

The field identification of North American eagles

*A detailed, simplified guide
takes the puzzles out of positive
identification of our two widespread eagles*

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INTRODUCTION

TWO SPECIES OF eagles, the Bald Eagle (*Haliaeetus leucocephalus*) and the Golden Eagle (*Aquila chrysaetos*), occur over most of North America north of Mexico. The former occurs only in North America while the latter has an extensive range in the Nearctic, Palearctic as well as North America (A.O.U. Check-List 1957). Although they are not closely related, their identification in the field is not always simple because of the similarity in shape, size and some plumages. (Two other species, the White-tailed Eagle (*Haliaeetus albicilla*) and the Steller's Sea Eagle (*H. pelagicus*) have been reported in North America, the former in Massachusetts and Alaska and the latter in parts of Alaska.)

This paper details field marks that will allow positive identification if an eagle is seen well, and discusses differences between these two species in their various plumages. Many of these field marks have not been previously published and were identified as a result of the development of raptor identification workshops for the Raptor Information Center. These workshops have been presented in many states and provinces and have provided opportunities for feedback and confirmation of field marks, both from the students' and author's experience.

Table 1 briefly summarizes the important field marks. It refers to Figure 3 which illustrates flying eagles as seen from above and below.

DISCUSSION

EAGLES ARE DISTINGUISHED from other North American raptors by their greater size, relatively longer wings and overall dark coloration (Amadon 1975, Peterson 1980), and, like most raptors, are generally shy and mainly cannot be closely approached by human beings. As a result, they are most often seen either perched at great distances, or flying high overhead hence the need for definitive field marks.

Bald and Golden eagles are comparable in size; females and more northern individuals of both species are larger. The Bald Eagle has a larger head and bill and longer neck than does the Golden. The Bald Eagle's wings appear slimmer in flight with the trailing edge more nearly parallel to the leading edge than the Golden Eagle's. Immatures of both in their first plumage have wings slightly wider and tails longer than birds in subsequent plumages. The Bald Eagle's legs are unfeathered for 3 to 4 inches above the toes, whereas the Golden Eagle's are feathered to the toes, most often with buffy feathers. Comparing adults, the Golden Eagle has the longer tail, but the tail of the Bald in first plumage is as long or longer than the Golden's.

Wing attitude, *i.e.*, flat *vs* dihedral (angle of the soaring wings from the horizontal), has been used as an aid in separating the two species. However, after extensive field experience with both species in many areas of North America, I

have found this unreliable. Many sightings plus a few photographs of both flying together have shown them with the same wing attitude. Both species have been seen soaring and gliding both on flat and slightly raised wings. While this character has been recommended for field identification in certain locations, such as along the mountain ridges in the eastern United States (Brett 1973, Heintzelman 1976), its universal value is doubtful. When gliding, the Bald Eagle usually closes the primaries more and cocks the wrist farther forward than does the Golden Eagle (Fig. 3b, upper view)

BALD EAGLE

THE FOLLOWING PLUMAGE descriptions are based on my observations of known-age Bald Eagles, both in the field and from photographs.

Dark Immature. This is the first plumage, acquired in the nest. The bill and cere are black, eye color dark brown. The overall plumage is most often uniformly dark to medium brown. The most important plumage field marks in flight are the white diagonal line and white spot on the underwing. Field guides have depicted light covert areas in the immature plumage, but have not fully shown these marks.

Some of the nape feathers may have tawny tips, but these are much less extensive and noticeable than the golden nape of the Golden Eagle. The primary and

Table 1. Eagle Identification Summary

<i>Bald Eagle</i>	<i>Golden Eagle</i>
<u>All plumages</u>	<u>All plumages</u>
Head projects forward of wings <i>more than half</i> the extent of the tail.	Head extends forward <i>less than half</i> the extent of the tail.
Bill and cere are <i>unicolored</i> .	Top of head and nape "golden."
Legs <i>not feathered</i> down to toes (only seen at close range).	Bill and cere are <i>tri-colored</i> . Bill is dark at tip, horn colored at base and cere is yellow.
<u>Immature and subadult plumages</u>	<u>Immature and subadult plumages</u>
Underwing has <i>diagonal white line</i> on coverts and a <i>white spot</i> where wing meets body ("wingpit").	Legs <i>feathered down to toes</i> (with lightish colored feathers in many individuals. Only seen when close).
Tail is variably mottled, but if mostly whitish, <i>outer edge</i> and tip are dark.	White in the wing is restricted to the <i>base of the flight feathers</i> and does not appear on the underwing coverts.
Immature with light upper wing coverts, darker flight feathers from above.	Tail is white at base, with sharp dividing line with dark tip.
Subadult has dark cheek and light tawny stripe over the eye, also <i>whitish triangle</i> on back.	Subadult has <i>tawny bar</i> on upper wing.
<u>Adult plumage</u>	<u>Adult plumage</u>
Unmistakable with white head and tail. Transition to adult produces unusual-looking eagles.	Uniform dark below, but light gray barring on flight feathers and tail seen at close range. <i>Tawny bar</i> on upper wing.

secondary flight feathers are generally uniform dark brown, with little or no white. The upper wing coverts are a lighter brown contrasting with the darker flight feathers. The entire coverts are lighter, whereas in the Golden Eagle adult and subadult the light area is more restricted and forms a bar (Fig. 3).

White Belly. The next plumage is usually completed by the end of the first year of age. The most prominent feature is the white belly, which has some dark brown marks on it. The upper breast remains



Fig. 1. Immature Bald Eagle showing white belly. Photo/William S. Clark.

mostly dark, forming a bib. Some light spotting appears on the back, forming an inverted triangle. There is a prominent buffy line above the eye which extends onto the nape and highlights a dark brown area behind the eye. Some primaries and secondaries exhibit white areas. The bill and cere have lightened to a slate color and the eye color has lightened to hazel, although this is variable. The white diagonal line and white spot on the underwing are still present and are, after the head-tail ratio, the best field marks in flight.

Mottled. This plumage, a continuation of the previous one into the third year, has more white and mottled areas. The eye color is lightened to a pale white and the bill and cere vary from horn color to light white-yellow. The underwing marks are still present, but on some light individuals may be masked by completely white underwing coverts (however, this will cause no confusion with the Golden Eagle). The back of most individuals will have the inverted white triangle.

Transitional. This plumage is highly variable because the subadult and adult plumages are markedly different. In general, the head begins to lighten first, then the body and wing feathers become completely dark. The head is usually not pure white, often with a dark area through the eye resembling an Osprey's eyestripe. The white tail is usually the last adult

character to be acquired. The white diagonal line under the wing disappears early, but the white spot usually remains until the bird is more nearly in the first-adult plumage.

Adult. The first adult plumage usually shows varying amounts of black or brown in the white areas of the head and

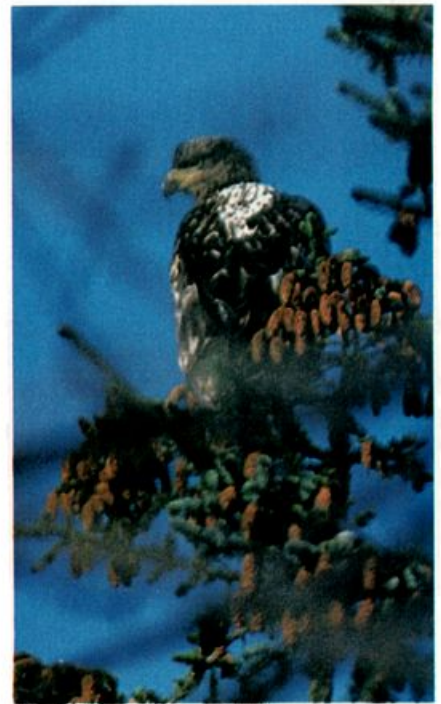


Fig. 2. Subadult Bald Eagle showing white triangle on back. Photo/William S. Clark.



Fig. 3a. Eagles as seen from below. Top, Bald Eagle (l. to r. dark immature, white belly, mottled), below, Golden Eagle (l. to r. immature, sub-adult, adult).



Fig. 3b. Eagles as seen from above. Top, Bald Eagle (l. to r. dark immature, white belly and mottled, adult), below, Golden Eagle (l. to r. immature, sub-adult, adult).



Fig. 4. Immature or subadult Bald Eagle. Note white underwing and "wingpit." Photo/Harry N. Darrow.



Fig. 5. Immature or subadult Golden Eagle. Note white at base of tail. Photo/Harry N. Darrow.

tail. In some cases, a more or less complete terminal tail band is present. Subsequent adult plumages are alike, however even older adults can show brown and black spotting in the white of the tail.

Albinism. Adults have been reported in albino plumage (Petit 1982, J. Hodges *pers. comm.*). Off-white feathers replace the brown feathers.

Vocalization. The Bald Eagle is very vocal, especially when in company with other Bald Eagles.

GOLDEN EAGLE

THE BODY AND WING COVERTS are uniform brown. There is often a somewhat mottled appearance, especially on the adult, the result of new darker feathers contrasting with the older faded ones, but the mottling is never as distinct as that of immature Bald Eagles. The golden nape ranges from pale tawny to dark orange and is present on most individuals, although on a few it may not be very obvious. The nape color is not related to age and probably remains constant throughout the bird's life.

Immature. The tail is mostly white with a dark terminal bar. The amount of white varies among individuals from the basal half of the tail to almost its entirety. A variable amount of white occurs at the base of some flight feathers, especially the inner primaries and outer secondaries. This is highly visible from below, but appears as a much smaller area from above. The eye color begins as dark brown and lightens.

Sub-adult. In subsequent plumages the amount of white in the tail decreases progressively until the 5th or 6th year when none remains. Replacement primaries and secondaries have no white. The first molt begins around one year of age, but molts of the flight feathers are not completed annually (Cramp & Simmons 1979). Individuals from two to three years old usually retain a small amount of white, visible from below. The upper wing coverts have a tawny area in the shape of a bar. Considerable variation occurs in the eye color, which lightens to amber or light brown during this period.

Adult. This plumage appears uniformly brown from a distance, but, at closer range, fine gray-brown barring in the secondaries and tail can be seen. The tawny wing bar is present in most individuals.

Vocalization. This species is usually silent. Many researchers have spent considerable field time studying it and have never heard it call (Cramp & Simmons 1979). However, some North American individuals are vociferous near the nest (A. Harmata, *pers. comm.*).

SUMMARY

THE TWO WIDESPREAD North American eagles can be readily separated in the field using the field marks presented in Table 1 and shown in Figure 3. The best field mark in flight is the relative length of the head and tail. The differences between these species are discussed in detail.

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