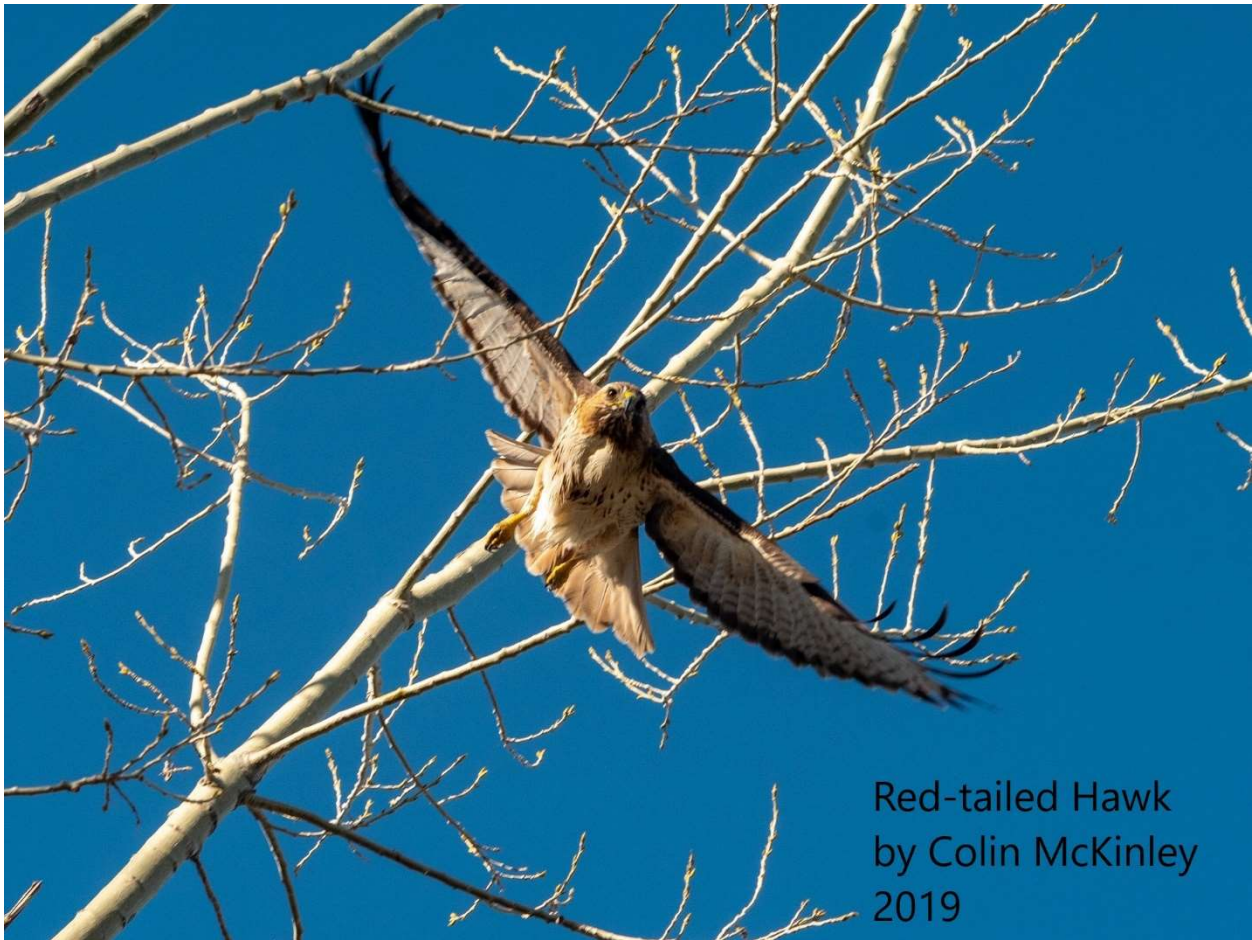


Town of Superior Raptor Monitoring 2019 Summary



Red-tailed Hawk
by Colin McKinley
2019

Sponsored by the
Open Space Advisory Committee

Introduction:

In late 2018, the Town of Superior Open Space Advisory Committee initiated a program to monitor the presence and activity of raptors (eagles, hawks, falcons, and owls) in and near Superior. The program has several goals: determining what raptor species are present in Superior, learning what areas raptors use at different times of the year, monitoring any nesting activity, working to prevent unnecessary disturbance to raptors, identifying habitats to protect, and providing relevant education to the Town's residents.



Figure 1 - Cooper's Hawk by Barbara Pennell Jaynes

Nine volunteer observers, all Superior residents, monitored seven general locations approximately weekly during the 2019 nesting season and identified eight species of raptors in the target areas. Some of these species use open spaces in Superior only intermittently, for hunting or migration. However, monitors determined that four species nested in or adjacent to Superior in 2019; ten nests were located and at least nine of them produced fledglings. The nesting species were Great Horned Owl, Red-tailed Hawk, Cooper's Hawk, and American Kestrel.

Background:

Southeast Boulder County, and especially the prairie dog colonies along Rock Creek west of Hwy 36, historically supported significant densities of several raptor species, especially during winter. As late as the mid-1980s, winter bird counts showed that our area had one of the highest populations of Ferruginous Hawks in the entire U.S. [3,4]. With the loss of open space due to increasing development in the 1990s and the additional reduction of prairie dogs due to intermittent plague epidemics, populations of large open-country raptors in and near Superior declined precipitously [2].

Subsequently, raptor species that are adapted to a suburban environment have found a suitable home in Superior. All of the nesting species identified by the monitoring program in 2019 are able to coexist with human activity and in some cases have modified their diets to include prey found in suburban habitats.

Why is it beneficial to have raptors living among us? Since raptors are apex predators, their populations can provide an indication of habitat and ecosystem health. They eat mainly "pest" animals such as rodents and non-native birds. In fact, one breeding pair of hawks or owls can

eliminate 4000 mice, voles, and rats each year! While some residents may be concerned that birds of prey may harm people or pets, raptors vastly prefer wild prey items [1].

Methods and Results:

Volunteer observers received orientation training, observed assigned areas regularly between mid-winter and mid-summer, and emailed observation reports to the project coordinator. If courtship activity or a nest was discovered, volunteers increased their observation frequency at that site. They identified the following species of raptors (with observed seasonal and area usage info in parentheses.)

Bald Eagle (year-round visitor; hunts in prairie dog colonies and at Hodgson-Harris Reservoir)

Northern Harrier (winter visitor; hunts in open spaces on western boundary of town)

Sharp-shinned Hawk* (year-round visitor; hunts in suburban areas with trees)

Cooper's Hawk (year-round resident and nester; found in suburban areas with large trees)

Broad-winged Hawk (very rare passage migrant)

Swainson's Hawk (summer visitor; hunts in open areas)

Red-tailed Hawk (year-round resident and nester; found in areas with very large trees bordering open space)

American Kestrel (year-round resident and nester; found in open areas with intermittent trees)

Peregrine Falcon* (summer visitor; hunts in open areas)

Barn Owl* (summer visitor; hunts in open areas)

Great Horned Owl (year-round resident and nester; nests and roosts in very large trees, hunts in open areas and residential neighborhoods)

Burrowing Owl* (summer visitor; hunts in open spaces on western edge of town)

Eastern Screech-Owl* (year-round resident; found mainly in wooded areas adjacent to open space, especially riparian corridors)

*Seen by raptor monitors in Superior but not in one of the regularly-monitored areas

The following areas received regular monitoring:

Rock Creek riparian corridor (Autrey Park) - nesting and hunting Red-tailed Hawks; hunting Swainson's Hawks.

Rock Creek riparian corridor (Community Park) - nesting and hunting Great Horned Owls, Cooper's Hawks, and American Kestrels.

Coalton trailhead area - nesting and hunting Red-tailed Hawks.

Coal Creek riparian corridor (Original Town) - nesting and hunting Cooper's Hawks.

Mayhoffer-Singletree trailhead area including Ochsner open space - nesting and hunting Great Horned Owls; hunting Bald Eagles, American Kestrels, Northern Harriers, and Red-tailed Hawks; migrating Broad-winged Hawks.

Purple Park - Heartstrong - Riverbend park corridor - nesting and hunting Cooper's Hawks and Great Horned Owls; hunting Red-tailed Hawks.

"Marshall Road Properties" - nesting and hunting Red-tailed Hawks.

All of the species that were observed to attempt nesting had at least one successful nest, as shown in Table 1.

Table 1

Species	Number of Nests	Number of Fledglings
Great Horned Owl	3	10
Red-tailed Hawk	3	8
Cooper's Hawk	3	at least 7
American Kestrel	1	1

The observational data showed several especially interesting features. First, Great Horned Owl nestling production was unusually high this year. A usual clutch size is two eggs, and sometimes not all nestlings eventually fledge (i.e., leave the nest.) However, two of the nests in Superior produced three fledglings and one produced four (see Figure 2). Since each owl needs to eat several rodents each day, supporting such a large brood requires substantial hunting efforts by both parents.



Figure 2 - Great Horned Owl fledglings by Kathy Carty-Mullen

Next, while Red-tailed Hawks usually consume mostly rodents, the prey items that the pair in Autrey Park were seen bringing back to their nest included a large number of birds. Since non-

native European Starlings and Rock Pigeons are common in and near Autrey Park, these red-tails seem to have adapted their diet toward the most available prey (see Figure 3).



Figure 3 - Red-tailed Hawk with Rock Pigeon by Jeff Gibson

Finally, it was surprising that only a single Kestrel nest was found, given that there is suitable habitat in several locations in town. Kestrels often lay up to five eggs, so the single fledgling is also low. It is possible that Kestrels are experiencing competition for nesting cavities from non-native species or suffering predation from other raptors [5].

Recommendations:

Based on monitors' observations, we make several recommendations to help ensure that raptors can continue to survive in Superior.

- *Preserve large trees, especially Plains Cottonwoods.* All observed Great Horned Owl and Red-tailed Hawk nests were in mature Plains Cottonwood trees, which have strong horizontal branches near their tops that can support the substantial nests needed by large raptors. The lone American Kestrel nest was in a hollow knothole in a mature

cottonwood. In addition, several raptor species were observed perching in or hunting from cottonwood trees adjacent to open spaces.

- *Avoid construction activities in known nesting areas during courtship and nesting season.* In previous years, Great Horned Owls have frequently nested in Autrey Park. Several monitors suggested that loud construction activity this year during the owls' winter courtship season may have discouraged them from nesting.
- *Discourage the use of all rodenticides outdoors.* Many of the parent raptors were observed delivering small rodents to their nestlings. A rodent that has ingested poison but has not yet died can poison a raptor that eats it.
- *Minimize widespread use of insecticides.* Insects make up a significant part of the food chain of several local raptor species, including American Kestrels, Swainson's Hawks, Cooper's Hawks, and Eastern Screech-Owls. Toxicity due to accumulated insecticides can reduce raptor breeding success.
- *Provide artificial nest boxes.* Cavity-nesting raptors such as American Kestrels and Eastern Screech-Owls can be outcompeted for available natural nest sites by non-native species such as European Starlings and Eastern Fox Squirrels. Monitors saw at least one Kestrel pair lose a nest site to Starlings this year.

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References:

[1] Cornell Lab of Ornithology. All About Birds [Online]. Available https://www.allaboutbirds.org/guide/Red-tailed_Hawk/lifehistory .

[2] Boulder County Nature Association. Winter Raptor Surveys [Online]. Available <http://bcna.org/raptorlinks.html>

[3] Jones, Stephen. Pers. comm.

[4] National Audubon Society (2010). The Christmas Bird Count Historical Results [Online]. Available <http://www.christmasbirdcount.org> .

[5] Rashid, Scott. Pers. comm.