Griffith Park, with study Outreach Coordinator Nurit Katz as the client advisor, engaged a team of undergraduate students at UCLA through the Senior Practicum in the UCLA Institute of Environment and Sustainability (IoES) Environmental Science Program. The students conducted research on breeding owl species and focused on augmenting existing study data on local breeding owl species to fill in knowledge gaps through a combination of field surveys and species distribution modeling¹². We are grateful to the student team- Beatriz Basurto, Andrew Briones, Stephanie Choi, Leclercq, Leclercq, Karine Leclercq, Mélia Leclercq, Nikole Liang, Jocelyn Nuño, and Ahalya Sabaratnam, and to Dr. Ryan Harrigan who served as faculty advisor along with study lead Dan Cooper.

¹² <https://www.ioes.ucla.edu/article/ucla-seniors-study-l-a-owl-habitats-with-friends-of-griffith-park/> (also published in Griffith Park Reporter).

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