



**Girl Scouts of Southeastern Michigan**

# **JUNIOR HAWKWATCHER PROGRAM**

**Cadettes, Seniors, and Ambassadors**

Sponsored by:  
The Hawk Migration Association of North America (HMANA)  
and the Detroit River Hawk Watch



## INSTRUCTIONS

To earn your Junior Hawkwatcher patch at the Detroit River Hawk Watch, complete the activities in this booklet. Once completed, please take this booklet to a counter or hawkwatching volunteer at the site. Your work will be checked for accuracy and if found to be correct, the Junior Hawkwatcher patch will be awarded.



What is your name?

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What is your age?

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Where are you from?

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What is your favorite bird?

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Have you been to a hawkwatch site before?

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Have you ever seen an eagle?

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## THE HAWKWATCHER'S PLEDGE

I, \_\_\_\_\_, have completed the appropriate number of activities for my age, and am beginning my journey to becoming a supporter of migrating raptors. Like people, migrating raptors need clean water, clean air, food that is free from toxins, and space. I promise to share what I have learned here with my family, my friends, and my teachers. When hunting and fishing, I will try to use non-lead alternatives. If I ever have a mouse problem, I will consider using mechanical mousetraps instead of poisons. I will also do my part to keep the environment clean, healthy, and safe for all wildlife, so that they can help the raptors survive. Most of all, I will let other people know that getting outside and watching raptors is good for the body and the mind.

### Senior Hawkwatcher Signature Required Below

I, \_\_\_\_\_, certify that \_\_\_\_\_ has met the requirement to become a Junior Hawkwatcher at the Detroit River Hawk Watch and earn their Junior Hawkwatcher patch, on this date of \_\_\_\_\_, 20 \_\_\_\_\_.

## BACKGROUND INFORMATION

The Detroit River Hawk Watch (DRHW) was established in 1983 under the leadership of Tim Smart, who served as the DRHW site coordinator for sixteen years. Smart had counted hawks for several seasons at Holiday Beach Conservation Area in Malden Center, Ontario, Canada. He knew that birds moving past Holiday Beach had to cross into Michigan near the Detroit region, so he scouted the area, trying to find the best and most consistent concentration of hawks. His efforts were soon rewarded with the establishment of two prime sites, the Lake Erie Metropark boat launch (the main site) and Pointe Mouillee State Game Area Headquarters parking lot (a secondary site), located just south of the Metropark.

A hawkwatch is designated to collect information about migratory raptors (birds of prey), which include eagles, falcons, vultures, osprey, harriers, accipiters, and buteos. These birds are often called “hawks,” but the term “hawk” really refers to specific types of raptors. The common Red-tailed Hawk is a hawk (in the genus *Buteo*), but the Peregrine Falcon (in the genus *Falco*) is not, for example.

Most hawkwatches, like the Detroit River Hawk Watch, have a designated spot where hawkwatching and counting takes place. A dedicated group of hawkwatchers helps run the hawkwatch. Hawkwatchers are the people—usually volunteers—that spot, identify, and attempt to age and sex (tell if the raptors are male or female) each raptor that passes the hawkwatch site during the migratory seasons.

Every year since 1983, counters have patiently monitored the skies at the lower Detroit River and produced daily reports. You can find these reports, uploaded each evening from September 1st through November 30th, at [www.HawkCount.org](http://www.HawkCount.org).

## WHAT MAKES THE DETROIT RIVER HAWK WATCH SPECIAL?

The primary purpose of the Detroit River Hawk Watch is to count migrating hawks 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 hawk numbers are increasing or decreasing. Hawkwatching is also a fitting example of a high-quality citizen-science program. In a time when the natural world can seem increasingly distant in our lives, daily counts and data are a meaningful connection. The hawkwatch team members are the storytellers of this timeless phenomenon—cyclic migration that is as old as the Great Lakes—sharing the information they gather at the hawkwatch site with anyone who accesses it online. DRHW values both the scientific integrity of the data as well as the passion for observing the miracle of migration.

The Detroit River Hawk Watch is famous for its Broad-winged Hawk numbers. There are few things that are as predictable as the annual September arrival of large numbers of these hawks, soaring and circling in what is known as kettles as they ride rising masses of air called thermals. Riding the air makes long-distance flights less demanding for the birds.



## ACTIVITY 1 – WHICH OF THE FOLLOWING BIRDS ARE RAPTORS?

A raptor is a bird that uses its keen eyesight, powerful talons, and curved beak for hunting and feeding on small animals and other birds.



Broad-winged Hawk



Eastern Blue Bird



Tundra Swan

## ACTIVITY 2 – INTERVIEW A HAWKWATCHER

Ask one of the hawkwatchers three questions that you are interested in knowing about hawkwatching. Space is provided below for writing the questions ahead of your visit as well as for the answers.

Question 1 \_\_\_\_\_

\_\_\_\_\_

Response 1 \_\_\_\_\_

\_\_\_\_\_

Question 2 \_\_\_\_\_

\_\_\_\_\_

Response 2 \_\_\_\_\_

\_\_\_\_\_

Question 3 \_\_\_\_\_

\_\_\_\_\_

Response 3 \_\_\_\_\_

\_\_\_\_\_



## ACTIVITY 3 – WORD SEARCH

EAGLE

FALCON

HAWKWATCHING

MERLIN

OSPREY

RAPTOR

SHARP-SHINNED

RED-TAILED

VULTURE

LIFT

WING

BUTEO

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

## ACTIVITY 4 – BROAD-WINGED HAWK

Below is a picture of a Broad-winged Hawk in flight. Answer the following descriptive questions.

1. What do you notice about the tail shape? \_\_\_\_\_

\_\_\_\_\_

2. Is there a large band in 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 trailing edge of the wing curved or straight? \_\_\_\_\_

\_\_\_\_\_



## ACTIVITY 5 – MERLIN

Below is a picture of a Broad-winged Hawk in flight. Answer the following descriptive questions.

1. What do you notice about the tail shape? \_\_\_\_\_

\_\_\_\_\_

2. Are the wings dark or light colored? \_\_\_\_\_

\_\_\_\_\_

3. Do the wings look triangular? \_\_\_\_\_

\_\_\_\_\_

4. Are the wings slim or fat? \_\_\_\_\_

\_\_\_\_\_

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

\_\_\_\_\_





## ACTIVITY 6 – SKETCH A MIGRATING RAPTOR

Use the space below to sketch a migrating raptor. Some ideas to consider when drawing:

- Where are the areas of dark on the bird?
- How long are the wings compared to the overall length of the bird?
- Is the tail long or short, fat or slender, banded or not?

## ACTIVITY 7 – LOCATING HAWKWATCHES ON THE MAP

The map below shows the hawkwatches in Southeast Michigan and Ontario, Canada. Notice that they are all near the shorelines of large bodies of water, which function as barriers for the migration of raptors.

Detroit River Hawk Watch is the hawkwatch site at Lake Erie Metropark!

1. Since the Holiday Beach Hawk Watch is east and along the northern edge of Lake Erie, and all the migrating raptors need to avoid the open waters of Lake Erie, what direction wind will push raptors towards the Detroit River Hawk Watch?

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2. Using the same logic, which winds would be the least beneficial for pushing the raptors to the Detroit River Hawk Watch?

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3. Can you guess which wind hawkwatchers prefer at the Detroit River Hawk Watch?

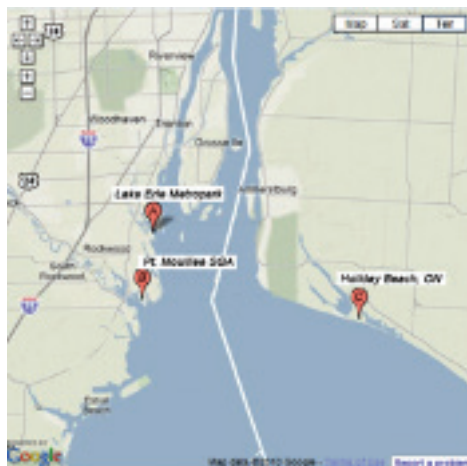
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4. Ask one of the hawkwatchers at the Detroit River Hawk Watch which wind they prefer. What was their response?

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## ACTIVITY 8 – TAKING THE WEATHER

At the beginning of the hour, notice the environmental data using your senses. Circle your observations.

### Wind Direction:

N            NE            E            SE            S            SW            W            NW

### Wind Speed:

None            Slight            Medium            Fast            Very Fast

### Precipitation:

None            Mist            Rain            Snow

### Sunlight:

Hazy            Overcast            Partial Sun            Full Sun

### Temperature:

Very Cold    Cold            Comfortable            Warm            Hot

### Visibility:

Can't See Across the River            Can See Canada            Clear

## ACTIVITY 9 – COUNTING RAPTORS

Count the number of Raptors that migrate past the site.

1. How many birds total did you count during your stay? \_\_\_\_\_

\_\_\_\_\_

2. How many of the birds were raptors? \_\_\_\_\_

\_\_\_\_\_

3. What other birds did you count? \_\_\_\_\_

\_\_\_\_\_

4. What was your favorite bird of the day? \_\_\_\_\_

\_\_\_\_\_

5. Did you see an eagle? \_\_\_\_\_

\_\_\_\_\_

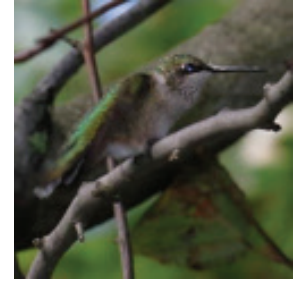
6. What is the easiest bird to identify? \_\_\_\_\_

\_\_\_\_\_



## ACTIVITY 10 – BUTTERFLIES AND HUMMINGBIRDS

Hawkwatching is all about raptors and the migration. However, raptors are not the only creatures that migrate. The famous Monarch Butterfly also migrates, as do Blue Jays and Crows. Most hawkwatchers develop a deep appreciation for all migrating creatures.



1. Have you seen any butterflies today? \_\_\_\_\_

\_\_\_\_\_

2. Were they all headed in one direction? \_\_\_\_\_

\_\_\_\_\_

3. Was that direction in the same direction as the raptors? \_\_\_\_\_

\_\_\_\_\_

4. Do you think they were migrating? \_\_\_\_\_

\_\_\_\_\_

5. Did you see any Blue Jays today? \_\_\_\_\_

\_\_\_\_\_

6. Were they all headed in one direction? \_\_\_\_\_

\_\_\_\_\_

7. Was that direction in the same direction as the raptors? \_\_\_\_\_

\_\_\_\_\_

8. Do you think they were migrating? \_\_\_\_\_

\_\_\_\_\_

## ACTIVITY 11 – LEAD IN RAPTORS

Bald Eagles are excellent at fishing, being able to catch prey directly from rivers and lakes. Both Bald and Golden Eagles have been known to kill small deer but prefer to find a carcass to avoid getting hurt during a hunt. Lead is a heavy metal that acts as a neurotoxin, damaging the nervous system. Scientific studies are showing elevated levels of lead in both Bald Eagles and Golden Eagles. Can you help solve a mystery?

1. How do you think lead gets into Bald Eagles? Hint: Fisherman use lead for sinkers? \_\_\_\_\_

\_\_\_\_\_

2. Can you think of a way to keep Bald Eagles from ingesting lead? \_\_\_\_\_

\_\_\_\_\_

3. How do you think lead gets into Golden Eagles? Hint: Hunters use lead for bullets. \_\_\_\_\_

\_\_\_\_\_

4. Can you think of a way to keep Golden Eagles from ingesting lead? \_\_\_\_\_

\_\_\_\_\_



(Note: Pb is the chemical symbol for lead)

## ACTIVITY 12 – RODENTICIDES

Red-shouldered Hawks love to eat mice and similarly small-sized mammals. This makes most people happy, because people do not 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-shoulder 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.

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2. Why do you think people do not find the dead mice? Hint: People try extremely hard to keep their basements dry, so they do not get mold.

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

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## ACTIVITY 13 – 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

Has a big white head

Bald Eagle

Adults have red tails

Osprey

Large black raptor that rocks in the air

Sharp-shinned Hawk

Has a golden nape on back of head

Red-Tailed Hawk

Large black raptor with a short tail

Golden Eagle

Close to a large Sharp-shinned Hawk

Broad-winged Hawk

Fastest of all raptors

Cooper's Hawk

In flight, it looks like a giant M

Black Vulture

A small-headed, snappy raptor

Peregrine Falcon

Large black and white tail bands



## ACTIVITY 14 – FAMILIES OF BIRDS OF PREY

The raptors usually seen at the DRHW are listed below. Please answer the following questions using this table.

Family	Genus	Species (Common name)
Accipitridae	Accipiter	Sharp-shinned Hawk, Cooper’s Hawk, Northern Goshawk
	Buteo	Red-tailed Hawk, Red-shouldered Hawk, Rough-legged Hawk
	Haliaeetus	Bald Eagle, Golden Eagle
	Circus	Northern Harrier
Falconidae	Falco	American Kestrels, Merlin, Peregrine Falcon
Pandionidae	Pandion	Osprey
Cathartidae	Cathartes	Turkey Vulture
	Coragyps	Black Vulture

Questions:

1. How many species of Falcons are seen at Detroit River Hawk Watch? \_\_\_\_\_

\_\_\_\_\_

2. How many Genus are in the Family Accipitriade? \_\_\_\_\_

\_\_\_\_\_

3. Are Black and Turkey Vultures in the same Family? \_\_\_\_\_

\_\_\_\_\_

4. Are Black and Turkey Vultures in the same Genus? \_\_\_\_\_

\_\_\_\_\_

5. In which Genus are Bald and Golden Eagles? \_\_\_\_\_

\_\_\_\_\_

## ACTIVITY 15 – WIND TURBINES

Climate change is having a huge effect on migratory birds. Northern raptors are not flying as far south, and some are just not migrating at all. Clearly, we must move away from relying on oil and gas toward more renewable energy sources, like wind and solar energy. Wind power is promising but placing wind turbines in the path of migrating raptors can spell unwelcome news!

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

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2. Who should decide if or when wind turbines can operate or should be banned from known migratory routes?

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3. How many eagles should be allowed to be killed by wind turbines for “the greater good?”

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Note: The Hawk Migration Association of North America is not opposed to wind energy but feels that location and timing is crucial to protect birds. To learn more about this very important issue, please visit [www.hmana.org](http://www.hmana.org).

## VISIT YOUR LOCAL HAWKWATCH!

Detroit River Hawk Watch (DRHW) is part of the U.S. Fish and Wildlife Service at the Detroit River International Wildlife Refuge and its friends' group, the International Wildlife Refuge Alliance (IWRA), along with the Detroit River Hawk Watch Advisory Committee (DRHWAC).

Website:

[www.drhawkwatch.com](http://www.drhawkwatch.com)

Partners:

[https://www.fws.gov/refuge/detroit\\_river/](https://www.fws.gov/refuge/detroit_river/)

<http://www.iwralliance.org/>

<https://www.gssem.org>

Facebook:

<https://www.facebook.com/groups/143903318970434/>

Latest Count Data:

[www.hawkcount.org](http://www.hawkcount.org)

Twitter:

@DRHawkWatch

## THE HAWK MIGRATION ASSOCIATION OF NORTH AMERICA (HMANA)

HMANA is a nonprofit organization that promotes hawkwatching and provides resources for the hawkwatching community. This includes raptor identification materials, the free HawkCount.org website, and Hawk Migration Studies (the official journal of HMANA). For more information and resources, visit <http://www.hmana.org/>

This booklet was originally created by Brian M. Wargo for the Allegheny Front Hawkwatch in Pennsylvania (<http://www.alleghenyplateauaudubon.org/hawk-watch.php>). Photos, diagrams, and other inscriptions were created by Brian M. Wargo and Jerry Jourdan, for the DRHW. No copyright laws have been violated. Permission is granted by the author for customization.