

Gyrfalcon (*Falco rusticolus*)



Cheri Heimbach's Gyrfalcon (Sundancer)

Physical Description:

The world's largest falcon is polymorphic, being recognized in three color phases: white, grey, and dark. The dark phase is dark grey, almost black, in some individuals and groups of this morph are found in northern Canada. The white morph is generally found in Greenland, and is usually almost pure white with some markings usually on the wings. The grey morph is an intermediate and found throughout the range, typically two tones of grey are found on the body, most easily being seen on the flight feathers versus the rest of the wing. This species is sexually dimorphic and thus has a wide ranging weight. Males weigh 800-1300g, averaging 53cm total length and females weigh 1400-2100g, averaging 56cm total length. The shape of the gyrfalcon is characteristically the same as most falcons. This includes long pointed wings (unlike the rounded wings of buteos), long tail and a notched bill. It also however, differs from other falcons by large size, shorter wings that only extend 2/3 down the tail when perched (compared with other falcons where the wings extend all the way to the tail), and broader wings. Adults characteristically have yellow ceres, eye-rings and legs while juveniles display these features in a blue color. As in all falcons, the eyes appear black. This species may perhaps only be confused with the Northern Goshawk (*Accipiter gentilis*) which inhabits dense forests, or the Peregrine Falcon (*Falco peregrinus*) which is

somewhat smaller with a dark slaty-blue-black "helmet" and a lighter underside.

Identification:

- Large falcon.
- Broad-chested appearance.
- May range from nearly pure white to dark gray to black, with variable barring and streaking; most are gray.
- Faint mustache mark on face.
- Long, broad, pointed wings.
- Long, barred tail.
- Dark form has pale flight feathers contrasting with darker wing linings.
- Large dark eyes.
- Tips of folded wings do not extend past tail tip.
- Bill yellow with dark tip.
- Cere and feet yellow.

Used in Falconry:

Falconry is one of the oldest sports dating back some 4000 years, the majority practiced in the middle east. The white phase of the gyrfalcon, historically was hunted only by royalty, and even today is still considered the "bird of kings". A wild gyrfalcon sold to a falconer can fetch upwards of \$10 000, while typical adults may sell from \$2 000 to \$5 000 each. McLean (1984) reports the demand to be high from the middle east, while Trefry(2000, personal communication) admits that very few gyrfalcons are captively bred. Gyrfalcons are thus an economic benefit to those who can catch and sell them; unfortunately some are captured illegally and sold on the black market.

Hunting Strategies:

Unlike eagles which use their large size to rob meals, and peregrine falcons which use gravity to gain tremendous speed, the gyrfalcon uses raw power to capture prey, usually in a tail chase. Usually low coursing flights are used in open habitat (no trees for concealment) where gyrfalcons will strike prey both in the air or on the ground . The majority of prey (by biomass) that constitutes the diet consists of ptarmigan (*Lagopus sp.*), Arctic ground squirrel (*Spermophilus parryii*) and Arctic hares (*Lepus arcticus*). Other prey includes other small mammals (mice and voles) as well as other birds (ducks, sparrows, buntings)

While hunting, this falcon uses keen eyesight to spot potential prey, as almost all animals in the north are cryptically colored to avoid detection. When potential prey is spotted a chase usually occurs where more than likely the prey will be knocked to the ground in a powerful blow from the talons and then pounced upon. Gyrfalcons are powerful enough to have sustained flight while hunting and occasionally wear their prey out until capture is easy. During nesting, the gyrfalcon will also cache meals with large prey such as Arctic hares between feedings. Rock doves (*Columba livia*), or pigeons as they are commonly known, although not native are preyed upon heavily in major centers by gyrfalcons during winter months.

Habitat and Range:

The gyrfalcon (*Falco rusticolus*) is an arctic dwelling species with a holarctic distribution. It is rarely found south of 60 degrees. The majority of the breeding range is found north of 60 degrees while in parts of Eastern Canada it can be found breeding to 55 degrees, mainly along sea coasts. Although gyrfalcons are non-migratory, they will disperse from the breeding range during the winter season, very rarely reaching the northern limit of the United States.

The gyrfalcon is typically found in northern latitudes away from the boreal forest. Although some individuals have been recorded nesting in trees, the majority of individuals of this species nest in the arctic tundra. Nesting habitat is usually among tall cliffs while the hunting and foraging areas are more diverse. Foraging areas may include coastal areas and beaches that are used heavily by waterfowl, stooping off cliffs at unsuspecting prey such as small birds beneath them, or on the open tundra where tail chases on ptarmigan and larger mammals is common.

Habitat fragmentation is currently not a threat to this species, due mainly to the short growing season and climate of the area. Since cliff faces are not disturbed and the tundra is not highly altered nor farmed, habitat for this species seems to be stable.

Winter can force this species to move regionally to feed. While in more southern climates, they prefer agricultural fields which remind them of their northern breeding grounds, typically perching low to the ground on fence posts.

Reproduction:

Gyrfalcons nest in the remote northern portions of the world. Until recently, little was known about nesting sites, incubation times, fledging dates, or reproductive behavior. Although much has been discovered recently, many other aspects of the reproductive cycle have yet to be determined.

Males begin defending nesting territory in mid-winter, about the end of January, while females generally arrive at nesting sites near the beginning of March. Pair bonding occurs for about 6 weeks and subsequently the eggs are usually laid near the end of April.

Gyrfalcons do not construct their own stick nests in trees (although old common raven (*Corvus corax*) stick nests in trees are sometimes used), and usually find suitable nesting sites on cliff faces where there is a shelf with an overhang. Nest sites are used year after year and accumulate prey remain piles, while the rocks turn white from excessive guano.

The clutch can be from 2-7 eggs, however, the average size is 4, which is typically incubated by the female with some assistance from the male. Incubation has recently been determined to be 35 days and all birds in the clutch hatch within a 24-36 hour period.

Due to cold climate, chicks are covered in heavy down and are left to thermoregulate themselves after only 10 days as the female leaves the nest to join the male in hunting duties for the growing family.

Lifespan / Longevity:

Up to 25 years in captivity. Probably shorter life span in the wild.

Behavior:

The gyrfalcon is a solitary species except during the breeding season when it will interact with its mate. During non-breeding times, this bird will hunt, forage, and roost alone. It is generally non-migratory but will move short distances, especially during winter to suitable areas where prey can be found.

This falcon has no natural enemies due to its large size, however, it will be eaten by a variety of animals if given the chance. Due to its large and capability of flight, many predators can't concentrate on hunting this species exclusively, and most mortalities occur to young inexperienced birds or ones that become injured. Some animals of the north that may feed upon Gyrfalcons include Arctic fox (*Alopex lagopus*), red fox (*Vulpes velox*), grizzly bear (*Ursus arctos*), wolverine (*Gulo gulo*), and great horned owls (*Bubo virginianus*).

Uses four methods to pursue prey: 1) flying low and surprising prey on ground; 2) pursuing prey over long distances, forcing it low or high and exhausting it; 3) hovering and making short stoops to force prey out of cover; 4) flying straight up to strike at birds overhead. Strikes prey or drives it to the ground, rather than grasping it in the air; dead prey typically have broken breast bone.

Communication:

Alarm call is a guttural "kak, kak, kak." Contact call, given during foraging and food transfer, is a sharp "chup..chup...chup."