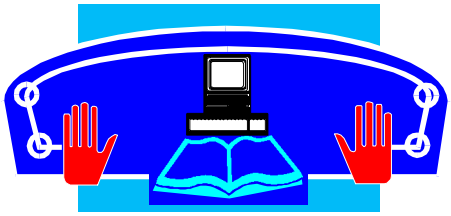

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Arctic Wildlife Sketches;birds Of Prey Of The Northwest Territories
Date of Report: 1981
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Birds of Prey

of the Northwest Territories

The birds of prey (or raptors, as they are also called) are the hunters of the bird world. They are akin to the wolf and the polar bear on land. All raptors have large, strong feet with which they seize and kill their prey as well as powerful, strongly hooked beaks which are used to tear the prey into bite-size chunks. Owls are raptors usually active after sunset (nocturnal) and depend upon their acute hearing to locate their prey. Hawks, eagles, harriers, osprey and falcons are active during daylight hours (diurnal) and rely upon their keen eyesight to spot prey. This pamphlet concentrates on the diurnal birds of prey — that is, the hawks, eagles, harriers, osprey and falcons occurring within the N.W.T.

Until recently, raptors and other predators were portrayed as the bad guys of the animal world. Man considered them unnecessary Competitors and reduced their numbers by shooting, trapping, and poisoning. As knowledge of the ecology of raptors increased, however, people realized that raptors did not live up to their reputation as relentless killers of chickens, lambs, and other livestock. Instead, they were discovered to be relentless hunters of rodents, birds, and insects which were often detrimental to farmers' crops. Educational campaigns stimulated a change in public attitude towards raptors. Today the sight of a raptor is an added bonus to an outdoor adventure and often a symbol representing the wild, unspoiled lands of Canada.

Distribution

Only mature gyrfalcons are permanent residents of the N.W.T. Most other raptors are summer visitors. Summer is breeding season for raptors as well as other birds. Thus, their distribution in the N.W.T. during summer usually coincides with the location of nesting sites. During summer throughout the taiga or forested areas, you can expect to see goshawks, sharp-shinned hawks, red-tailed hawks, Swainson's hawks, bald eagles, marsh hawks, ospreys, merlins and American kestrels. Merlins also wander into the southern extremities of the tundra. Golden eagles are most common in the Mackenzie Mountains, which form the border between the Yukon and the N.W. T. You are most likely to see rough-legged hawks and gyrfalcons in the Mackenzie Mountains and upon the open tundra, while peregrine falcons occur throughout the tundra and taiga wherever nesting sites and prey are available. During spring and fall, most diurnal birds of prey migrate from and to their wintering areas which range from southern Canada to central South America.

Breeding distribution of the gyrfalcon

Natural History

Among most species of hawks, eagles, osprey and falcons, the only characteristic distinguishing males from females is size. The male bird (known as a *tiercel*) is smaller than the female. Selection of mates often occurs at a nesting site. The same pair will return year after year to the same nesting area and frequently to the same nest. Hawks, eagles, harriers and ospreys tend to construct bulky stick nests. In contrast, falcons lay their eggs in a small hollow scraped on a cliff ledge or in an abandoned stick nest. The nest site of the diurnal raptors is known as an *eyrie.* **Typically, the eggs are incubated by both the male and female, and incubation extends over a period of 30-35 days, Eagle eggs require 44 days to hatch. The** young birds are called *eyasses* and remain in the nest for a minimum of 30 days.

The vulnerability of eggs and young birds over such a long time period requires that the eyrie be situated in a location where it is inaccessible or invisible to most predators and that a strong bond develop between a mated pair since it requires the cooperation of both birds to incubate the eggs to feed the young, and to defend the nest site. This pair bond is often weakest during the initial breeding stages. Thus, it is very important not to disturb raptors at their nest sites. Human activity near a nest site during mating and incubation frequently causes a nest to be deserted.

Each of the raptor species is best adapted to hunt one type of prey. **Thus, the sharp-shinned hawk is adept at pursuing small woodland birds through heavy forest, the rough-legged hawk and marsh hawk specialize** in small rodents, the osprey is a fisherman, and the gyrfalcon concentrates its hunting efforts on birds of the tundra. Birds larger than robins are usually plucked before being eaten. Most other birds and small rodents are swallowed whole. Raptors are incapable of digesting bones, fur, feathers or insect skeletons and each day cough up a small pellet consisting of those indigestible remains. Often many pellets can be found around the nest site and near favourite perches. Examination of those pellets allows you to determine what a raptor has been dining upon.

ʻoodlano Hawks

Sexes have similar plumage, females are ırger.

1. Goshawk (***Accipiter gentilis***) — Grey nderparts, a light white stripe over the eye nd five finger-like wing tip feathers ·**marginate** primaries) characterize North .merica's largest accipiter (50-60 cm tall). he large, bulky stick nest of goshawks is ısually built by the tiercel and located in a ıll tree within the forest. The nest may be :used in subsequent years. Two or three ggs are laid in mid-June. The young birds re fed lemmings, squirrels, hares and grouse y both parents and learn to fly when they re 45 days old. Nest success as well as the istance **travelled** south every winter seems to **:flect** prey abundance. During fall, oshawks leave the N.W. T. and migrate **›uth** to overwinter in southern Canada and ıe **U.S.A.**

2. Sharp-shinned hawk *(Accipiter* ***striatus)*** - The only other accipiter of the N.W.T. is istinguished from the goshawk by its rusty, arred breast markings and much smaller size !5-35 cm tall). Sharp-shinned hawks prefer › build their nests in conifers. Unlike the oshawk, a new stick platform nest is con-ructed each year. The female lays four to ve eggs in late May. This hawk has long, ender toes and talons, indicating a diet of redominantly **small** woodland birds sup-Iemented with small rodents. **The** young irds grow rapidly and fledge approximately 3 days after hatching. As fall approaches, ıe immature hawks begin the long migration › the wintering grounds **in and south of Iexico. The adults follow and, like other ıptors, migrate predominantly during aylight hours.** The sharp-shinned hawk is ncommon. The pesticide concentrations **ithin** its prey species have affected breeding **ıccess** and precipitated a decline in numbers ver the last 30 years.

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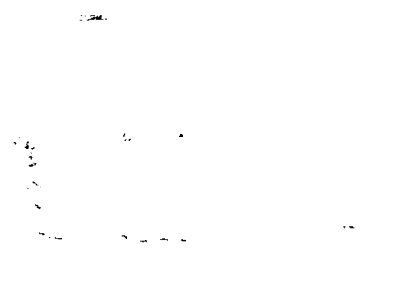
Sexes have similar plumage, **females** are **ırger.**

1. Red-tailed hawk (***Buteo jamaicensis***) —



Breeding distribution, ...

The distinguishing characteristics of this large (50 -60 cm tall) common soaring hawk of the taiga are a rusty tail, a dark belt across the abdomen and four emarginate primaries. The stick nest is usually constructed in a tree at the forest edge and may be reused for 4-5 years. The female lays one to three eggs in May. The young are fed a varied diet of voles, lemmings, hares, insects or carrion and begin to fly 43 days after hatching. Red-tailed hawks migrate during fall to over-winter throughout southern Canada and the U.S.A.

2. Swainson's hawk (***Buteo swainsoni***) — Swainson's hawks are similar in size to red-tailed hawks (45-55 cm tall); however, they are uncommon in the N.W.T. There are a few old nesting records from the open woodland-tundra southeast of Inuvik. A broad dark band across the breast, an olive grey tail with a dark edge and three emarginate primaries separate this soaring hawk from the red-tailed hawk. A large, bulky stick nest is constructed in small deciduous trees or bushes. Sometimes a ledge is used. Occasionally, the nest may be reused in subsequent years. Two eggs are laid in mid-May and the young birds are fed small rodents, hares and insects. Fledging occurs 28 days after hatching. Immature and mature Swainson's hawks overwinter in Argentina.

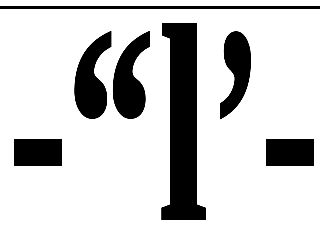
3. Rough-legged hawk *(Buteo* ***lagopus***) — The adult plumage is variable in colour and marking but usually displays a dark patch or shield on the belly and a light tail with a distinct dark edge. A breeding pair builds a large stick nest on cliff ledges or on the ground, and may maintain several nests which are reused in subsequent years. Two or three eggs are laid in late May. The eyasses are fed lemmings and voles as the relatively small feet of the rough-legged hawk prevent him from capturing larger prey. The young learn to fly about 41 days after hatching. Rough-1egged hawks overwinter throughout the U.S.A. A large hawk (48-60 cm tall), it is a common summer inhabitant of the moun-tains and the tundra of mainland **N.W.T. and the southern Arctic archipelago.** The population size probably follows a cycle similar to the lemming population cycle.

4. Golden eagle (***Aquila chrysaetos***) — **It** takes 4 years before a bird assumes the dark brown plumage with the characteristic gold wash on the back of the head and neck of a mature bird. The immatures are dark brown with varying amounts of white under the wings and at the base of the tail. In late May, the female lays two or three eggs in a large stick nest constructed on a cliff ledge or in a tall tree near creeks and rivers. A nest slowly increases in size as it is used year after year. Usually only the first nestling to hatch obtains enough food to reach the fledging stage (77 days). The large, powerful feet and size (75-1OU cm tall) of the adults allow them to capture much larger prey (such as hares, ground squirrels or the occasional newborn caribou calf) than other soaring hawks. Mature golden eagles occasionally are perma-nent residents of the Mackenzie mountains; however, most migrate south to overwinter in southern Canada and the U.S.A.

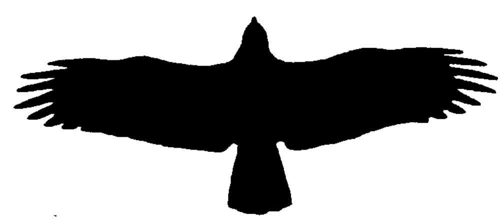
5. Bald eagle (*Haliaeetus leucocephalos)* — The pure white head, neck and tail of the adult bird distinguish it from all other rap-tors in the N.W.T. The immatures are dark brown with varying amounts of white on the head, neck and tail. Bald eagles are similar in size to golden eagles (75-108 cm tall) and also require 4 years to achieve adult plumage. A large stick nest is constructed usually in a tall tree near sources of water. Those nests are

·ilhouettes

The specific body structures of the diurnal **aptors** allow them to exploit most efficient-~ one type of habitat and one type of prey. Vhen outlined against the sky, the **general-ıed** shape of body, wings and tail are similar mong certain species of raptors. In the {. W. T., the diurnal birds of prey can be Iassified into five groups — the woodland awks or accipiters, the soaring hawks and **agles,** the harrier hawks, the osprey, and the **ılcons** — each group having their own haracteristic silhouette. Knowledge of the **ilhouette** shape and ecology which haracterize each of the five groups increases our ability to predict which species of raptor ou may have spotted.



As the name implies, the body structure of woodland hawks or accipiters is adapted to forested areas. Their short rounded **wings** and long **tails increase maneuverability** as they dodge branches while in pursuit of small birds, squirrels or mice. Those hawks will often be seen sitting quietly on an exposed tree limb in the forest waiting to spot a mouse or small bird.



The soaring hawks and eagles are heavily **built** raptors with broad **wide wings** and **fan-shaped tails** which allow them to prospect for prey as they ride the air currents. They have powerful beaks and feet, especially the much larger eagles, and hunt in more open country than the accipiters.

s c' gyrfa con (above) may resemble peregrine, covert le the field, however, the can be told by its maller size and more monotone … tern …

many years and may reach several
height. Two eggs are laid in May.
ts are opportunistic feeders and feed
ng a varied diet ranging from fresh
ght by the adult or stolen from an
fisherman) to carrion. Usually one
fledged after 77 days in the nest.
es overwinter in southern Canada
J. S. A., frequently concentrating in
ıbers along spawning salmon
In the N. W. T., bald eagles frequent
:ed lake country.

Harriers

Plumage of the sexes differs.

1. Marsh hawk *(Circus cyaneus)* — The distinct white rump patch identifies our only harrier. It is also known as the "hen harrier" and the "northern harrier". It is similar in size to the Swainson's hawk (46-56 cm tall). **The** male is slate grey in colour while the dark brown plumage of the female allows her to remain camouflaged as she sits on her nest, which is located on the ground amongst **marshland shrubbery. Four to six eggs are** laid in late May. Marsh hawks are very sensitive to disturbance and will quickly desert their nests if they are bothered during the incubation period. The adults feed themselves and their offspring small rodents, frogs, birds and insects from the marshes. The eyasses learn to fly once they are 37 days old and precede the mature birds to the wintering grounds throughout southern Canada and **the U.S.A.**

Osprey

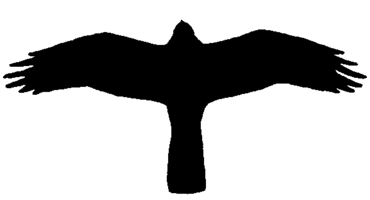
Sexes are similar in size and plumage.

1. Osprey ***(Pandion haliaetus)*** — A black cheek patch across the white head as well as a white neck, breast and belly characterize this handsome fish eater. It is similar in size to the soaring hawks (53-60 cm) and also builds large stick nests on the tops of isolated tall trees, poles or cliff pinnacles near rivers and lakes. Nests are reused in successive years, with three eggs being laid in early June. The adults are tireless fishermen often diving below the water surface to capture fish. The young fledge after 50 days in the nest, and both immature and mature birds migrate south during fall to overwinter in locations as far south as Peru. Ospreys appear to be uncommon in the **N.W.T. but** have been observed more frequently along the southern portions of the Mackenzie River. In the eastern U. S. A., osprey populations declined as pesticide levels increased in fish as a result of runoff from sprayed croplands. It is not known whether ospreys of the N.W. T. are affected similarly after consuming fish on their wintering grounds.

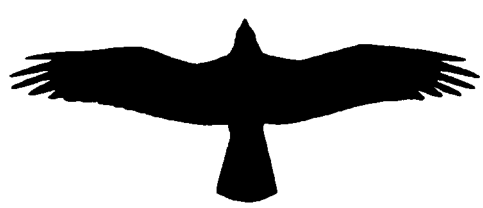
[illegible]

Sexes usually have similar plumage, females are larger.

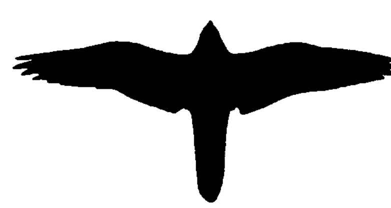
1. Gyrfalcon ***(Falco rusticolus)*** — Gyrfalcons are our largest falcon (50-63 cm tall). The colour of their plumage varies from dark grey throughout the mountains and southern tundra of the N. W. T., to light grey or white on the Arctic islands. No nest is built. Instead, three eggs are laid and incubated by the female on a narrow cliff ledge frequently



:s are **slim-bodied** hawks with **slim**
ʒs, long tails and **long legs.** The
wk is our only harrier. They fly low
ı marshlands hoping to flush a small
ıouse from cover and **frequently**
ɜr their quarry before pinning it to
ıd.



Osprey are fish-eaters and inhabitants of river and lake country. Their powerful **long, narrow, slightly crooked wings** can lift them out of the water after having plunged in after a fish. Their feet have spiny scales, long curved talons and a reversible outer toe, all of which increase their ability to hang onto their slippery prey.



Falcons are swift. aerial hunters. Their **streamlined bodies, "sbort narrow pointed wings** and **slim tail** enhance this lifestyle. Unlike other raptors, they have a small toothlike projection behind the hooked tip of the upper bill which characterizes them as falcons.

near a water body. Occasionally, eggs may be laid in a stick nest, constructed by a raven or other raptor, either in a tree it' within the taiga-tundra border or on a cliff ledge. Gyrfalcons nest in April or early May. The same nesting ledge is frequently reused in successive years, or a breeding pair may alternate among several nesting ledges within a small area. Ptarmigan, the primary prey, are flushed into the open as the gyrfalcon flies low and fast over the tundra. At times, lemming and hare and other birds may also be consumed. Gyrfalcons which nest near the **Arctic** coast feed primarily upon seabirds which are attacked in the air. The eyasses fledge about 49 days after hatching. During fall and winter, the immature and some

adults wander south into the boreal forest in search of ptarmigan concentrations. Other adult gyrfalcons remain close to their nesting area on the tundra or in the mountains feeding on overwintering ptarmigan flocks or hares. It appears that the number of gyrfalcons and nesting success vary in response to the amount of prey available. Gyrfalcons have always been highly prized by falconers. During the middle ages when falconry was a common practice no one but a king or prince was allowed to own and fly, a gyrfalcon. Today this falcon still retains its high status in the world of falconry.

2 Peregrine falcon (*Falco peregrinus*) — **The grey to brown plumage and striking black sideburns against a white face differentiate the slightly smaller (40-50 cm tall) peregrine falcon from the gyrfalcon.** Ledges on cliffs adjacent to water bodies are used for nesting. Three eggs are laid in a shallow scrape in late May or early June. Peregrine falcons have an unusually strong affinity to certain sites as nesting areas. Frequently, the same cliff face or nesting ledge has been used by successive pairs of peregrine falcons for over 50 years. Knowledge of such historically documented nesting sites allows biologists to census and monitor the peregrine population in successive years. The eyasses begin to fly at the age of 35 days. Peregrine falcons which nest at sites on the tundra migrate farther south into South America than do peregrine falcons nesting within the taiga. The final moments of a peregrine's hunt can be a spectacular sight as he folds his wings, often diving from a great height, to stun a flying songbird or duck with a blow from his large feet, knocking the quarry onto the ground amongst a flurry of feathers. The recurring desire to witness those final thrilling moments of a hunt have caused peregrine falcons to be highly sought after by falconers. Thus peregrine falcons in the N.W.T. have undergone depredation by poachers as well as a decline in numbers from the effects of ingesting DDT-contaminated prey. In response to this decline, several breeding programs have been established to produce peregrine falcons. The facility at Wainwright, Alberta, has been given falcons and financial support by the N.W.T. Wildlife Service to maintain a breeding reserve of peregrine falcons. Thus with the decreasing use of pesticides, this reserve of captive-bred falcons may be used to reintroduce peregrine to breed again in areas where they once existed.

3. Merlin (*Falco columbarius*) — The much smaller size (25-34 cm tall) and narrow whitish line over the eye separate the merlin from the peregrine and the gyrfalcon. The plumage of the tiercel is blue-grey in contrast to the dark brown of the female. Females may choose a variety of sites to lay their eggs. Those sites include cliff ledges, abandoned bird nests or on the ground amongst shrubbery. Usually four to five eggs are laid and incubated by the female in June. Merlins are aerial hunters of open country and are also known as pigeon hawks. They often fly low to the ground flushing out small birds and have adapted their pursuit strategies to counter the escape patterns of their prey. The young fledge about 28 days after hatching and, like the adults, overwinter in Latin and South America. Merlins were once a common taiga and treeline raptor; however, DDT has impaired their reproductive success causing a decline in the population.

4. American kestrel (*Falco sparverius*) — The light grey face with black stripes through and behind the eyes as well as the small size (25-30 cm tall) characterize the American kestrel. Like merlins, the females are dark brown; however, the males are slate blue with rusty brown on the back and nape. Unlike other diurnal raptors, the kestrel is a cavity nester. The female lays two or three eggs in late May, incubating them while the male feeds her a variety of small rodents and insects. Kestrels are often seen perched on posts or treelimbs searching for prey or hovering over a prospective victim. Although kestrels are also known as sparrow hawks, they very rarely hunt birds. The young learn to fly at the age of 28 days. Kestrels are commonly seen along roadsides and, during fall, migrate south to overwinter in the southern U.S.A. and Mexico.

Population Trends

The number of raptors returning each summer to the N.W.T. varies annually. The fluctuation is related primarily to food resources available to the raptors during the previous year. Seven of the diurnal raptor species maintain fairly stable population levels; however, three species have constantly

fluctuating population trends and three other species are declining in numbers.

Stable	
marsh hawk	bald eagle
red-tailed hawk	golden eagle
Swainson's hawk	osprey
kestrel	

Fluctuating	Declining
rough-legged hawk	sharp-shinned hawk
goshawk	peregrine
gyrfalcon	merlin

In the Arctic, the population levels of several major prey species fluctuate between high and low densities within a predictable time frame. Lemming and vole populations follow a four-year cycle while hare and ptarmigan populations follow a ten-year cycle. Rough-legged hawks prey primarily upon lemmings and voles. Whenever those small rodents have reached their highest population density in the four-year cycle, rough-legged hawks raise more offspring thus increasing their numbers. When lemmings and voles are scarce, the population of rough-legged hawks declines. Goshawks are affected similarly by rodent population cycles. Gyrfalcons which nest on the tundra hunt primarily ptarmigan. Fluctuations in the number of gyrfalcons in the Yukon follow the cycle observed **in the ptarmigan population, and** the same likely holds true in the N.W.T.

The populations of sharp-shinned hawk, the peregrine falcon and the merlin are declining. The decline is related to the use of pesticides and insecticides containing DDT. Those poisons are still in use in Latin and South America. Unlike other diurnal raptors, the sharp-shinned hawk and the two falcons feed primarily upon migratory birds which, in their wintering habitats, eat seeds and insects from areas where DDT-containing compounds are in use. The DDT is not excreted; instead, it is stored within the body tissues. The seed- and insect-eating birds then migrate back to the Arctic to breed. Consumption of such birds harboring DDT within their bodies has two effects which both decrease the number of offspring reared by the raptors. At the nest, a young sharp-shinned hawk or falcon which is fed birds containing DDT is often poisoned and dies. Although adults are not susceptible, female raptors with high concentrations of DDT lay very thin-shelled eggs, which break easily. Thus the population decline of the sharp-shinned hawk, the peregrine falcon and the merlin is a direct result of fewer birds reaching maturity each year. It appears that only concern for these raptors at the intentional level will stop the continuing decline.

In an effort to learn more about the ecology of various birds of prey, biologists in Canada and the U.S.A. capture raptors along migration routes. They sex and age the bird, place a small coloured and numbered plastic band on one leg and then release it. If you see such a band, report the date and location of the sighting as well as the colour of the band and the bird species to the nearest Wildlife Officer, In addition, bald eagles have been equipped with radio transmitters while overwintering in Montana. Some of those eagles are known to be nesting in the N.W. T. during summer. If you see a bald eagle with orange markers across the shoulders, report the location and date of the sighting to the N.W. T. Wildlife Service, which will relay this information to the Montana Fish and Game Branch.

All raptors in the N. W. T., and their nests and eggs, are protected by legislation, A person found to be in illegal possession of such a bird or egg, whether it is alive or dead, is subject to fine between two and ten thousand dollars, and/or up to two years in prison. If you find a dead or injured raptor, it must be turned in to the nearest Wildlife Officer.

Prior to 1981, the Wildlife Regulations allowed the capture of birds of prey only if they were to be used at established breeding facilities for scientific or conservation purposes. In 1981, however, an experimental harvest of juvenile gyrfalcons for commercial purposes was authorized. Although this harvest was unsuccessful, further attempts are expected to continue — within the terms of a well-defined management program.

International trade in raptors is strictly controlled through a permit system as defined by the Convention on International Trade in Endangered Species.

For further information on birds of prey in the Northwest Territories, contact the N.W.T. Wildlife Service, Yellowknife.

Susan Fleck
Yellowknife
1981

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