



# Learning Eastern Hawk Flight Identification

Line drawings were modified by Bob Pettit from material developed by Paul Carrier in 2009 for Hawk Migration Association of North America, (HMANA). Silhouettes were developed by Bob Pettit from these modified drawings. Photographs are by Bob Pettit unless otherwise noted by Allen Chartier.

**Holiday Beach  
Migration Observatory**



**Essex Region  
Conservation Authority**



**Presentation by Bob Pettit**  
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**Holiday Beach  
Conservation Area**

**THE HAWK TOWER AT HOLIDAY BEACH**



## What makes a bird a raptor?

Raptors are birds that capture their prey with their feet.

Therefore, hawks and owls are raptors.

Hawks are *daytime* raptors.  
They are *diurnal*.

Owls are *nighttime* raptors.  
They are *nocturnal*.

This presentation is about:

***“How to ID Hawks in Flight”***.



## Feeding Habits of Hawks

- ✦ The feeding habits of hawks have evolved them into predators with different body types and a variety of flight behavior patterns.
- ✦ If we know how a hawk captures its prey we can determine the flight structures that aid in that process.
- ✦ Those flight structures (wings and tail) are the key to the different feeding groups.
- ✦ Let's take a look at various groups of hawks and how they feed and then we will learn clues to their flight behavior and use this to identify them in flight.




**The main feeding groups are:**

**Accipiters**  **3 species**

**Falcons**  **3 species**

**Eagles**  **2 species**

**Buteos**  **4-5 species**

**Others: Turkey Vulture, Osprey, and N. Harrier**



# Accipiters

- A. Accipiters feed in woodland with closely spaced trees and chase fast and maneuverable winged prey (songbirds).**
- B. Their flight features of short, rounded wings keep them from hitting trees.**
- C. Their long narrow tails help them to move quickly through the trees in pursuit of food.**
- D. All Accipiters have the same shape and proportion but differ in size, which reflects the prey size they chase and capture.**

Sharp-shinned Hawk



Cooper's Hawk



Northern Goshawk



# Falcons

- ✦ **Falcons feed in flight in open space.**
- ✦ **They depend on speed in capturing swift prey.**
- ✦ **They have pointed wings for speed and agility like jets fighters.**

- **American Kestrel**



- **Merlin**



- **Peregrine Falcon**



# Eagles

- ✦ Both Bald and Golden Eagles have large wing areas and wing length.
- ✦ They capture food on the ground or water in open spaces from long distances.
- ✦ They may also scavenge for food.

**Bald Eagle**



**Golden Eagle**



# Buteos

**✦ Buteos have broad-shaped wings for soaring or perching on high to inspect fields for prey to capture.**

- **Red-tailed Hawk**



- **Broad-winged Hawk**



- **Red-shouldered Hawk**



- **Swainson's Hawk**



- **Rough-legged Hawk**





# Vultures

- Plank-like long and broad wings held in 'V'-shaped wing attitude call dihedral -or- vulture lacks dihedral.
- Moves over fields and woods searching for dead prey called carrion.

## Turkey Vulture



**Bold dihedral**  
**Little wing flapping**  
**Abundant**

## Black Vulture

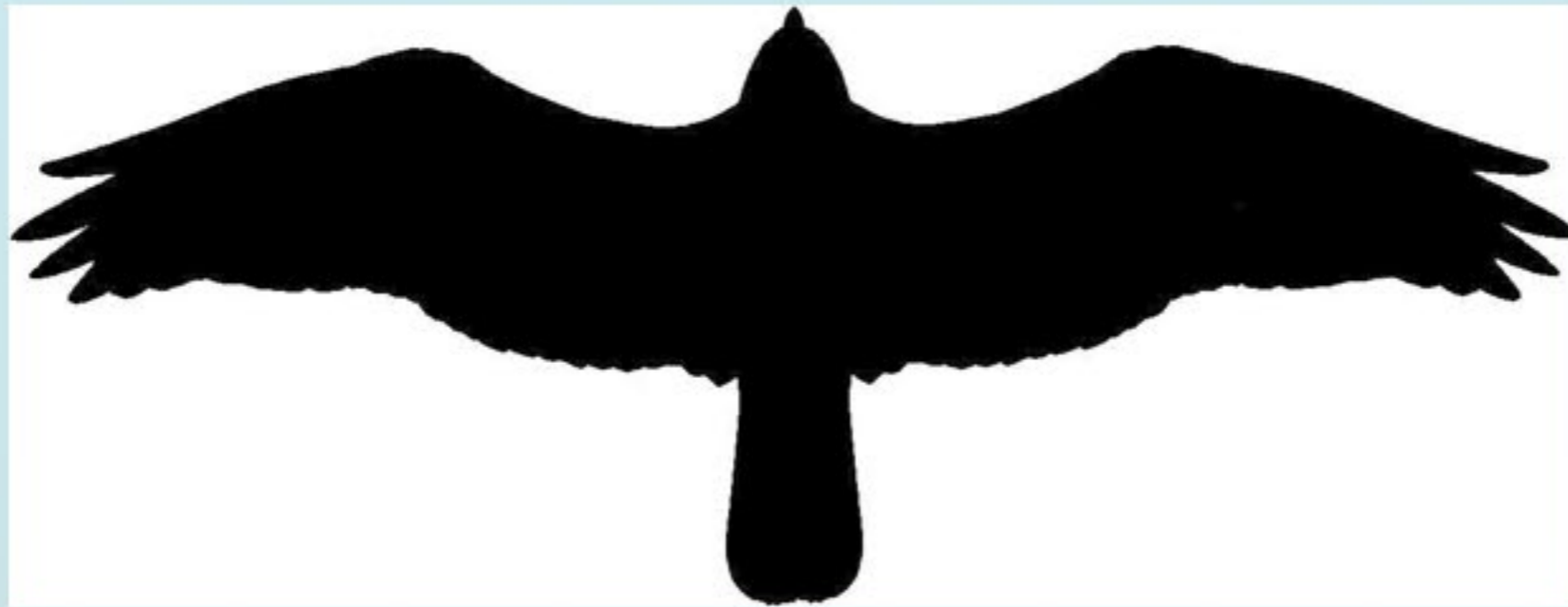


**No dihedral**  
**Lots of wing flapping**  
**Rare to Common**



# Osprey

- **Distinctive gull-shaped body and wings. Feeds on fish captured in a long dive, feet first, into the water.**



## Northern Harrier

- Harriers have a distinctive 'V'-shaped wing attitude know as dihedral that allows them to fly low and slow at ground level.
- They move slowly and closely over fields and marshes gleaning for prey to capture on the ground.



## Summary of Hawk Feeding Groups

a. **Accipiters**



Short wings, long tail for woodland prey.

b. **Falcons**



Pointed wings for speed in open space for prey.

c. **Eagles**



Large wings capture ground and water prey from long distance. Also scavengers.

d. **Buteos**



Broad-shaped wings for soaring or perching on high to inspect fields for prey to capture.

e. **Turkey Vulture**



Carrion feeder.

f. **Osprey**



Fish feeder.

g. **Northern Harrier**



Gleaning on dihedral wings low over field and marsh for prey.

# Sharp-shinned Hawk



- The body is like a *flying mallet of wings and tail*.
- Immatures have thick *noodle-like*, brown streaking on chest and belly.
- Adults have a reddish *barring* on their chest and belly.

- The banded tail is usually *straight tip*. **Straight Sharpie!**
- The terminal tail band is narrow, dirty gray, *not white but soiled*. **Soiled Sharpie!**
- The wings are *pushed forward* and so the head a *hunched*. **Shrugging Sharpie!**
- *Wing beats (flaps) are quick*, snappy, hurried, and too rapid to count. Flap, flap, (pause), glide. Flap, flap, glide, (pause). **Snappy Sharpie!**
- Sharpies travel in ones, twos, or small groups (8). They are feisty and frequently harass other raptors during migration and dive at owl decoys. **Social Sharpie!**



# Sharp-shinned Hawk

## Key Illustrative Terms

**S**hrugging

**S**traight

**S**oiled

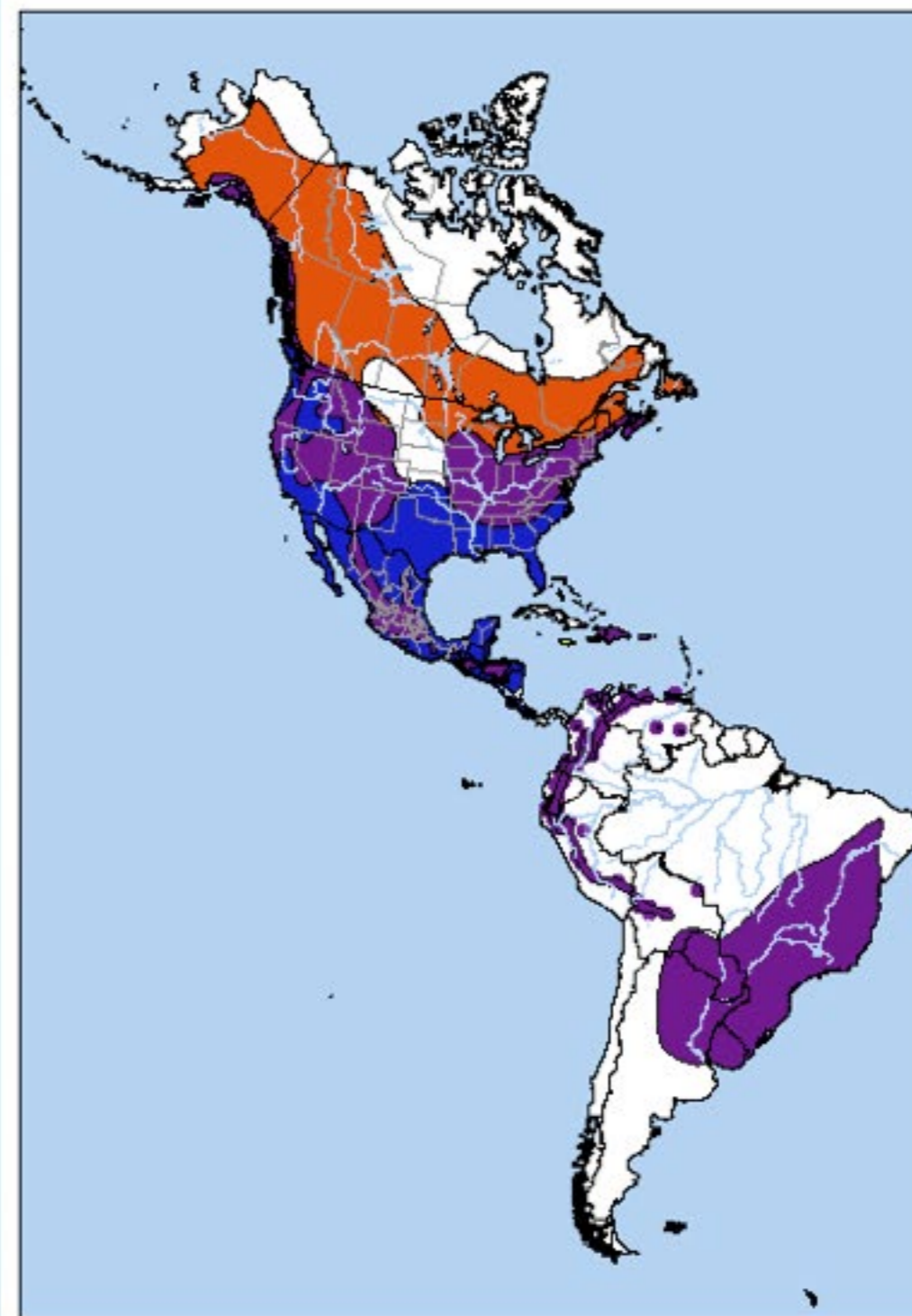
**S**nappy

**S**ocial



## Sharp-shinned Hawk Range Map

**Brazil and Argentina populations  
are permanent.**



- Permanent Resident
- Breeding Resident
- Nonbreeding Resident
- Passage Migrant
- Uncertain Status
- Introduced
- Vagrant
- Extirpated
- Historical Records Only
- National boundary
- Subnational boundary
- River
- Water body

  
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Map created September 2007

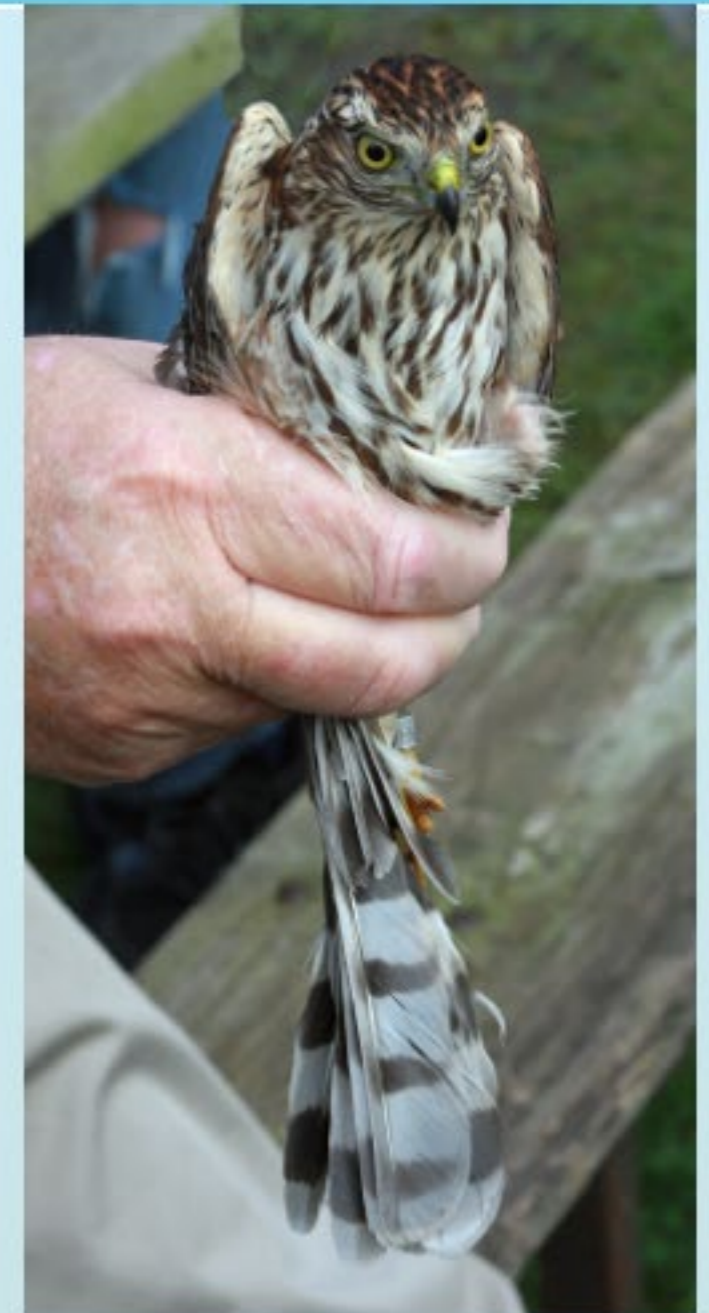
750 0 750 Kilometers



# Learning Eastern Hawk Flight Identification



**Squared,  
Soiled tip.**

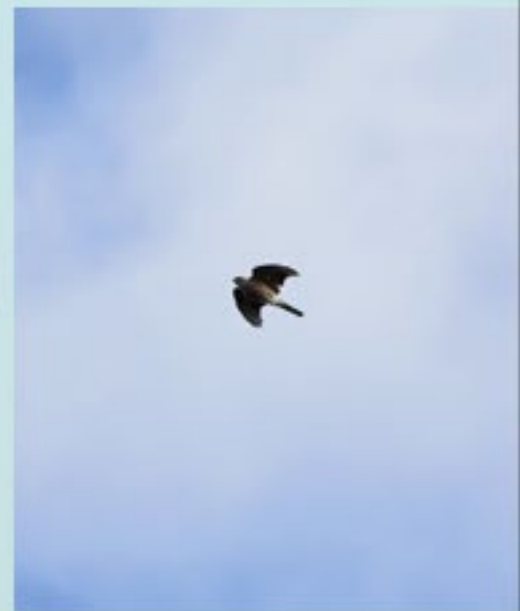
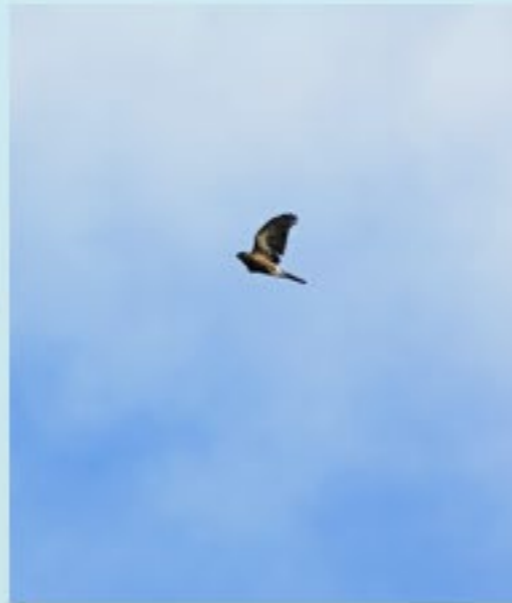


**Yellow eye – HY bird.**



**Orange eye – AHY bird.**

# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification





# Cooper's Hawk



- Cooper's always *larger* than Sharp-shinned and *less common*.
- *Immature* chests only are marked with *neat and fine streaking*.
- *Adults* have a *reddish barring* on their chest.
- *Wings* long, straight-edged, with little or no bend at the wrist. Protruding head forward of the wings. A *flying cross*.
- *Tail* is invariably *rounded* at the tip.
- A terminal tail band is broad and white, not dirty gray.
- *Wing flapping* is *slow*, stiff, and arthritic and can be counted.
- Usually appear as *single birds*. May *soar high* in thermals with full wing extension and tail flared.

**Crossing Cooper's!**

**Curved Cooper's!**

**Crisp Cooper's**

**Casual Cooper's!**

**Companionless  
Cooper's!**



# Cooper's Hawk

## Key Illustrative Terms

**C**rossing

**C**urved

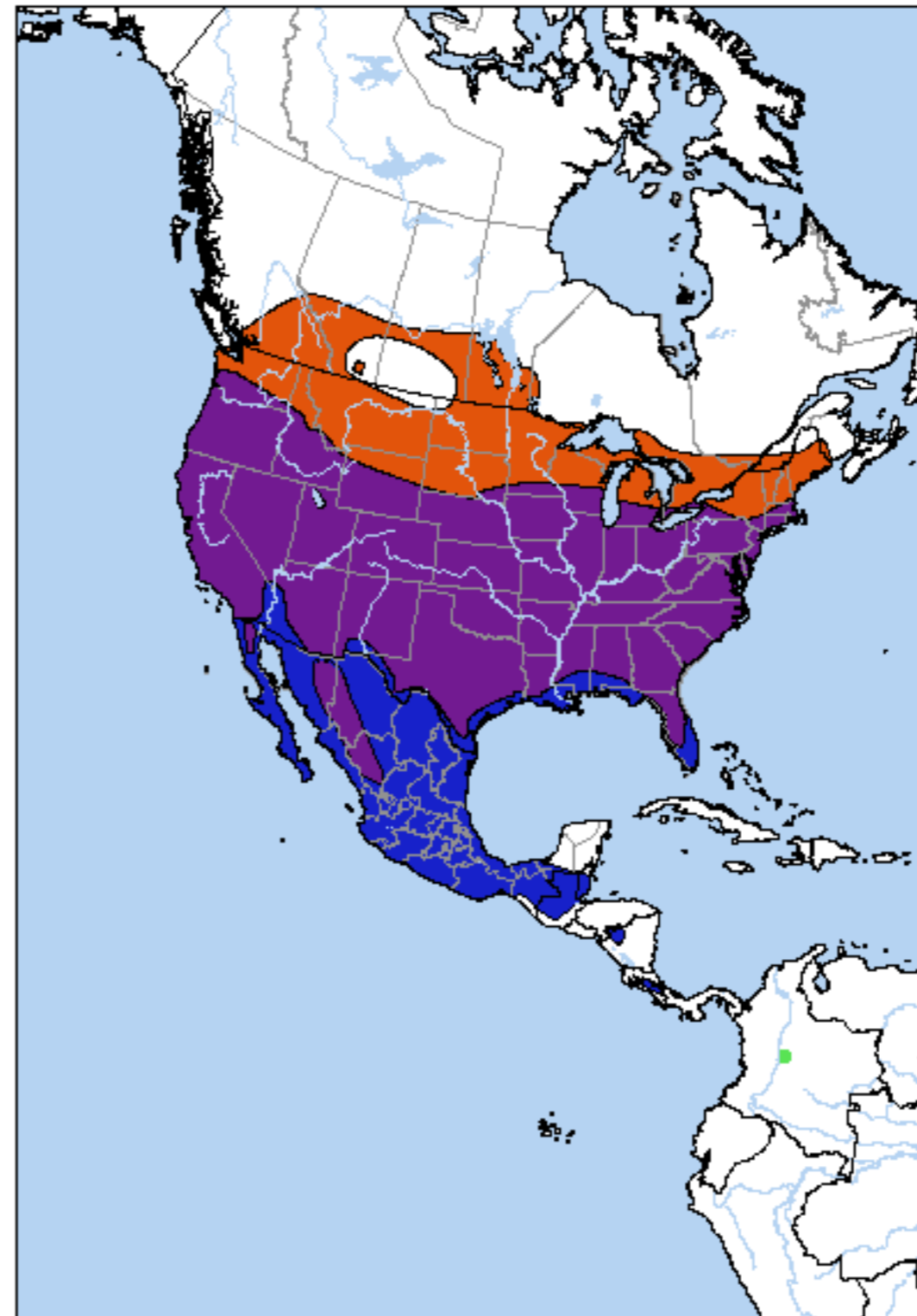
**C**risp

**C**asual

**C**ompanionless



## Cooper's Hawk Range Map



- Permanent Resident
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Map created September 2007

750 0 750 Kilometers



# Learning Eastern Hawk Flight Identification



**Hatch year (HY) bird**

# Learning Eastern Hawk Flight Identification

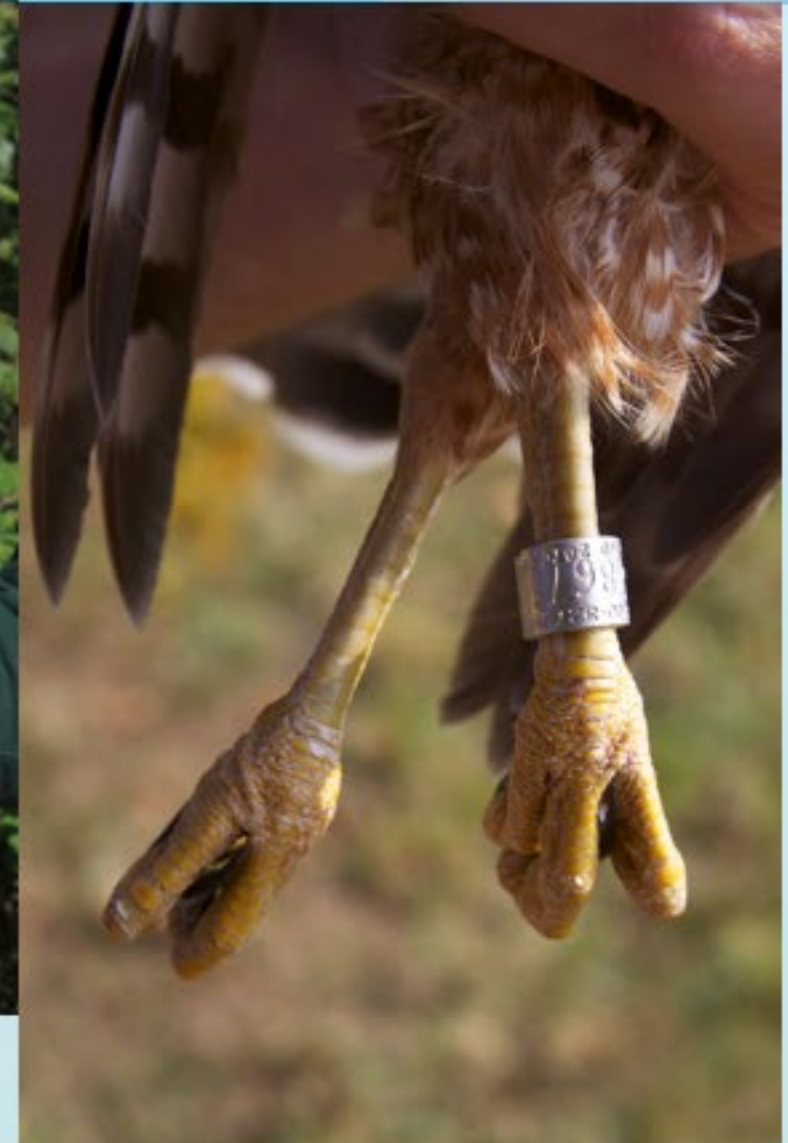


**White (Crisp) Tail Tip**

**Round (Curved) tail tip**



# Learning Eastern Hawk Flight Identification



**Orange eye.**

**After hatch year (AHY) bird.**



**Chicken-like feet  
with lock on band.**

# Learning Eastern Hawk Flight Identification



**Orange eye, AHY bird.**



# Learning Eastern Hawk Flight Identification





**When focused on the movement of prey, the bird moves through space using wings and tail while keeping vision locked on prey.**





**When focused on the movement of prey, the bird moves through space using wings and tail while keeping vision locked on prey.**





**When focused on the movement of prey, the bird moves through space using wings and tail while keeping vision locked on prey.**





**When focused on the movement of prey, the bird moves through space using wings and tail while keeping vision locked on prey.**





**When focused on the movement of prey, the bird moves through space using wings and tail while keeping vision locked on prey.**





**Summary**

**Sharp-shinned**

**Cooper's**

**Shrugging**

**Crossing**

**Straight**

**Curved**

**Soiled**

**Crisp**

**Snappy**

**Casual**

**Social**

**Companionless**



# Northern Goshawk

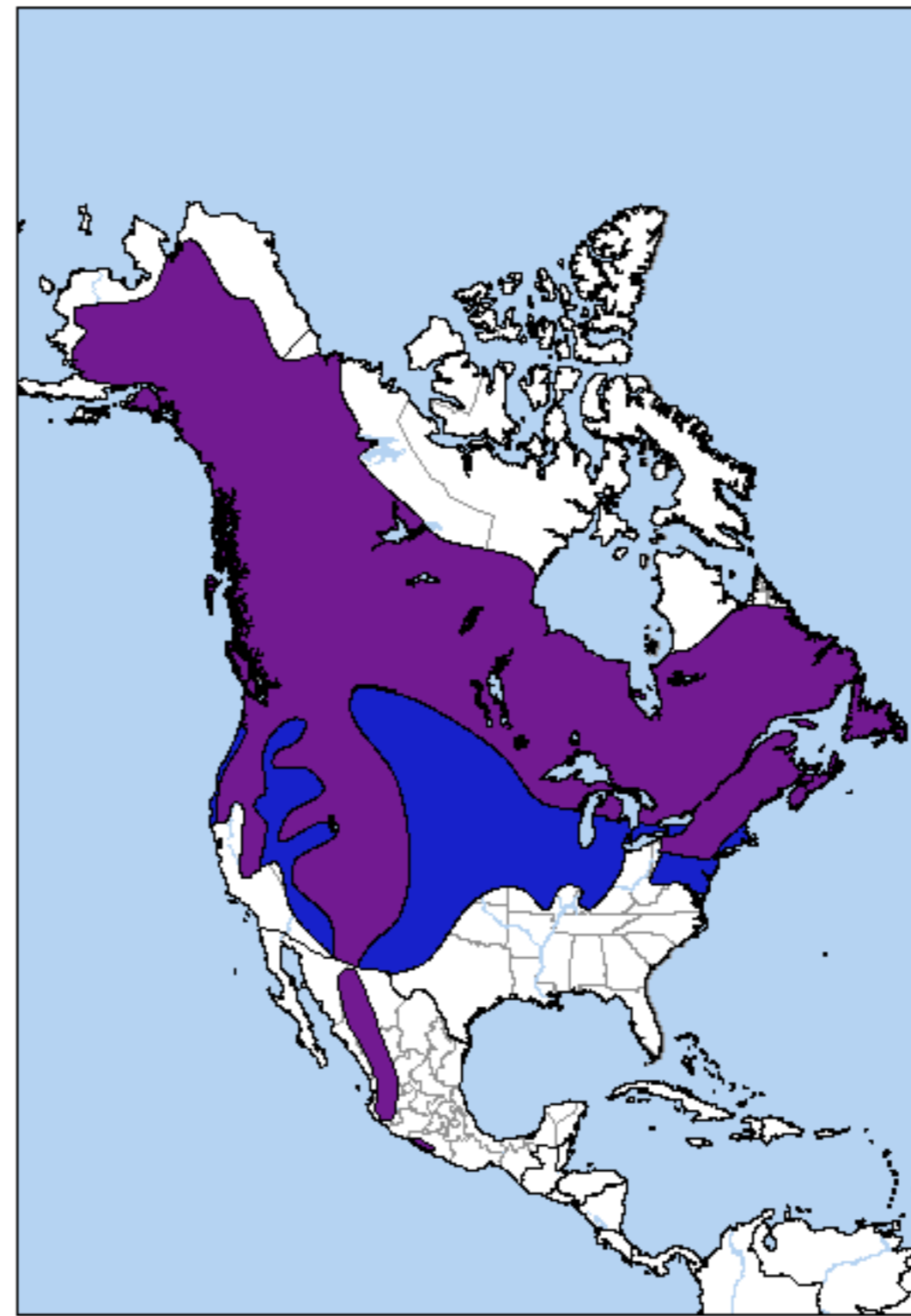


- A **flying tube**. Chunky.
- This accipiter **thinks it's a buteo**.
- **Immature: Heavy noodle-like streaking** on breast to base of tail.  
**Adult: Pale gray barring.**
- The **head is large, broad, and fist-shaped**.
- **White** line over eye is seen in all plumages (**superciliary = eyebrow**).
- In flight **flapping like a buteo**. Wings stiffer than other accipiters.
- **Beware of immature Red-shoulder breast markings of large splotches of noodling.**

# Learning Eastern Hawk Flight Identification



## Northern Goshawk Hawk Range Map



- Permanent Resident
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- Vagrant
- ▨ Extirpated/Extinct
- ▨ Historical
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750 0 750 Kilometers



  
NatureServe

Map created September 2007

# Learning Eastern Hawk Flight Identification



© Allen Chartier

Note ***superciliary*** line.

# Learning Eastern Hawk Flight Identification



**Northern Goshawk**



**Cooper's Hawk**



## Pale male immature Goshawk with Cooper's Hawk



**“Tubular” and “Chunky”**

# American Kestrel



## Male

- Wing blue above with a line of **white** dots on trailing edge like beads in a “necklace”.
- Back between wings is rusty-rufous.
- Tail bright rufous with a broad, dark band at the tip.

- Smallest diurnal raptor.
- Flight is fluttery and wandering.
- Battered about by moderate winds; bounces like a cork on the water.
- Two vertical slashes on the side of the face; mustache and sideburn.
- Soft curving wing; sickle-shaped; head tucked back, a ‘flying banana’.
- Travels in 1’s, 3’s, 4’s or up to 8-10 in a loose group.



## Female

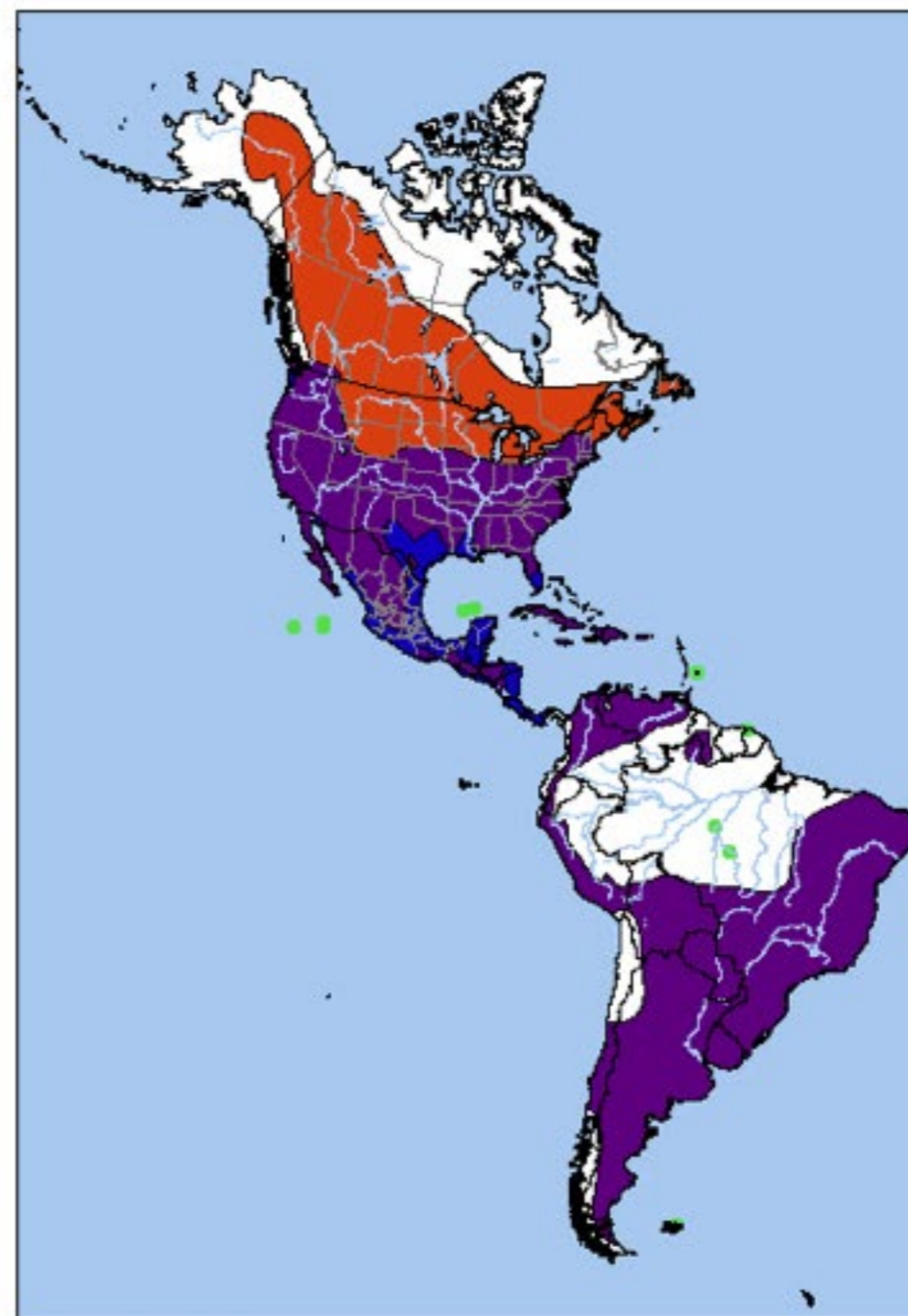
- Wing reddish-brown above with a line of **buffy** dots on trailing edge *not visible*.
- Back, wings, and tail are reddish-brown above.
- Tail has broken barring and no dark tip.



## American Kestrel

### Range Map

**Most Kestrels breeding in North America overwinter in the United States. South American populations do not migrate to the United States.**



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**American Kestrel**



Map created September 2007

7500750 Kilometers



## *Male Bird*



**Mustache  
and  
Sideburn.  
Eyes too.**



**Bright rufous tail  
base with broad,  
dark band and  
white tip.**

**White dots of  
wing edge  
necklace.**



# Learning Eastern Hawk Flight Identification



**Gender?**

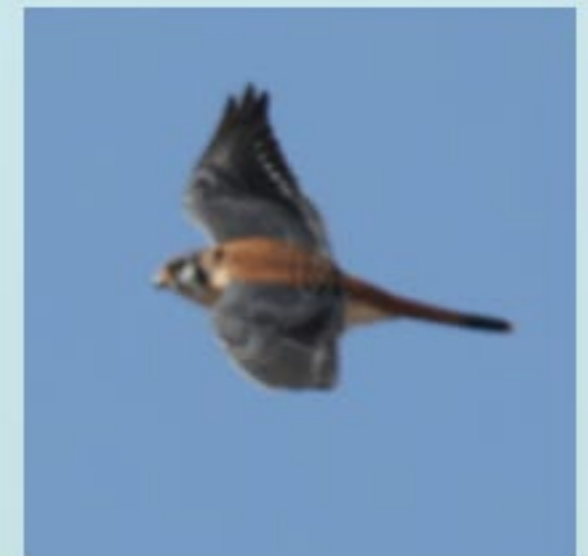


**Red-tail and Kestrel**



**“Flying Banana”**

# Learning Eastern Hawk Flight Identification



# Merlin

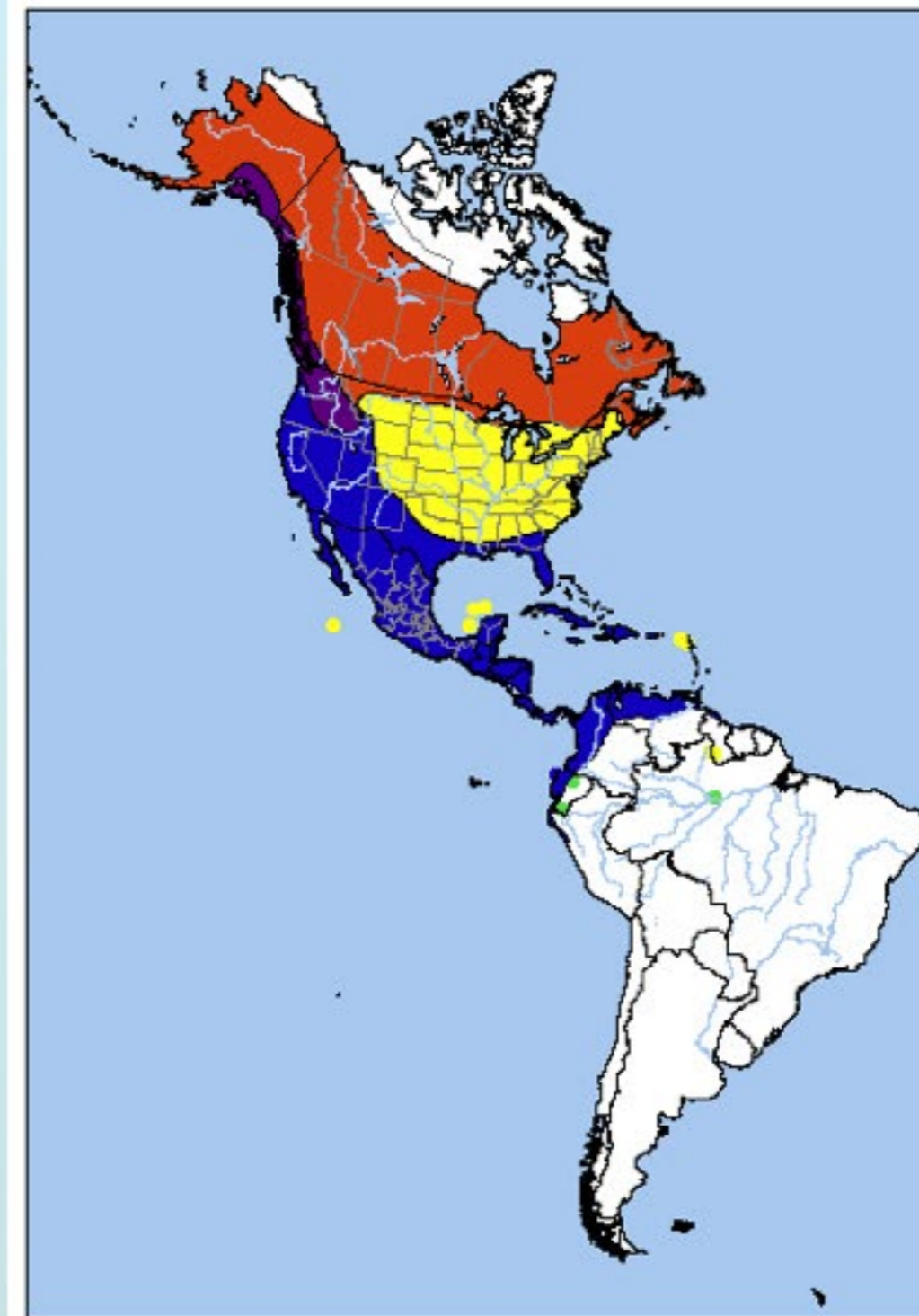


- Athletic, slender, and powerful. **Solitary** migrants. The *mustache mark is faint, smudgy, and indistinct.*
- **Point-to-point flight is pure and direct.** Wing beats are quick and continuous with power in the downstroke. Cadence and motion are similar to a Rock Pigeon.
- Highly **aggressive and pugnacious** with little tolerance for other raptors.
- **Male (Adult)**
  - Bright **metallic blue** above.
  - Finely streaked below.
  - Tail **blue-gray** with several thin, **blue-gray bands.**  
Larger **black terminal band with white tip.**
- **Female and Immatures**
  - **Chocolate falcon.** Brown above and below.
  - Heavy streaking below with contrasting white throat and buffy under-tail coverts.
  - Tail **brown** with several wide **buffy bands.**  
Larger **brown terminal band with white tip.**

# Learning Eastern Hawk Flight Identification



## Merlin Range Map



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Merlin



Map created September 2007

750 0 750 Kilometers



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



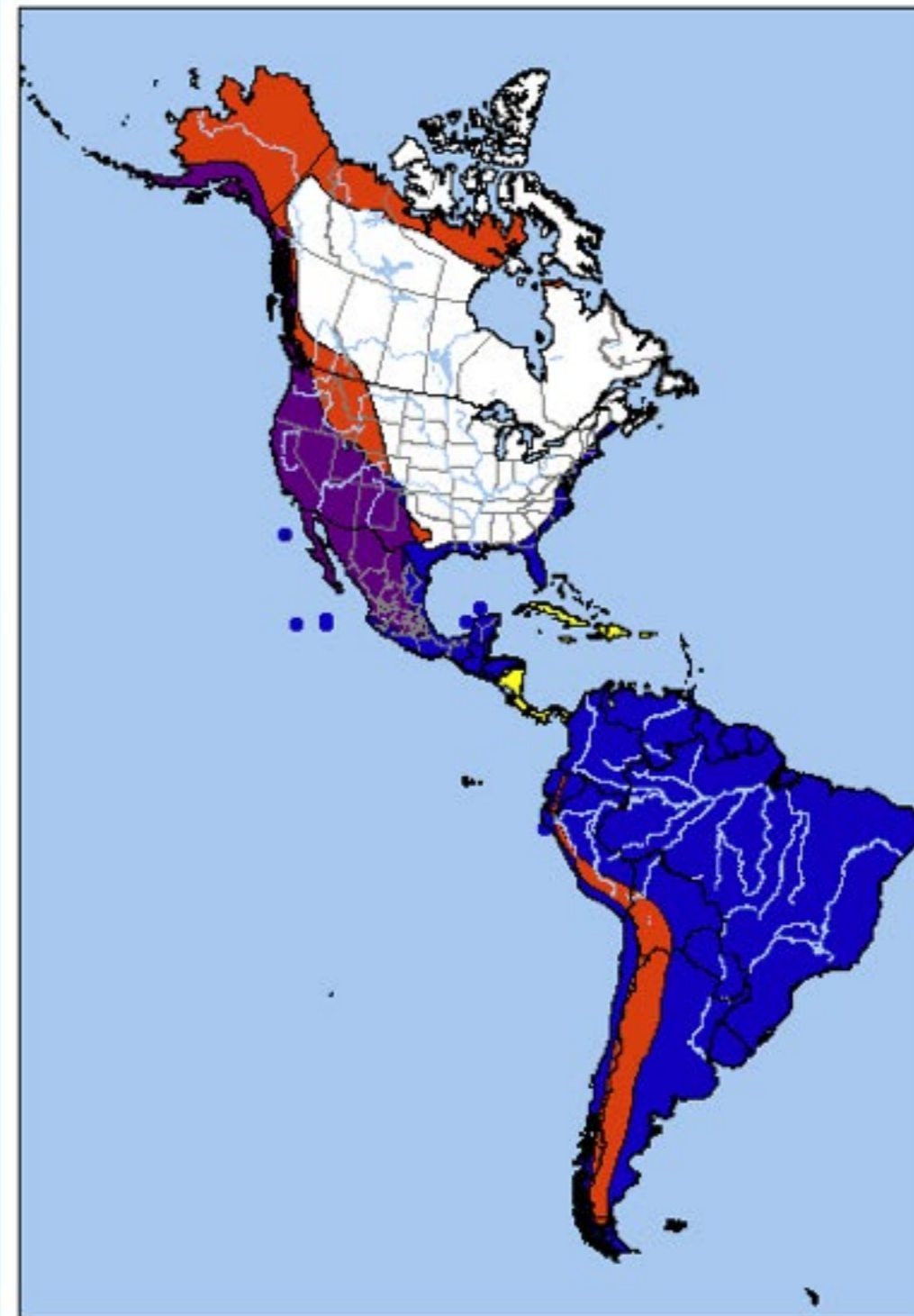
# Peregrine Falcon



- Heavy and ***broad bodied***. All have a bold, ***distinct mustache***.
- ***Wing extremely long***; shaped like wide based ***triangle*** that resemble ***tapered candles*** in soaring birds.
- ***Wing beat is like Common Loon: stiff, fluid, rhythmic***, and elastic.
- ***Solitary*** in migration.
- Usually ***confused with the Harrier*** that has longer wings and tail.
- Backside:
  - ***Adult*** — ***Blue-gray***
  - ***Immature*** — ***Brown***.
- Underparts:
  - ***Adult: Heavily barred*** below with white chest and throat.
  - ***Immature: Heavily streaked***, with buff-colored chest and throat.
- ***Head of Immature: Blond crown and nape***.



## Peregrine Falcon Range Map



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## Peregrine Falcon



Map created September 2007

750 0 750 Kilometers



# Learning Eastern Hawk Flight Identification



**Hatch year male.**

**Bold mustache.**

**Note streaking on breast and blond head and nape.**



# Learning Eastern Hawk Flight Identification



**Peregrine passing the tower.**





***An adult Peregrine flight series.***

# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Osprey

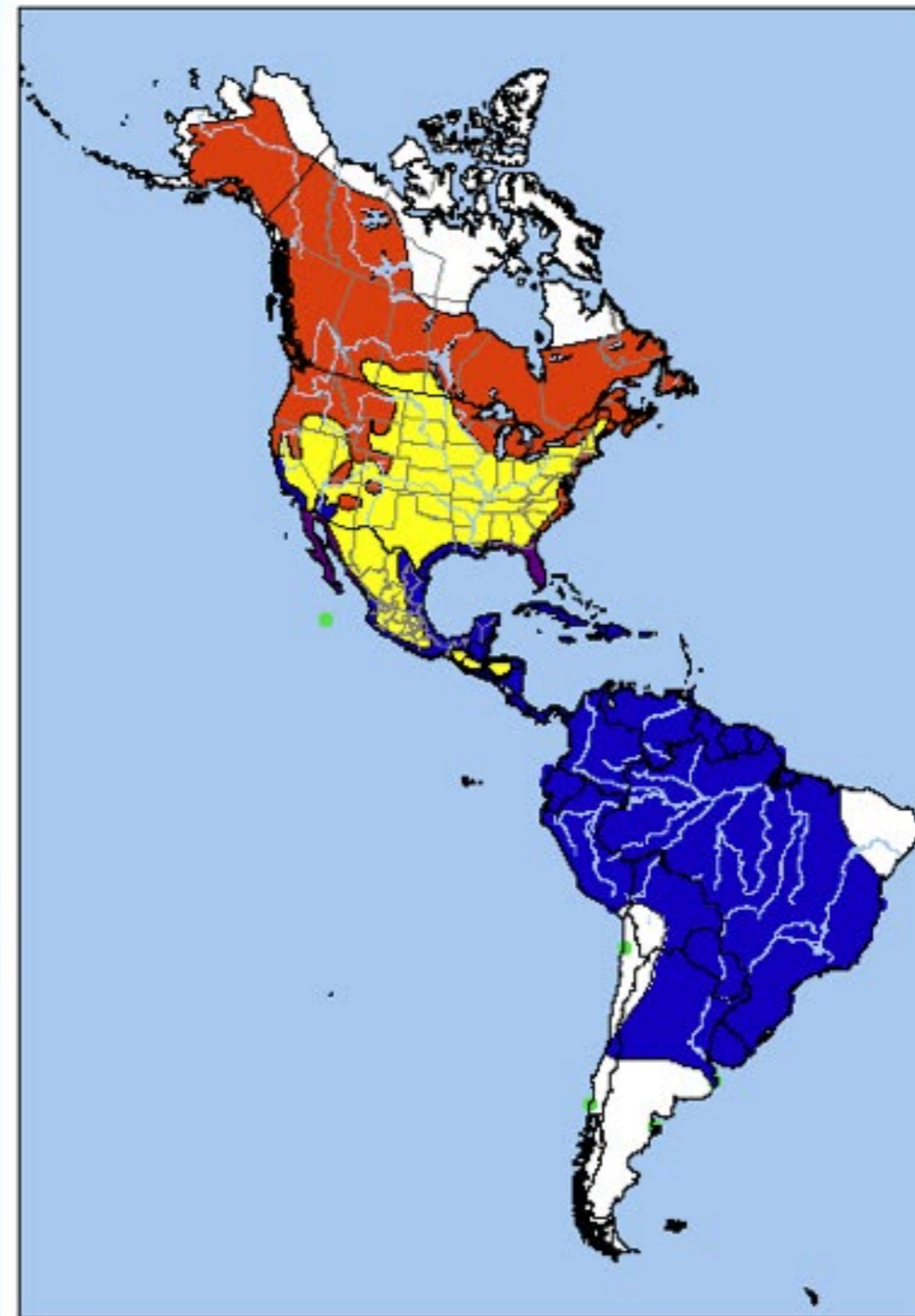


- **Fishes** for food by **diving feet first** to capture prey. After a long descending glide toward the prey its feet are extended at the last moment ending in a complete submersion after the prey.
- Distinctive **black-and-white patterned plumage** and a unique **gull-like flight** and shape.
- They may be clean-breasted, or have varying amounts of streaking; like a necklace on the upper chest.
- **Dark eye stripe** separates the white **crown** from the white **throat**.
- **Immatures:** Have a narrow white border on the **tip of the tail**.  
**Adults:** Lack a narrow white border on the **tip of the tail**.
- **Wing beat is stiff**, almost arthritic. Look for **hover flight** during feeding.



## Osprey Range Map

'Hatch year' birds remain in South America for one "migration cycle" before returning north in their 'after second' year age.



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**Osprey**



Map created September 2007

750 0750 Kilometers



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



**White tail tip of hatch year bird.**

**Dark eye stripe  
separates the  
white crown  
from the white  
throat.**



# Learning Eastern Hawk Flight Identification



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s**



# Northern Harrier



- Harriers have a distinctive 'V'-shaped wing attitude known as dihedral that allows them to fly low and slow at ground level with a buoyant flight.
- They move slowly and closely over fields and marshes gleaning for prey to capture on the ground.
- In normal flight, wing beat is loping and regular with an emphatic snap during the downward stroke. **Unique Cadence = Best Clue.**
- Look for long, narrow wings, a long tail, and a white rump patch.

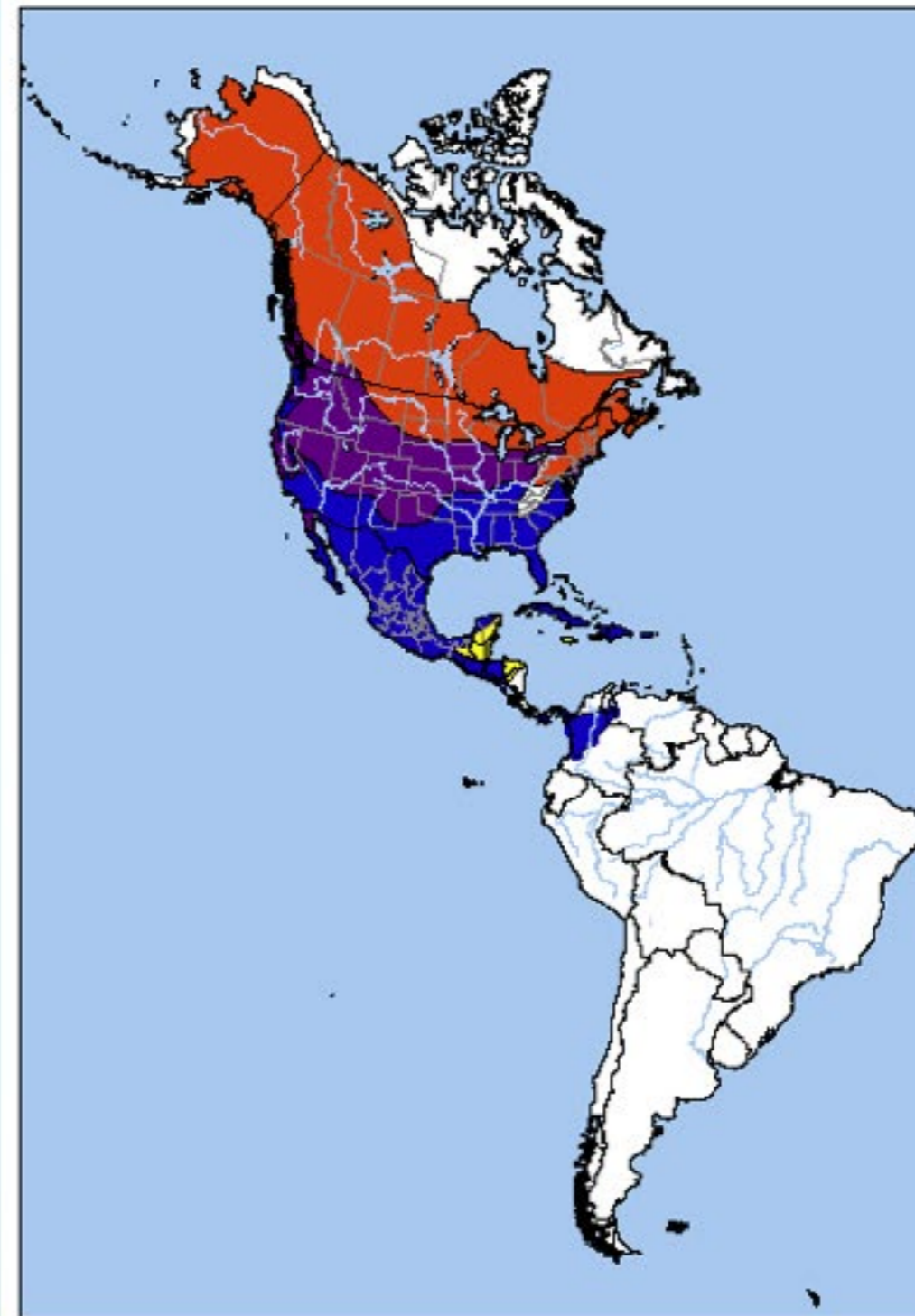
## Plumage

- **Male:** Silver gray above, white below.
  - **Female:** Tawny above, buffy below with brown streaks on sides.
  - **Immature:** Chocolate-rust above, pumpkin to cinnamon below. No streaking.
  - **Female and Immature** have dark axillaries (armpit) at the base of the underwing.
- Best Clue for Female and Immature

***Hairy Armpits = Harrier***



## Northern Harrier Range Map



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Northern Harrier



Map created September 2007

# Learning Eastern Hawk Flight Identification



**Long legs and dark armpits**



**Male**



**Proportionately the longest tail of eastern raptors.**

# Turkey Vulture



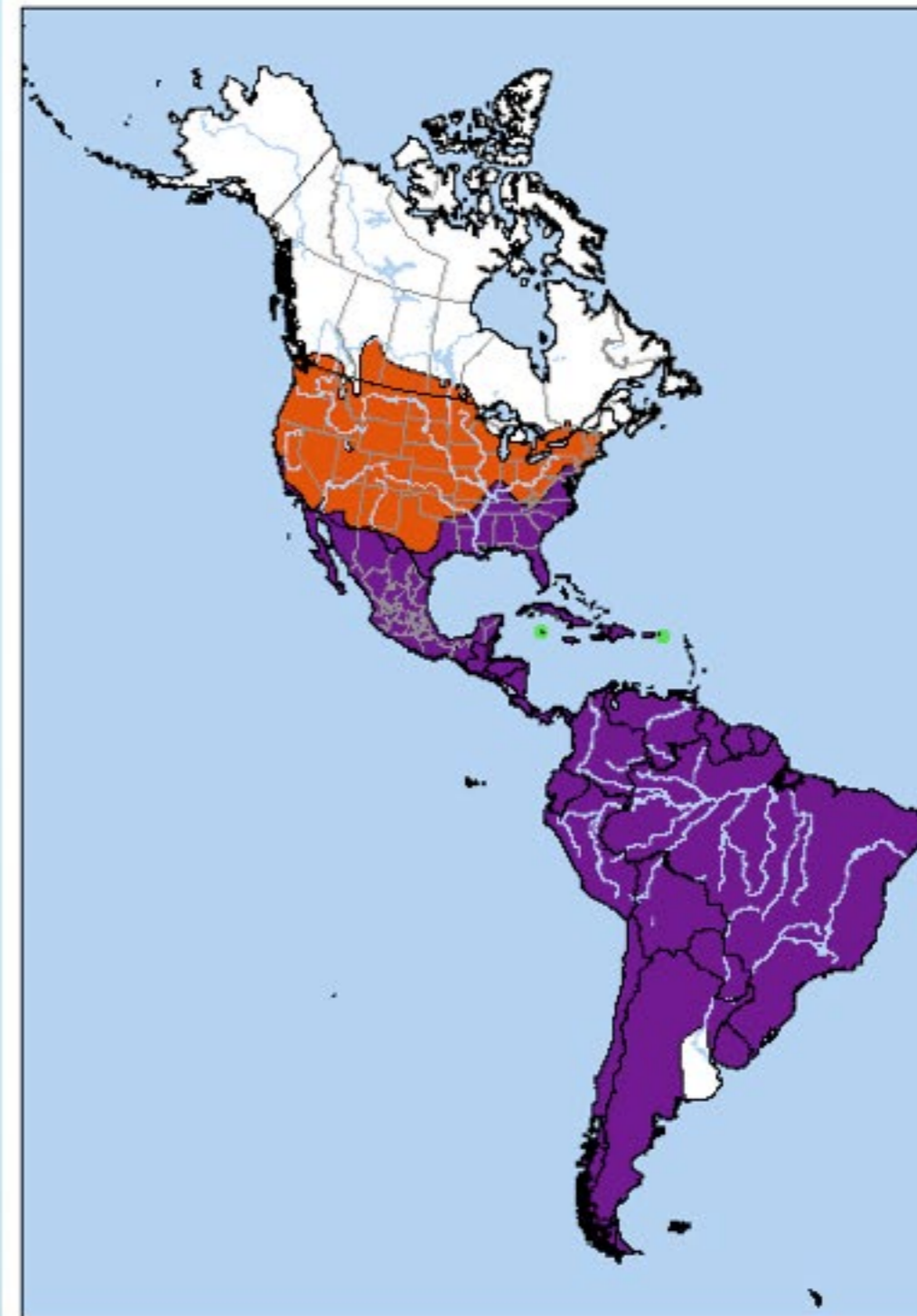
- Moves over fields and woods for dead prey called carrion.
- Long, broad, plank-like wing held in bold dihedral.
- Rarely needs to flap; droops only wing tips, then resumes dihedral in a mock-flap. This behavior is seen only in Turkey Vultures, and no other raptor.
- Flight feathers silver with underwing coverts and leading edge black.
- At a distance, rocking flight causes a mirror-like flashing of silvery underwing.
- Long, broad silvery gray tail is usually not fanned.
- Highly gregarious.
- Confused most with distant Golden Eagle; eagles don't rock in flight.

## HEAD

- ★ **Adult:** Tiny, red with yellow bill.
- ★ **Immature:** Dull gray with gray bill.



## Turkey Vulture Range Map



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Map created September 2007

750 0 750 Kilometers



# Learning Eastern Hawk Flight Identification



**Two-toned underwing**



**Size comparision**

# Learning Eastern Hawk Flight Identification



**“Rocking” flight while ‘streaming’.**



**“Kettling” and ‘mock-flapping’.**

# Learning Eastern Hawk Flight Identification



paon

Ann and Rob Simpson

- A single bird, Turkey Vulture, *Cathartes aura* being **leucistic** sighted at Holiday Beach Conservation Area October 1, 2011 16:59 Local Time
- Leucism comes in two main varieties
  - **paleness**, an equal reduction of melanin in all feathers; and
  - **pied**, an absence of melanin in some feathers creating white patches.
- © Ann & Rob Simpson - Simpson's Nature Photography, 1932 E Refuge Church Rd., Stephens City, VA 22655, Ph & Fax 540 869 2051 - [AnnRobSimpson@snphotos.com](mailto:AnnRobSimpson@snphotos.com) - [www.agpix.com/snphotos](http://www.agpix.com/snphotos)



## Black Vulture



- **Wings are held flat.**
- **Since it lacks the dihedral it must flap often to maintain glide speed.**
- **Primaries are silvery** and remainder of wing is dark.
- **Tail is shorter** than Turkey Vulture's tail.
- **Small head is gray** with a pale bill.
- ***Is found in Turkey Vulture kettles*** and is easy to spot since it flaps often, has light wing tips, and small dark head and short dark tail.



## Black Vulture Range Map

Note **Green** vagrant spots.



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Map created September 2007

00750 Kilometers



# Learning Eastern Hawk Flight Identification



- **Sighting at Holiday Beach 2011.  
One bird, two views and sizes.**
- **Wing tips light colored.**
- **Head small and gray**
- **Wings flat.**



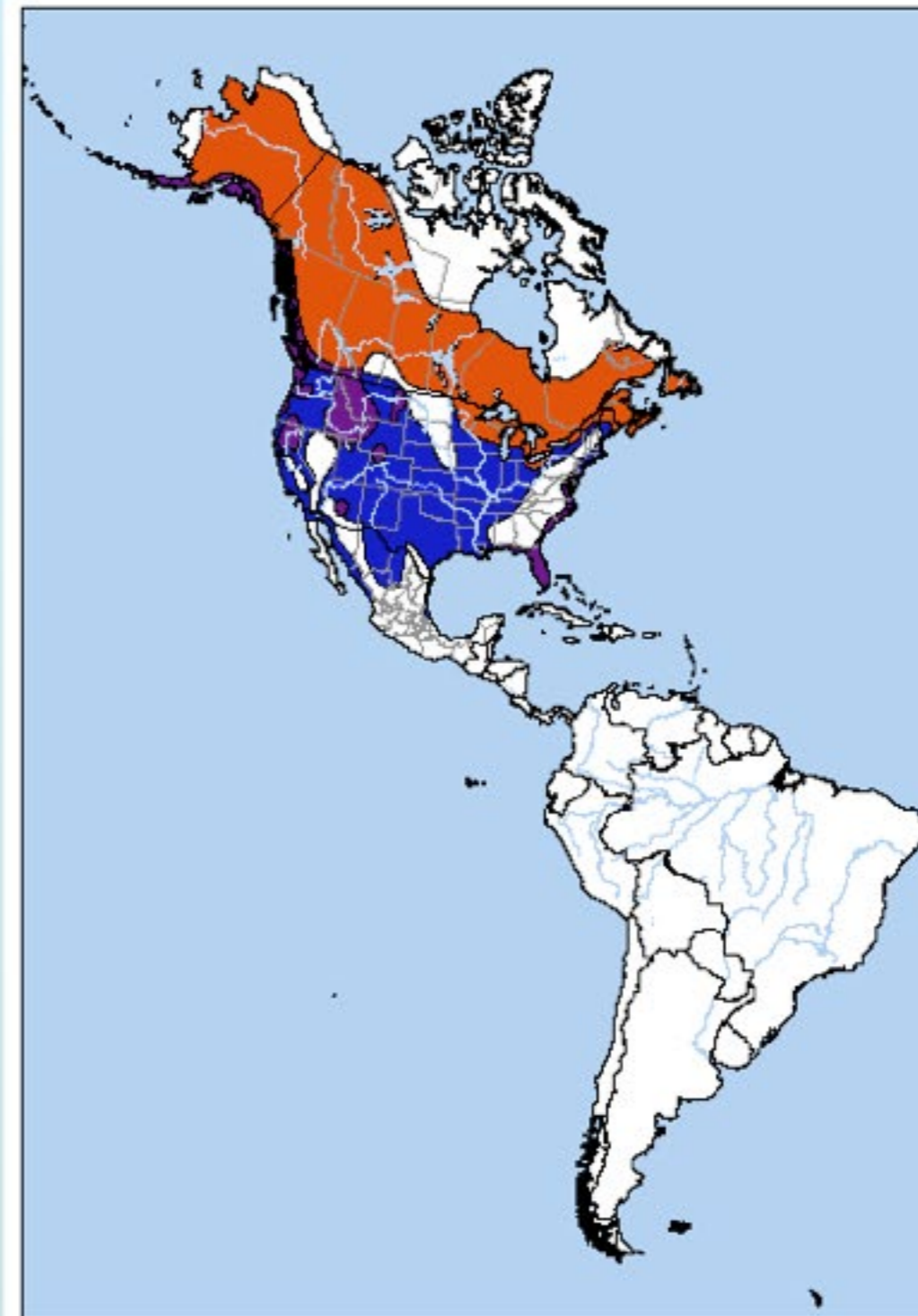
# Bald Eagle



- **Immense size** in all age classes.
- Head and bill are massive. **Adult Head:** White. **Immature Head:** Dark.
- **Adult Body:** Dark, almost black.
- **1st Year Body:** Chocolate, almost black, speckled with dirty white; mottling varies and is age related.
- **2nd & 3rd Year Body:** Large areas of white mottling are present on the belly and some is located on the back.
- In soar, wing is uniformly wide — slab-like; held at right angle and straight out. **Adult Wing:** Dark, almost black. **Immature Wing:** Speckled with dirty white; mottling varies and is age related. **1st Year Wing:** Trailing edge of wing 'even saw-toothed' in first-year birds and later offset-tooth-like.
- **Tail** is an important field mark; **white** (adult) to **dark** (subadult).
- **Flight:** Steady, stately, deliberate, even-keeled, and not stiff. Beat is slow, robust, deeply arched, and high on upstroke. Flaps continuously or never flaps.



## Bald Eagle Range Map



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Map created September 2007

750 0 750 Kilometers



# Learning Eastern Hawk Flight Identification



# Golden Eagle

## Body

- Large and dark. *Imm*: Dark. *Adult*: Dark brown.

## Head

- Very small; bill too. The crown and nape are blond or pale gold in all plumages.

## Wings

- Long, broad, slab-like.
- *Imm*: Brilliant white patches of various sizes.
- *Adult*: Lacks patches.

## Tail

- *Imm*: Large white base appearing as if the tail is all white. Terminal band present.
- *Adult*: A trace of white is possible.

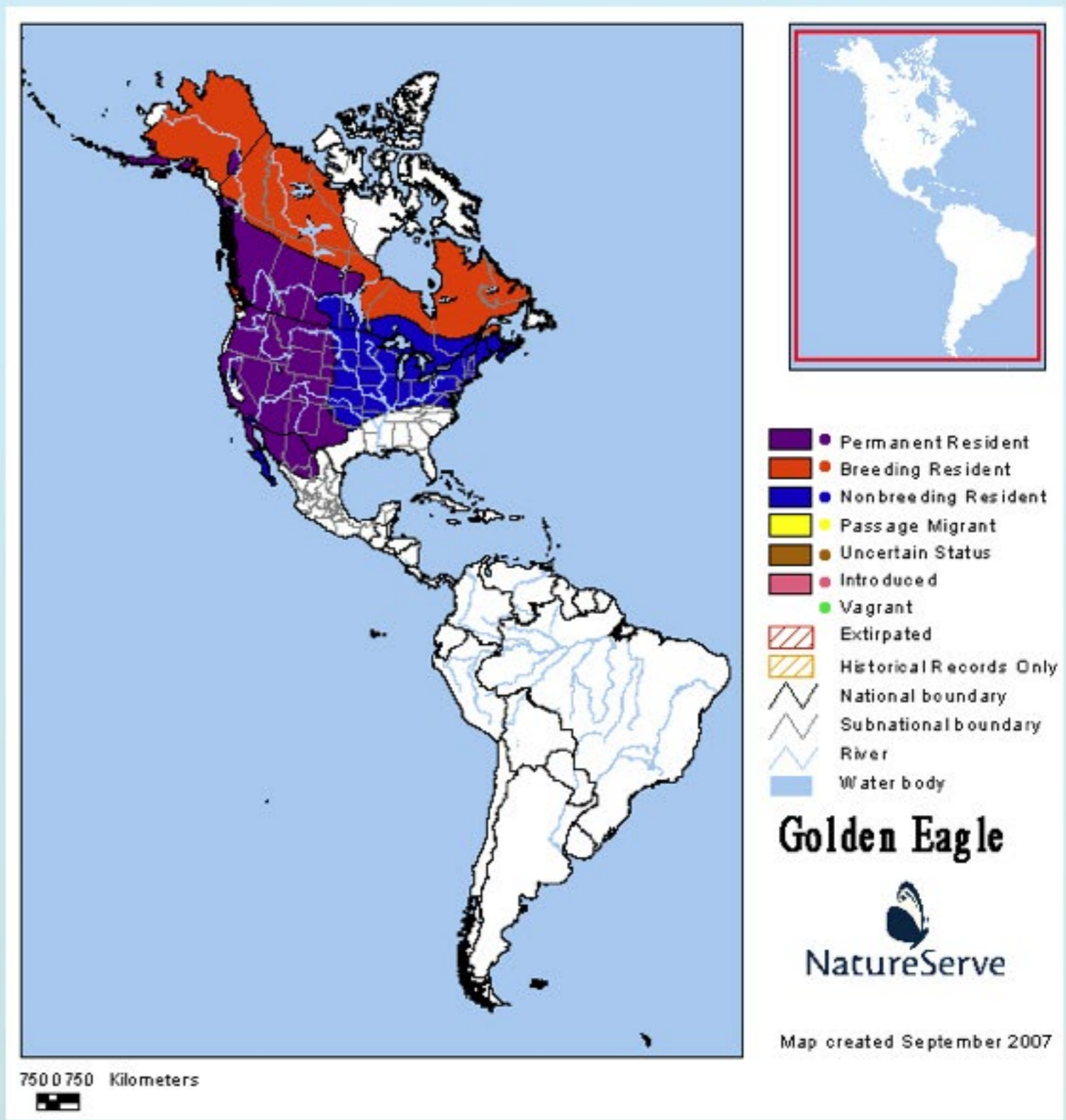
## Behavior

- They *capture food on the ground* in open spaces.
- *Wing beat shallow, slow, and ponderous.*
- Like slow, gliding, and *distant single Turkey Vulture.*
- They *migrate singly or in groups of two's or three's.*





## Golden Eagle Range Map



# Learning Eastern Hawk Flight Identification



**Museum study skins.  
Left bird ventral view.**



**Museum study skins.  
Left bird dorsal view.**

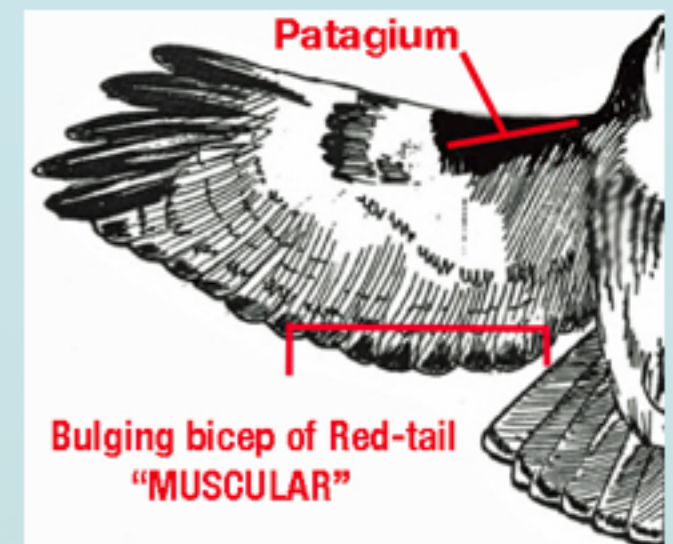




# Red-tailed Hawk



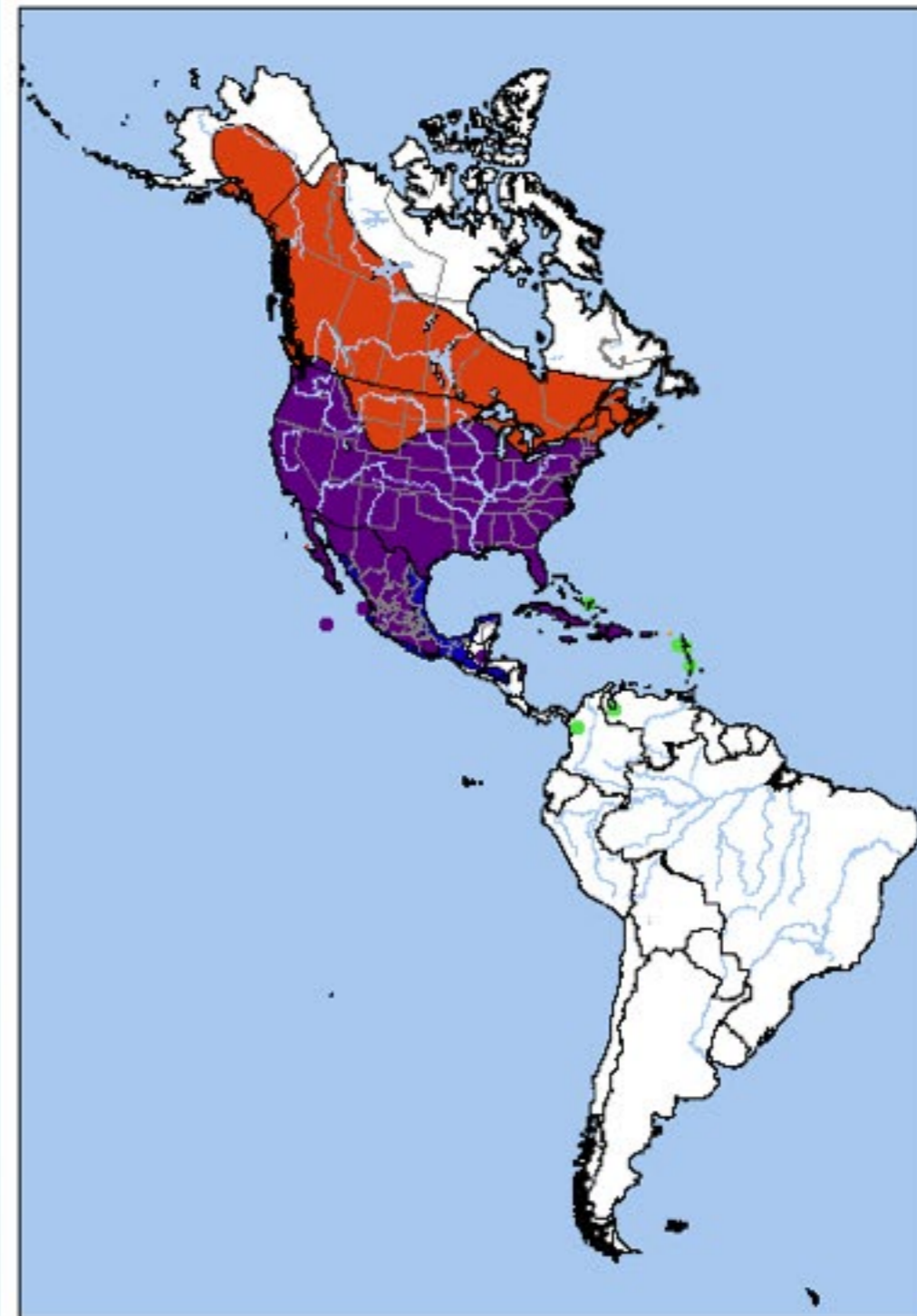
- Broad-shaped wings for soaring and perching to inspect fields for prey.
- This hawk exhibits *great range* in size, proportions, and plumages.
- **Underwing:** ‘Comma’ located at the wrist. The **PATAGIUM**, the dark region on the leading edge near the body is *found only in the Red-tailed* (all plumages).
- Adults and immatures are similar in plumage being brown to gray-brown above and light below, with varying amounts of speckling and streaking.
- The chest is very white with varying amounts of a distinct bellyband being present on most birds.
- Adult Tail: The ‘**reddish**’ tail is gotten during the *second year*.
- Immature Tail: The tail has **fine brown barring** and shows white at the base.
- Wings are long, broad, and round-tipped. The trailing edge near the body appears to be bulging or like an **inverted bicep** thus ‘**muscular**’ thus NOT straight.
- Red-tail is the **reference-bird** for all Buteos.



## ‘Patagium’ and ‘Muscular’



## Red-tailed Hawk Range Map



- Permanent Resident
- Breeding Resident
- Nonbreeding Resident
- Passage Migrant
- Uncertain Status
- Introduced
- Vagrant
- Extirpated
- Historical Records Only
- National boundary
- Subnational boundary
- River
- Water body

## Red-tailed Hawk



Map created September 2007

# Learning Eastern Hawk Flight Identification



**Hatch year bird. Note the Yellow eye and patagium.**



**Note the amount of WHITE on the dorsal surface.**



# Learning Eastern Hawk Flight Identification



★ Look **FIRST** for the Patagium.

★ Look **SECOND** for the Muscular trailing wing edge.





# Red-shouldered Hawk



- Appears slimmer, trimmer, tube shaped, and more clean-cut than Red-tailed. In flight appears 3/4 the size of a Red-tailed.

## Body

- **Adult:** A **chestnut-colored** body and chest. **Immature:** A cream-colored with heavy streaking on chest (**dollops** or **splotches of chocolate**).

## Tail

- Is boldly striped with black and white creating *equally appearing bands*.

## Wing

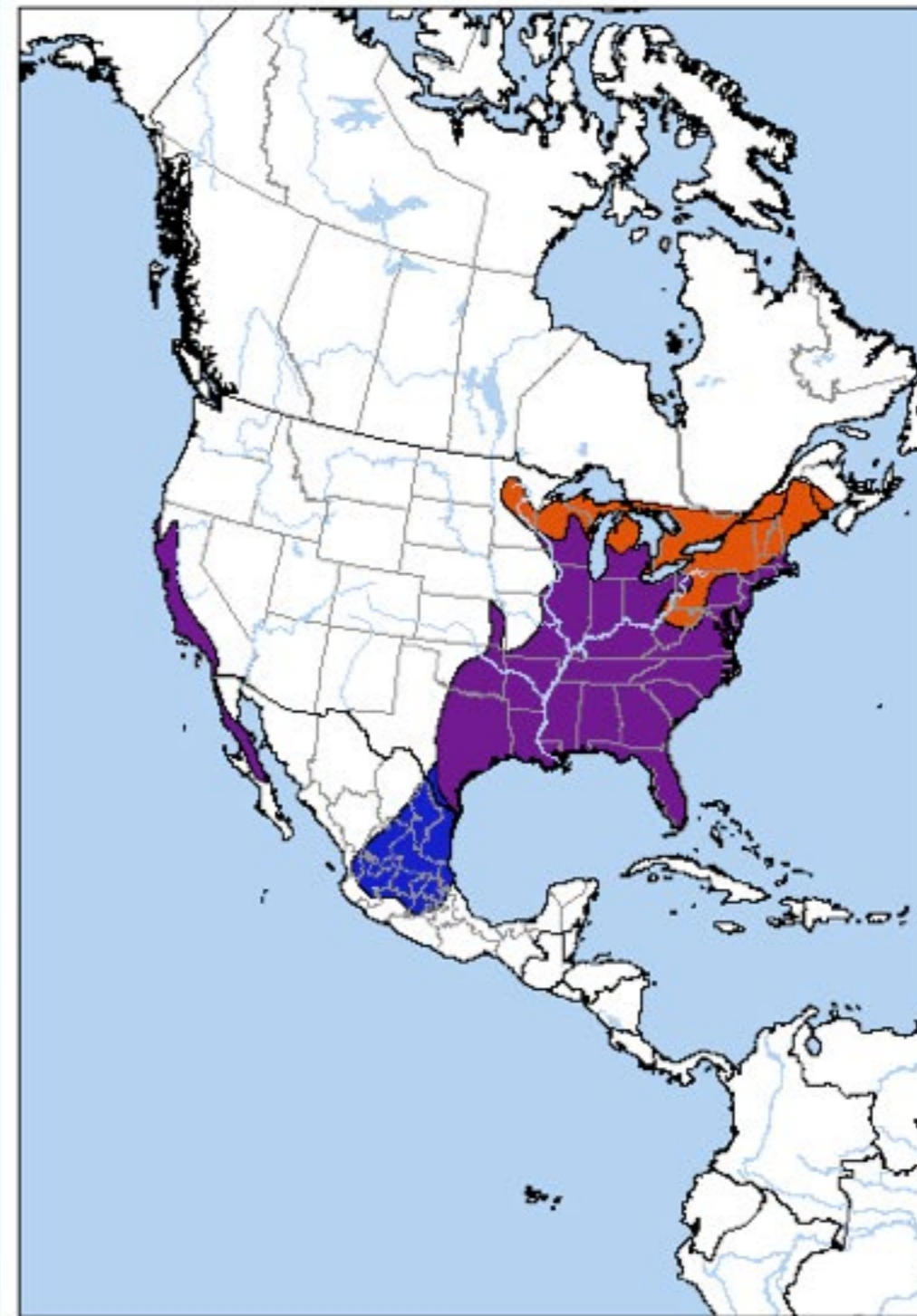
- Long, narrow, and clean-edged and lack the muscular bulges of the Red-tailed. ***In full soar the entire wing juts forward.*** It appears to be reaching out with open arms. **Adult** upper-wing coverts (shoulder) are rusty. **The crescent-shaped 'stained-glass window' is extending to the tip of each wing is a 'checkerboard pattern'.**
- Wing beat is quicker than a Red-tailed. Action is stiff, as though the bird were ***batting the air with cupped wings.***

## Behavior

- General appearance is that of a buteo trying to ***imitate an accipiter.***



## Red-shouldered Hawk Range Map



- Permanent Resident
- Breeding Resident
- Nonbreeding Resident
- Passage Migrant
- Uncertain Status
- Introduced
- Vagrant
- Extirpated
- Historical Records Only
- National boundary
- Subnational boundary
- River
- Water body



Map created September 2007

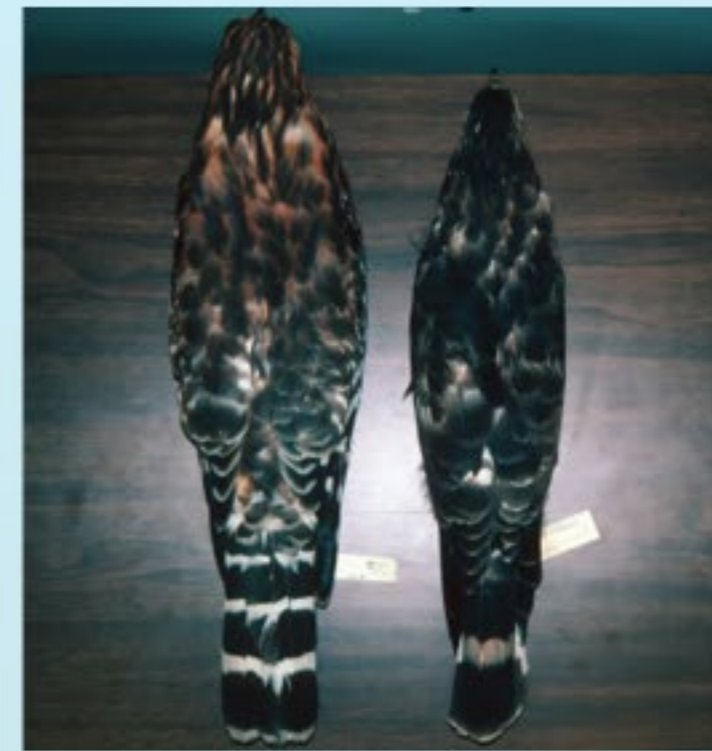
750 0 750 Kilometers



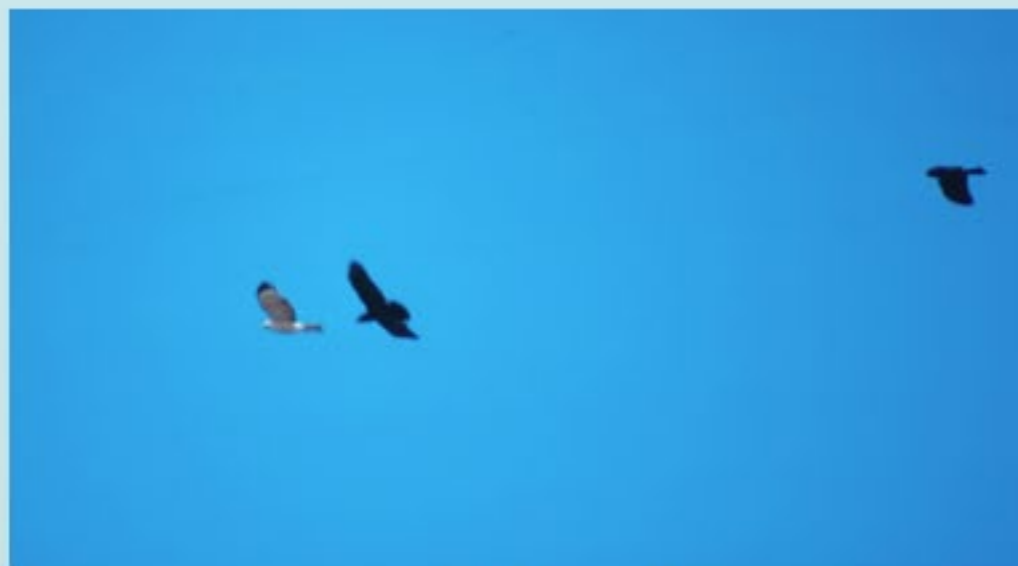
# Learning Eastern Hawk Flight Identification



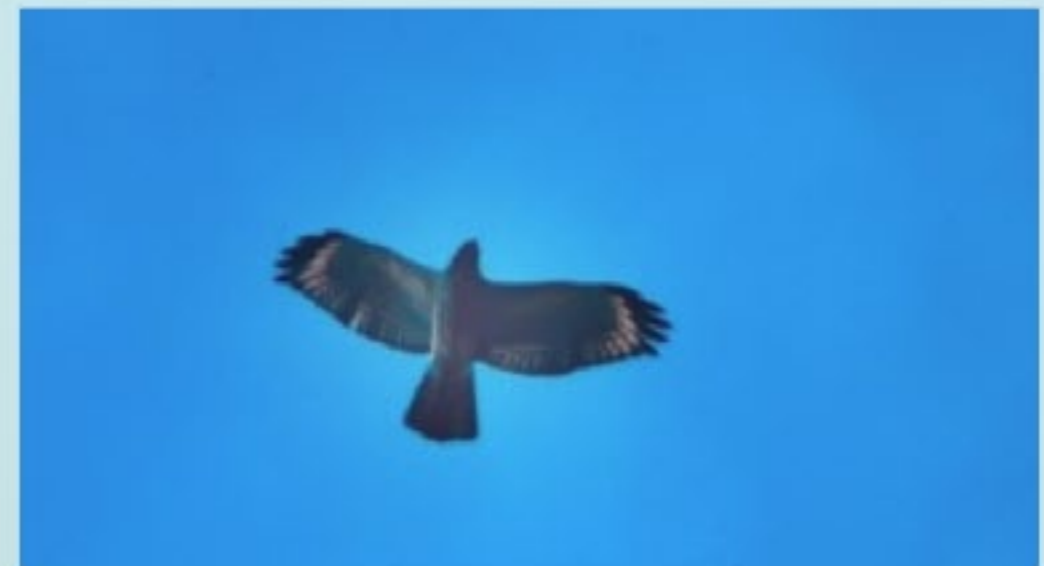
**Adult and immature study skins.**



**Tail compared with Broad-wing.**



**Crows giving chase.**



**Windows of adult. Not muscular.**

# Learning Eastern Hawk Flight Identification



**Adult above and Immature below with crescent 'wondows'.**

**Note Red-tail below for comparison with its light 'panels' not crescent 'windows'.**





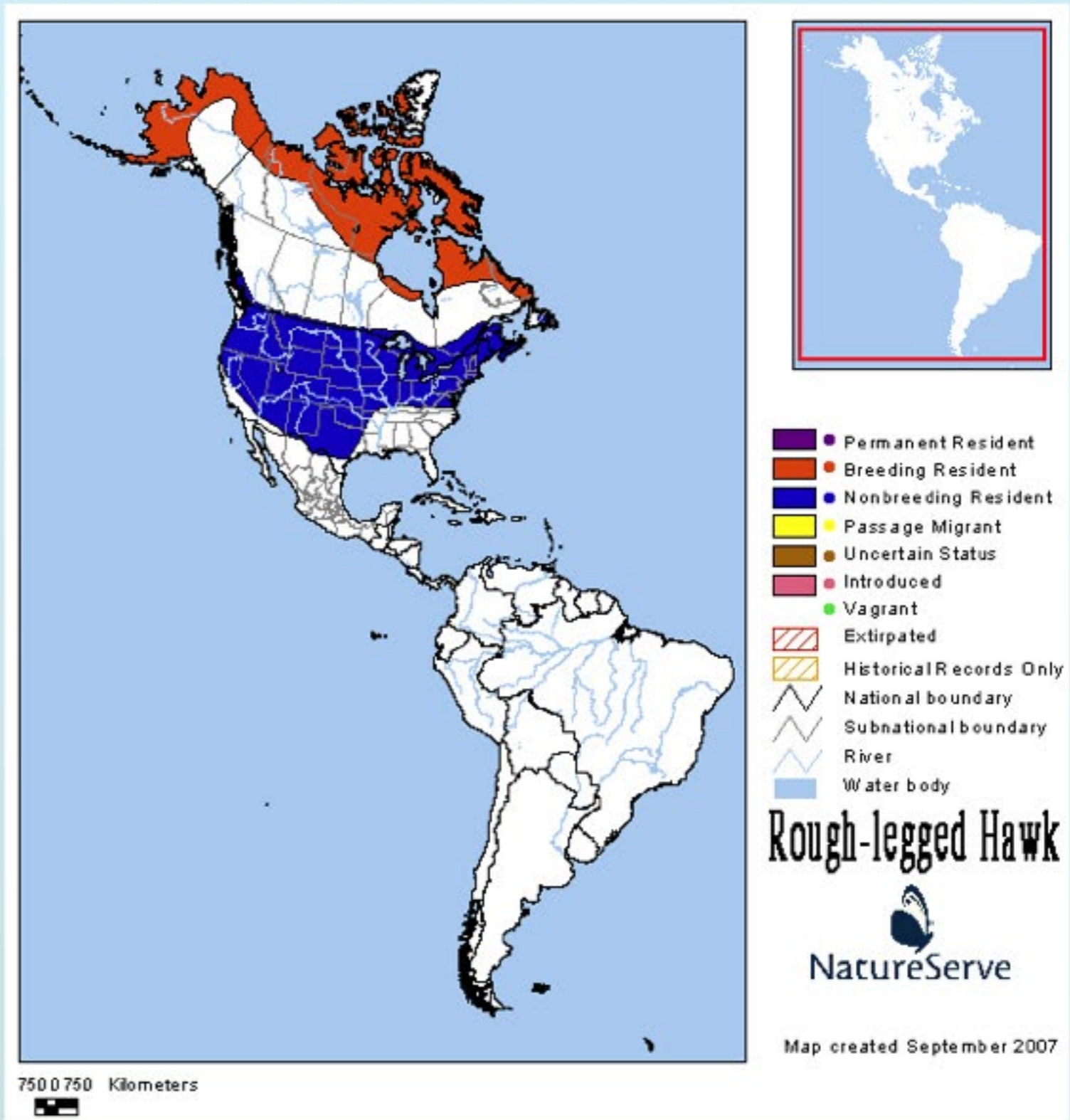
# Rough-legged Hawk



- A large, ***lanky-winged*** buteo with **bold plumage patterns**.
- Several different plumages patterns occur, relating to age and sex, but these are obvious and readily separate light-morph birds from other species. Dark-morph ones may be more difficult.
- In a soar or a glide, the wing juts up sharply from the body forming **pronounced dihedral** then flattens out at the wrist. *This up-and-out, hunched-shoulder look is only seen only in the Rough-legged.*
- **WING BEAT** is *steady, unhurried, methodical, and deeply arched*. Flapping doesn't usually happen in a series, as with other buteos. **Flight is a series of pumps (FLAPPING) and glides with more pumps (FLAPPING) to the glide.**
- Flight seems effortless and is done with a sense of purpose. Graceful. Readily use their own power for flight. They are the **least hesitant of the buteos about crossing open water**. They can hover in one spot for several minutes.

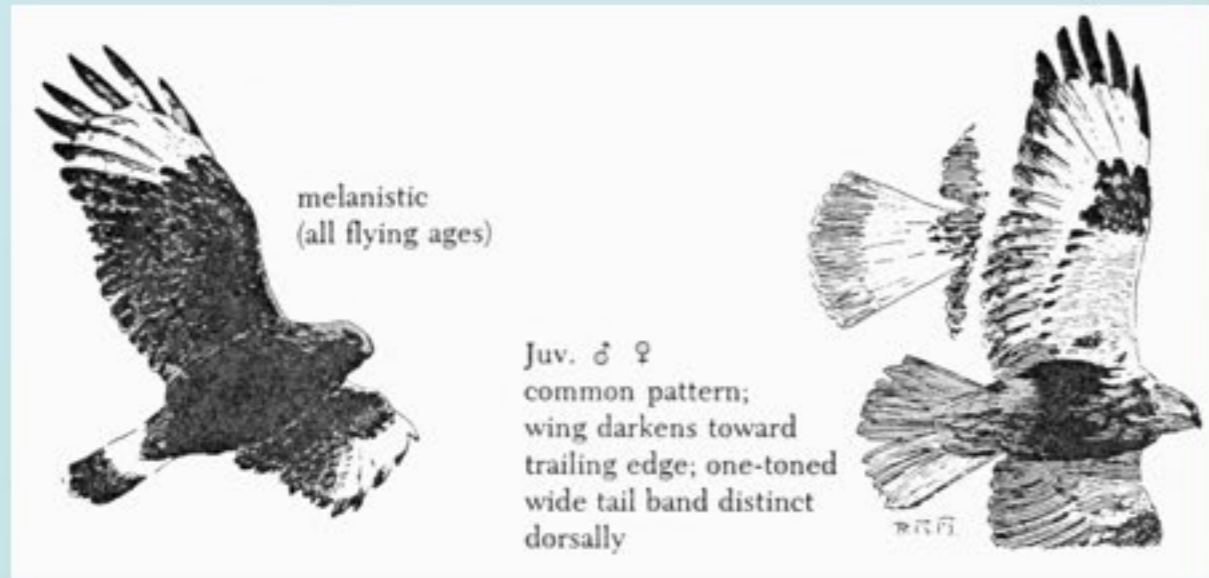
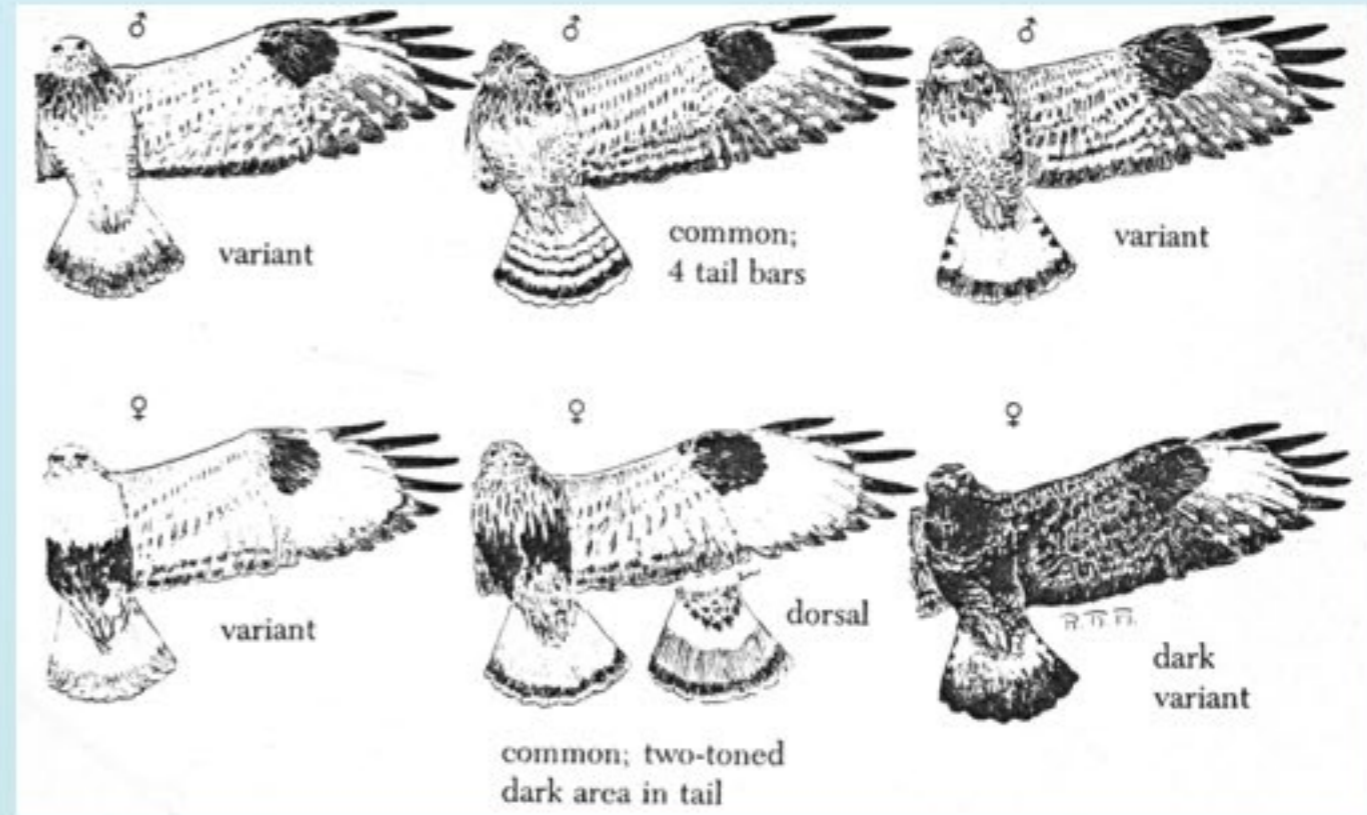


## Rough-legged Hawk Range Map



# Learning Eastern Hawk Flight Identification

Note long narrow wing and bold plumage patterns.



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



**Starts  
here.**



**Ends  
here.**

# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



*Light Morph Rough-legged Hawk  
Whitefish Point, Paradise, Michigan  
© 2011 RCPettit*



# Broad-winged Hawk



- A small, chunky, stubby, and *Crow-sized buteo*.

## CHEST

- *Adult* has barring on the chest. *Immature's* underparts are creamy with heavy streaking on the face, throat, sides, and belly (suggesting a band).

## WING

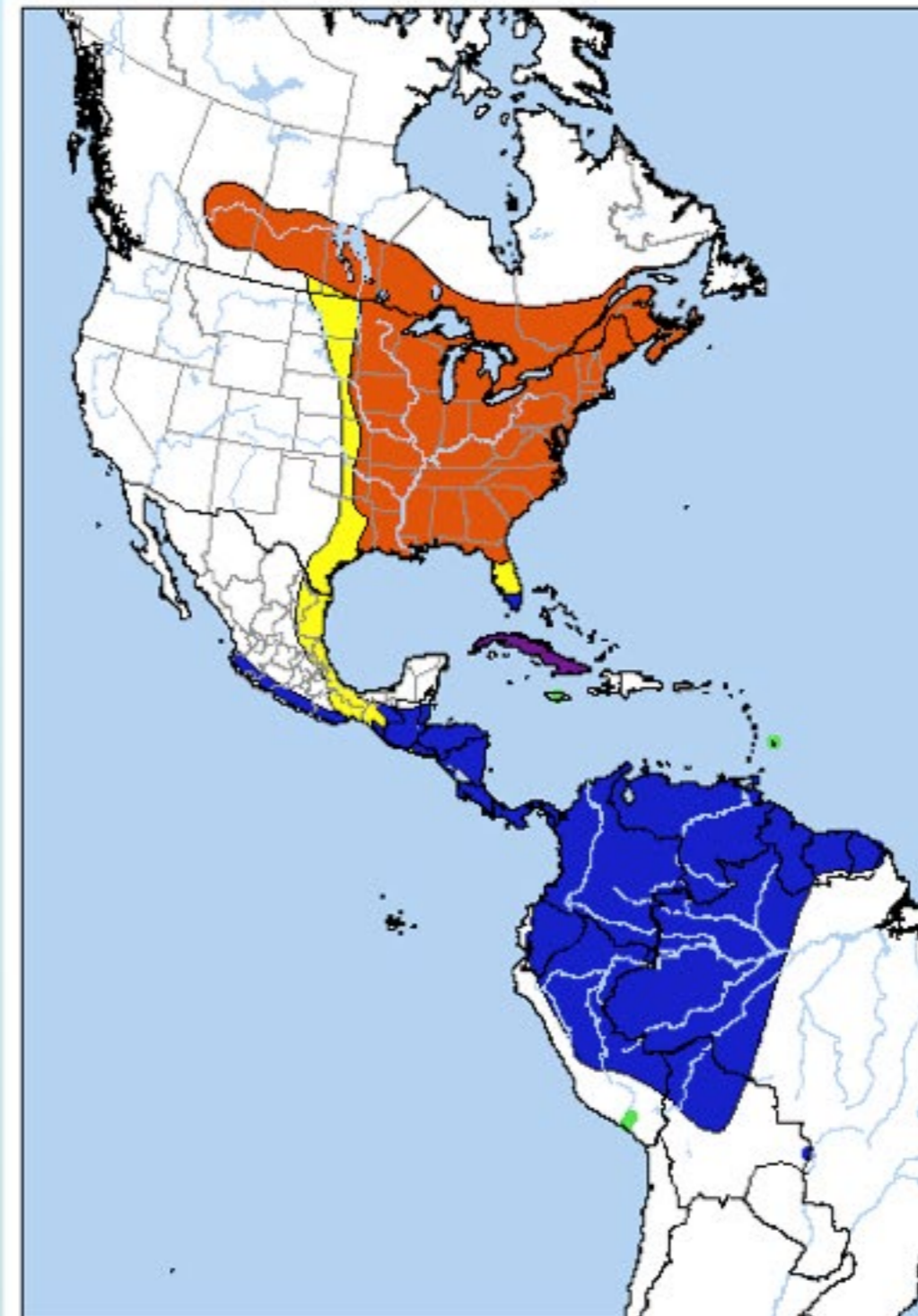
- In a *glide or partial tuck*, the wings curve back along the leading edge and become straight along the trailing edge, like the *blade of a paring knife*.
- *Underwing*: In all ages are very **clean and white**. The underwing color is highlighted by a broad, dark outer boarder of the trailing edge of the wing. The appearance is that of a white picture framed in black.

## TAIL

- *Adult* has broad **black-and-white bands**. *Immature* show indistinct **brown and white bands**. *Subterminal band is darker and wider than the other bands*.
- During a soar, the tail opens very wide, so that it appears shorter. When closed, the tail is very narrow, very long, and very unlike a buteo tail.
- Readily use **thermals** during migration traveling in **large groups** called '**kettles**'.



## Broad-winged Hawk Range Map



- Permanent Resident
- Breeding Resident
- Nonbreeding Resident
- Passage Migrant
- Uncertain Status
- Introduced
- Vagrant
- Extirpated
- Historical Records Only
- National boundary
- Subnational boundary
- River
- Water body



Map created September 2007

750 0 750 Kilometers



# Learning Eastern Hawk Flight Identification



## Immature Broad-wings



# Learning Eastern Hawk Flight Identification



**Adult Broad-wing**



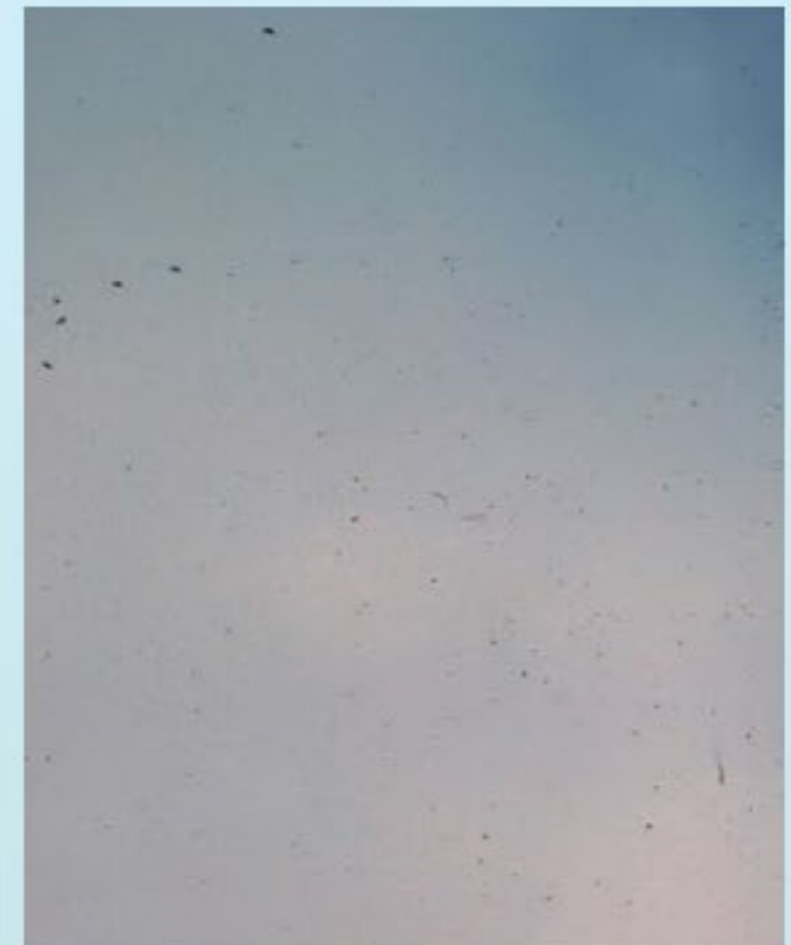
# Learning Eastern Hawk Flight Identification



*Adult Dark Morph Broad-winged Hawk  
Whitefish Point, Paradise, Michigan*

© 2011 RCPettit

# Learning Eastern Hawk Flight Identification



**Kettles and Kettles of Broad-wings**

# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



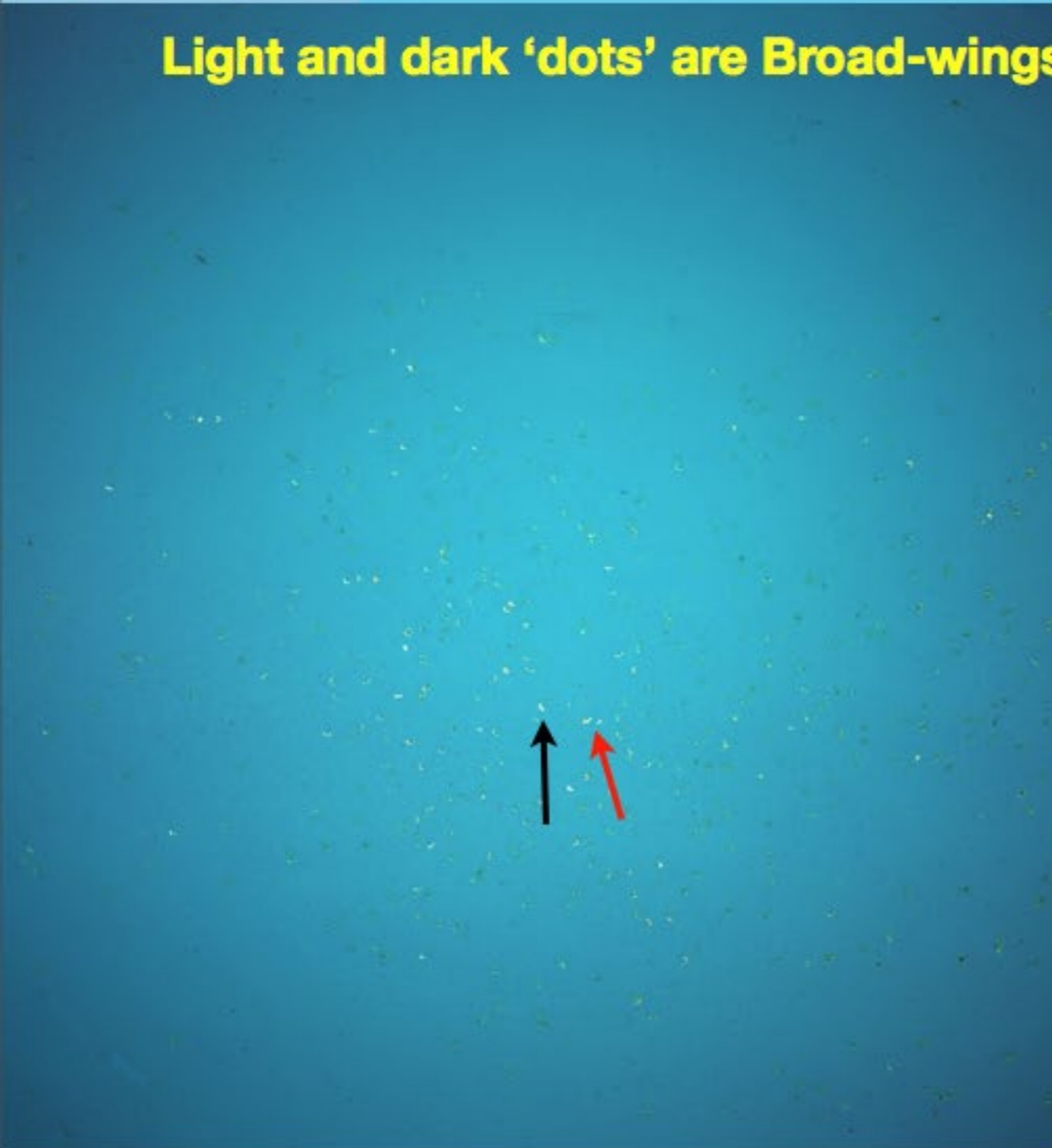
# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



**Light and dark 'dots' are Broad-wings kettling overhead. Arrows for reference.**

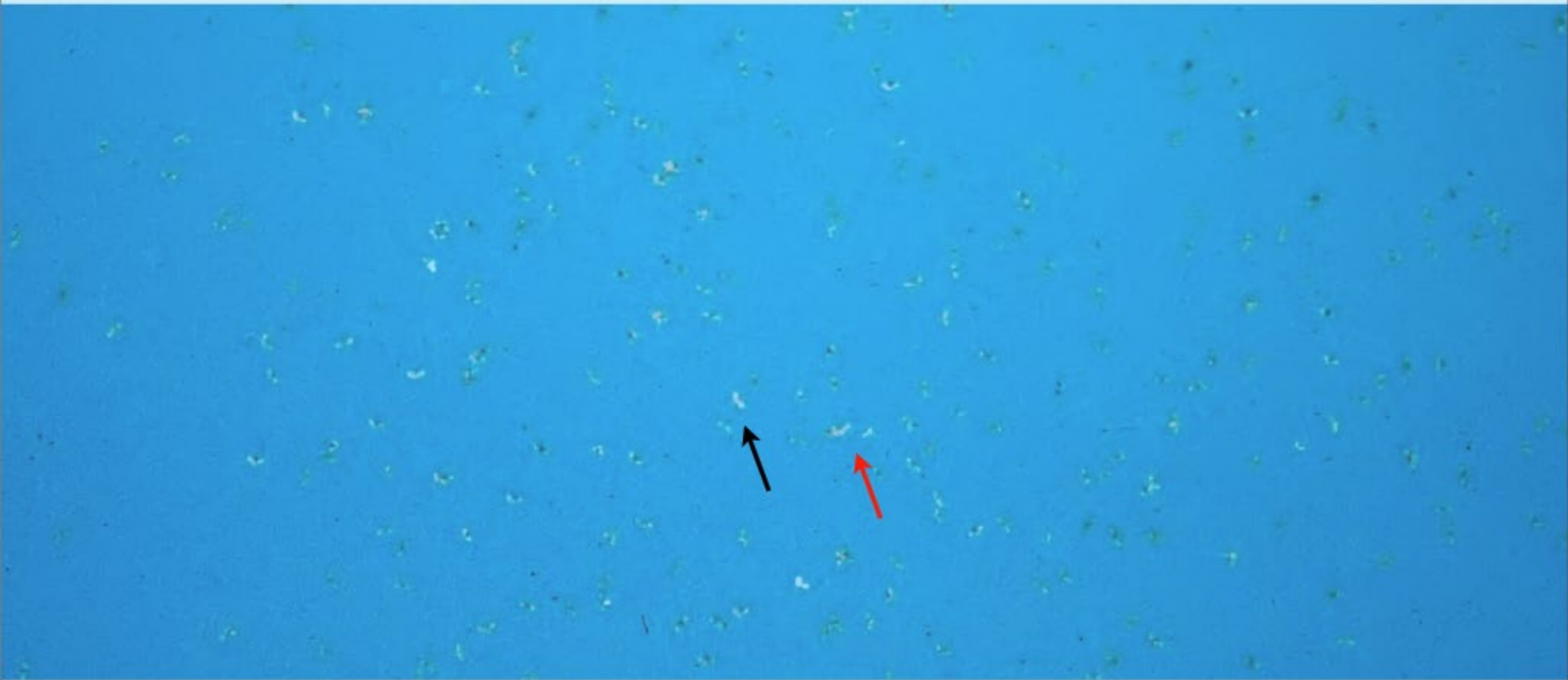


**"Sparkling Brown Sugar" Backlighting birds against bright blue sky very high overhead.**

## Learning Eastern Hawk Flight Identification



**Light and dark 'dots' are Broad-wings in kettle overhead. Arrows for reference.**



**Large sky area straight overhead with 300mm lens with over 800+ birds total.**



# *Review Time*

# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



## Key Points for Sharp-shinned Hawk

★ **S**hrugging

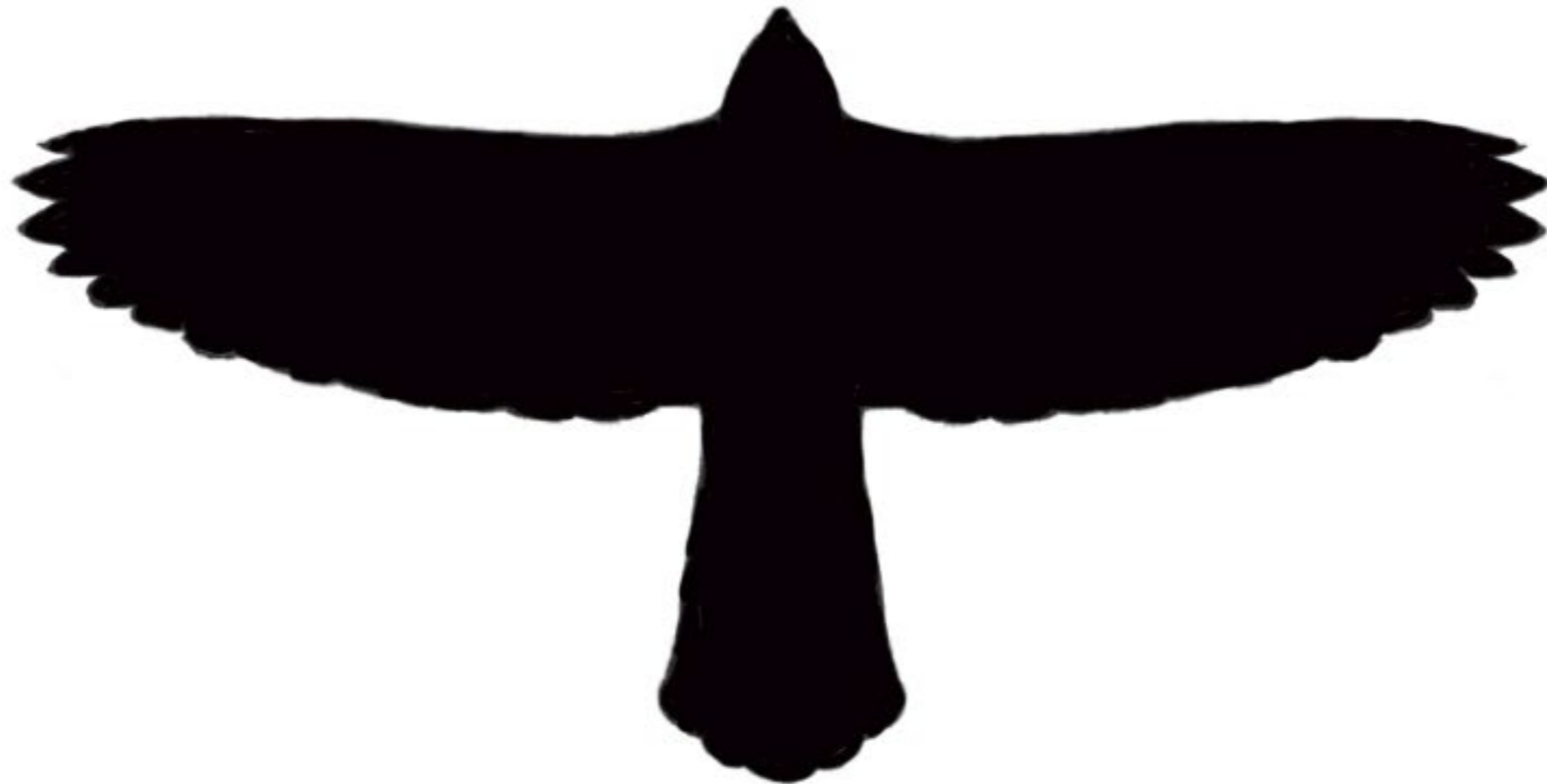
★ **S**traight

★ **S**oiled

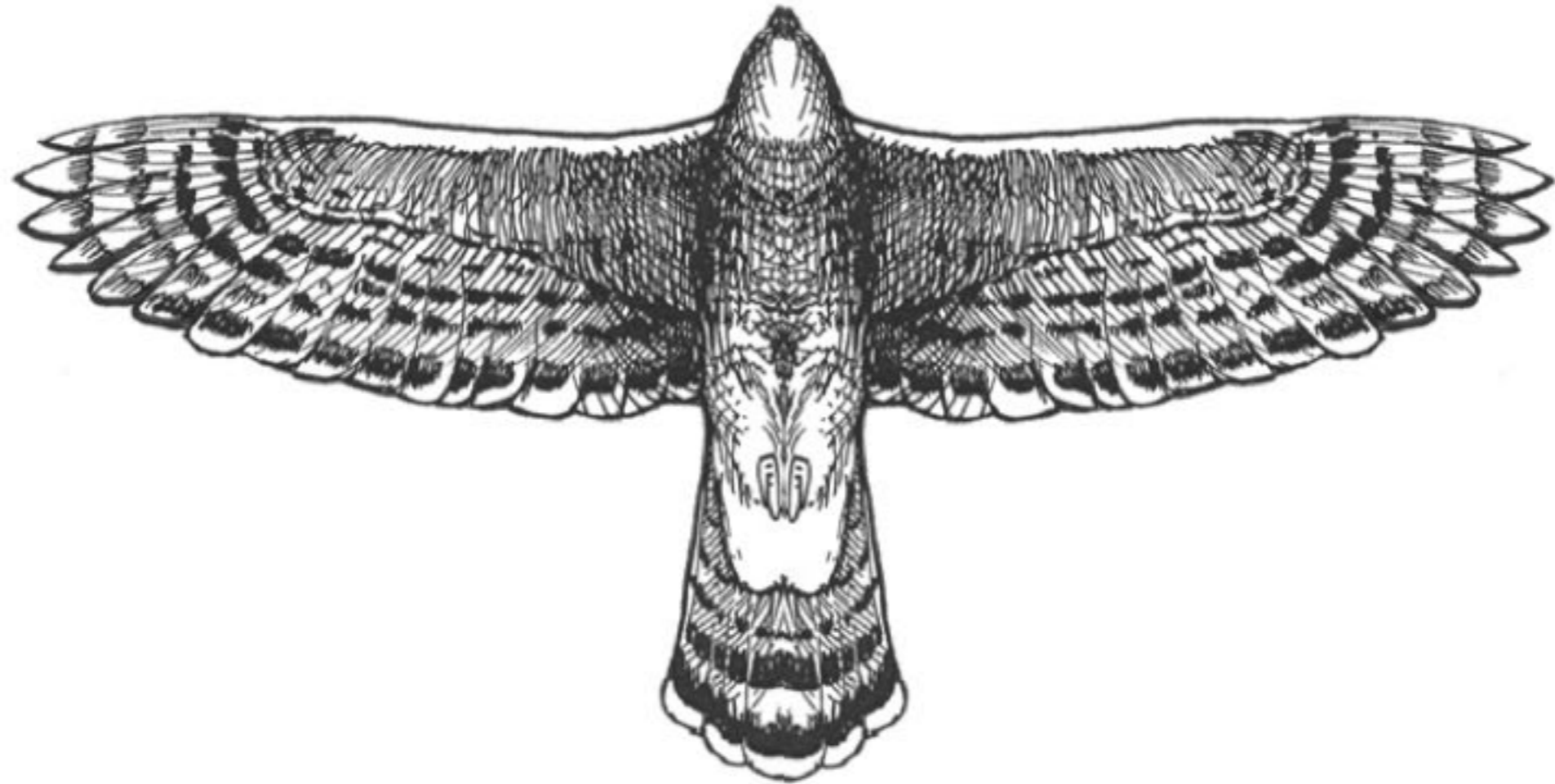
★ **S**nappy

★ **S**ocial

# Learning Eastern Hawk Flight Identification



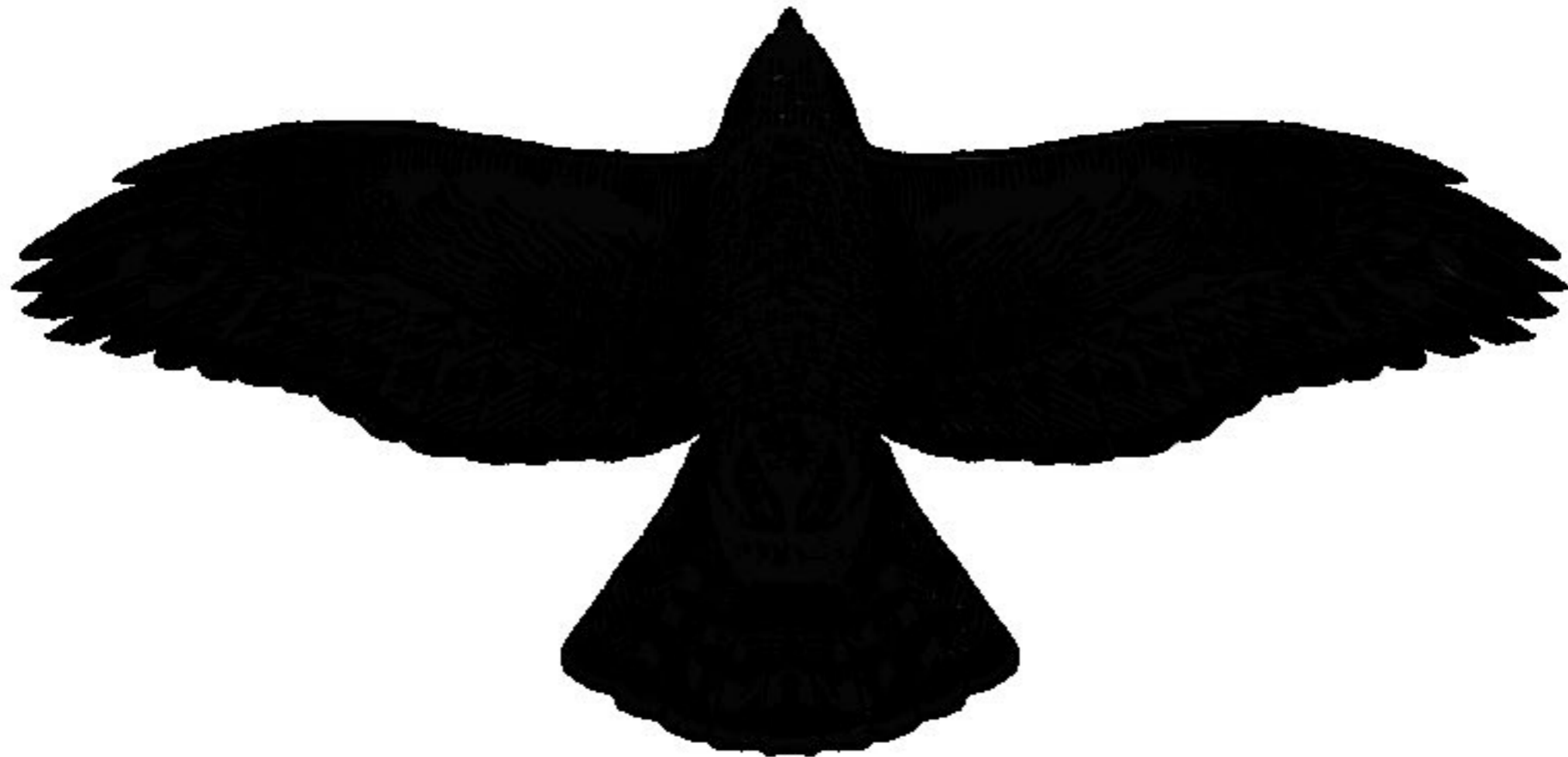
# Learning Eastern Hawk Flight Identification



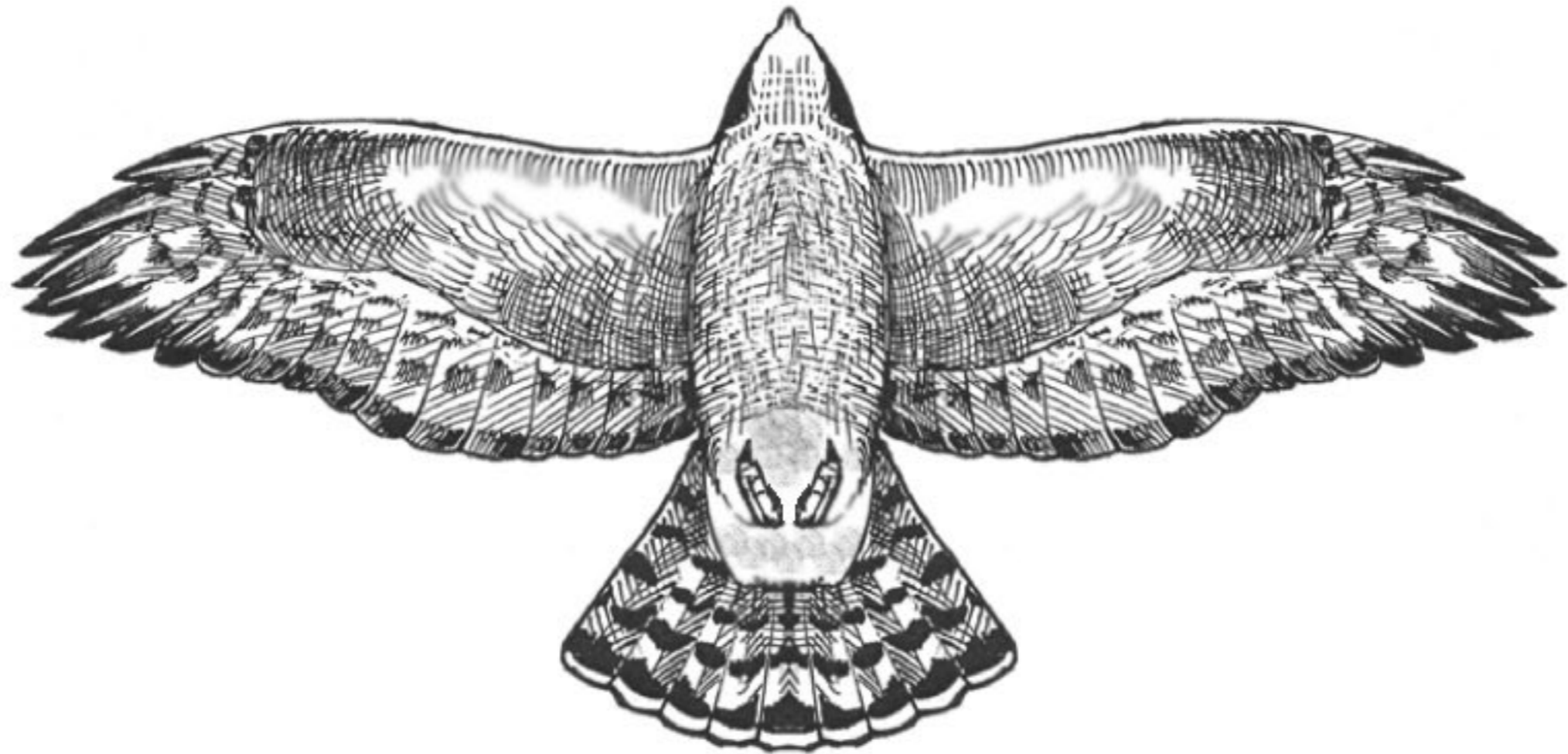
## Key Points for Cooper's Hawk

- ★ **C**rossing
- ★ **C**urved
- ★ **C**risp
- ★ **C**asual
- ★ **C**ompanionless

# Learning Eastern Hawk Flight Identification



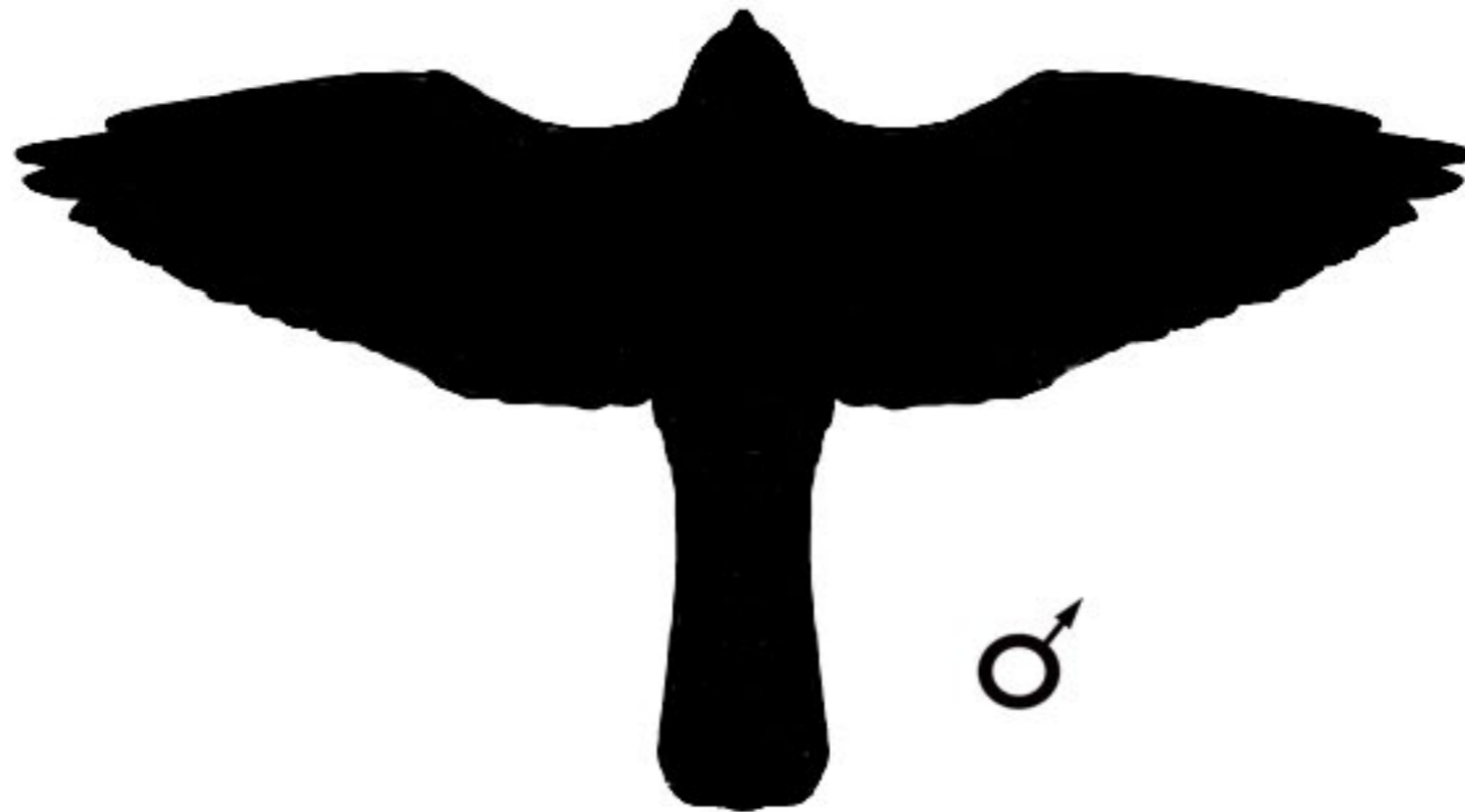
# Learning Eastern Hawk Flight Identification



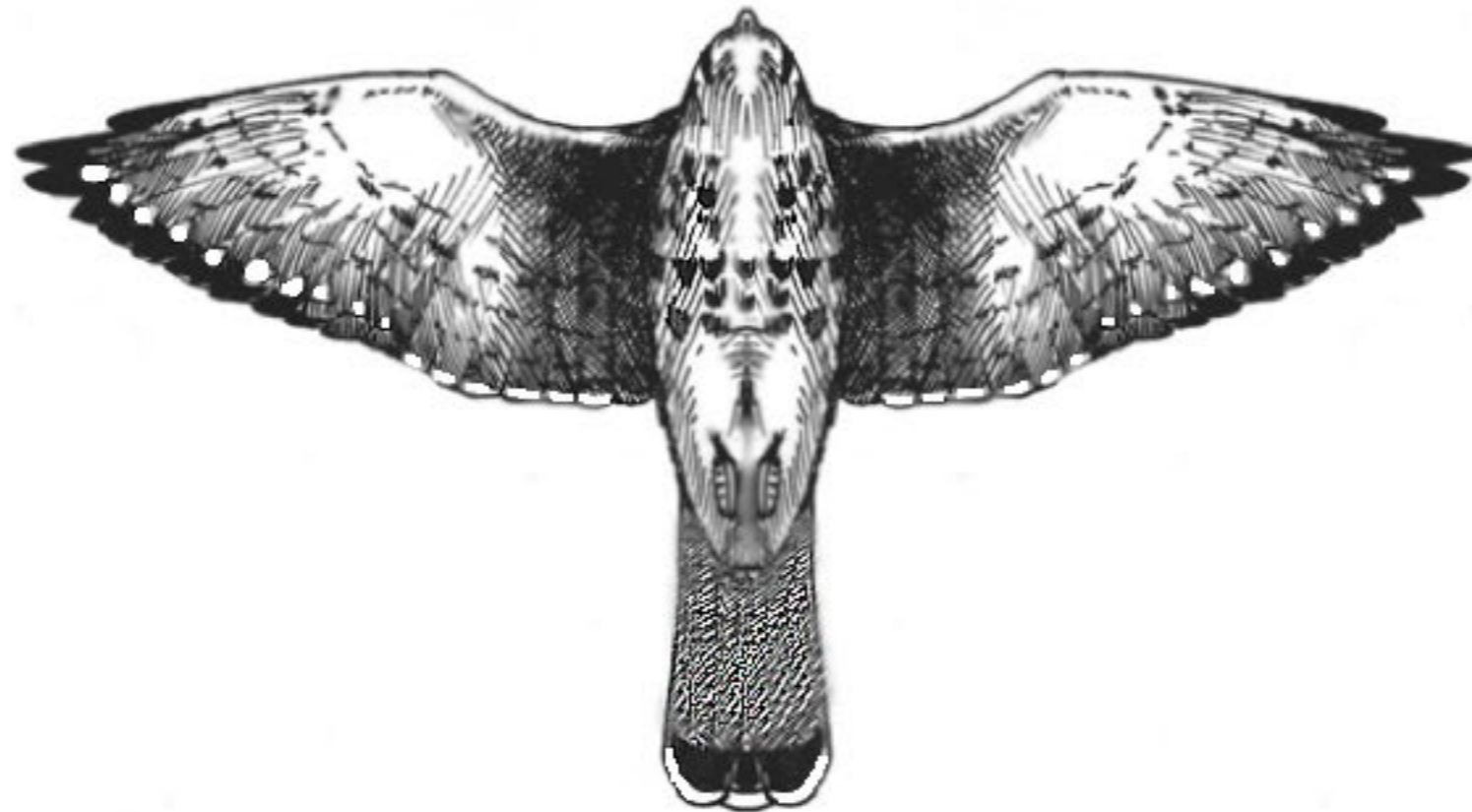
## Key Points for Northern Goshawk

- ★ A flying **tube**.
- ★ An accipiter that thinks it's a **buteo**.
- ★ Fist-shaped head with a visible **eye-line**.
- ★ Wing beats are labored like a **buteo**.
- ★ **Red-shouldered immature** has similar breast pattern.

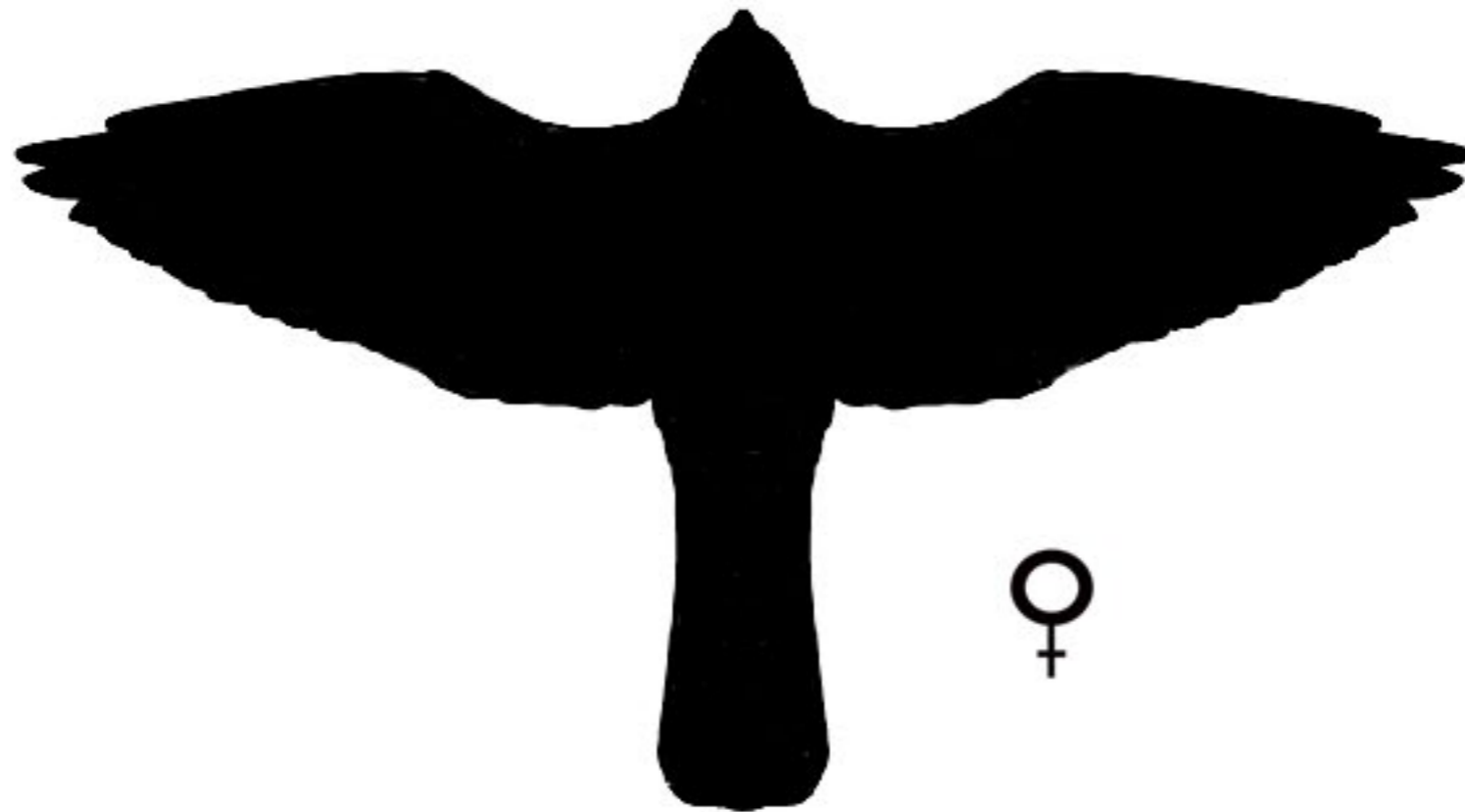
# Learning Eastern Hawk Flight Identification



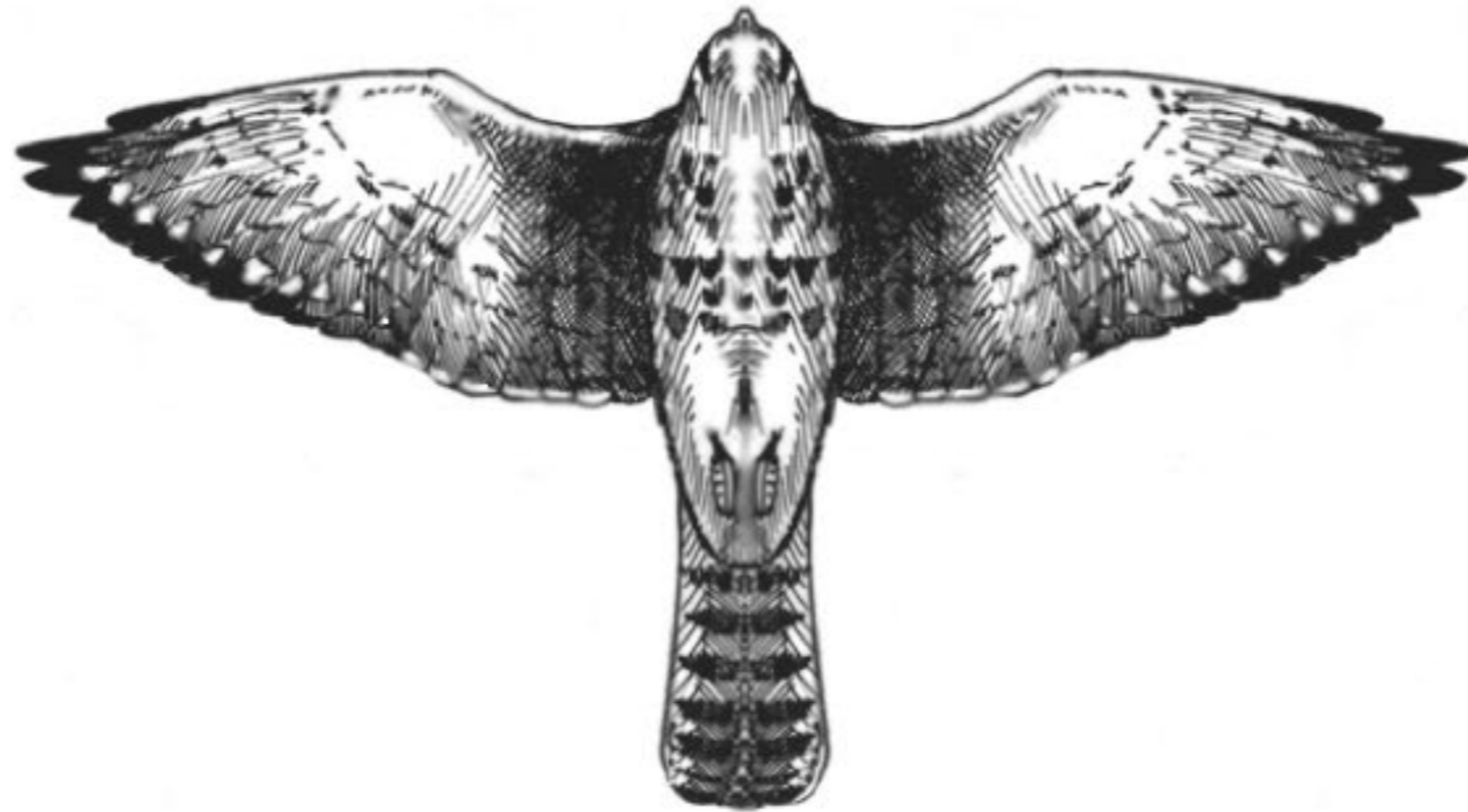
# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Key Points for American Kestrel

## Body:

***Smallest*** falcons.

Curving wing; "***flying banana.***"

## Male:

***Blue*** wing tops.

***Rusty*** back.

***White*** dots, "***necklace***", on trailing wing edge.

Bright ***rufous*** tail with thick ***dark tip***.

## Female:

***Rusty*** wing tops.

***Rusty*** back.

***Buffy*** dots ***not*** very visible.

***Reddish brown*** tail with ***broken barring***

## Flight:

***Light***, lively, ***wandering***, accipiter-like.

***Glides*** more often than other falcons

***Bounces*** like a cork on the water in high wind.

Travels in a loose ***groups***.

# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Key Points for Merlin

## ● Flight

- Merlin's most distinctive feature.
- ***Point-to-point*** flight.
- Cadence and motion are similar to a ***Rock Pigeon***.
- ***Does not wander***.

## ● Male (Adult):

- The ***mustache mark is faint***, smudgy, and indistinct.
- Bright metallic blue above.
- Tail dark blue with several pencil-thin, ***blue-gray bands***.

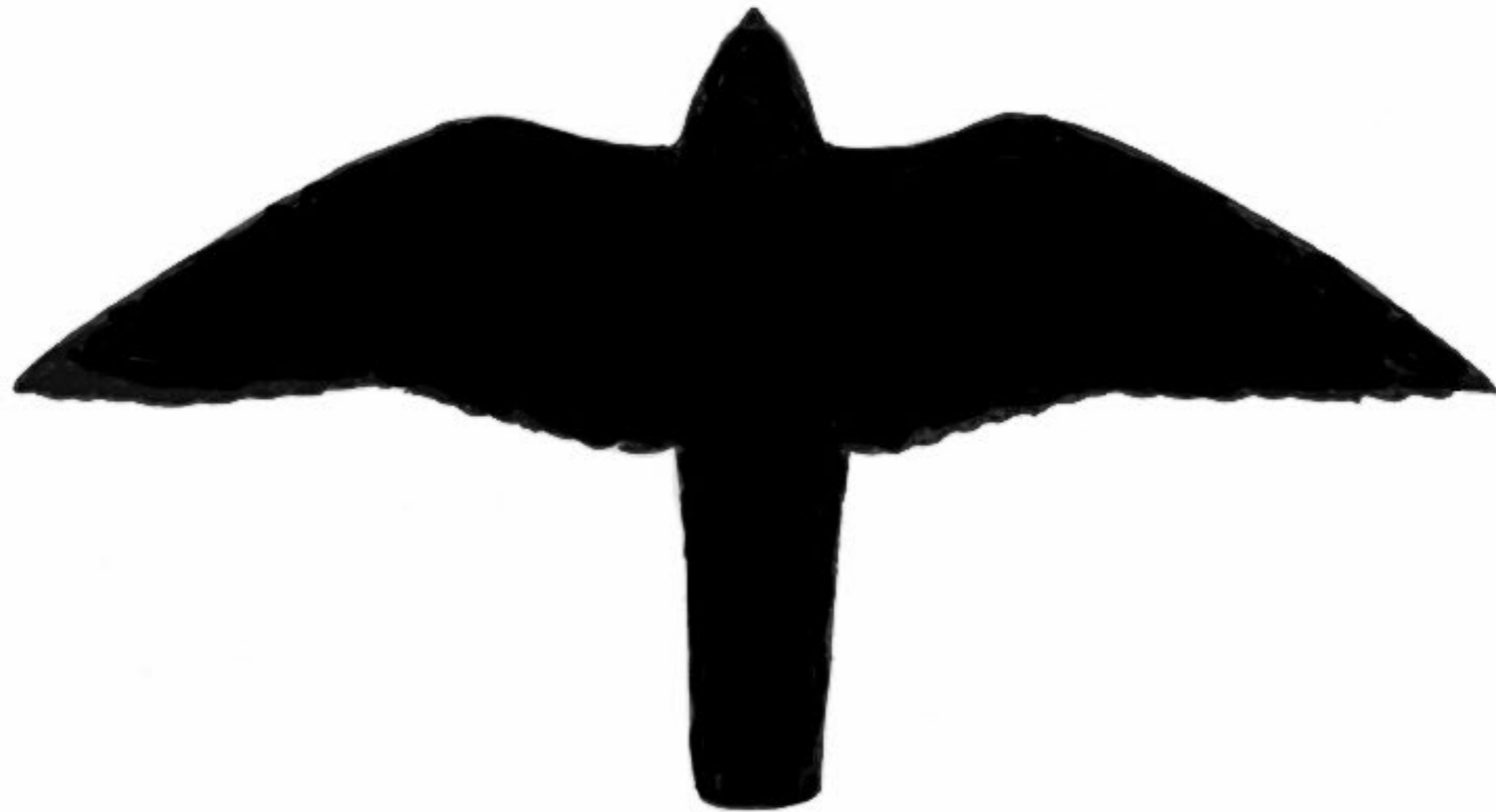
## ● Female and Immatures:

- The ***mustache mark is faint***, smudgy, and indistinct.
- ***Chocolate falcon***. Brown above and below.
- Tail brown with several wide ***buffy bands***.

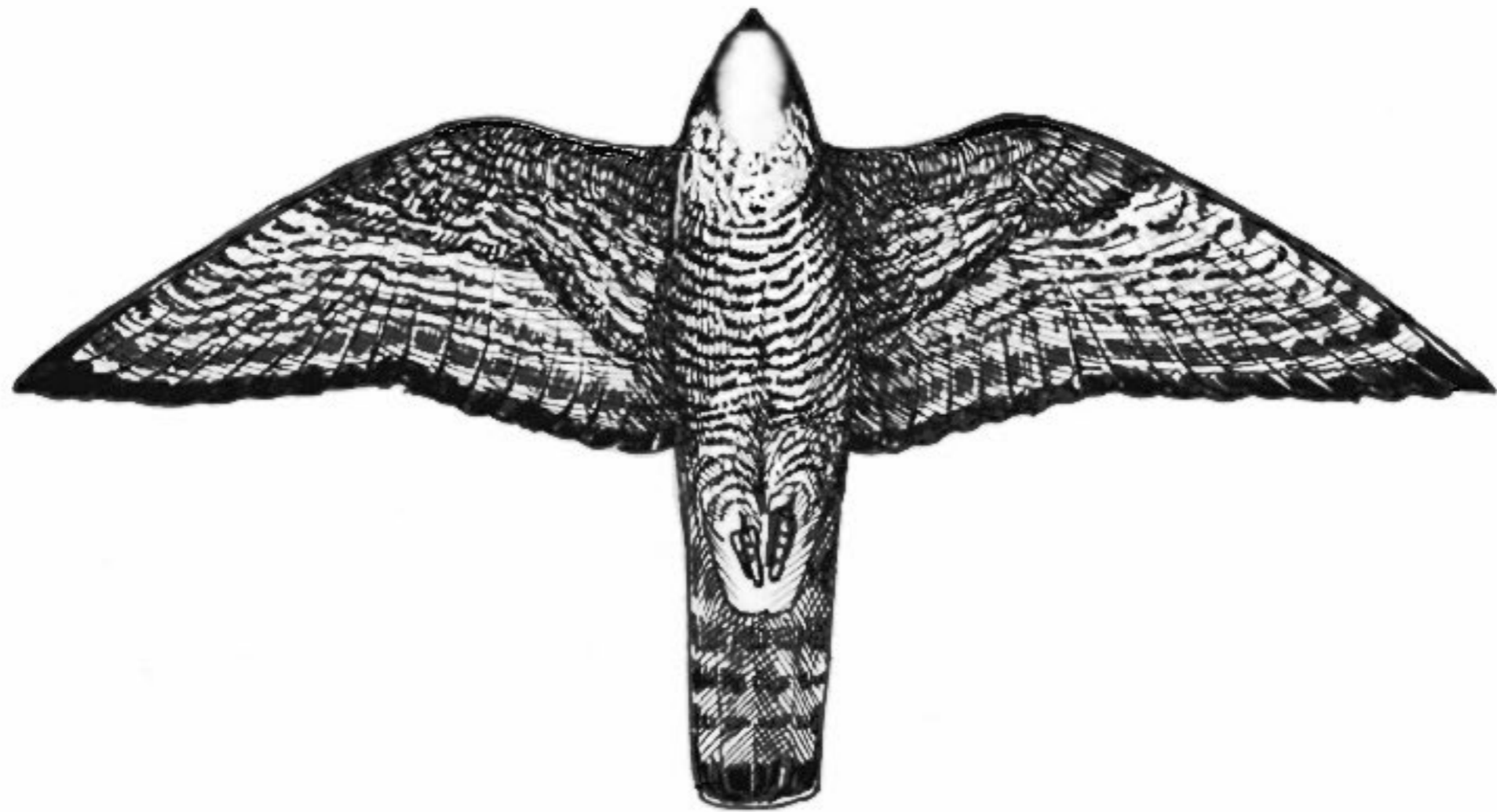
## ● Behavior

- ***Highly aggressive***.
- ***Athletic***.
- ***Solitary*** migrant.

# Learning Eastern Hawk Flight Identification



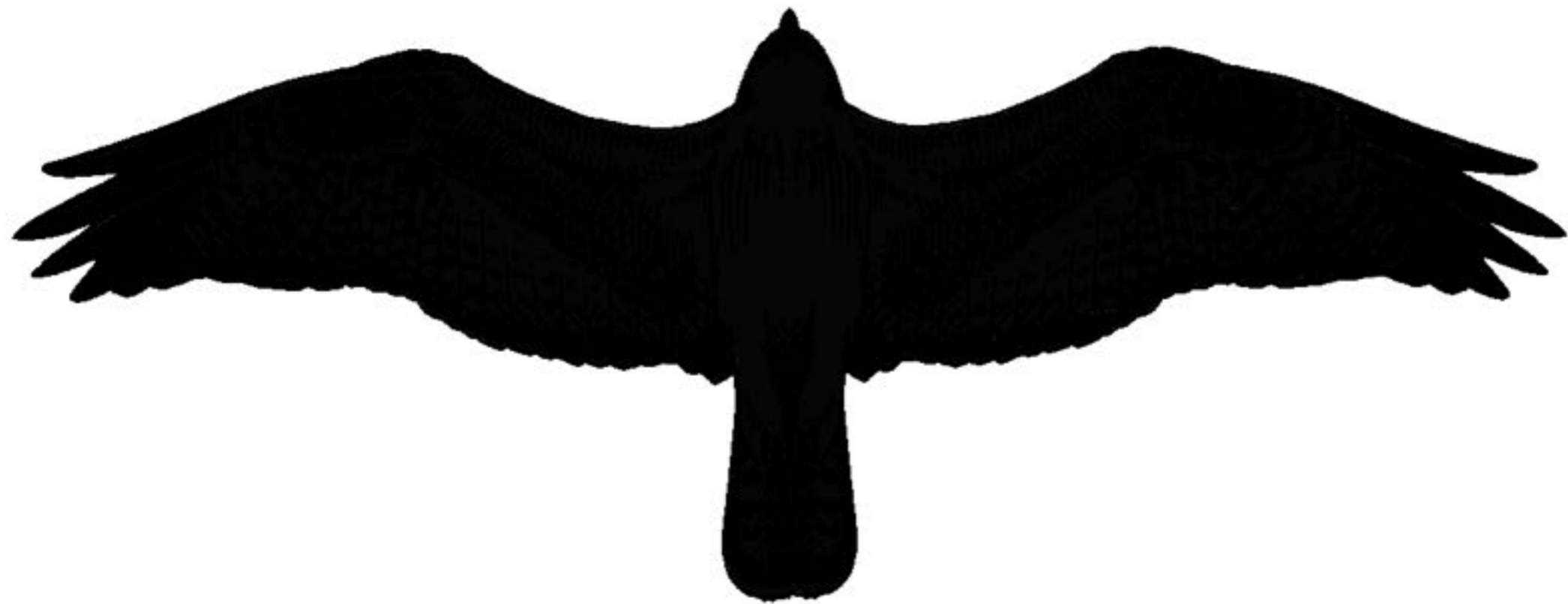
# Learning Eastern Hawk Flight Identification



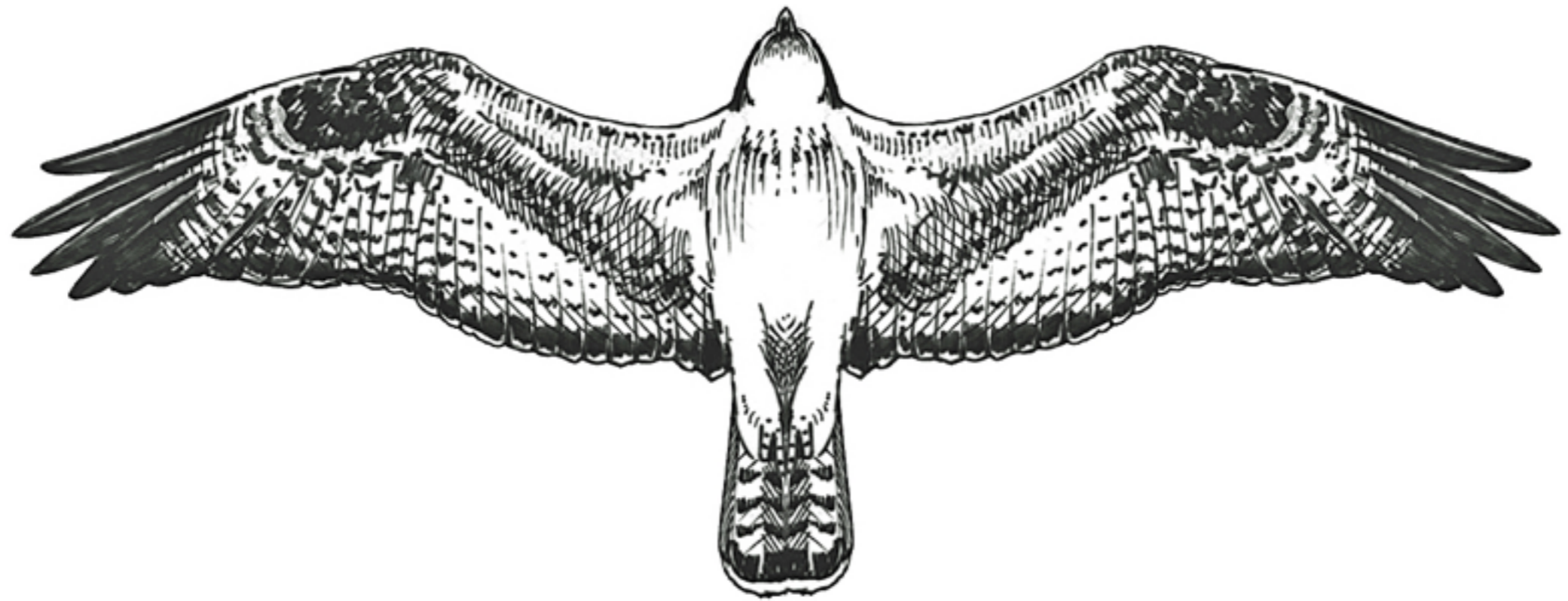
# Key Points for Peregrine Falcon

- Bold, *distinct mustache mark*.
- Extremely *long-winged falcon*.
- In a *soar* the *wing shape* is a *wide based triangle* that resemble *tapered candles*.
- *Wing beat* is like *Common Loon*
- *Solitary* in migration. Usually *confused with the Harrier* that has longer wings and tail.
- ***Backside***
  - *Adult*—Blue-gray
  - *Immature*.—Brown.
- ***Underparts***
  - *Adult*: Heavily barred below with white chest and throat.
  - *Immature*: Heavily streaked, with buff-colored chest and throat.
- ***Immature Head***
  - *Blond* crown and nape.

# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



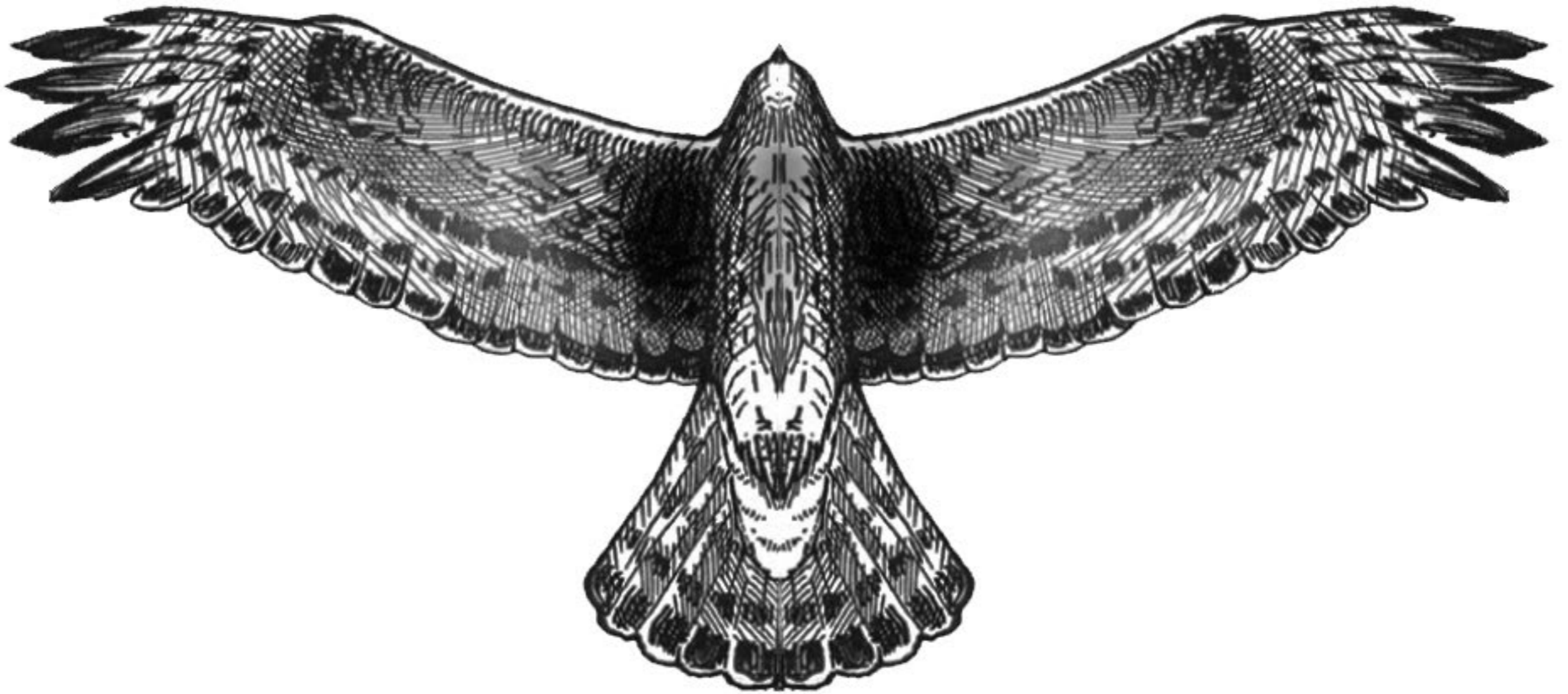
# Key Points for Osprey

- A large ***water-loving raptor*** with distinctive ***black-and-white patterned plumage*** and a unique ***gull-like flight***/soar shape.
- ***Wing beat*** is stiff, almost arthritic. Look for ***hover flight*** during feeding.
- Soars on long and lanky ***crooked-wings***. Wings bend up above horizontal axis and then downward at wrist.
- Uses ***thermals*** and ***updrafts***.
- Adults and immatures are functionally similar in appearance.
  - Aging by the narrow white border on the tip of the tail.
  - Adults lack it immatures have it.
- They ***may be clean-breasted***, or have varying amounts of ***streaking***; like a ***necklace*** on the upper chest.
- ***Dark eye stripe*** separates the white crown from the white throat.

# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Key Points for Northern Harrier

- Wings are held in a ***pronounced dihedral*** during its ***buoyant flight***.
- On windy days, the ***dihedral attitude*** causes it to rock ***unsteadily***.
- In normal flight, wing beat is ***loping*** and regular with an ***emphatic snap*** during the ***downward stroke***. ***Unique Cadence*** = Best Clue.
- Proportionately it has the longest tail of eastern raptors. ***Look for long, narrow wings, a long tail, and a white rump patch***.
- ***Male Plumage***: Silver gray above, white below.
- ***Female Plumage***: Tawny above, buffy with brown streaks on sides below.
- ***Immature Plumage***: Chocolate-rust above and orange to cinnamon below. No streaking.
- In ***female and immature birds*** look for ***dark axillaries***, the feathers in the armpit at the base of the underwing. ***Hairy Armpits*** = Best Clue.

# Learning Eastern Hawk Flight Identification



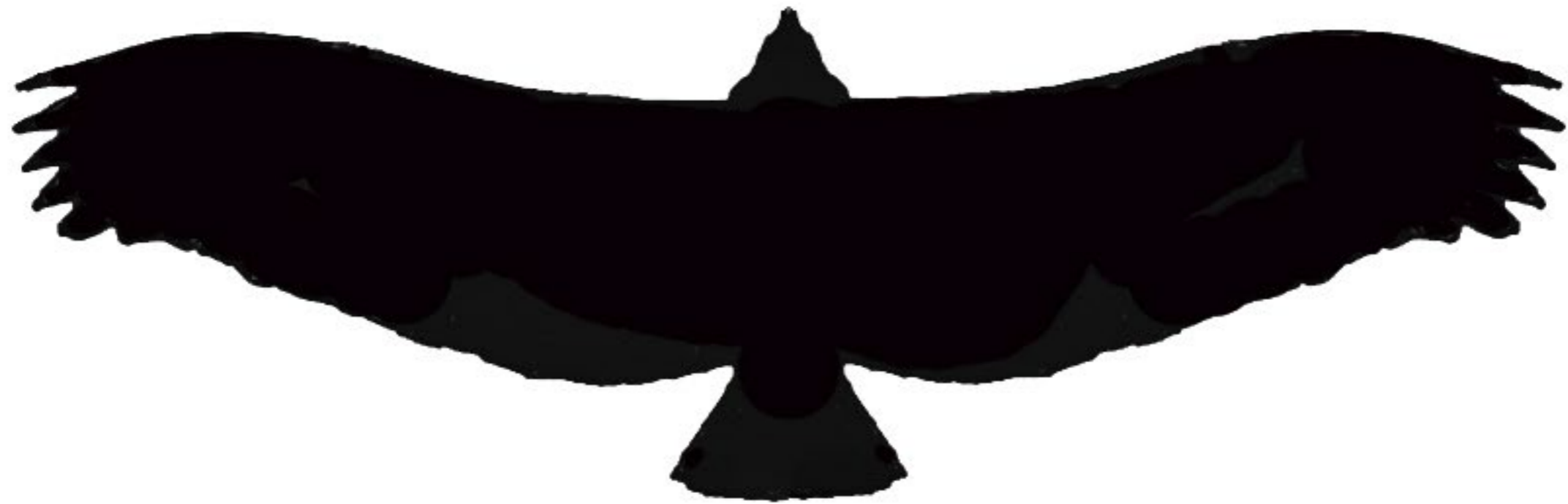
# Learning Eastern Hawk Flight Identification



# Key Points for Turkey Vulture

- Long, broad, plank-like wing held in ***bold dihedral***.
- ***Rarely needs to flap***; droops only wing tips, then resumes dihedral in a ***mock-flap***. This behavior is seen only in Turkey Vultures, and no other raptor.
- ***Flight feathers silver*** with underwing coverts and leading edge black.
- At a distance, rocking flight causes a ***mirror-like flashing*** of silvery underwing.
- ***Long, broad*** silvery gray ***tail*** is usually not fanned.
- ***Adult Head***: Tiny, red with yellow bill.
- ***Immature Head***: Dull gray with gray bill.
- Highly ***gregarious***.
- Confused most with ***distant Golden Eagle***; eagles don't rock in flight.

# Learning Eastern Hawk Flight Identification



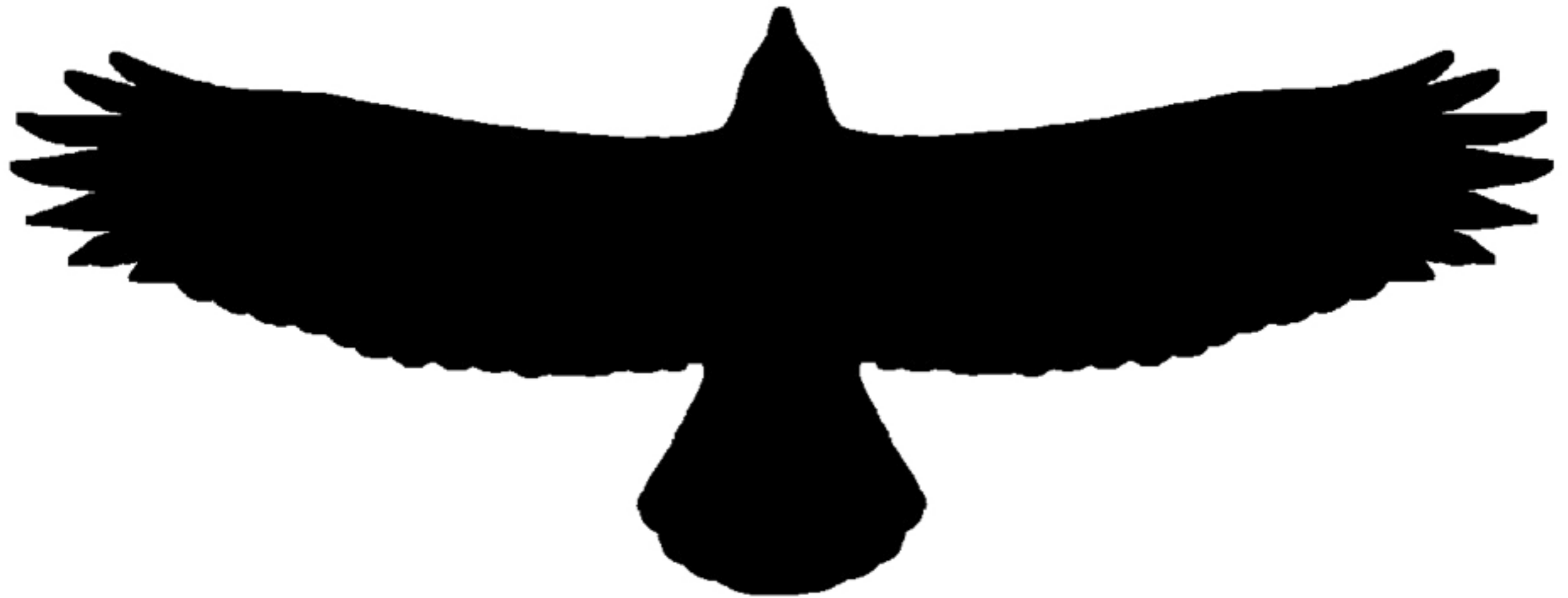
# Learning Eastern Hawk Flight Identification



# Key Points for Black Vulture

- ***Wings*** are held flat.
- Since it ***lacks the dihedral*** it ***must flap*** often to maintain glide speed.
- ***Primaries*** are silvery and remainder of wing is dark.
- ***Tail*** is shorter than Turkey Vulture's tail.
- Small ***head*** is gray with a pale bill.
- Is ***found in Turkey Vulture kettles*** and is easy to spot since it flaps often, has light wing tips, and small dark head and short dark tail.

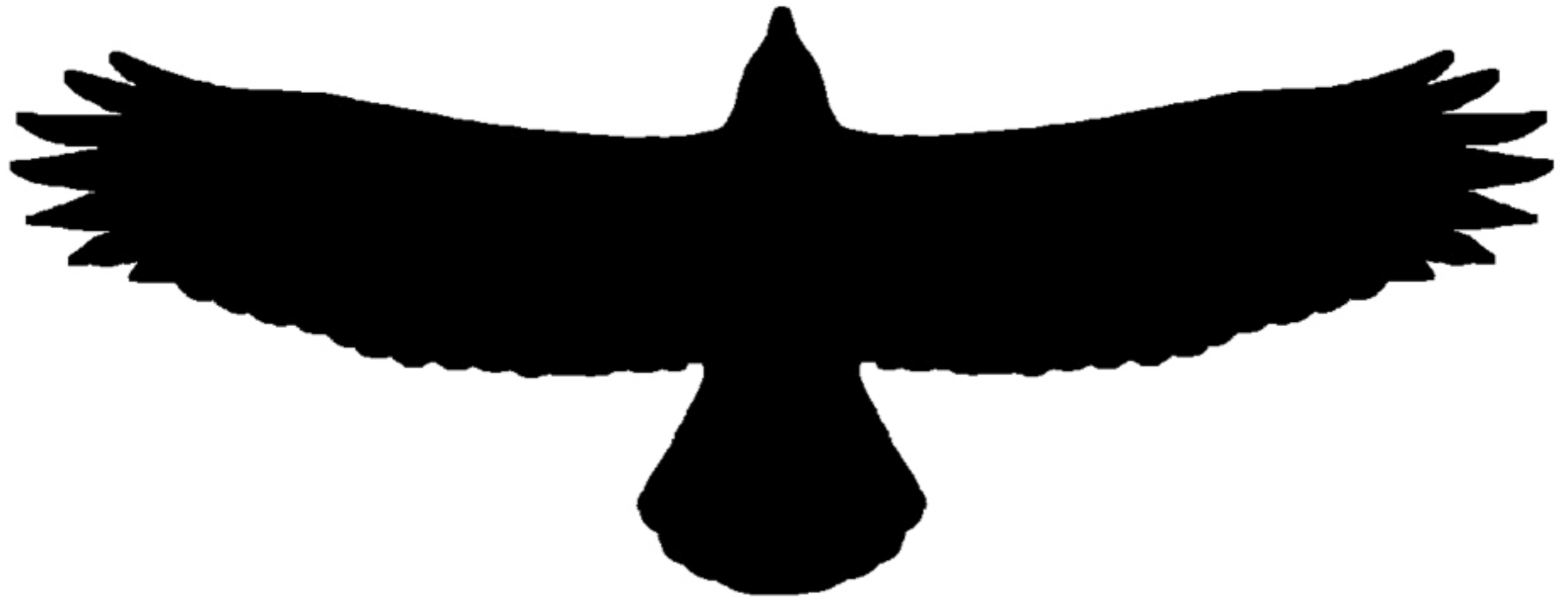
# Learning Eastern Hawk Flight Identification



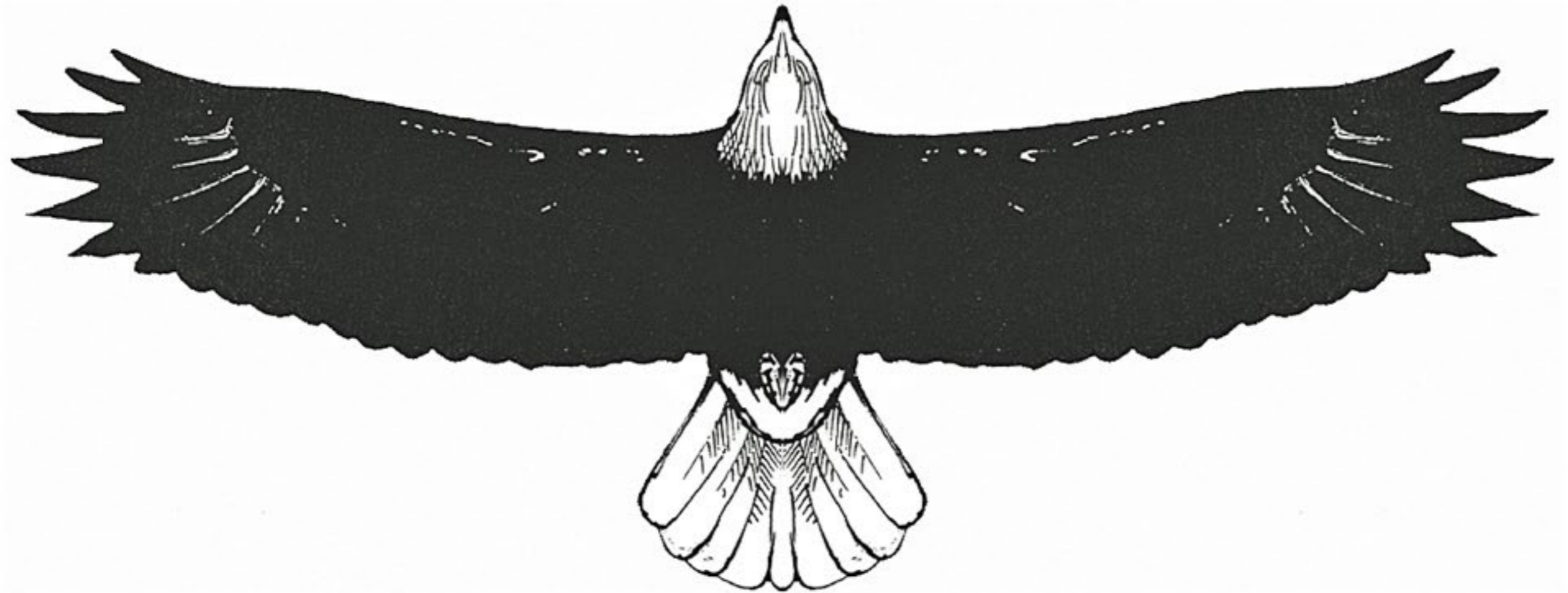
# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



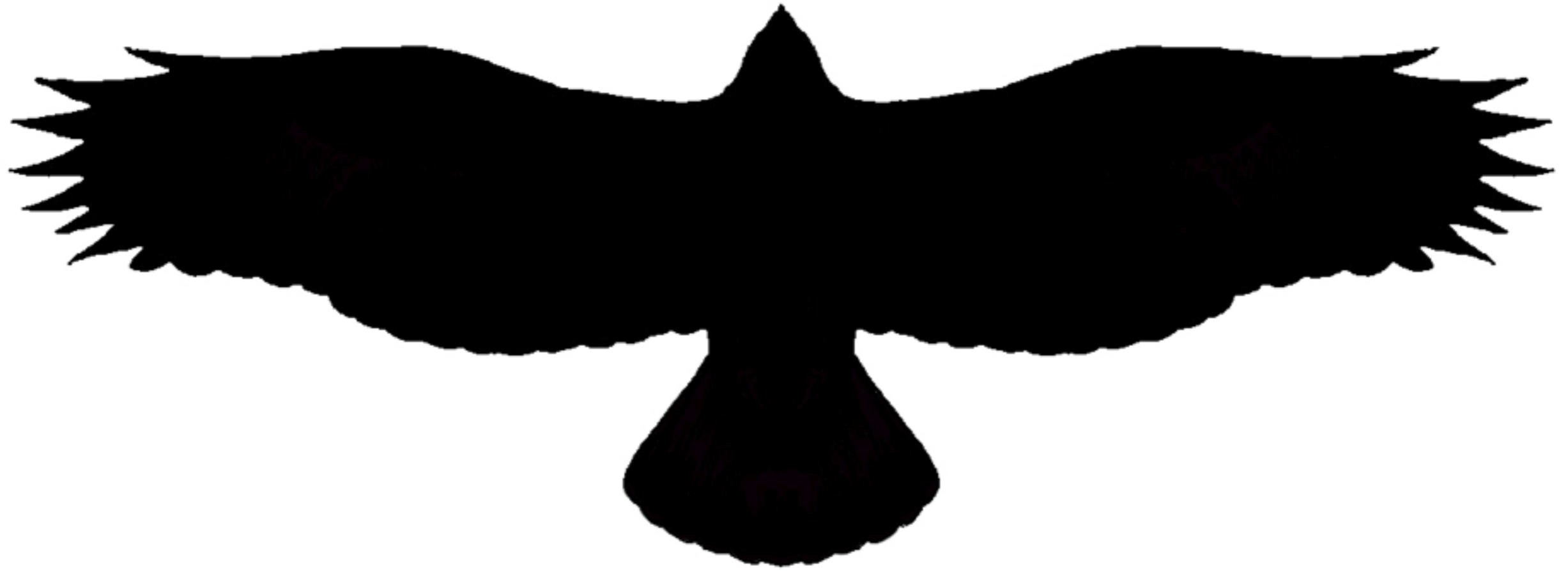
# Learning Eastern Hawk Flight Identification



# Key Points for Bald Eagle

- Immense size in all age classes.
- **Head and bill** are massive. **Adult Head:** White. **Immature Head:** Dark.
- **Adult Body:** Dark, almost black.
- Tail is an important field mark; white (adult) to dark (subadult).
- **1st Year Body:** **Chocolate**, almost black, speckled with **dirty white**; mottling varies and is age related.
- **2nd & 3rd Year Body:** Large areas of **white mottling** are present on the belly and some is located on the back.
- In soar, wing is uniformly wide — slab-like; held at right angle and straight out.
  - **Adult Wing:** Dark, almost black.
  - **Immature Wing:** Speckled with dirty white; mottling varies and is age related.
  - **1st Year Wing:** Trailing edge of wing '**even saw-toothed**' in first-year birds and later offset-tooth-like.
- **Flight:**
  - Steady, stately, deliberate, even-keeled, and not stiff.
  - Beat is slow, robust, deeply arched, and high on upstroke.
  - Flaps continuously or never flaps.

# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Key Points for Golden Eagle

- **Adult Body:** Dark brown body. **Immature Body:** Dark body. Body is large and dark, similar in appearance and shape to immature Bald Eagle.
- The **head and bill are very small**. when compared with Bald Eagle.
- **The wings are long, broad slab-like similar to Bald Eagle.**
- The **crown and nape are blond** or pale gold in all plumages.
- **Adult Tail:** A trace of white is possible.
- **Immature Tail:** Large white base appearing as if the tail is all white. Terminal band present.
- **Adult Wing:** Lack the white wing patches.
- **Immature Wing:** Brilliant white patches of various sizes on the wings. May be large and obvious or small and visible only from below.
- **Wing beat** slow and ponderous. Shallower wing beat than the deep arcing beat of a Bald Eagle. Like slow, gliding, and distant single Turkey Vulture.
- They **migrate singly or** in groups of **two's or three's**.

# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Key Points for Red-tailed Hawk

- **Learn the characteristics of this bird carefully.**
  - Reference **buteos**.
- **Wing:**
  - Long and broad. **Bulging** or **inverted bicep** creates a '**muscular wing**'.
  - **Patagium** is found only in the Red-tailed. **Patagium: Best Clue.**
- **Adults and immature plumage:**
  - Similar; brown - gray-brown above and light below, with speckling and streaking.
- **Chest:**
  - **White-chested** hawk. **Bellyband** present on most birds.
- **Adult Tail:**
  - The '**red**' tail in second year.
- **Immature Tail:**
  - **Fine brown barring**; white base.

# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification

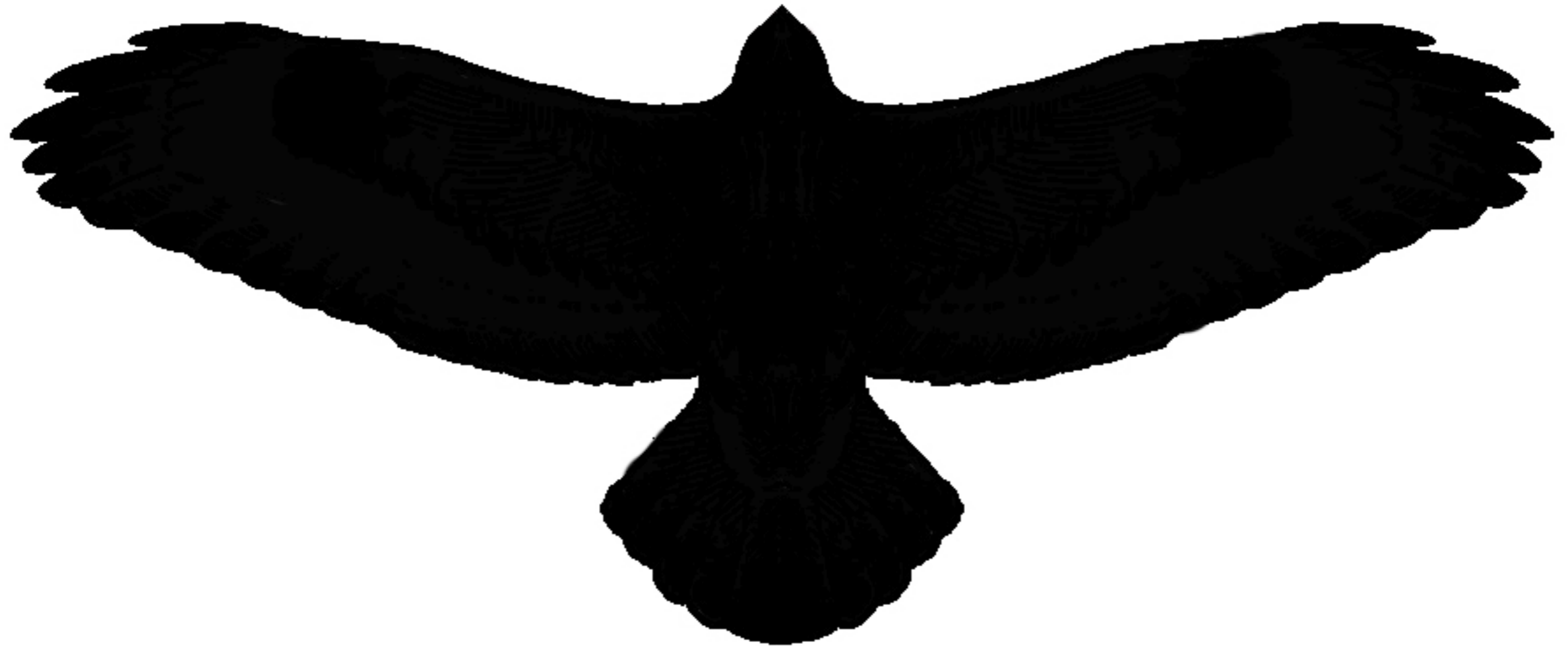




# Key Points for Red-shouldered Hawk

- Appears slimmer, trimmer, tube shaped, and **more clean-cut** than Red-tailed. In flight appears **three-quarters** the size of a Red-tailed Hawk.
- **Adult Body:** A **chestnut-colored** body and chest.
- **Immature Body:** A cream-colored body with heavy streaking on chest (**dollops of chocolate**).
- **Tail:** Is boldly striped with black and white creating **equally appearing bands**.
- **Wings:** Are long, narrow, and clean-edged and lack the muscular bulges of the Red-tailed Hawk. **In full soar the entire wing juts forward**. It appears to be reaching out with open arms. **Adult** upper-wing coverts (shoulder) are **rusty**.
- The best field mark is the crescent-shaped '**stained-glass window**' extending to the tip of each wing. This window has a '**checkerboard pattern**'.
- **CAUTION:** other buteos may show **translucent oval or rectangular patches** on the inner primaries or secondaries, but they are not 'windows'.
- **Wing beat** is quicker than a Red-tailed. Action is stiff, as though the bird were **batting the air with cupped wings**.
- General appearance is that of a buteo trying to **imitate an accipiter**.

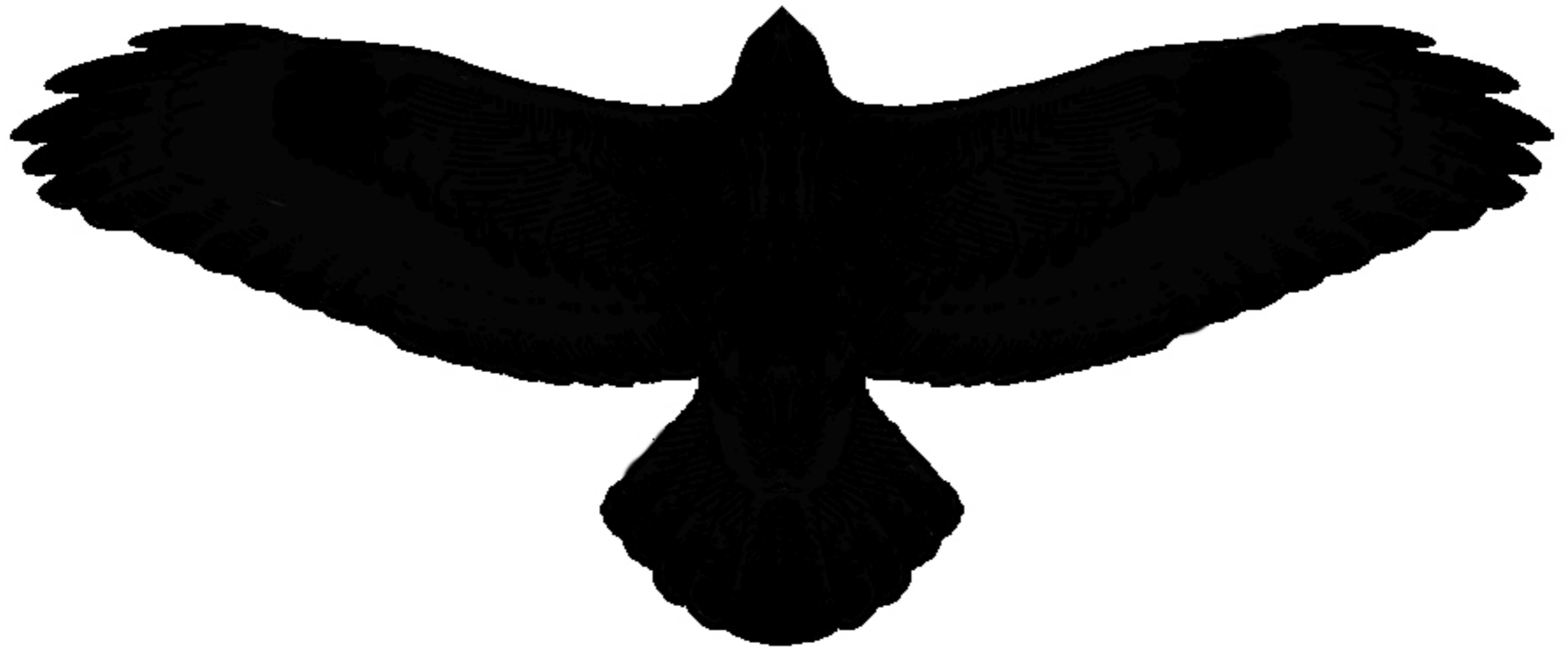
# Learning Eastern Hawk Flight Identification



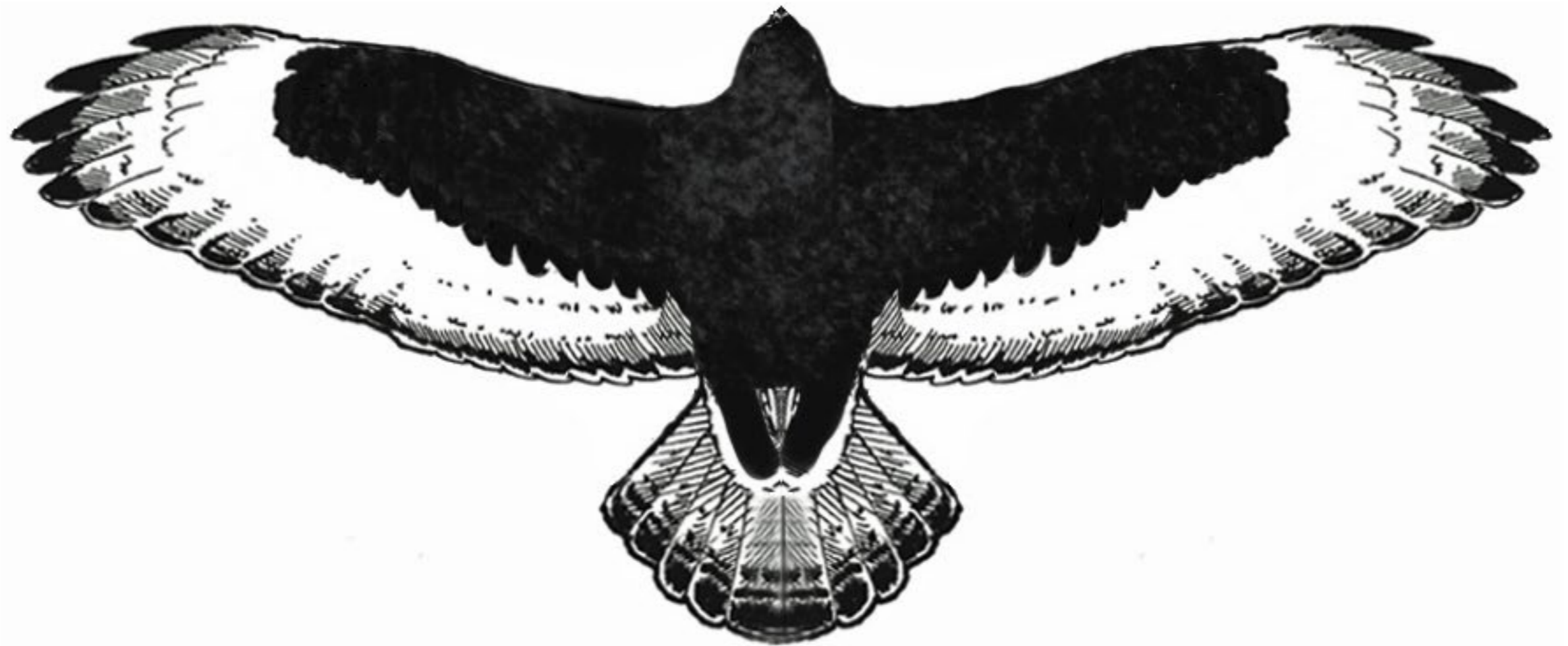
# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



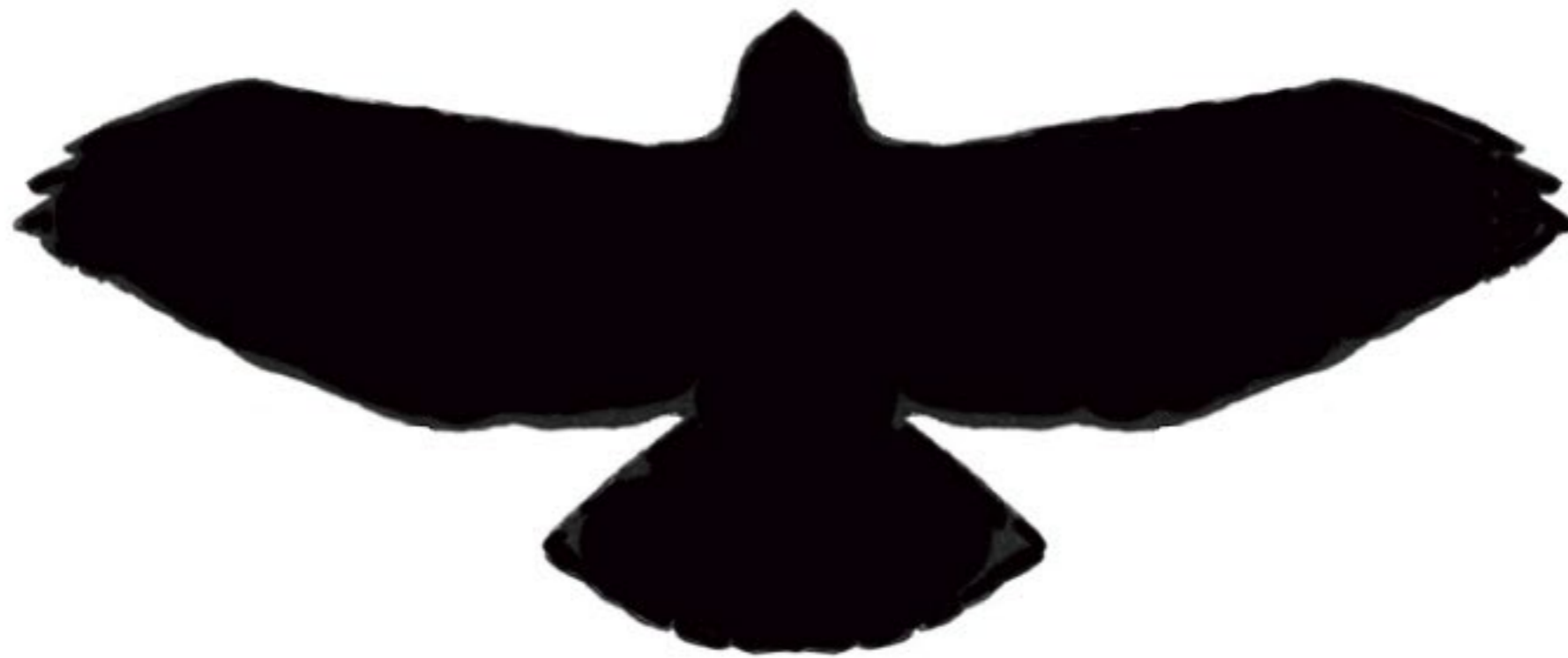
# Learning Eastern Hawk Flight Identification



# Key Points for Rough-legged Hawk

- A large, *lanky* buteo with bold plumage patterns. *Light-morph* and *Dark-morph*.
- *Wing* juts *up-and-out* forming a *dihedral* that *flattens* out at the wrist giving a *hunched-shoulder* attitude.
- *Wing beat* is steady, unhurried, *methodical*, and deeply arched.
- *Flight* seems *effortless*. Flapping doesn't usually happen in a series; but if does, there are more pumps to the glide. *Graceful*.

# Learning Eastern Hawk Flight Identification



# Learning Eastern Hawk Flight Identification



# Key Points for Broad-winged Hawk

- ***Crow-sized buteo.***
- ***Adult Chest:***
  - Barring on the chest.
- ***Immature Chest:***
  - Creamy below with heavy streaking on the face, throat, sides, and belly.
- ***Wing:***
  - In a *glide or partial tuck*, the wings looks like the *blade of a paring knife*.
- ***Underwing:***
  - Very clean and white. White picture framed in black.
- ***Adult Tail:***
  - Broad black-and-white bands.
- ***Immature Tail:***
  - *Subterminal band on the tail is darkest and widest.*
- ***Uses thermals.***
  - Look for 'kettles'.





Keep  Looking Up



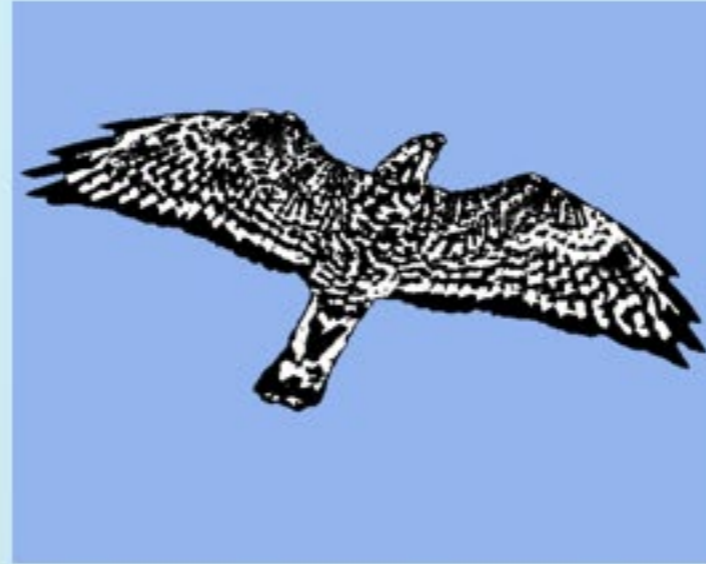
Keep  Looking Up



Keep  Looking Up



Keep  Looking Up



Keep  Looking Up



Keep  Looking Up

# Learning Eastern Hawk Flight Identification



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*See you on the  
Hawk Tower!*

