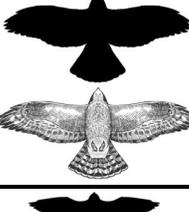
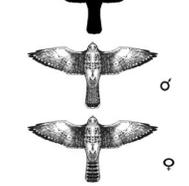
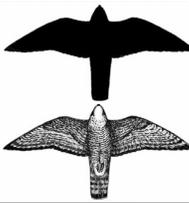
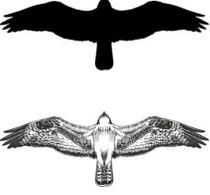
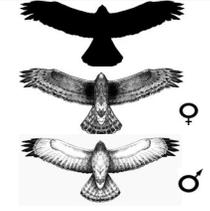
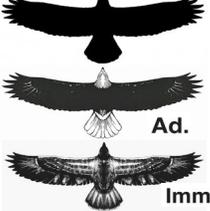
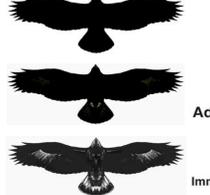


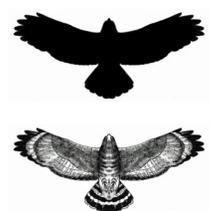
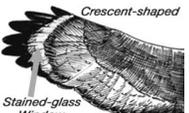
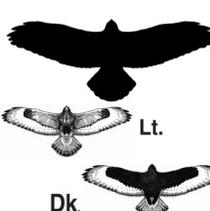
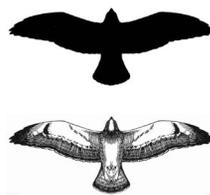
Eastern Migrant Diurnal Raptor Flight Guide

Raptor	Image	Body	Tail	Wing	Head	Underparts	Flight	Behavior
Sharp-shinned Hawk Shrugging, Snappy, Straight, Soiled, Social.		Narrow, stubby. Body equal to length of tail. A flying mallet of wings and tail. Shrugging Sharpie	Tip usually squared . Terminal band is narrow, soiled , not white but difficult to see. Straight Sharpie Soiled Sharpie	Short, broad and very round at the tip. The leading edge has the wrist projecting or pushing forward. The trailing edge shows an "S" curve.	Appears to be pulled back since wings are pushed forward. Shrugging Sharpie	Immature: Chest and belly have thick noodle-like streaking. Looks dirty at distance. Adult: Rusty barring on chest and belly.	Flapping and gliding is hurried and snappy. Too rapid to count. Flap, flap, flap, gggglide. Like Beethoven: Bump, bump, bump, bbbbah. In a glide tends to hold tail up above head. Snappy Sharpie	Travels in 1's, 2's or up to 8 at a time. Feisty, agitator, intimidator. Social Sharpie
Cooper's Hawk Crossing, Casual, Curved, Crisp, Companionless.		Large version of Sharpie. Body appears shorter than tail. A flying cross. Crossing Cooper's	Long with tip usually rounded. The terminal band is broad white and easy to see. Curved Cooper's Crisp Cooper's	The wing is rather long and straight with little or no bend at the wrist. Along the leading edge it is flat while the trailing edge is curved.	Large and heavy head. It projects forward of the wings, like a turtle's extended head. The eye is well forward. Crossing Cooper's	Immature: Only the chest has thick noodle-like streaking. Looks white or clean at distance. Adult: Rusty barring on chest.	Countable flapping. Gliding with stiff flaps. Moth-like in flight. In a glide tends to hold head up higher than tail. Casual Cooper's	Usually doesn't travel in pairs or groups. Tends to be solitary flyer . May soar high with other raptors in thermals with fully extended wings. Companionless Cooper's
Northern Goshawk Buteo-like. Tubular. White eye-line visible.		Buteo size and shape. Tubular. Cylindrical. Cooper's on steroids.	Broad and wedge-shaped. Tail appears like an extension of the body. Tail banding is in a zig-zag pattern.	Leading edge <i>almost straight</i> . Trailing edge like Sharpie's 'S' curve.	Head is Fist-shaped , large, and broad. White Eye line visible in all ages . Adult: Black eye patches.	Immature: Heavy noodle-like streaking on breast to base of tail. Adult: Pale gray barring.	Wing beat is heavy, deep. Wing beat is labored like a buteo. <i>A flying tube.</i>	An <i>accipiter</i> that looks like a buteo. Beware of similar plumage in immature Red-shoulder Hawk. Red-shoulder lacks white eye line of Goshawk.
American Kestrel 'Flying Banana'		Killdeer-sized. Dainty and delicate looking. Strong back curving of the wings and tuck of the head gives a flying banana look. Female slightly but not noticeably larger than male .	Male: Bright rufous tail with a broad, dark band near the tip. Female: Reddish brown, overlaid with dark, broken barring. No dark tip.	Soft curving swept back wing. Sickle-shaped like a "flying banana". Male: Blue above. Line of white dots on trailing edge termed "necklace." Female: Reddish above. Necklace of buffy dots.	A vertical slash-marks on both sides of the face. Mustache and Sideburn.	Adult: Very pale. Lightly streaked and spotted, especially on the sides. Immature: Similar to adult, with more heavy streaking below.	Light, lively, fluttery, wandering. Accipiter-like quality. On calm days flight behavior similar to Sharpie's flap-flap-glide. Glides more often than Merlin and Peregrine. Battered about by moderate winds.	Travels in 1's, 3's, 4's or up to 8-10 in a loose group. Eats dragonflies while flying. In a strong wind, it bounces like a cork on the water.
Merlin Point-to-point flight. Solitary.		Athletic, slender, and powerful. Male: Larger than Kestrel. Bright metallic blue above. Female and Imm: Large pigeon. Chocolate falcon.	Male: Dark blue tail shows several pencil-thin blue-gray bands . Female: Dark brown tail shows many pencil-thin buffy bands .	Longer and broader than Kestrel. Broad isosceles triangle-shaped with sharply pointed tips.	Mustache mark: Is <i>blurred, faint, vague, and ambiguous</i> .	Fine to heavy streaking. Male: Finely streaked below Female: Heavy streaking below with contrasting white throat and buffy under tail coverts.	Point-to-point flight is consistent and direct. Doesn't wander nor is altered by wind speed. Wing beats are quick and continuous with short strokes. Power in down-stroke. 'Pigeon' flight.	Its demeanor may be <i>irritating, galling, and bothersome</i> . Usually solitary .
Pergrine Falcon Extremely long-winged. Wing beat like Common Loon.		Medium-to-large with wide range between sexes. Heavy and broad. Adult: Blue-gray back. Immature: Brown back.	Fairly long and broad tailed falcon. When tail is fully spread it forms a semicircle that nearly touches the trailing edge of wing .	Very long-winged falcon. Wide base triangle-shape. In soaring bird, wing resembles tapered candles.	All individuals have a bold, distinct mustache mark . Immature: Blond crown and nape .	Adult: Heavily barred below, with a gleaming white chest and throat . Immature: Heavily streaked , with a buff-colored chest and throat .	Wing beat is fluid, rhythmic, elastic, and whip-like. <i>Similar to a Common Loon's wing attitude.</i>	Solitary in migration. May be confused with the Northern Harrier that has longer wings and tail .

Eastern Migrant Diurnal Raptor Flight Guide

Raptor	Image	Body	Tail	Wing	Head	Underparts	Flight	Behavior
Osprey Black & white showy plumage. Distinctive gull-shape.		Adults and Immatures: Similar in appearance; With distinctive black and white patterned plumage and distinctive gull-shape. Imm. have white tip tail.	Adult: Lack a narrow white border on the tip of the tail. Imm.: Have a narrow white border on the tip of the tail.	Adult: Long & gull-shaped with darker mottling on the underwing. Imm.: Long & gull-shaped with thin white trailing edge border.	Dark eye stripe separates the white crown from the white throat.	Body and wing linings are creamy white. Flight feathers are uniformly dark.	Soars on long and lanky crooked-wings. Wings bend up above horizontal axis and then downward at wrist. Beat is stiff, arthritic.	Looks like a gull . Uses thermals and updrafts .
Northern Harrier Proportionally longest tall of all N. A. raptors		Long, lean, lanky, medium size. White rump patch. Male: Silver gray above, white below. Female: Tawny above buffy with brown streaks on sides below. Immature: Chocolate-rust above. Orange to cinnamon below. No streaking.	Long and narrow. Proportionately longest tail of all North American raptors.	Long and narrow, bold dihedral . Attitude may be pointed (falcon) or blunt (buteo). Male: Underwing shows inky-black tips and trailing edge.	Immature: Head is dark; appearing hooded. Male: Black head.	Male: White. Female: Buffy with brown streaks on sides. Immature: Cinnamon, to mahogany, or rust-colored.	Rocks unsteadily in a wind. Wing beat loping and regular; emphatic snap on downward stroke. Best Clue: unique cadence.	Migrate alone, in pairs, or groups of 3's and 5's. Flight path is usually single file.
Turkey Vulture Bold dihedral. Rocking flight.		Uniformly dark black. Sexes similar.	Broad tail, usually not spread.	Bold dihedral . Wing long, broad, plank-like, deeply slotted tips. Flight feathers silver with underwing coverts and leading edge black.	Diminutive, Lilliputian, minute, minuscule, tiny! Adult: Red with yellow bill. Immature: Dull gray with gray bill.	Two-toned. Uniformly dark black but flight feathers are silvery.	Long tail and no head. Rocks in flight like a tightrope walker.	Gregarious. Rarely flaps. Singles confused with Golden Eagle. Uses thermals for lift.
Black Vulture No dihedral. A burst of wing flapping.		Raven-like vulture clothed in black.	Very short tail.	Wings held horizontally. Wings shorter than TV's wings. All feathers dark except primaries being silvery.	Head totally gray , featherless, and small. Bill pale.	Entirely black except for silvery patches on the underside of the primaries.	Soars with its wings held horizontally going a short distance then engages in a burst of wing flapping followed by another soar.	Rare in northern mid-west states and Canadian provinces. Rarely in a thermal.
Bald Eagle Large head. Wings flat.		Immense size in all age classes. Adult: Dark, almost black. 1st year: Chocolate, almost black, speckled with dirty white. 2nd & 3rd: Large areas of white mottling are present on the belly and some it located on the back.	Important field mark; white to dark . Adult white Immature is dark without or with some white	In soar, uniformly wide — slab-like; held at right angle and straight out. Adult: Dark, almost black. Immature: Speckled with dirty white; mottling varies and is age related. 1st year: White limited to underwing linings. It appears as broad white line at leading edge area. Wing pits white. 2nd & 3rd: Underwing patches generously white.	Head and bill are massive. Adult: White. Imm: Dark.	Great variation . Adult: Dark. Other ages: Various amounts of white on belly, wings, and tail.	Steady, stately, deliberate, even-keeled, and not stiff . Beat is slow, robust, deeply arched, and high on upstroke.	Flap continuously . Or Never flapping.
Golden Eagle Small head. Slight dihedral.		Large and dark, similar in appearance and shape to immature Bald Eagle. Adult: Dark brown. Immature: Dark.	White at base of tail . Adult: Trace of white feathering may be present at the base of the tail. Immature: White tail broadly edged with a dark terminal band.	Long, broad slab-like wing similar to Bald Eagle. Adult: Lack white wing patches. Immature: Brilliant white patches on the wings large and obvious.	Head and bill are small. Crown and nape blond or pale gold in all plumages.	Uniformly dark except for flight feathers and tail.	Wing beat slow and ponderous. Shallower wing beat than the deep arcing beat of a Bald Eagle. Like slow, gliding, single distant Turkey Vulture.	Flies singly or in groups of two's or three's.

Eastern Migrant Diurnal Raptor Flight Guide

Raptor	Image	Body	Tail	Wing	Head	Underparts	Flight	Behavior
Red-tailed Hawk Patagial wing mark. Muscular wing bulge.		Adult and Immature: Similar in plumage – brown to gray-brown above and light below, with varying amounts of speckling and streaking. They do differ in tail color.	Adult: Has a reddish tail that is gotten during the second year. Immature: Have finely barred brown tails that show white at the base.	Best Clue: Patagium Patagium on <i>leading edge</i> is near the body; in all Red-tailed plumages. Underwing 'comma' at the wrist. <i>Trailing edge</i> bulges to form a 'muscular' wing.	Brown to gray-brown. → Wing con't: Second Best Clue: Muscular 	Very <i>white</i> breast and belly. A distinct <i>bellyband</i> is usually present on most birds BUT <i>is not an ID mark</i> .	May hover-hunt and is capable of kiting for a short time.	The Red-tailed <i>must be a reference for identifying other buteos</i> . This bird is the large hawk of the highway roadside.
Red-shouldered Hawk Curved 'stained-glass window' near wing tip.		Compared to Red-tailed in flight, it appears slimmer, sleeker, and cylindrical. Adult: Curved body chestnut. Immature: Body not chestnut & brown above.	Boldly striped with black and white broad bands. Tail sub terminal band isn't noticeably different from the other bands. Adult: Short tail. Immature: Long tail.	Long, narrow, and clean-edged; lacks the bulging of the Red-tailed. Adult: Underwings chestnut. Flight feathers boldly striped with black and white.	→ Wing con't: Crescent-shaped "stained-glass window" at base of primaries. 	Adult: Chestnut.* Immature: Cream-colored below with heavy streaking on the chest.	In full soar, entire wing projections forward, Beat is quicker than a Red-tailed but stiff as though the bird was swatting the air with cupped wings.	It thinks it's an accipiter.*General appearance is that of a <i>buteo</i> trying to mimic an accipiter.
Broad-winged Hawk <i>Smallest Buteo.</i> Chunky, Crow-sized. Uses <i>thermals</i> for travel.		Small, chunky, stubby, and Crow-sized.* Immature: Brown above.	Adult: Broad black and white tail bands.*Sub-terminal band on the tail is darker and wider than the other bands on the tail.	Underwings of both Immatures and (especially) Adults are very clean and white. The broad, dark outer border extending from wing tip back along the trailing edge accents this. The look is a white picture and black frame.	Nothing special to note.	Adult: Barring on chest.* Immature: Creamy below with heavy streaking on the face, throat, sides, and belly (suggesting a band).	Soar: wings are short and broad and are held horizontally and flat at almost a perfect 180°.* Glide: Wing leading edge is curved & trailing edge is straight like blade of a paring knife.	Depend more on thermals than most hawks.*In the East, a large flock of <i>buteos</i> intuitively means Broad-winged.
Rough-legged Hawk A slender <i>buteo</i> . Large and lanky, Two boldly patterned color forms.		Large, lanky, slender <i>buteo</i> . It's boldly patterned, setting the bird apart from most <i>buteos</i> . Several different plumages occur, relating to age and sex, but these are conspicuous. Light morph dark morph birds occur	Light morph: Upper surface is white except for a broad, dark band at the tip.* Dark morph: Show almost no white on the tail, and some have none. Some show an obvious broad dark sub-terminal band.	Juts up sharply from the body forming pronounced dihedral then flattens out at the wrist. Hunched-shoulder posture is only seen in the Rough-legged. Light morph: Light with some streaking. Dark morph: Black underwing linings.	Light morph: Creamy or tawny crown and nape (usually over-streaked with brown).* Dark morph: Black.	Light morph: Adult: Chest heavily streaked. Bellyband less obvious. Immature: Mostly unstreaked and pale below. Note the carpal patch, dark belly, and dark tail band. Dark morph: Silvery flight feathers and undertail.	Wing beat is steady, unhurried, methodical, and deeply arched. Flapping doesn't frequently happen in a series, but if the bird does fly in a series of pumps and glides, there are more pumps to the glide.	Readily use own power for flight. Least hesitant <i>buteo</i> to cross open water. Flight is effortless with a sense of purpose and grace.
Swainson's Hawk <i>Dark and Light morphs</i> .		Light-morph adult has white underparts, rufous bib, and dark gray flight feathers. Dark-morph varies from reddish brown to dark brown underside with rufous color to underwing coverts.	Dark band at tailend with narrow white tip.	Slight dihedral, it rocks in flight. Light morph has a unique pattern with leading edge of light linings and trailing edge of dark flight feathers.	Dark head. White throat and face patch.	Light morph adults have white underparts with dark reddish 'bib' on chest. White throat and face patch.	Glides with modified dihedral. Gliding wings appear falcon-like. It rocks in flight with a slight dihedral of wings.	Mixed tieh Broad-wings in thermals. 1-3 per seasons.

The material contained in this document has been gathered from personal observations, conversations with fellow hawk watchers, and the published sources listed to the right. This document may be copied for hawk identification usage. I hope this is a useful tool for you. I encourage you to support your local hawkwatch and the Hawk Migration Association of North America.
 HMANA.ORG and HawkCount.org.
 Keep Looking Up!

Clark, W. S., and B. Wheeler; 1987, *Hawks: A Field Guide to the Hawks of North America*, Peterson Field Guide Series, Houghton Mifflin
 Dunne, P., D. Sibley, and C. Sutton; 2012, *Hawks in flight: Flight identification of North American migrant raptors* 2nd Ed, Houghton Mifflin.
 Dunne, P., D. Keller, R. Kochenberger; 1984, *Hawk Watch: A Guide for Beginners*, New Jersey Audubon Society.
 HMANA, 2009, Developed by Paul Carrier, for Hawk Migration Association of North America, *A Guide to Hawks Seen in North America* .
 Liguori J.; 2005, *Hawks From Every Angle: How to Identify Raptors in Flight*, Princeton University Press
 Liguori J.; 2011, *Hawks at a Distance*, Princeton University Press.
 Wheeler, B., and B. Clark; 1999, *A Photographic Guide to North American Raptors* (Paperback), Academic Press
 Wheeler, B.; 2003, *The Wheeler Guides: Raptors of Eastern North America and Raptors of Western North America*, Princeton University Press