

## Falcons

**General description:** Falcons are swift raptors with long, pointed wings and long tails. They capture their primarily avian prey in open country by virtue of superior speed, either in powered flight or in a characteristic dive called a stoop. A stooping falcon folds its wings and dives from a high perch or while flying overhead, and may exceed 320 kilometers per hour (200 miles per hour). At such speeds, falcons must exercise precise control, exact timing, and superior coordination to strike and capture prey without harming themselves. Falcons typically seize prey in their strong, taloned feet, but are known to disable or even kill prey with sharp blows from their feet as they stoop on quarry. Prolonged ground fights with struggling prey animals could damage their relatively stiff flight feathers and reduce the future ability to catch prey, so falcons typically sever prey animals' spinal cords by separating neck vertebrae to quickly end contests. Small notches near the tips of their beaks facilitate this behavior.

Aside from the characteristic notched beaks, falcons have small bony protuberances in their nostrils to baffle airflow in stoops, allowing them to breathe at high speeds. Falcons have dark eyes and varying degrees of mustache-like facial patterns. Falcons are typically dark gray or brown above, with lighter or even white plumage below, their underparts extensively marked with black or gray. Plumage of immature falcons mirrors adult patterns, but in shades of brown or gray (kestrels are rufous); underparts are typically streaked with brown or gray. Showing a strong degree of the sexual size dimorphism commonly seen in other raptors, females are up to 40% larger than males.

**Life history:** Aside from the largely resident gyrfalcons and Peale's subspecies of peregrines, falcons are highly migratory. Moving northward in the spring, falcons take advantage of the long days and abundant prey of the arctic and subarctic habitats to hatch and rear young.

Falcons do not build nests. Gyrfalcons and peregrines commonly deposit eggs directly on a "scrape," or cleared space on ledges of rocky hillsides or mountain cliffs, but have been known to reoccupy disused raven, rough-legged hawk, and golden eagle nests. Merlins use old magpie nests or lay eggs on the ground under protective subalpine vegetation. Kestrels nest in old woodpecker holes, hollows in tree snags, and artificial nest boxes.

Falcons form monogamous pair bonds amidst courtship behavior including high-speed flight displays where male falcons soar, race, and dive over potential nest sites, and males ritually bringing prey to females, sometimes in aerobic, air-to-air transfers. Incubation of eggs is often shared, but undertaken primarily by females. Males provide food for females and young nestlings; both sexes hunt when nestlings grow larger. Both sexes defend the nest, although females are typically more aggressive, screaming and diving at intruders.

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Four species of falcon breed in Alaska: gyrfalcon (*Falco rusticolus*); peregrine falcon (*Falco peregrinus*); merlin (*Falco columbarius*); and American kestrel (*Falco sparverius*). Accidental or occasional falcon visitors to Alaska include the hobby (*Falco subbuteo*) and the Eurasian kestrel (*Falco tinnunculus*).

### Gyrfalcon (*Falco rusticolus*)

Gyrfalcons are raven-sized with broad, powerful wings and stocky, robust bodies. They vary in coloration from almost completely white to nearly black. By far the most common pattern is dark gray on the head, back, and wings with whitish breast, belly, and underparts marked with gray teardrops and chevrons. Gyrs are 50-65 cm (20-25 inches) long, with wingspans ranging from 110-130 cm (50-65 inches). Females weigh about 1200-2100 g (2.75-4.5 pounds), males 800-1350 g (1.75-3 pounds). The gyrfalcon is the largest species of falcon in the world.

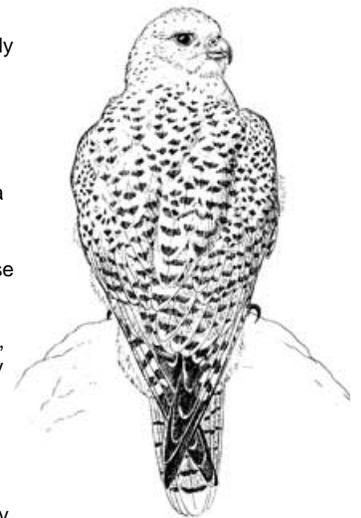
They inhabit cold, dry areas throughout the circumpolar north, occurring across the Northern Hemisphere wherever open tundra is interspersed with mountains or cliffs that provide suitable nesting ledges or crevices. Gyrfalcons occur throughout much of Alaska, across treeless areas of southcentral Alaska, the Aleutian Chain, the Alaska and Brooks Ranges, western and northwestern coastal plains, and on the North Slope. Not generally migratory, gyrfalcons may wander south in winter in response to episodic shortages of prey at high latitudes.

Gyrfalcons are strong, powerful predators and take a variety of prey, including ptarmigan, large shorebirds, ducks, geese, gulls, jaegers, smaller raptors, ground squirrels and arctic hares. They stoop to capture prey, but are capable of outflying most quarry in direct, powered pursuit.

Typically, gyrs become sexually mature at three to six years of age. Adults do not necessarily form long-term attachments to individual mates, but frequently return to the same nest sites year after year. Breeding pairs lay one to five eggs, typically three or four, usually in May. Incubation lasts a little longer than a month. Young gyrfalcons begin short experimental flights at about five weeks. They spend the next eight weeks or more honing flight skills and practicing pursuit of prey, and remain almost wholly dependent on the adults for food. Siblings may travel together in loose associations for several months after gaining independence.

### Peregrine Falcon (*Falco peregrinus*)

Peregrines are crow-sized with slaty blue to black upperparts and buffy white to rusty underparts, variably marked with gray or black. They are from 35-50 cm (13-20 inches) long, with wingspans of 80-120 cm (30-45 inches). Sexes are similarly colored, but females weigh from 900-1500 g (2 - 3 pounds), males 450-750 g (1 - 1.5 pounds).



Subspecies of peregrines occupy a wide variety of habitats worldwide, from the arctic to the tropics; this cosmopolitan falcon even lives and nests amidst the skyscrapers of some large cities. Three subspecies occur in Alaska, the lighter-colored arctic peregrine (*F. peregrinus tundrius*) of the North Slope, the darker American peregrine (*F. p. anatum*) which frequents cliffs along major river valleys, and the much darker Peale's peregrine (*F. p. pealei*) of Alaska's coastal regions.

Peregrine falcons prey almost entirely on other birds, taking a wide range of avian prey. Males catch small and mid-sized shorebirds, small ducks, and songbirds, while females concentrate on larger shorebirds and waterfowl. Watching from high cliffside perches or from overhead on the wing, peregrines ambush prey unlucky enough to venture away from protective cover to cross open valleys, wide rivers, tidal flats, or expanses of seawater.

Birds typically begin breeding at two to three years of age. Females lay from one to five eggs, usually three or four, which hatch after about a month's incubation. Young birds fledge in about six weeks and remain with their parents for up to two months.

Peregrine means "wanderer" in Latin, and these falcons commonly travel long distances between breeding territories and wintering grounds. Falcons nesting on North Slope riverbanks in Alaska may winter as far south as southern Chile and Argentina.

#### **Merlin** (*Falco columbarius*)

Merlins are slightly smaller than pigeons and gray or brown above with faint mustache markings, whitish underparts figured with gray or brown, and long, banded tails. Males tend to be brighter gray than the brownish females. Merlins are 25-30 cm (9-12 inches) long, with wingspans of 50-70 cm (21-27 inches). Females weigh 200-250 g (7- 8.75 ounces), males 150-170 g (5.25-6 ounces).

Merlins live in open coastal or tundra habitats interspersed with tracts of forest. The highly migratory *F.c. columbarius* occupies tundra and alpine areas across mainland Alaska, while the darker *F.c. suckleyi* inhabits coastal regions and is often a year-round resident.

Merlins are fast, energetic predators, relying more on stealth and speed than high-altitude stoops. They prey primarily on songbirds and small shorebirds, often surprising them in low-level flight, but merlins eat small mammals and large insects, too. They are extremely agile on the wing and commonly snatch dragonflies from mid-air and eat them in flight. These little falcons are fearless and aggressive toward larger raptors, and can often be seen harassing eagles or large hawks.

Birds hatched the previous year are commonly capable of breeding, and female merlins may lay up to eight eggs, but pairs usually tend three to five eggs. Young birds grow quickly and fledge and disperse at an impressive pace. A young merlin may be largely independent only 90 days from egg-laying. After fledging, merlins remain in loose sibling associations, being fed by their parents, until waves of southbound migrant songbirds sweep through, taking the pursuing falcons with them. Migrating merlins may travel as far as Central or northern South America.

#### **American Kestrel** (*Falco sparverius*)

Kestrels are delicate, robin-sized falcons, showing bold facial markings and bright and noticeably different coloration between the sexes. Males have slaty blue wings and blue-and-rufous heads, offset by rufous backs and tails with whitish underparts boldly marked with black spots, while females present rufous upperparts with buffy, streaked breasts and bellies. Markings on the backs of the heads of both sexes give the appearance of "eye spots," perhaps as a defense against predators. Kestrels are from 20-30 cm (8-11 inches) long, with wingspans of 50-60 cm (20-24 inches). Females weigh 100-160 g (3.5-5.75 ounces), and the smaller males tip the scales at only 80-120 g (2.75-4.25 ounces).

These colorful falcons live along forest edges where trees provide nesting habitat and open areas or low shrub habitat offers hunting opportunities for small birds, small mammals, and large insects. Kestrels commonly hunt from tree branches or overhead wires, where their near-constant tail-bobbing is a reliable field mark. Hunting kestrels often hover in flight for extended periods, diving to grab prey when sighted.

Cavity-nesting kestrels usually lay four or five eggs; males incubate almost as much as females. Nestlings grow quickly and scramble from nest holes in about three weeks, clinging to nearby tree branches and making practice flights. Kestrels begin moving south with the first hints of winter and may travel as far as Mexico and Central or South America.

**Conservation, management, and protection:** Pesticide contamination of prey caused major declines in raptors in the last century, particularly in peregrines in the eastern Lower 48 states. The *tundrius* and *anatum* subspecies were listed under the Endangered Species Act. Combined with a nationwide ban on the worst chemical offenders, release of captive-bred peregrine falcons re-established extirpated populations in the Lower 48. Persistent organic pollutants remain a possible threat to all Alaska falcons, especially the migrants, since some countries to which they travel in winter still use pesticides extensively.

The greatest annual source of falcon mortality is starvation, particularly of young birds inexperienced at making their livings as predators. Outsmarting and overpowering intelligent prey is a difficult endeavor, and many young falcons do not survive their first few months of life on their own. Disease, parasitic infections, and injuries sustained in pursuing prey kill or contribute to the deaths of many falcons. Eagles and other large raptors occasionally kill falcons, especially in the process of stealing prey from them.

Federal and state laws make it illegal to kill or harass falcons. Illegal shooting, collisions with windows, communications towers, and guy wires, electrocution on power poles and lines, and being struck by vehicles are the most common human-related hazards resulting in acute injury or death. A few birds are taken from the wild each year by falconers holding special permits, with no evident effect on raptor populations. Degradation of nesting habitat and disturbance due to large-scale development is mostly a localized threat in Alaska, but loss of wintering habitat is more extensive and could pose future difficulties. Habitat changes brought on by climate change could also create significant adverse impacts on breeding territories, especially on gyrfalcons if thawing of permafrost and subsequent changes in vegetative cover adversely affects their sensitive arctic environs and the prey animals that reside there.

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