



## STUDENT HANDOUT

GRADES 6–12

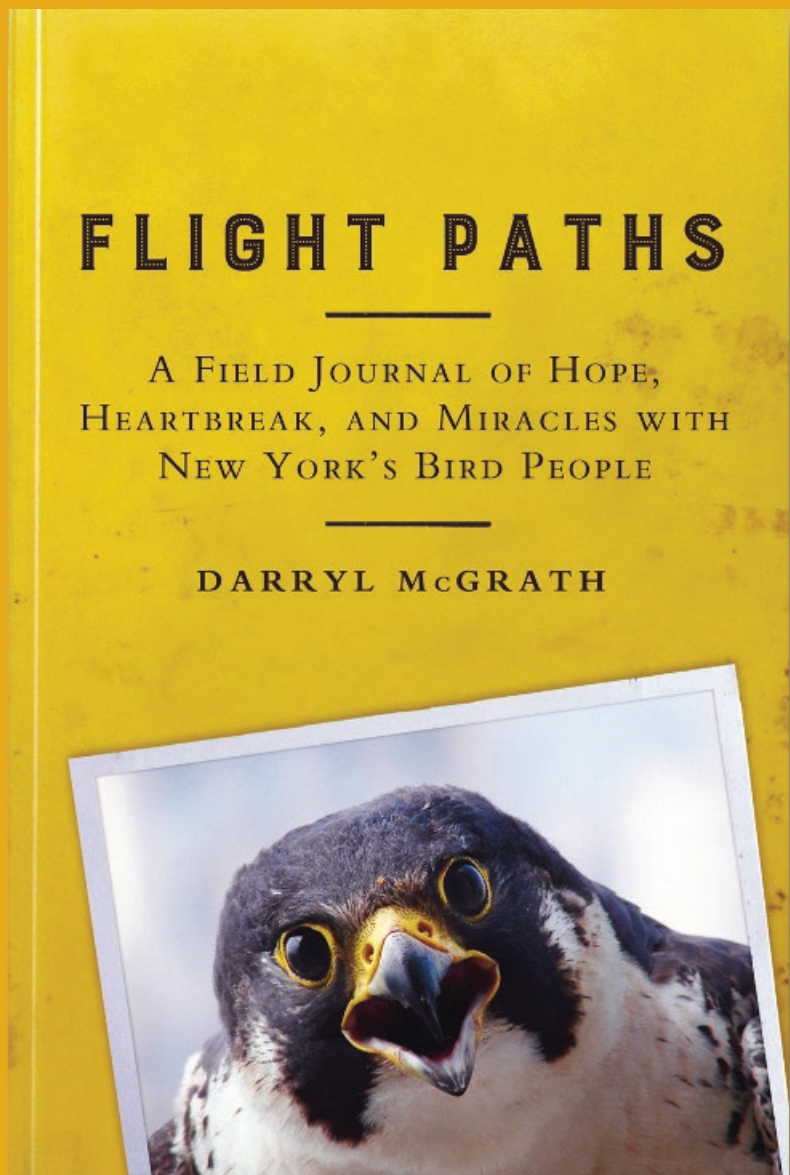
An interactive reading exercise based on excerpts from the New York State Museum's exhibit *Birds of New York* and the book *Flight Paths*, by Darryl McGrath.



The New York State Museum is a program  
of The University of the State of New York  
The State Education Department  
Office of Cultural Education

### READING EXERCISE

# PESTICIDES, BIRDS, AND MUSEUM COLLECTIONS





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An interactive reading exercise based on excerpts from the New York State Museum’s exhibit *Birds of New York* and the book *Flight Paths*, by Darryl McGrath.

Name: \_\_\_\_\_ Date Completed: \_\_\_\_\_

Class: \_\_\_\_\_ Lab Minutes: \_\_\_\_\_ Teacher: \_\_\_\_\_

## READING EXERCISE

# PESTICIDES, BIRDS, AND MUSEUM COLLECTIONS

You will be using literacy strategies, such as summarizing, sketching, and jotting notes in the margins.

### PART 1 – TEACHER-GUIDED SUMMARIZING

Your teacher will read the first paragraph below and demonstrate how to summarize content. Listen and follow along carefully. Then listen as a student reads the second paragraph aloud and write your own summary in the space provided.

“Widespread agricultural use of the pesticide DDT in the mid-20th century caused raptors and fish-eating species at the top of the food chain to produce eggs with very thin eggshells, which broke when the parents tried to incubate them. Populations of Bald Eagle, Peregrine Falcon, and Osprey plummeted across the country, and these species become rare in New York. By 1976, following a years-long population decline, only one Bald Eagle pair remained in New York State. That year, biologists at the New York State Department of Environmental Conservation began placing eagle nestlings from Alaska and the Great Lakes into artificial nests in New York.

“Peregrine Falcons once nested on cliffs in the Adirondacks and the Hudson River valley. Years of failed nesting attempts caused by DDT exposure pushed this species to the brink of extinction by the early 1960s. The Bald Eagle was another species that nearly became extinct because of DDT-induced eggshell thinning. The banning of DDT in 1972, along with restoration efforts by the New York State Department of Environmental Conservation and the Cornell Lab of Ornithology in the 1970s and 1980s, enabled these species to make a comeback. Scientists released captive-raised Peregrine Falcons and transplanted Alaskan Bald Eagle chicks into artificial nests beginning in 1974. Over a 13-year period, hundreds of birds were released into the wild by the NYSDEC. Today Peregrine Falcons can again be found nesting on cliffs, skyscrapers, and bridges across the state, and Bald Eagles are more numerous than at any time in the last 200 years.”

– Dr. Jeremy Kirchman, New York State Museum Ornithologist

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PART 2 – STUDENT INTERACTIVE READING GUIDE

This part of the lesson includes two activities.

**ACTIVITY 1** – Read Excerpt A, below, with a partner and follow the instructions, which will prompt you to stop several times to talk with your partner about each passage.

- Partner A reads the first paragraph aloud. On their own sheet, Partner B underlines important words and phrases and jots the gist in the margin. After listening, show Partner A your notes and which words and phrases you underlined. Discuss your impressions.
- Exchange roles for paragraph 2, with Partner B reading aloud while partner A listens, underlines, and summarizes.

**Excerpt A:**

“Rachel Carson was the author of *Silent Spring*, which was published in 1962 and was credited with alerting the general public to the hazards of the pesticides that came into such heavy use in the United States after World War II. The book was her masterpiece, and even though Carson was a marine biologist, not an ornithologist, *Silent Spring* became best known for its chapters about the deadly effects of DDT on songbirds. . .

“Carson focused mainly on documenting evidence that linked DDT to the deaths of songbirds that ate insects sprayed with the chemical; she didn’t even mention Peregrine Falcons in *Silent Spring*. *Silent Spring* struck a chord with the public. When Carson died in 1964, two years after its publication, she had become a celebrity, a status she never sought. But her passion and her dignity during savage attacks on her credibility by the industrial chemical industry earned her the respect of other scientists.”

– *Flight Paths*, by Darryl McGrath (2016), p. 43

**Activity 2** – The two paragraphs in Excerpt B contain figurative language and several adjectives to help you visualize a museum collection. Working on your own, read the paragraphs and underline the words and phrases that most help you visualize the bird collection. Make a drawing of a Peregrine Falcon nest and eggs based on the description.

**Excerpt B:** (This text describes the bird specimen collection at the New York State Museum.)

“This imaginary tour ends in Albany, in a locked, climate-controlled room at the New York State Museum. Ornithologist Jeremy Kirchman, the museum’s Curator of Ornithology, has unlocked the doors to reveal a huge, windowless room full of gray storage cabinets, where the museum keeps its rarest specimens. Jeremy slides storage trays in and out of cabinets, searching, and then finds what he wants: a plain cardboard box, the size of a small gift box. I know what it contains, and I also know that I would be afraid to touch the box, much less hold it, so I am relieved when Kirchman—who exudes a breezy, efficient confidence—does not hand it to me. Instead, he lifts the top to show me its precious contents: three hollowed-out Peregrine Falcon eggshells that were taken from a nest site in Canada in 1887. . .



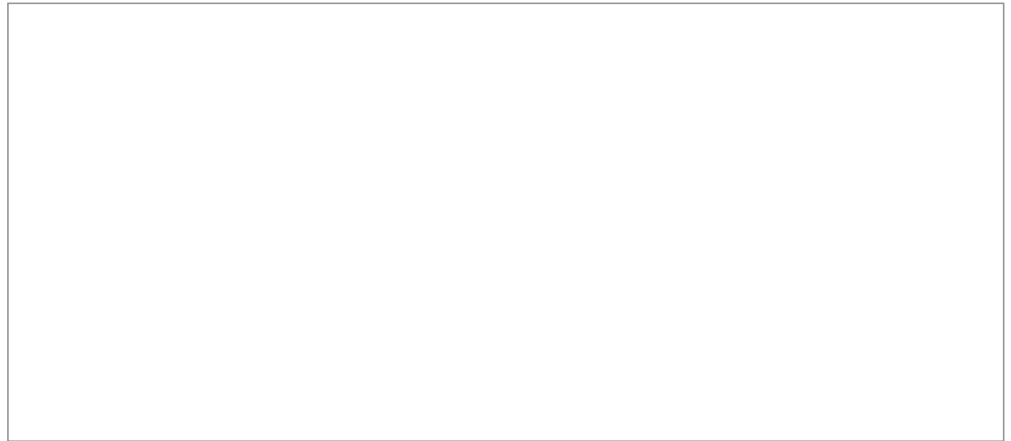
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“They are a mottled reddish-brown, like polished agate with the swirled pattern of marbled paper. It is easy to imagine them camouflaged against the cliff ledge where they lay so long ago. The handwritten card accompanying the specimens says they were gathered by an Indian boy named Assinaway, who was lowered by rope from a cliff in Ontario Province to the peregrine nest under an overhanging rock.”

– *Flight Paths*, by Darryl McGrath (2016), p. 35



Draw an image of a Peregrine Falcon nest and eggs based on the text.

**PART 3 – DETERMINING IMPORTANCE**

**This part of the lesson includes two activities.**

**Activity 3** – Both partners read the paragraphs below silently. Ask yourself, What is the gist of each paragraph? In your own words, jot the gist in the margin. (You need not write in full sentences; your jot simply needs to make sense to you when you go back and read it.) After you have both read and made notes, share what you wrote in the margins and see if you agree on the gist of the excerpts.

“In the 1800s and early 1900s, rich hobbyists in Europe and North America popularized the practice of gathering wild bird eggs, blowing out their contents and keeping the shells in private collections. The Federal Migratory Bird Treaty Act of 1918 outlawed egg collecting, and many private egg collections ended up in museums. During the 1960s and 1970s, biologists on two continents were trying to prove that DDT was linked to the mysterious thinning of Peregrine Falcon eggshells. To do that, they needed a base sample of shells from the pre-DDT years. The peregrine eggshells in museums and private collections provided that baseline.



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“The circa-1887 peregrine shells that Jeremy Kirchman showed me played an important role in unraveling the mystery of the Peregrine eggshell thinning. David Peakall, a researcher at the Cornell Laboratory of Ornithology in the late 1960s and early 1970s, was one of the people conducting measurement tests, and he needed a pre-DDT eggshell. The Peregrine eggshells in the museum once numbered four, but the museum gave one to Peakall so he could measure its thickness. He usually could do this by inserting an instrument into the “blow hole” through which the egg’s contents had been forced. Whether or not the eggshell survived the measuring, it did not end up back in the museum. It is fitting that the museum has such a strong tie to this historic project, because the story of the Peregrine Falcon’s near-extinction and its astonishing recovery is more closely tied to New York than any other place in the world.”

– *Flight Paths*, by Darryl McGrath (2016), p. 35–36

**Activity 4** – Demonstrate your understanding of all of the excerpts in this lesson by answering the following questions in complete sentences:

1 How did pesticide use cause the decline of raptor populations in the 20th century?

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2 How were Peregrine Falcons and Bald Eagles brought back from the brink of extinction?

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3 Why are natural history museums important for understanding the impact people have on wildlife?

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WINTER 2021

**Museum Director**  
Mark A. Schaming

**Curator of Ornithology**  
Dr. Jeremy J. Kirchman

**Exhibition Planner**  
Carrie Ross

**Museum Educators**  
James Jenkins & Hattie Langsford

**Museum Editor**  
Jessica Fisher Neidl

**Graphic Designer**  
Christopher Havens

**Cover Photo**

*Flight Paths: A Field Journal of Hope, Heartbreak, and Miracles  
with New York's Bird People*, by Darryl McGrath,  
<https://www.sunypress.edu/p-6201-flight-paths.aspx>

