

# What is a Bird of Prey?



Birds of prey are predators. Like all **predators**, they hunt and kill other animals for food. Birds of prey have specific **adaptations** to help them hunt, capture, and kill their **prey**. They have keen eyesight, sharp, strong **talons**, and a strong, curved beak. These are important features for a bird that must hunt and kill other animals to survive. Hawks, falcons, eagles, and owls are all birds of prey. Birds of prey are also called **raptors**.

# What is a Bird of Prey?

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THE SHAPE AND SIZE OF BEAKS AND FEET  
DEPEND ON WHAT BIRDS DO AND EAT

Match the following description to the appropriate picture of the bill or foot

## Beak for

Getting nectar from flowers

Ripping and shredding meat

Cracking open seeds and fruit

Getting grubs from under tree bark

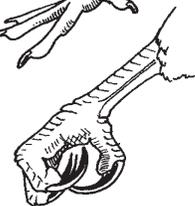
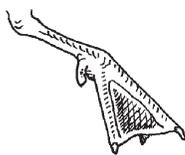
## Feet for

Swimming

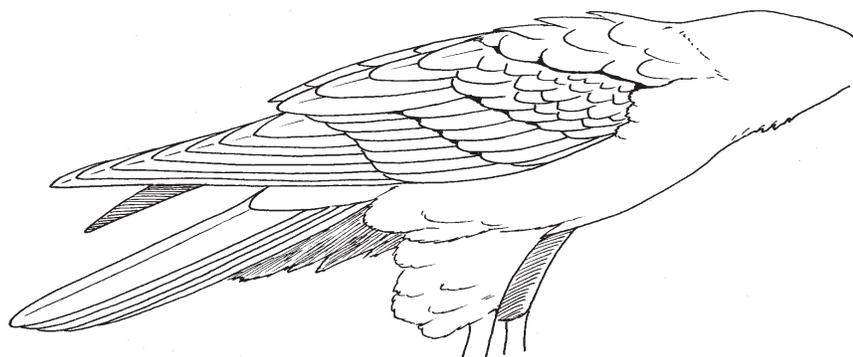
Holding onto sides of trees

Running

Holding onto prey animals

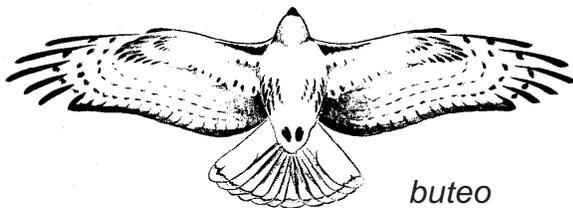


Add eyes, feet and a beak to make this a bird of prey



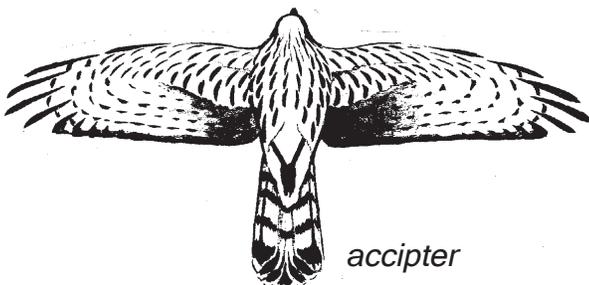
# Identifying Birds of Prey

Birds of prey (raptors) come in many shapes and sizes. When hawkwatchers identify birds of prey in flight, they look mainly at body shape, proportions, and flight characteristics. There are three general types of raptors recognizable by body and wing shape: *buteos*, *accipiters* and *falcons*. The shapes of these birds also indicate how they fly and, thus, their life-styles. The following silhouettes help identify these three basic groups of raptors.



*buteo*

**Buteos.** These soaring hawks have long, broad wings and wide, fanned tails. Buteos are built to glide effortlessly on air currents. They can soar for long stretches without flapping their wings. Their soaring ability lets them hunt for prey while circling over open areas. They will perch on trees and utility poles and wait for unsuspecting prey to move below. Buteos include the Broad-winged Hawk, Red-tailed Hawk, Red-shouldered Hawk and Rough-legged Hawk.



*accipiter*

**Accipiters.** With short, round wings, and long, rudder-like tails, accipiters are agile forest hawks. These birds, which are adept at maneuvering in thick woods, dart through trees, hunting birds on the wing. Although they sometimes soar like buteos, their typical flight pattern is several flaps followed by a glide. Cooper's Hawks, Northern Goshawks and Sharp-shinned Hawks are examples of accipiters.



*falcon*

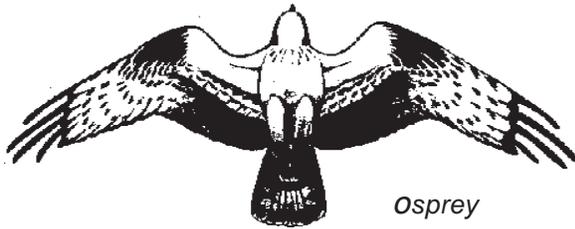
**Falcons.** Falcons, the fastest birds of prey, are built for speed with streamlined bodies and long, pointed wings. Falcons most often flap continuously while in flight. The peregrine falcon can dive at speeds of over 150 miles per hour. Falcons often hunt other birds on the wing. The smallest falcon, the American kestrel, is able to hover in one place while hunting small rodents and insects. Falcons include the American Kestrel, Peregrine Falcon, and Merlin.

In all, 16 species of birds of prey commonly migrate over Hawk Mountain, nine of which fall into one of the three above categories. The six other birds of prey include Osprey, Bald Eagle, Golden Eagle, Northern Harrier, Turkey Vulture and Black Vulture.

# Identifying Birds of Prey

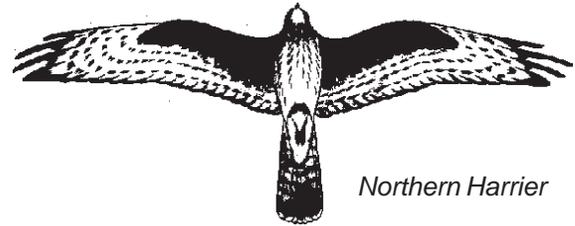
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*Osprey*

**Ospreys.** The long narrow wings of Ospreys are often crooked at the wrist so that the leading edge of the wings forms an “M” shape. Underneath, Ospreys have contrasting dark and light plumage. Ospreys tend to glide extensively on migration. Ospreys hunt mainly for fish, and are seldom found far from water. In hunting, Ospreys plunge feet first into the water to capture fish swimming near the surface. The bottoms of Ospreys’ feet are rough like sandpaper, allowing them to grip their slippery prey.



*Northern Harrier*

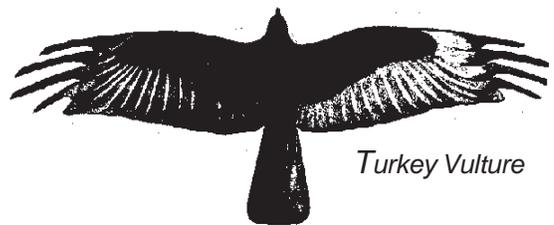
**Northern Harriers.** With wings held above the body in a shallow “V” these birds of prey with an “owl-shaped face” hunt over marshes, meadows and open fields. Northern Harriers, or marsh hawks, can be identified by a white rump patch at the base of their long narrow tails.

**Turkey Vultures.** Turkey Vultures also hold their wings in a “V” or dihedral. They are easily identified by their rocking flight as they soar in circles taking advantage of rising thermal currents. Unlike most birds of prey, Turkey Vultures have a keen sense of smell, which helps them to find dead and rotting animals for food.



*eagle*

**Eagles.** The two eagle species - the Bald Eagle and Golden Eagle - are two of the largest birds of prey found in North America. The Bald Eagle is our national symbol. Adults have a white head and tail, and a dark body. The long, wide wings are held flat while soaring and the large head and beak are noticeable from a distance. Bald Eagles, which hunt live prey, mainly fish, are also scavengers. The Golden Eagle has a smaller head and beak and its wings often form a slight “V” when its gliding.



*Turkey Vulture*

In the fall, hawks flying over Hawk Mountain are counted as they pass the Sanctuary’s North Lookout. The count has been conducted annually since 1934, and is a very valuable tool to study changes in raptor populations.

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# Migration of Birds of Prey

**E**ach fall, millions of birds make long journeys from summer nesting grounds to lower-latitude wintering grounds. Those that survive migrate back again each spring. The distance traveled by these birds may range from a few hundred to several thousand miles each way.

The raptors that fly over Hawk Mountain are following the Appalachian flyway. These birds come from the northeastern United States and eastern Canada. They have different destinations, depending on species and populations. Broad-winged hawks, ospreys, and peregrine falcons travel the greatest distances each year; most of them

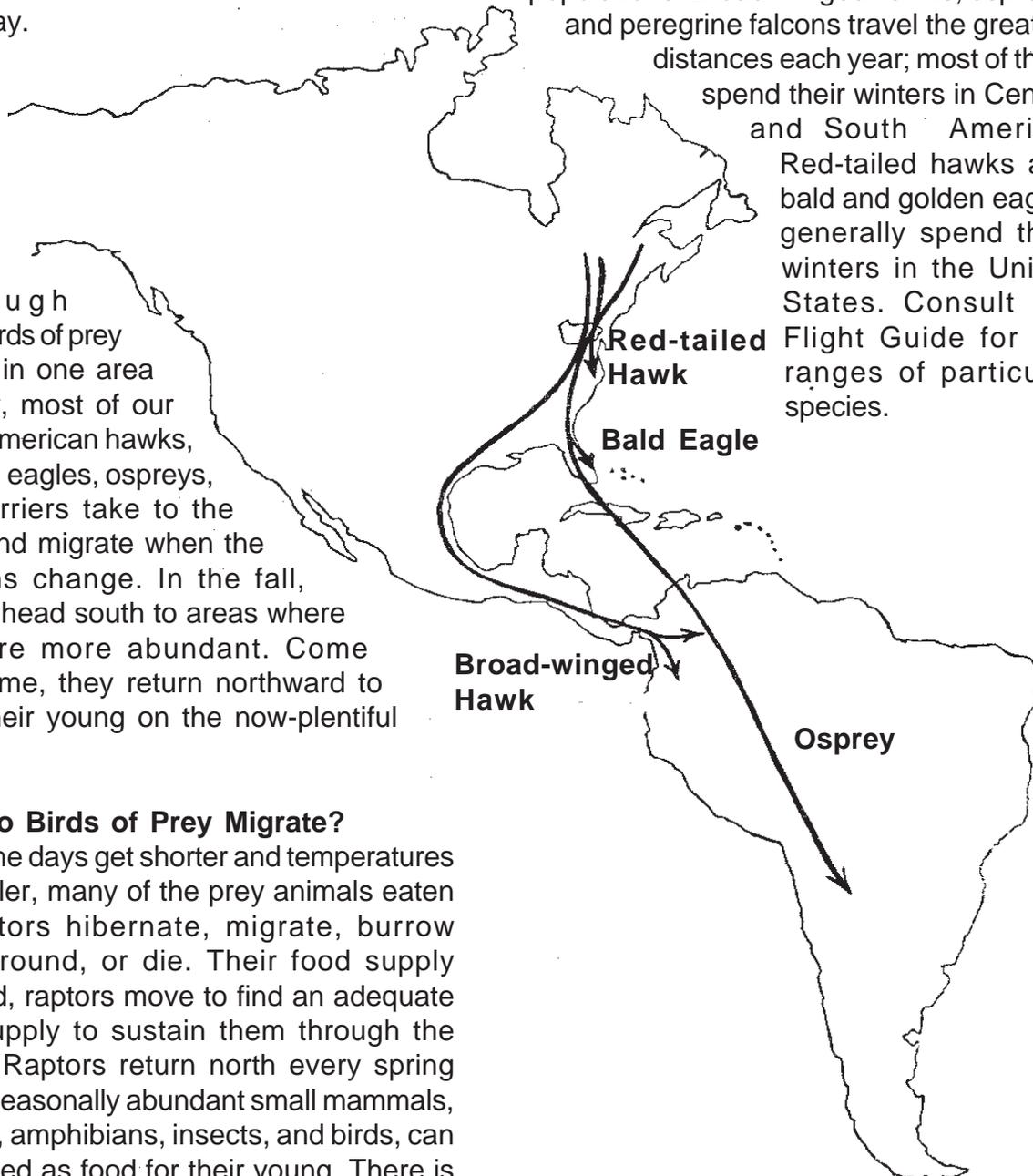
spend their winters in Central and South America.

Red-tailed hawks and bald and golden eagles generally spend their winters in the United States. Consult the Flight Guide for the ranges of particular species.

Although some birds of prey remain in one area all year, most of our North American hawks, falcons, eagles, ospreys, and harriers take to the skies and migrate when the seasons change. In the fall, raptors head south to areas where prey are more abundant. Come springtime, they return northward to raise their young on the now-plentiful prey.

## Why Do Birds of Prey Migrate?

When the days get shorter and temperatures get cooler, many of the prey animals eaten by raptors hibernate, migrate, burrow underground, or die. Their food supply reduced, raptors move to find an adequate food supply to sustain them through the winter. Raptors return north every spring where seasonally abundant small mammals, reptiles, amphibians, insects, and birds, can be hunted as food for their young. There is less competition here than on their wintering grounds, where other year-round raptors nest and hunt.

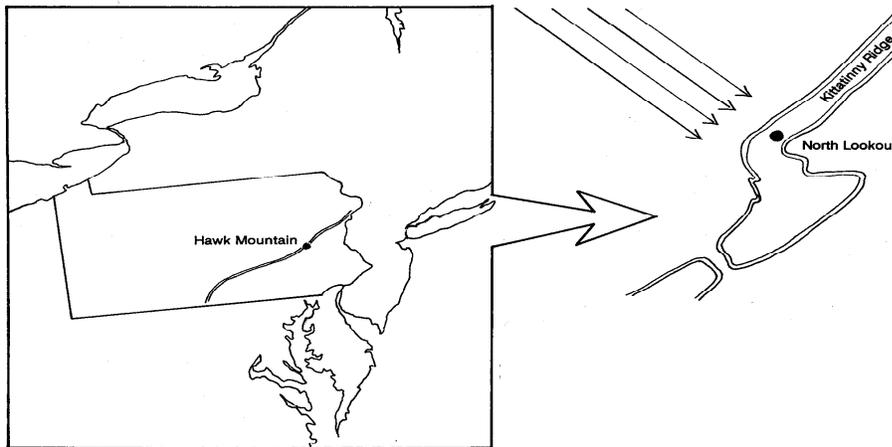


# Migration Dynamics

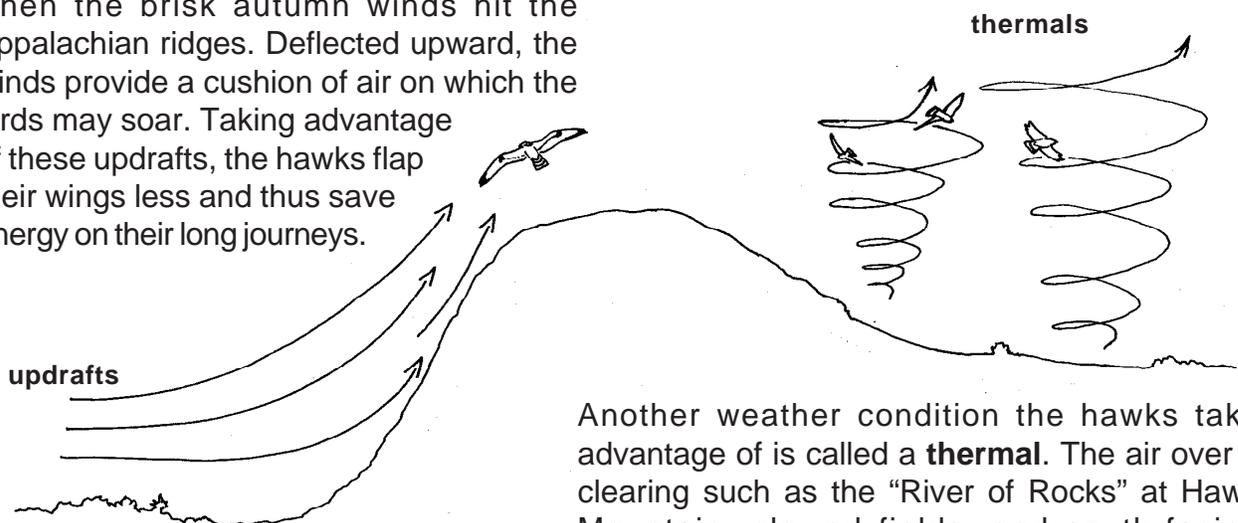
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When migrating, birds of prey tend to follow certain routes, or “flyways.” Flyways often follow geographic features, such as mountain chains, rivers, or coastlines. These features may aid the raptors in navigation. Also, wind currents along many of these routes provide opportunity

for soaring, allowing the birds to power their flight on upwardly moving columns of air. Hawk Mountain is located along the Kittatinny Ridge, the eastern-most ridge of the Appalachians Mountains. Wind conditions occurring along the ridge provide a helpful lift to migrating birds of prey.



Wind currents, called **updrafts**, are created when the brisk autumn winds hit the Appalachian ridges. Deflected upward, the winds provide a cushion of air on which the birds may soar. Taking advantage of these updrafts, the hawks flap their wings less and thus save energy on their long journeys.



Another weather condition the hawks take advantage of is called a **thermal**. The air over a clearing such as the “River of Rocks” at Hawk Mountain, plowed fields, and south-facing mountain slopes is heated by the sun more rapidly than the air over a wooded area. This warmed air begins to rise, and a thermal is created. Raptors seek out these bubbles of warm, rising air, soaring higher and higher until gliding off in the direction of their migration; saving energy again by not having to flap their wings.

# Migration of Birds of Prey

The Hawk Mountain Migration Timetable (page 10) shows when different species migrate over Hawk Mountain. Use the table to answer questions 1-3.

1. Which species would you expect to see if you visited Hawk Mountain in November?

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2. Which two species are you most likely to see anytime you visit Hawk Mountain in the fall?

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3. When would you visit if you wanted to see a broad-winged hawk? \_\_\_\_\_

**Choose your favorite bird of prey and find out where it migrates and the route it takes during its migration south.**

4. Name the kind of raptor you studied \_\_\_\_\_

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Answer the following questions about your raptor's migration:

5. Name a mountain chain and a river crossed over during migration \_\_\_\_\_

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6. Name two countries on the route \_\_\_\_\_

7. Does your bird fly near any major cities? \_\_\_\_\_

If so, name them: \_\_\_\_\_

8. What is your bird's usual winter destination? \_\_\_\_\_

9. What dangers might your bird encounter during its migration? \_\_\_\_\_

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# Migration of Birds of Prey

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10. On the map below, draw arrows to indicate your bird's southward migration route. On your map, add such features as mountain ranges, rivers, major cities, states, and countries that the bird flies over. Label the features on your map.



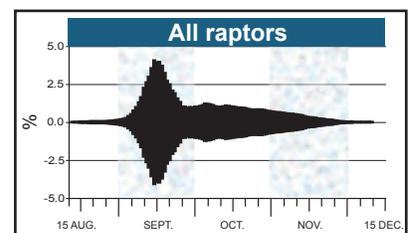
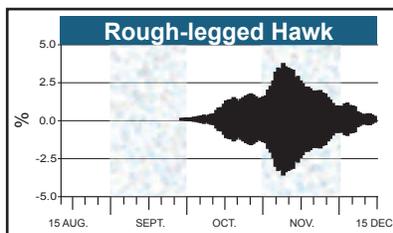
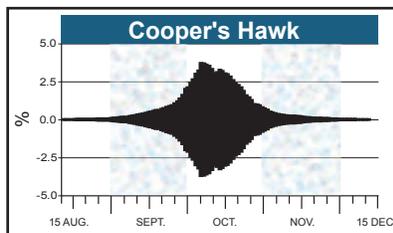
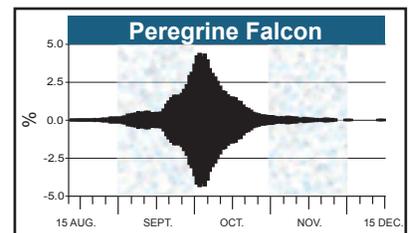
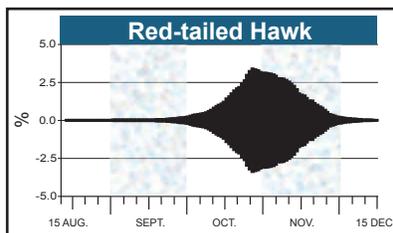
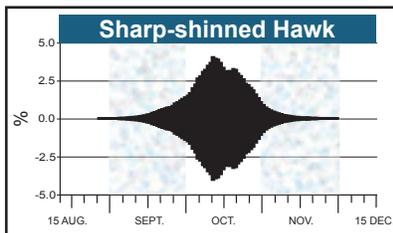
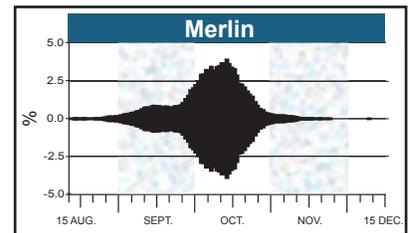
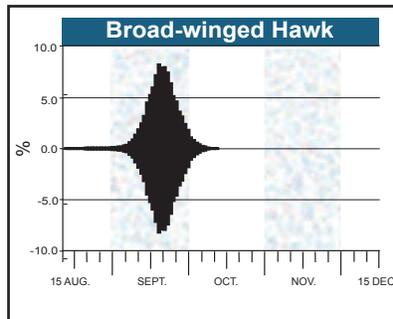
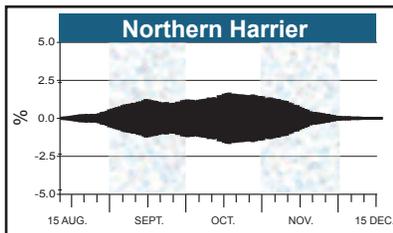
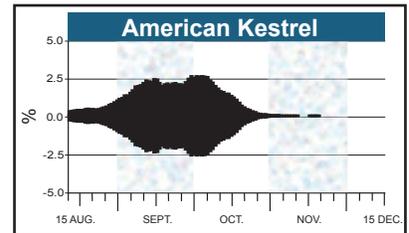
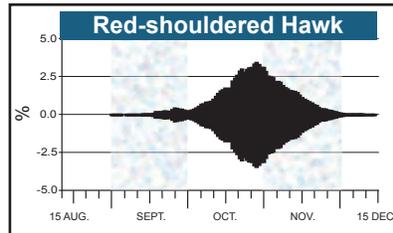
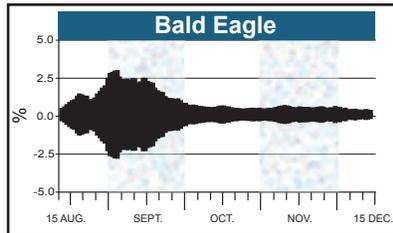
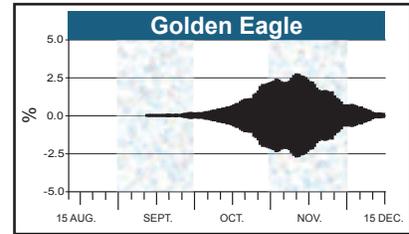
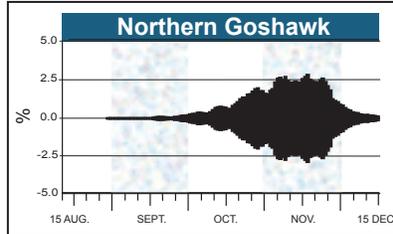
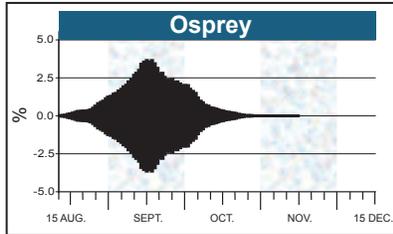


HAWK MOUNTAIN

1934-2005

# Migration Timetable

The bubble-graphs below represent seasonal changes in the magnitude of migration, expressed as a percentage of the annual flight for each species.



# Summary of Annual Counts



Species	Long-term average	Highest count	Year	Lowest count	Year
Turkey Vulture*	104	457	2005	84	1992
Black Vulture*	12	112	2005	21	1992
Osprey	388	869	1990	17	1934
Bald Eagle	64	213	2003	12	1972
Northern Harrier	226	475	1980	89	1934
Sharp-shinned Hawk	4,327	10,612	1977	1,259	1965
Cooper's Hawk	360	1,121	2005	60	1964
Northern Goshawk	70	347	1972	3	1953
Red-shouldered Hawk	274	468	1958	87	1971
Broad-winged Hawk	8,126	29,519	1978	2,886	1946
Red-tailed Hawk	3,316	6,208	1939	1,525	1956
Rough-legged Hawk	9	31	1961	0	6 years
Golden Eagle	56	159	2003	12	1966
American Kestrel	391	835	1989	11	1934
Merlin	49	198	2005	7	1972
Peregrine Falcon	27	62	2002	6	1982
<b>All raptors</b>	<b>17,928</b>	<b>40,698</b>	<b>1978</b>	<b>7,892</b>	<b>1934</b>

*\*Data for Turkey and Black Vultures are based on counts since 1990.*



# Long-term Trends

1934-2005

The Hawk Mountain migration counts below reflect long-term changes in regional populations of raptors. Each point represents a *three-year running average* for the species.

