Flight Identification of Common North American Buteos

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photographs by the author
drawings by ROBERT PRATT

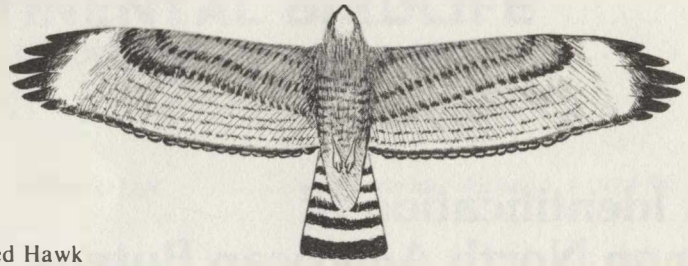
Accurate field identification of raptors is among the most difficult challenges facing the birder and field biologist today. This results mainly from the extreme plumage diversity within species and the variable wing shape during the different flight modes: flapping, soaring and gliding. The problem is compounded because available bird field guides do not have space to adequately treat each species and they fail to incorporate the most recently recognized or discovered field marks.

Most of us have learned to identify flying buteos through many hours of field observation, usually at one or, at most, several locations. We learned to distinguish buteos from other raptors by their flight silhouette and to identify species by a variety of field marks and characteristics, many of which are subjective and many others of which are peculiar to a specific site or flying condition (e.g., migration along a mountain ridge) (Amadon 1975). This article presents a simple system of field marks which will allow the beginner to identify most flying buteos when they can be seen well. Also presented will be additional information on buteos for the more advanced birder. Although not designed to replace methods used by advanced birders to identify buteos, this information can be used to verify identification.

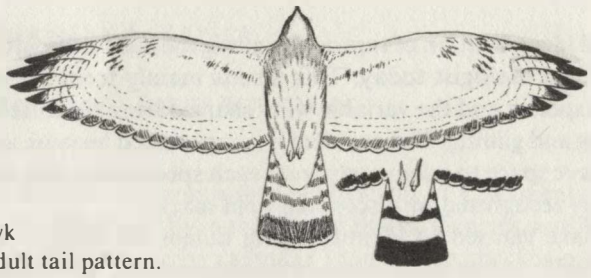
There are six species of North American buteos which occur over a considerable portion of the continent north of Mexico. All but one of these species has a "dark" color phase, along with a "light" or normal phase. In many, there are also many intermediate degrees between the two extremes.

The first section will be a brief description of the field marks which will enable one to identify flying buteos. The buteos are shown from the underside in Figures 1 and 2 with the pertinent field marks highlighted. Differences in the wing and tail shape among these buteos are depicted in these figures. Each buteo will also be discussed in more detail with comments on seasonal distribution. Special sections on Albinism, Behavior, Wing Panels and Head-On Profiles will round out the buteo descriptions.

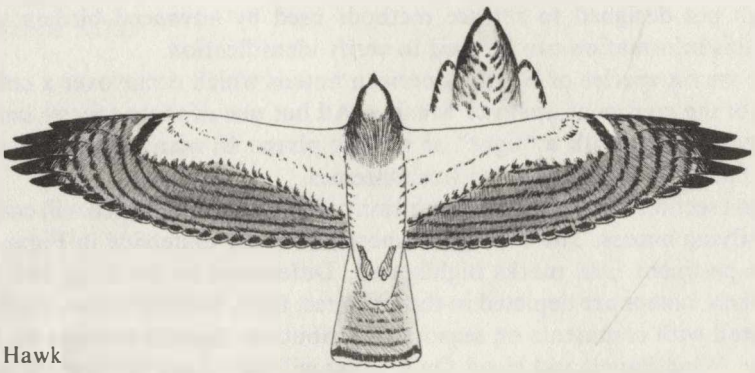
This is the first of a planned series on flight identification of North American raptors, in preparation for a raptor field guide. Most of the information presented was organized for teaching raptor identification as a part of the Raptor Information Center's Raptor Short Courses and has been field tested in most sections of North America north of the Mexican border.



Red-shouldered Hawk
Adult.

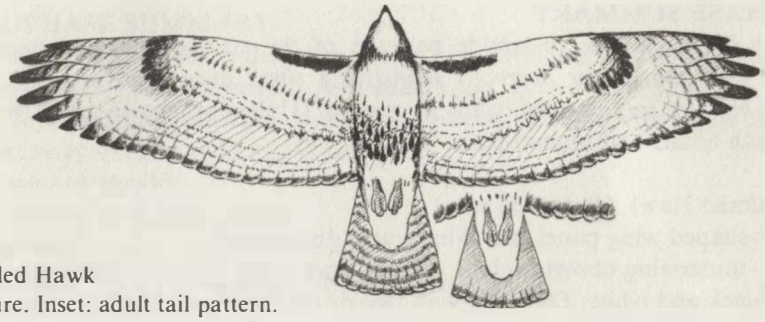


Broad-winged Hawk
Immature. Inset: adult tail pattern.

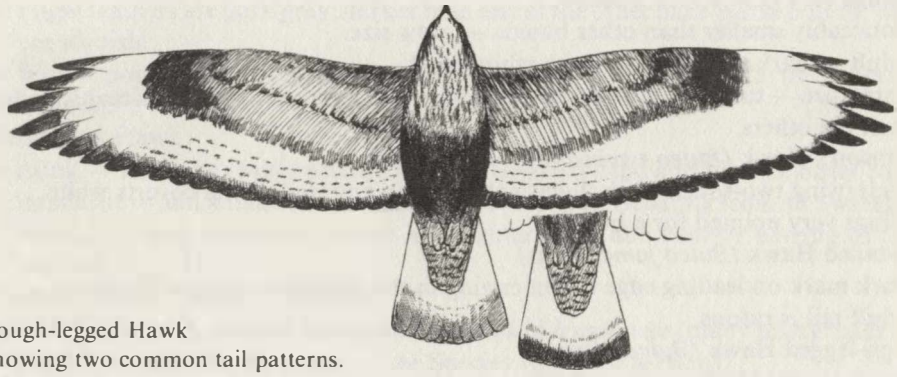


Swainson's Hawk
Adult. Inset: immature chest pattern.

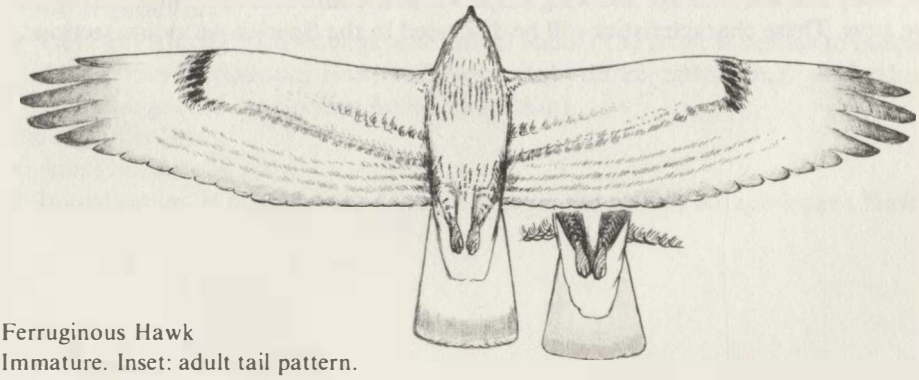
FIGURE 1.



Red-tailed Hawk
Immature. Inset: adult tail pattern.



Rough-legged Hawk
Showing two common tail patterns.



Ferruginous Hawk
Immature. Inset: adult tail pattern.

LIGHT-PHASE BUTEOS

LIGHT-PHASE SUMMARY

Figure 1 illustrates the underside patterns of the six light-phase buteos. *The diagnostic field marks for correctly identifying these buteos are mostly on the underwing and are summarized below by species:* (Unless otherwise noted, remarks apply to both adults and immatures.)

Red-shouldered Hawk *(Buteo lineatus)*
- Crescent-shaped wing panel (see Wing Panel discussion).
- Adult — underwing coverts rufous, darker than flight feathers, which are boldly barred black and white. Dark tail with two or more narrow white bands.
- Immature — underwing coverts and flight feathers whitish. Tail light brown with even width dark brown bars.

Broad-winged Hawk *(Buteo platypterus)*
- Lightish underwing with no distinguishing marks, except black border.
- Wings very pointed for a buteo.
- Noticeably smaller than other buteos — crow size.
- Adult — dark tail with one thick white band.
- Immature — tail light brown with dark bars, the subterminal bar noticeably wider than the others.

Swainson's Hawk *(Buteo swainsoni)*
- Underwing two-toned, with flight feathers gray and underwing coverts white.
- Wings very pointed for a buteo.

Red-tailed Hawk *(Buteo jamaicensis)*
- Dark mark on leading edge of underwing in the patagial area (see Figure 1).
- Adult tail is rufous.

Rough-legged Hawk *(Buteo lagopus)*
- Large square black patch at wrist.

Ferruginous Hawk *(Buteo regalis)*
- Black crescent at wrist, but no other *black* on the underwing.
- Patagial area clear or with *reddish* patches.

The body and tail plumage and wing shape will help confirm identification using the above keys. These characteristics will be discussed in the Species Accounts section.

DARK-PHASE SUMMARY

Figure 2 illustrates the underside patterns of dark-phase buteos. The wing patterns are very similar. *The important field marks for correct identification are located mostly in the tail and undertail covert areas,* but also include wing shape and pattern. The summary of these field marks follows.

Broad-winged Hawk

- Tail pattern as in light-phase.
- Wings very pointed for a buteo.
- Noticeably smaller than other buteos — crow size.

Swainson's Hawk

- Undertail coverts *light*, often barred (all other dark-phase buteos have dark undertail coverts).
- Undertail pattern as in light-phase, tail with dark subterminal band and many thin dark bands.
- Flight feathers are dark gray; darker than any of the other dark-phase buteos, which are whitish.
- Wing is pointed for a buteo (there is usually some whitish mottling in the underwing coverts).

Red-tailed Hawk

- Adult — tail red or pink, usually with subterminal band and hints of other bands.
- Immature — tail is light brown with dark brown bars. Separate from all Swainson's Hawks by dark undertail coverts and lighter color and heavier barring of flight feathers.

Harlan's Hawk *(Buteo j. harlani)*

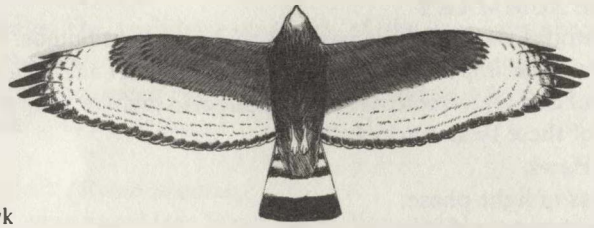
- Adult — whitish mottled tail feathers, streaked *lengthwise* (many intergrades with adult Red-tailed Hawk occur — see Species Accounts section).
- Immature — at present time indistinguishable from immature dark-phase Red-tailed Hawk.

Rough-legged Hawk

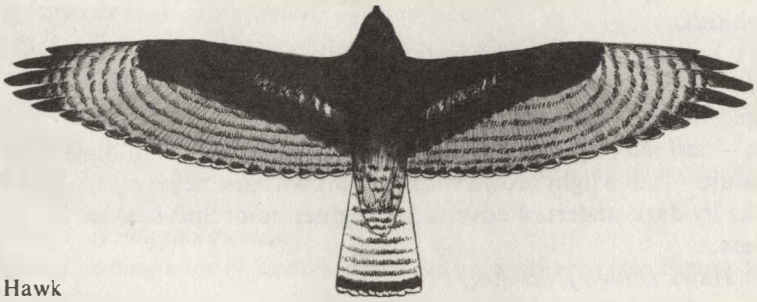
- Tail usually white at base with dark terminal band; may be dark with one to three white bands or . . .
- Tail light with darkish smudge as terminal band. (The latter is similar to immature dark-phase Ferruginous Hawk tail. Separate by darker border on flight feathers of Rough-leg. Also see Species Accounts section).

Ferruginous Hawk

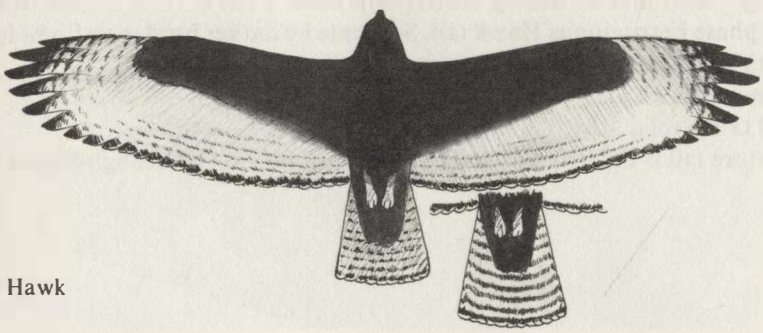
- Adult tail is solid gray.
- Immature tail is lightish with dark smudge on the tip (see Rough-legged Hawk).



Broad-winged Hawk
Adult.

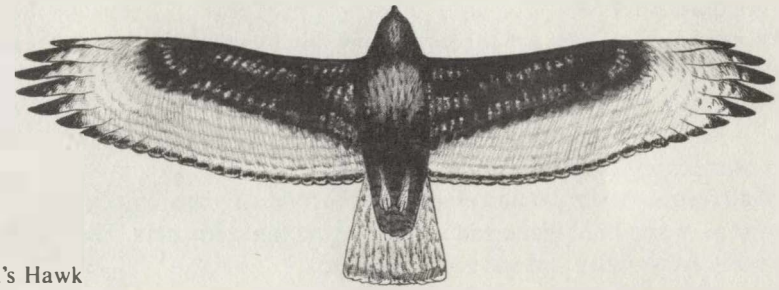


Swainson's Hawk
Adult.

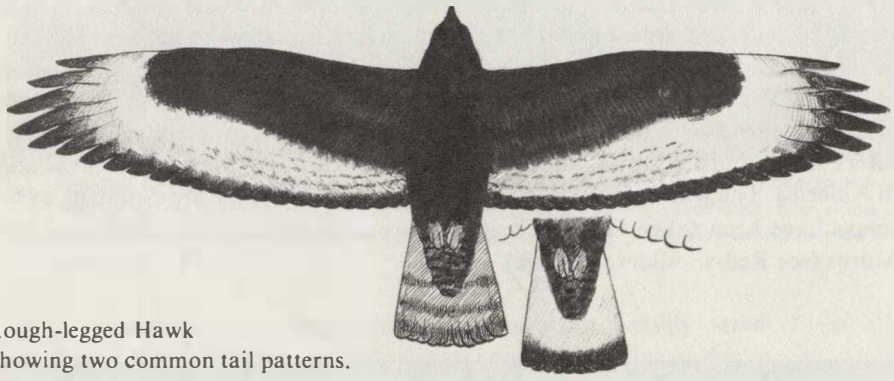


Red-tailed Hawk

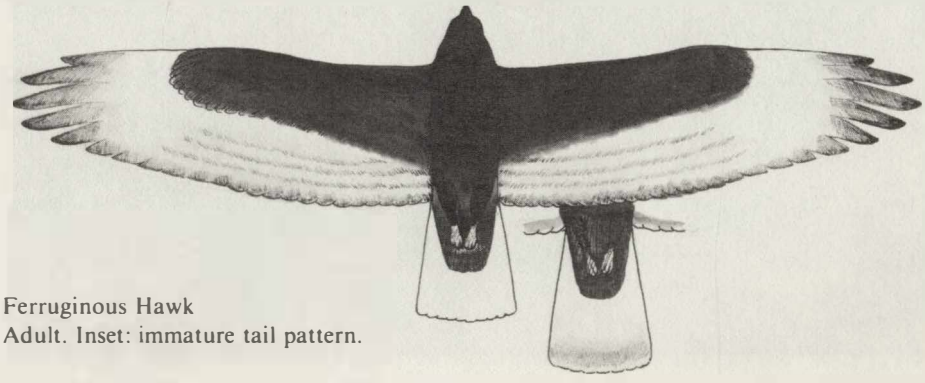
FIGURE 2.



Harlan's Hawk
Adult.



Rough-legged Hawk
Showing two common tail patterns.



Ferruginous Hawk
Adult. Inset: immature tail pattern.

DARK-PHASE BUTEOS

SPECIES ACCOUNTS

Red-shouldered Hawk: There are three recognizably different forms of this species. The nominate race *(Buteo l. lineatus)* and similar races *(B.l. alleni* and *B.l. texanus)* occupy all of North America east of the Great Plains, except the Florida Peninsula where the Florida race *(B.l. extimus)* occurs. There is a geographically distinct population of this species in California *(B.l. elegans).*

Adults of all forms are similar and all exhibit the reddish breast, black tail with four to seven white bars and bold black and white colored flight feathers. The Florida and California races are smaller and have grayish heads.

The immature plumage of all races is similar with heavily streaked breast and a dark brown tail with light brown bars. Use wing shape and plumage for field identification of these individuals.

Note that immature Red-shoulders and Broad-wings are not safely separated in the field by body plumage. It is necessary to see the underwing shape and pattern or the tail pattern for safe identification. The tail pattern of the immature Red-shoulder is light brown with even width dark bars, while the immature Broad-wing has a wider dark sub-terminal bar (Dunne *et al.* 1982).

Broad-winged Hawk: The Broad-wing is monotypic (in North America) and breeds throughout eastern North America occurring westward in the boreal forest to Alberta. It winters from south Florida, southern California through Mexico, Central and South America. The winter records from areas north of this range are doubtful, as no specimens have been taken. The majority are probably misidentified Red-shoulder immatures (see Red-shouldered Hawk).

Figure 3. Immature Broad-winged Hawk. Notice the relatively pointed wingtips, plain and pale underwing with darker tips and trailing edge, tail with several narrow bars and broader subterminal bar. Pattern of body plumage is variable.

Figure 4. Immature Swainson's Hawk. On this individual the streaking of the underparts is heaviest across the chest, suggesting the adult's pattern. The two-toned underwing is less apparent than on the adult, but notice the wing shape: long, narrowing toward a rather pointed tip.

The immature Broad-wing's breast varies from heavily streaked to almost immaculate white. There is a relatively rare melanistic phase of this species, probably occurring only in the western part of the breeding range.

Swainson's Hawk: The Swainson's Hawk is most unusual for a buteo as it retains immature plumage for two years (Fitzner 1980). This plumage is characterized by a streaked breast, with many individuals' patterns suggestive of the adults.

The Swainson's Hawk is a common breeding raptor in western North America in the proper habitat. It leaves North America in the winter, except for a small number of individuals wintering in south Florida (Browning 1974). It is recorded on migration in the eastern U.S. regularly (Clark 1974). There are strong doubts about the validity of winter sight records of this species in North America, although winter specimen records exist for Florida, south Texas and southern California (Browning 1974). Winter Swainson's Hawks should be photographed, captured and photographed, or, as a last resort, collected. All other records should be viewed skeptically.

Red-tailed Hawk: There are seven recognized races (five forms) of this species in North America north of the Mexican border (Taverner 1927 & 1936). In all forms, except the Harlan's Hawk, the Red-tail is recognized by the red tail of the adult. In most light-phase forms the breast is clear. In light-phase birds of all ages the "belly band" is mottled rather than solid color. However, the presence of the belly band is not sufficient for species identification (see under Ferruginous Hawk). The forms of the Red-tailed Hawk are:

- Eastern Red-tailed Hawk — *(B.j. borealis* and *B.j. umbrinus)* The Eastern Red-tail is relatively uniform and occurs only in the light-phase. The adult tail is red with a

thin subterminal band of black. These races occur east of the Great Plains from central Texas north to the Arctic. (*B.j. umbrinus* occurs only in peninsular Florida.) There is a large area of overlap with the Western Red-tail.

- Krider's Red-tailed Hawk — *(B.j. kriderii)* This form is characterized by being very light. No two individuals are alike. It is essentially a very light Eastern Red-tail. The breeding range is the eastern part of the Canadian and northern U.S. prairies (Taverner 1936).
- Western Red-tailed Hawk — *(B.j. calurus* and *B.j. alascensis)* Somewhat more variable in color, ranging from individuals similar to Eastern Red-tails to uniformly rufous ones (erythristic), to uniformly solid black (melanistic), and every intermediate degree. In *all* adult individuals, the tail is red with a thick dark subterminal band; in most individuals there are also many incomplete narrow bands. In some individuals there is only a hint of these bands and in others they are absent. This form occurs from the Great Plains to the west coast.
- Fuertes' Red-tailed Hawk — *(B.j. fuertesi)* This subspecies intergrades with the Western race in the southwestern United States. It appears similar to an Eastern Red-tailed Hawk except that it is paler in color below, the adult almost always with

Figure 5. Adult "Harlan's" Red-tailed Hawk. This form typically shows light mottling on the dark chest and underwing coverts.

Figure 6. Adult "Harlan's" Red-tailed Hawk. The distinctive tail pattern of this form, most apparent from the upperside, features black mottling and streaking arranged longitudinally on the whitish rectrices.

an incomplete or absent belly band.

- Harlan's Hawk — *(B.j. harlani)* This is a very unusual form which has been variously assigned as a race of the Red-tailed Hawk and as a separate species. Present studies are beginning to shed light on the true extent of its breeding and wintering range (Lavers 1975, Lowe 1978, Mindell 1983). Past studies of the plumages (Taverner 1927, Wood 1932) have been neglected by many field guide authors. These studies and Lowe's and Mindell's work have influenced the following discussion. The Harlan's Hawk is distinguished in the adult plumage by the white tail feathers, which are mottled longitudinally with black. Harlan's Hawk probably occurs only in the dark-phase. (Light-phase individuals are most likely intergrades with Western Red-tails). The dark body color is usually not solid, with most individuals having light patches or mottling, particularly on the chest and on the underwing coverts. The barring in the flight feathers is heavier than in the dark-phase Red-tail forms. The typical Harlan's body plumage base color is brownish-black, while most dark Red-tails are dark brown or reddish.

The Harlan's Hawk breeding range is mostly in Alaska, where it interbreeds extensively with Western Red-tails. In central to western Alaska only the Harlan's and Harlan's intergrades occur (Lowe 1978; Mindell 1983).

The main winter range of the Harlan's is in western Arkansas, southwestern Missouri, southern Kansas, Oklahoma, and northern Texas (Lowe 1978).

However, they have been found great distances from the area, both east and west (Lavers 1975, Mindell 1983). The photo shown is of an adult captured near Tucson, Arizona in early spring.

Figure 7. Rough-legged Hawk, in the dark phase. Some extreme dark-phase individuals have darker tails than the bird shown.

Rough-legged Hawk: The Rough-leg is a winter visitor all across North America south of the tundra where it breeds. It occurs in the dark phase more commonly than do the other buteos. The age and sex criteria are complex (Cade 1955), but in general the dark carpal patch (often discernible even in the dark phase) and tail pattern are sufficient for a proper field identification.

Figure 8. Immature Ferruginous Hawk, lacking the dark thigh feathering typical of adults. The underwing lacks any black in the patagial area or on the trailing edge. Notice the long, broad wings and tail, and the wide head.

Ferruginous Hawk: The Ferruginous is the largest of the North American buteos. In the adult light-phase plumage, the bird is mostly light colored with dark reddish leg feathers. The adult tail is usually solid white, pink or gray, but sometimes has gray or rufous edges to the feathers. There is no tail barring. The adult underwing

may have some chestnut patches on the coverts.

The dark phase is rather uncommon and is really a very dark brown. It differs from the other dark-phase buteos in that the rear border of the wing is not as dark. Unlike other buteos, there are no intermediates between light and dark-phases (Schmutz and Schmutz 1981).

The breeding range of this buteo takes in more arid steppe and prairie areas of western North America. Individuals move somewhat southward during the winter. It has been recorded, on occasion, in the eastern United States.

Figure 9. Partial albino Red-tailed Hawk.

ALBINISM & PARTIAL ALBINISM

These color aberrations, particularly the latter, are fairly common in the Red-tailed Hawk (Austing 1964, Clark 1967). Four white or partially white Red-tails were seen during the fall of 1978 at Hawk Mountain Sanctuary, Pennsylvania (Brett 1979, Personal Communication). The partial albinos are distinct from the Krider's Red-tail in that some feathers are normal and some are white (see photo). In the Krider's, the general coloration is lighter, but not as "checkerboard" as the partial albino. A few albinistic Red-shoulders have been reported (Austing 1964).

BEHAVIOR

Contrary to statements in a major field guide, four of the six species of buteos hover. The Rough-leg hovers regularly, but the Red-tail also hovers and kites (hovers

without wing flapping) when winds are strong (see Preston 1981 for a discussion of the relationship of wind and flight in the Red-tail). The Swainson's and Ferruginous Hawks also frequently hover. The Red-shoulder and Broad-wing have not been reported to hover.

The Red-shoulder can be confused with a large accipiter, as it will often fly with "three flaps and a sail." Flapping has been used to separate this species from Red-tails (Wander 1978).

HEAD-ON PROFILES

The Broad-wing and Red-shoulder show a level wing attitude when viewed head-on but the Red-shoulder wing in a glide may appear bowed because the wing tips are lowered and the wrist is raised (Dunne *et al.* 1982). The Red-tail usually glides with the wings slightly raised. The Swainson's soars and glides with its wings in a pronounced dihedral. The Ferruginous also soars and glides with a slight dihedral. The Rough-leg head-on gliding profile is somewhat gull-like, with the wrists held higher than the body and the wing tips usually level with the wrists.

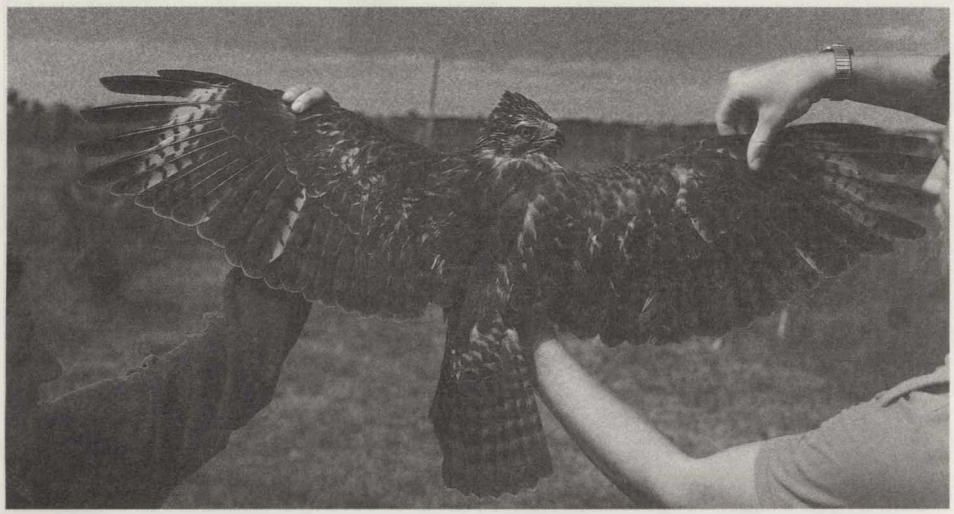


Figure 10. Immature Red-shouldered Hawk, showing the crescent-shaped "wing panel" formed by light areas near the bases of the outer primaries.

WING PANELS

The Red-shoulder's wing panels are the result of a light area on part of the upper surface of some of the primaries (see photo). The result is a *crescent shaped* light area visible from below which extends from the front of the wing to the rear. The Broad-wing and Red-tail can also show wing panels. However, these are usually restricted to the rear half of the wing and are trapezoidal in shape, not crescent shaped, as in the Red-shoulder. This author has seen two Red-tailed Hawks which had window panels as in the Red-shoulder, but they were properly identified by the presence of the dark patch in the patagial area.

The Ferruginous Hawk shows whitish on the upper surface of the wings near the tips because the inner web of each primary is whitish. The Rough-legged Hawk also shows this field mark, although the white is not usually as extensive, if present. Thus this is of limited value in field identification.

SUMMARY

Most individuals of the six buteo species that regularly occur throughout North America can readily be identified in flight by the beginning birder using the field marks presented in this paper. Light-phase buteos can be identified mainly by the *underwing pattern,* with the tail pattern and color, and wing shape as aids. Dark-phase buteos can be best identified using *tail pattern and color* and in some cases undertail coverts.

Additional information on plumage variation and geographic and temporal occurrences is presented to aid in field identification.

In spite of the general reliability of the field marks presented, some individuals will exhibit aberrant plumage or behavior and defy proper identification. Even the "expert" must learn to say "unknown buteo"!

ACKNOWLEDGMENTS

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