



## How to Search for Raptor Nests

*Resource Stewardship*



Sharp-shinned Hawk Nest

- Search for nests in the fall and winter when there are no leaves on the trees
- Know which raptors nest in your State Park (see list in Handbook) and the type of nesting habitat they prefer (see Table below)
- Look for feathers, pellets, bones, fur under nest trees, and white wash on cliff faces
- Look for butcher blocks (stumps where prey have been taken apart) for accipiters
- Watch for breeding behaviors in raptors and signs of nest building
  - Copulation- mating usually occurs near nesting location
  - Courtship- circling flights/soaring as a pair, grasping talons and spiraling in the air, perching together, rubbing against each other, beak kissing, hunting together and sharing prey, nest building
  - Territorial behavior/agitation- circling and calling above territory, chasing/attacking other raptors entering territory
  - Raptors carrying sticks to the nest
- Food deliveries – Once females are incubating watch for males bringing food to the nest
- Once eggs have hatched listen for begging calls of nestlings

## Types of Nests

### Cavity

- Species: American Kestrels, most owls
- Look/listen for: males making prey deliveries, adult owl calls near dawn/dusk, begging calls of juvenile kestrels
- Challenges: owls are still and very camouflaged during the day; you can't see into cavity to confirm nestlings until fledglings start leaving the nest



### Stick

- Species: Eagles, hawks, accipiters, Osprey
- Substrate: Trees, cliffs, platforms, poles, electrical transmission towers
- Look/listen for: Locate nests before tree leaf-out, watch for territorial displays and incubating females



Cooper's Hawk



Red-tailed Hawk Nest



### Cliff/Cave/Crevice

- Species: Peregrine and Prairie Falcons, Turkey Vultures (scrapes), Golden Eagles (stick nest on cliffs)
- Look/listen for: Whitewash, adult territorial calls, juvenile begging calls
- Challenges: Difficult to see into a deep cave/crevice



Peregrine Falcon



Turkey Vulture

### Ground

- Species: Northern Harriers, Short-eared Owls, Ferruginous Hawks (sometimes)
- Look/listen for: Male aerial mating displays; when delivering prey male harriers won't visit the nest, but they will call to females and drop food to her; juvenile begging calls
- Challenges: Ground nests are difficult to locate; male harriers can have between 1 and 3 mates



Northern Harrier



Short-eared Owl Nest

## Raptor Species Table

Nest Habitat Codes:

**A** - aspen forest

**Cl** – cliffs

**Cw** - coniferous woodland

**G** - grassland

**Cf** - coniferous forest

**S** - shrubland

**U** - human structures

**W** - wetland

**R** - riparian woodland

<b>Species</b>	<b>Nest Type</b>	<b>Nest Substrate</b>	<b>Nest Habitat</b>
American Kestrel	Cavity	Tree, rock crevice, box	R, U
Bald Eagle	Stick	Tree	R, W
Barn Owl	Cavity	Tree (cavity), cliff, cave, building, box, river bank burrow	G, U
Boreal Owl	Cavity	Tree, box	Cf
Burrowing Owl	Burrow	Ground	G
Cooper's Hawk	Stick	Tree	R, Cf
E. Screech-Owl	Cavity	Tree, box	R
Ferruginous Hawk	Stick	Tree, cliff, pole, rock outcrop, shrub, knoll, haystack	G, Cl
Flammulated Owl	Cavity	Tree	Cf
Golden Eagle	Stick	Cliff, tree, platform	Cf, Cl
Great Horned Owl	Stick (old)	Tree (abandoned stick nest or cavity), cliff, platform, building	R, G, U, Cl
Long-eared Owl	Stick (old)	Tree (abandoned stick nest or cavity), cliff, ground	R
Mississippi Kite	Stick	Tree	R
Northern Goshawk	Stick	Tree	Cf, A
Northern Harrier	Ground	Vegetation	W, G
N. Pygmy-Owl	Cavity	Tree	Cf, R, A
N. Saw-whet Owl	Cavity	Tree, box	Cf
Osprey	Stick	Tree, cliff, pole, platform	R, W
Peregrine Falcon	Cliff	Cliff, tower, quarry, building	Cl
Prairie Falcon	Cliff	Cliff, tree, tower, quarry, building	Cl
Red-tailed Hawk	Stick	Tree, cliff, pole	R, Cf, Cl
Sharp-shinned Hawk	Stick	Tree	Cf
Short-eared Owl	Ground	Vegetation	G, W
Spotted Owl	Cavity or Stick (old)	Tree (cavity or abandoned stick nest), platform, cliff	Cf
Swainson's Hawk	Stick	Tree, pole	G, R
Turkey Vulture	Cliff	Rock crevice, cave, ledge	Cl
W. Screech-Owl	Cavity	Tree, cliff, box	R, Cw

## Raptor Species Details

**American Kestrel-** Nest in tree cavities (old woodpecker holes, natural tree hollows), rock crevices on cliffs, nest boxes, nooks in buildings and other human-built structures. They favor open area with short ground vegetation and sparse trees in meadows, grasslands, deserts, farm fields, or at the edges of woodlands. They are very vocal around the nest.

**Bald Eagle-** Large stick nests placed near the top of large, mature cottonwoods or pines. Usually in riparian areas along rivers or around large lakes or reservoirs.

**Barn Owl-** They typically lay their eggs on an internal building ledge, in a cave or pothole, or in a rodent or mammal burrow in a ravine. Cliffs, ravines, unoccupied human structures--plains and western valleys, mostly below 2000 m.

**Boreal Owl-** Tree cavity (spruce or fir), subalpine life zone (usually above 3000 m). Their eerie territorial call (a rapid series of "hoo" notes very similar to the sound made by a winnowing snipe) are heard in the high country February-April. Ski or snowshoe into potential habitat before dawn or after sunrise. Adults make a variety of high-pitched wails and laser-like screams around the nest.

**Burrowing Owl-** Rodent colonies in grasslands, shrublands, and deserts, mostly below 2000 m. Highest nesting densities occur in prairie dog colonies on the eastern plains. Burrowing owls avoid areas where mid- to tall grass obscures their view of terrestrial predators. Occupied nest burrows usually have whitewash on the burrow mound, and bits of bone and fir of prey items are often scattered around the burrow entrance.

**Cooper's Hawk and Sharp-shinned Hawk-** Stick nests in dense stands of Douglas fir, but also juniper, ponderosa pine, scrub oak, aspen groves and riparian woodlands. Coniferous forest in the mountains between 1500 and 3200 meters in elevation. Nests are typically 25-50 feet high, often about two-thirds of the way up the tree in a crotch or on a horizontal branch.

**Eastern Screech Owl-** Tree cavities, nest boxes, wood piles, mailboxes, or wooden crates in cottonwood-willow creek bottoms, and urban parks north of Palmer Divide and east of Continental Divide. Fairly common along South Platte River and tributaries. Listen for two territorial calls (a soft, horse-like whinny; and a rapid series of "hoo" notes, like a bouncing ping-pong ball), December-March, and again June-July.

**Ferruginous Hawk-** Stick nests in trees, cliff faces, or on the ground. They will build nests on top of the remains of other species' nests. Prairies and shrublands, eastern plains and northwestern plateaus.

**Flammulated Owl-** Tree cavity, usually in ponderosa pine, pinon pine, or aspen, 2000-2800 m. They begin vocalizing (short, resonant hoots) shortly after arriving from the south in early May. These fist-sized owls hunt moths and other insects in remote foothills canyons. Once you have located a territory by listening for the hooting males, search tree cavities at dusk or listen for the loud hissing sound that fledglings make when begging for food.

**Golden Eagle-** Cliff or trees, generally in open country. Cliff stick nests are 3-10 feet wide, one cliff may contain several nests (used by the same pair in alternate years). Nesting cliffs are usually sheer and often several hundred feet high. Look for fresh greenery (Douglas-fir or pine boughs) in active nests. They will sometimes nest in human-made structures including windmills, observation towers, nesting platforms, and electrical transmission towers.

**Great Horned Owl-** All Colorado ecosystems from the plains and western valleys to treeline. They usually lay their eggs in a hawk, crow, or magpie nest; but they also use stumps, large tree cavities, caves and cliff ledges, and building ledges. Extremely adaptable, they thrive in human-disturbed habitats, driving away or preying upon other owls, including barn owls, long-eared owls, and burrowing owls.

**Long-eared Owl-** Variable, but often in dense thickets of coniferous or deciduous growth with nearby open areas for hunting small rodents. These medium-sized owls breed from the plains to the subalpine forest. They typically use stick nests abandoned by other bird species. Less often they nest in tree or cliff cavities/crevices, abandoned squirrel nests, or the ground.

**Mississippi Kite-** Southeastern Colorado only, nesting colonially in cottonwood groves and urban parks. Largest colonies are in Pueblo and Lamar, but these acrobatic kites also nest in several canyons in Comanche National Grassland. They are conspicuous as they soar and dive over nesting areas. They sometimes build on top of old squirrel nests.

**Northern Goshawk-** Stick nests in open conifer stands with large trees (often old-growth ponderosa pine), dense stands of spruce or fir, or mature aspen stands, usually between 2000 and 3200 meters in elevation. Nests are placed next to the tree trunk on a large horizontal branch or in a primary or secondary crotch.

**Northern Harrier-** Nest is a platform of grass, reeds, and cattails placed on the ground and concealed by thick vegetation. They nest in wetlands, grasslands, and shrublands, usually below 3000 meters in elevation.

**Northern Pygmy Owl-** Tree cavity (ponderosa pine, pinon pine, lodgepole pine, or aspen), foothills, western plateaus, and mountains. They vocalize (a series of high, hollow, breathy whistles--1-2 per second) from early March to late April and make a creeper-like twitter around the nest. They are active in the daytime, when they perch on dead branches and are sometimes mobbed by flocks of songbirds.

**Northern Saw-whet Owl-** Tree cavity (often ponderosa pine, lodgepole pine, or aspen), foothills, plateaus, and mountains. They vocalize (a series of high, hollow, persistent whistles) March-May. Since they are entirely nocturnal and cryptically colored, most nests are discovered by accident.

**Osprey-** Large stick nests in tall trees, broken-topped snags, power poles, or artificial nest platforms. In the plains they nest near lakes. In the mountains they nest beside rivers, lakes, beaver ponds, or in flooded groves of trees on islands.

**Peregrine Falcon-** Ledges of high cliffs, usually remote areas in foothills and mountains, sometimes near wetlands. Look for extensive patches of whitewash on cliffs. They advertise their nesting territory with a sky dance and high circling display, and adult calls audible from 1-2 km. Compete with prairie falcons for nesting sites, but these two species can nest successfully in close proximity.

**Prairie Falcon-** Cliffs in open country such as grasslands, deserts, and shrublands, usually below 3000 meters in elevation. They lay their eggs directly onto the rock of a ledge, pothole, or crevice, or occasionally in a used hawk or eagle nest. Look for whitewash on cliffs, and listen for adult calling. Compete with peregrine falcons for nesting sites, but these two species can nest successfully in close proximity.

**Red-tailed Hawk-** Bulky stick nest in a tall tree, utility pole, or occasionally on a cliff. They prefer open country and mosaics of wetlands, grasslands, and woods, but are found in all Colorado ecosystems from the plains to the high mountains, including urban areas.

**Short-eared Owl-** Open country, particularly wetlands and grasslands. They nest and roost on the ground amid concealing vegetation.

**Spotted Owl-** Deep, rocky canyons containing old-growth coniferous forest or scattered conifers. They lay their eggs in crevices of cliffs and in stumps or on limbs of tall conifers. They may use nests of other raptors, clumps of mistletoe or debris, or lay their eggs directly onto a stump or rock ledge.

**Swainson's Hawk-** Large stick nest is usually placed in an isolated tree or shrub, or in a small grove of trees along a stream. Nests are often in shelterbelts or other trees located near agricultural fields and pastures where they feed. Open country, usually grassland, on plains and in mountain valleys and parks.

**Turkey Vulture-** Nest in rock crevices, caves, and ledges of remote cliffs. Can also nest in hollow logs, fallen trees, mammal burrows, abandoned hawk or heron nests, and abandoned buildings.

**Western Screech Owl-** Tree cavities and sometimes cliff cavities, cottonwood-willow creekbottoms, and pinon-juniper woodlands, west of Continental Divide and south of Palmer Divide. Listen for their territorial call (a rapid series of soft hoots), January-June. Call is distinct from those of eastern screech-owl, but these two species are difficult to distinguish visually.

## Examples of Non-Raptor Nests

Don't be fooled by bird and squirrel nests! Before you report a "Potential Raptor Nest" consider the size and shape of the nest and what it is made of. Keep an eye on your "Potential Raptor Nest" for signs of use by a raptor species. But don't rule out a small nest all together! Some raptors, like Great Horned Owls and Mississippi Kites, will sometimes nest on top of a squirrel or bird nest.



Great-Horned Owl nesting on top of old squirrel nest

### Corvid Nests:

**Magpies:** A hood or dome nest made up of loosely assembled twigs and branches that usually has one or more side entrances. Nests are often found near the top of trees or tall shrubs. Old nests are repaired and reused, or a new nest can be built on top. These nests can become 48 inches deep by 40 inches wide.

**Crows:** A nest made of medium-sized twigs. Nests are normally located in a crotch near the trunk of a tree or on a horizontal branch, usually towards the top third or quarter of an evergreen.

**Ravens:** A deep bowl made of large sticks and twigs. The nest can be 5 feet across and 5-6 inches deep. Cliff nests are usually under a rock overhang, and tree nests are typically in a crotch high in the tree.

**Heron Nests:** Bulky stick nest platform from 20 inches to 4 feet across (older nest). Nests are built in trees, sagebrush, cacti, channel markers, artificial platforms, etc.

**Squirrel Nests (Dreys):** A roofed nest of sticks insulated by leaves. Nests are usually basketball-sized and in the forks or crotches of tall trees about 30-45 feet above ground level.





Magpie Nest



Crow Nest



Raven Nests (cliff and tree)



Great Blue Heron Nests (Rookery)



Squirrel Nest