Junior Hawkwatcher Guide

Hawk Migration Association

Instructions

Complete all activities in this guide to earn your Junior Hawkwatcher sticker from the migration site coordinator, your teacher or field trip leader.

What is your name?

_____

What is your age?

_____

Where do you live?

_____

What is your favorite bird?

_____

Which raptor migration site are you visiting?

_____

Which birds are you most excited to see today and why?

_____

_____

_____

The Junior Hawkwatcher's Pledge

I, _____, pledge to protect raptors and all birds. I can make this possible by being a patient observer and sharing my memories and observations with friends and family. I can also protect raptors by not littering or using poisons, such as lead and rat killer.

Date: _____

Location: _____

Information about Migration and Hawkwatching

Migration is the seasonal movement of animals. Many bird species, including hawks, in North America migrate, spending spring and summer (breeding season) up north and the winters down south (into Indiana or far into Central and South America). Birds of prey are often called raptors, which include eagles, falcons, vultures, osprey, harriers, kites, accipiters, and buteos. Raptors are also commonly called “hawks,” but the term “hawk” really refers to specific types of raptors, those from the genus Buteo (like Red-tailed Hawks). Many hawks, or “raptors”, migrate through the Great Lakes Region. Raptor migration is special because…

- these birds fly during the day, they are diurnal!
- the geography of the landscape concentrates raptors along predictable paths (mountain ridges and shorelines)
- hawkwatching is important science and a fun hobby

Areas with large migrations sometimes also have organized raptor migration count sites, also known as hawkwatches. Organized count sites include a standardized protocol for when, where and how to count migrating species. The primary purpose of raptor migration count sites is to count migrating raptors to monitor the health of their populations and to build a strong conservation community. These counts can be used to create a trend analysis - a study that determines whether raptor numbers are increasing or decreasing. Raptors are indicator species, which means their health is an indication of the health of the surrounding ecosystem.

Hawkwatching is an example of a high-quality community-science program that connects people with the phenomena of migration. Hawkwatchers are trained to spot, identify, age and sex (male/female) each raptor passing the site. You can be a hawkwatcher! This guide will help you build your raptor knowledge and practice your observation skills.

Activity 1 – Draw a Bird

Observation is the act of watching and it is a powerful tool used by scientists. Practice your observation skills by watching a bird and making a drawing to record what you observe. Label the beak, feet, eyes and other notable characteristics like wing shape, coloring and behavior. Make notes to describe what the bird is doing.

Activity 2 – Which of the following birds are raptors?

Raptor means ‘to seize prey’ and is used as a term for a group of birds that includes species of hawks, kites, owls, falcons and eagles. Raptors eat prey such as small mammals, birds, insects and snakes. Each raptor has large, forward facing eyes; feet with powerful talons and a sharp, curved beak.

Activity 3 – Interview a Hawkwatcher

First, take a moment to observe the people at the count site. What tools are they using to find and count birds? What are you curious about? What would you like to know more about? Challenge yourself to come up with at least three questions to ask one of the other hawkwatchers.

Question 1) _____

_____

Response 1) _____

_____

Question 2) _____

_____

Response 2) _____

_____

Question 3) _____

_____

Response 3) _____

_____

Activity 4 – Word Search

SHARP-SHINNED	HAWKWATCHING	RED-TAILED
VULTURE	FALCON	MERLIN
OSPREY	EAGLE	BUTEO
RAPTOR	WING	LIFT

U P J M J Y T X W Q E L E D C V D I R F
C X Z P S L H A W K W A T C H I N G U D
D J J M X P A C W N X R G U J V K V F E
R Y G P E B O O S Z D E D S Z L B N O V
L E G J O Y S J J H Z U W C V T F X X N
B I T E V K P M R A V M Q S M E R L I N
V O Z F Y Q R Y S B R M N L R S L S V L
F N O G R H E I T E W B C O E H E N P I
D C V V F R Y P T D E N M U D A M J C F
Z F A U A A V U L T U R E F T R C G K T
E K T A F E X M W I N G B J A P O N J L
C O Y B A U U H Z H T Z M T I S V N K R
T T O M M T B U T E O C M X L H R F F G
G Q A U J R P N F K J P D V E I B R F B
D F N C L B R A P T O R E S D N S V A F
G O G K S V T K W U N X L U Q N V F L N
Z P H L M G K T E A G L E V J E W D C O
U W U N V V C H D O X I W R D D X A O E
J E A N Y Z A K R M N Z L A N Q L W N A
A L K U Y S V G L Y V W U N S H B E V M

Activity 5 – Broad-winged Hawk

Below is a picture of a Broad-winged Hawk in flight. Broad-winged Hawks are crow-sized hawks in the Buteo family. They can migrate in large groups that hawkwatchers call “kettles.”

1) What do you notice about the tail shape?

2) Describe the coloring on the tail.

3) What color is the outline of the wing?

4) What do you notice about the shape of the wing?

5) Is the bottom (trailing) edge of the wing curved or straight?

Activity 6 – Merlin

Below is a picture of a Merlin in flight. Merlins are small falcons with a powerful build and sharply pointed wings. They love to fly really fast!

1) What do you notice about the tail shape?

2) Are the wings dark or light-colored?

3) Describe the wing shape

4) Are the wings slim or fat?

5) Is the bottom (trailing) edge of the wing curved or straight?

Activity 7 – Locating Hawkwatches

Raptor migration sites in Michigan are located along the shorelines of the Great Lakes, which act as 'superhighways' for the migration of raptors. Elsewhere pay attention to mountain ridgelines, river valleys and ocean coastlines to find migration flight paths.

Diurnal raptors migrate during the day, when warm columns of air called thermals provide free lift. These rising columns of air are created by the sun warming the earth. The sun warms land quicker than water, so thermals don't form over water. This means that raptor flight paths follow the land and avoid flying over water whenever possible.

Pretend it's spring and you are a Rough-legged Hawk, headed to the arctic to breed - draw a flight path from the South to the North that crosses the least amount of water possible.

Now, pretend it's fall and you are a Turkey Vulture, headed from your nest in Michigan's Upper Peninsula to your winter home in Kentucky - draw a flight path South that crosses the least amount of water possible.

Some count sites are active in both seasons and some are only active in spring OR fall. Why do you think this is? What is different seasonally?

_____

_____

Activity 8 – The Importance of Weather

Understanding weather is an important part of hawkwatching. Wind, precipitation, barometric pressure, cloud cover and temperature affect a bird's ability to migrate. Use your senses to observe the weather conditions and circle your answers below.

Wind Direction (where it's coming from):

N NE E SE S SW W NW

Wind Speed:

None Slight Medium Fast Very Fast

Type of Precipitation:

None Mist Rain Snow

Amount of Cloud Cover/Sunlight:

Hazy Overcast Partial Sun Full Sun

Temperature:

Very Cold Cold Comfortable Warm Hot

Amount of Visibility:

Poor Medium Clear/Good

Activity 9 – Counting Raptors

Use the data table below to keep track of your raptor observations.

Species (bird name)	Number Observed	Notes about the bird's behavior
Turkey Vulture		
Bald Eagle		
Osprey		
Sharp-shinned Hawk		
Red-tailed Hawk		
Golden Eagle		
Merlin		
Broad-winged Hawk		
Cooper's Hawk		
Black Vulture		
Peregrine Falcon		
American Kestrel		
Other:		
TOTALS		

1) How many species of birds did you count today? (this is a measure of the biodiversity) _____

2) How many total individuals did you count today? (this is a measure of abundance) _____

3) Which bird was your favorite and why? _____

_____

Activity 10 – Connect the Raptors to the Name

Draw a line from the raptor to their description. You may use any resources to help answer these questions.

Raptor	Description
Turkey Vulture	Adults have big white heads
Bald Eagle	Adults have red tails
Osprey	Large, dark bird of prey that rocks in the air
Sharp-shinned Hawk	Has a golden nape on back of head
Red-tailed Hawk	Large, dark bird of prey with a very short tail
Golden Eagle	Looks like a large Sharp- shinned Hawk
Broad-winged Hawk	Fastest of all raptors
Cooper's Hawk	In flight, it's shape looks like a giant M
Black Vulture	A small-headed, snappy raptor
Peregrine Falcon	Large black and white tail bands

Activity 11 – Wind Turbines

Climate change is having a measurable effect on migratory birds. Some northern raptors are not flying as far south while some are changing their migration paths or just not migrating at all in response to weather patterns changing. Renewable energy sources are an important consideration for decreasing carbon emissions and tackling climate change. Using wind turbines to generate power is promising. But windy places can also be migration pathways for birds.

1) What do you think happens to Golden Eagles when they encounter a wind turbine? Hint: The tips of the blades move much faster than cars on a highway.

2) Who should decide if wind turbines are allowed to operate or be banned from known migratory routes?

3) Is it reasonable that a certain number of eagles might be allowed to be killed by wind turbines for the production of a more environmentally friendly energy source? If so, how many eagle deaths would be acceptable?

Note: The Hawk Migration Association (HMA) is not opposed to wind energy, but feels proper siting is crucial. To learn more, please visit...
https://www.hawkmigration.org/industrial-wind-turbine-siting-position/

Activity 12 – Rodenticides

Red-shouldered Hawks love to eat mice and similarly small sized mammals. This makes most people happy, because not all people want to live near mice. In fact, many people kill mice using rat poison (rodenticide). They put it near their houses, usually in the basement, and it soon kills the mice. The funny thing is that people rarely find the dead mice.

Reports of drowning Red-shouldered Hawks has scientists investigating their deaths. Can you help them solve this mystery?

1) Why do you think Red-shouldered Hawks are drowning themselves?
Hint: Rodenticides make animals crave water.

2) Why do you think people do not find the dead mice?
Hint: Do you think raptors could be eating the poisoned mice?

3) Can you think of a way to help kill mice without using rodenticides?

Activity 13 – Secret Code News!

Use the following key to decipher important migrating raptor facts. To keep others from spying on your work, it has been specially coded for you! To decode, simply shift back one letter in the alphabet for each letter.

Example: “Tpnf” becomes “Some.”

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Tpnf njhsbujoh sbqupst fbu jotfdut uibu bsf bmtp jnqpsubou, tvdi bt esbhpogmjft.

_____

_____

_____

Ju jt jnqpsubou up lffq uif fowjsponfou ifbmuiz tp uibu njhsbujoh sbqupst ibwf dmfbo gppe boe xbufs up tvswjwf uifjs kpvsofz.

_____

_____

_____

_____

Journal About Your Day

Include key things you learned about raptors, migration and conservation. Share your favorite moments from this experience. Include a sketch of your favorite raptor!

Thank you for being a Junior Hawkwatcher and caring for these special species! Studying raptors and how they migrate helps us to better understand and protect them. We hope you enjoyed learning about hawk migration!

To learn more about raptor counting, find a raptor migration site near you and to support raptor conservation, visit...

www.hawkmigration.org

www.hawkcount.org

Michigan Raptor Migration Teaching Network

Are you an educator? Check out the Michigan Raptor Migration Teaching Network for free resources and professional learning opportunities.
http://www.hawkmigration.org/mrmtn

Hawk Migration Association

HMA is a nonprofit organization that promotes hawkwatching and provides resources for the hawkwatching community. This includes offering raptor identification materials, managing the HawkCount.org database and producing a biannual journal, Hawk Migration Studies.

This guide was updated in 2025 by Kara & Josh Haas and Julie Brown for the Michigan Raptor Migration Teaching Network and for broader use throughout the HMA network. It was originally created by Brian M. Wargo for the Allegheny Front Hawkwatch in Pennsylvania (**www.alleghenyplateauaudubon.org/allegheny-front-hawk-watch**). Raptor and other bird photographs provided by Josh Haas (**www.hawksonthewing.com**).

Michigan Raptor Migration Teaching Network

THE MEIJER FOUNDATION

HMA advances scientific knowledge of raptor populations and raptor migration, promotes raptor conservation, and inspires all communities to study and celebrate raptor migration. Learn how you can support raptors by visiting **www.hawkmigration.org/support/**

www.hawkmigration.org www.hawkcount.org

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