

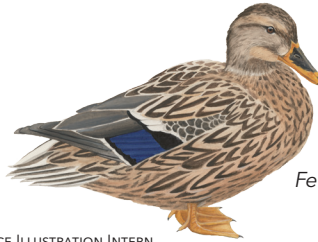
Station 1: Watching Live Birds!

Activity: Sketch a Bird

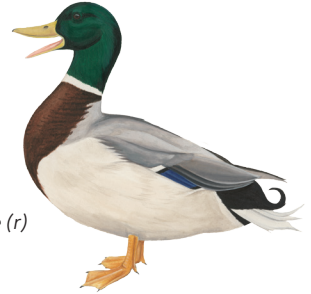
Take a look out the windows. Notice both the pond area and the bird-feeding garden.

Now find a bird that is relatively still and try drawing it below. Include as many features as possible to help you identify your bird.

Female (l) and male (r)
House Finches



Female (l) and male (r)
Mallards



Mourning Dove

ILLUSTRATIONS BY LIZ CLAYTON FULLER, BARTELS SCIENCE ILLUSTRATION INTERN



Activity: Create a Bird List

Keep a list of every bird species you see from the windows. Add the highest number you see at one time for each species to make it a bird count.

Use the **Merlin Bird ID App** (on the iPad near the feeder window) to help identify the birds you see.

Bird field guides are also available at the front desk.

Species

Bird Count Number

Ex: *American Goldfinch*

3

Note: You can also download the Merlin Bird ID App to your smartphone or tablet and take it with you wherever you go.















Did you know?

All American Goldfinches are a drab yellow-brown in winter, but in spring the males turn bright yellow and black.

Station 2: *Wall of Silhouettes Mural*

Activity: Silhouette Scavenger Hunt

- Notice these five **habitats**: tropical rainforest, desert, northeastern forest, mangrove swamp, and Atlantic coast.
- Find each of these birds on the *Wall of Silhouettes* by artist James Prosek, using the hints below.

	Hints		Hints
	I'm an owl of the tropical jungle. What's my number?		I'm a duck that hangs out in trees in the eastern U.S. What's my number?
	I'm a bird along the coasts of the southern U.S., including mangrove swamps. What's my number?		We perch on the flowers of a large cactus called a Saguaro. What's my number?
	I live in colonies with hundreds of other birds, nesting on rocky seacoasts. What's my number?		I'm a tropical rainforest bird with a long fuzzy nest high in a tree. What's my number?
	I'm a woodpecker of the desert. What's my number?		I'm often seen perching on cattails in a marshy habitat. What's my number?
	I walk with long legs in the water of mangrove swamps, using my large bill to catch tiny fish. What's my number?		I'm a large seabird that feeds by flying over the water then diving for my dinner. What's my number?
	I'm a tropical hummingbird with a very long bill. I perch on tree branches. What's my number?		You think I'm for Thanksgiving, but I also live in forests of the northeastern U.S. What's my number?

Answer key (from top to bottom, left column then right): 135, 32, 3, 106, 25, 122, 51, 99, 114, 20, 11, 56

Activity: Careful Observations

Look closely at the postures of the bird silhouettes.

What can you tell about where and how Bird # 21 finds food? _____

What about Bird # 99? _____

Look for birds that perch in these places and enter their numbers in the blanks:

On wires: _____

On the ground: _____

On branches or tree trunks: _____

Answer key: #21 catches fish; #99 forages in cactus flowers; **wires:** 66, 68, 71, 74-5, 78, 80-82, 84-93; **ground:** 3, 4, 9, 12, 55, 59, 63, 100, 103; **branches:** 18, 20, 26-31, 44-52, 56-58, 60-62, 64-66, 109, 110, 115, 117, 119, 121-123, 125-30, 132-40

Station 3: Bartels Theater

Activity: Choose a Video to Watch

Watch videos of researchers on adventures around the world. We recommend:

In the "Cornell Lab Discovery" section:

Adventure: Cape York (11 minutes)

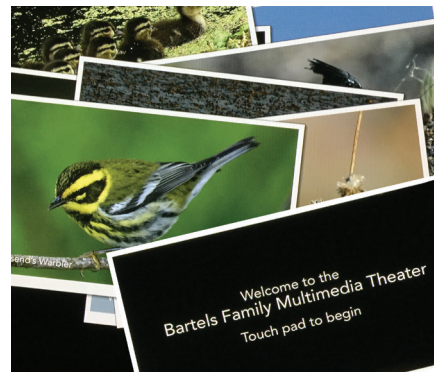
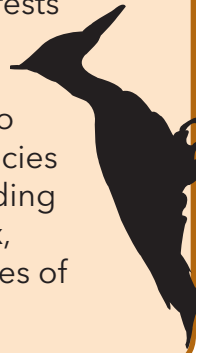
In the "World of Birds" section:

Language of Birds (10 minutes)

Wildflower Garden (13 minutes)

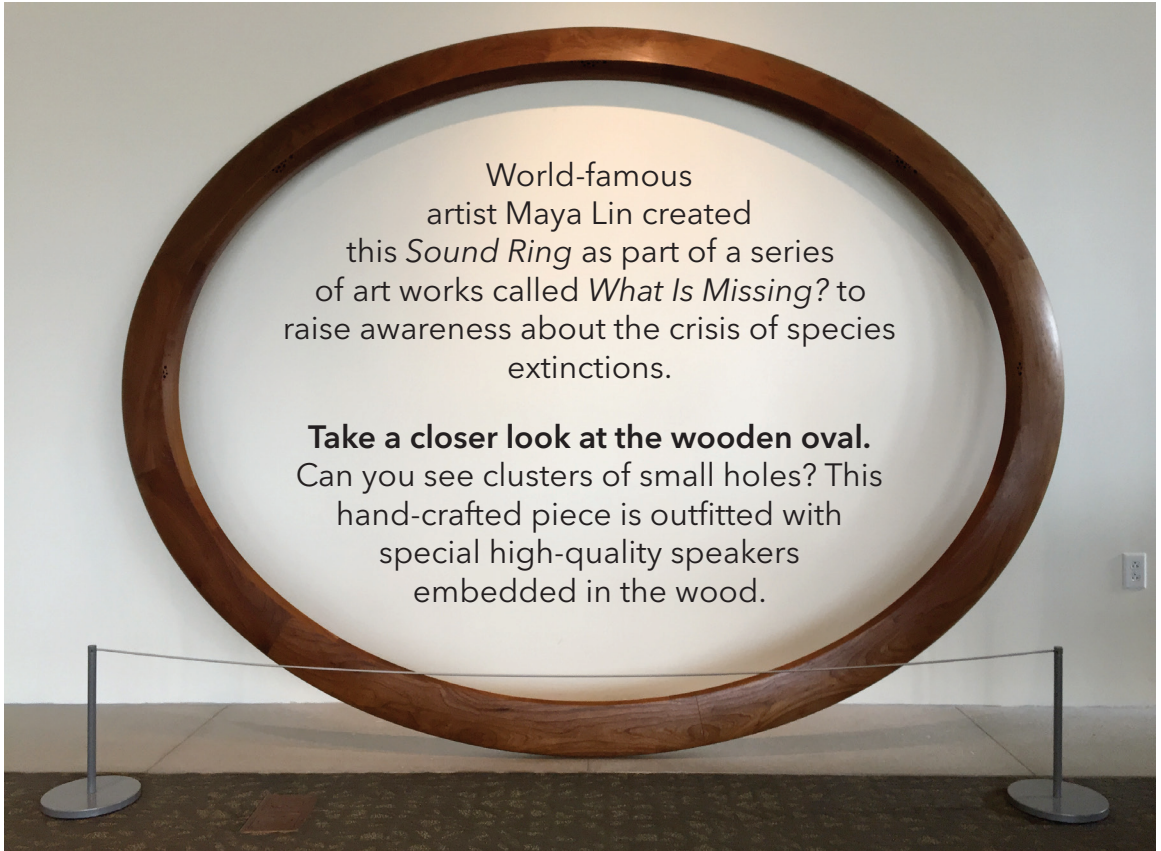
Did you know?

Northeastern forests (the middle habitat on this wall) are home to hundreds of species of animals including black bears, lynx, and **seven** species of woodpeckers.



Station 4: **Sound Ring**

What **is** that big empty wooden frame?



Activity: Listening Match-Up

Get the packet of *What is Missing?* cards from the front desk and lay them out on the floor in front of the *Sound Ring*. The packet contains photos of **endangered species** and places, and **extinct species**. Have one person in your group choose a sound on the iPad while the rest of the group stands directly in front of the *Sound Ring*. Take turns guessing which image matches the sound you're hearing.

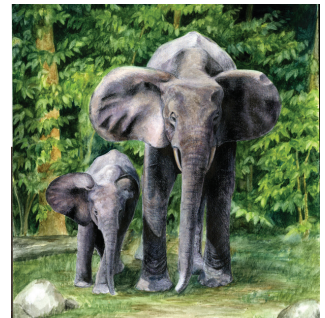


ILLUSTRATION BY NATALIE KOSCAL,
BARTELS SCIENCE ILLUSTRATION INTERN

Station 5: *From So Simple a Beginning Mural*

This mural was created by artist Jane Kim and took nearly two years to complete. It represents the **evolution** and **diversity** of birds by showing every **taxonomic family** around the world.

Here are some questions to help you explore the mural:

- A. Why do you think the birds are placed where they are? What do you think the gray ones represent?

- B. Look for some birds with very long tails. Can you find a bird with a long tail and guess which purpose the tail serves?

- C. Look for some birds with large bills. Can you find one with a bill that might help it to spear frogs or fish? Why do you think the bird has such long legs?

- D. Find a bird with the foot types below and write a purpose for each.

Strong feet, sharp claws

Large, muscular feet

Answer key: (A) Birds are placed in the geographic area where their family is found; gray birds/animals are extinct (D) for grabbing and eating prey; for walking or running (C) Long legs allow them to wade in shallow water looking for food (frogs & fish) (B) Some tails are used as a display to attract a mate, others are for balancing in flight or while catching prey.

Which bird in the mural is your favorite? Draw it in the space below.



Station 6: Venture Upstairs

Now look at the mural (*From So Simple A Beginning*) from the upstairs hallway. Quite a view, isn't it?

Activity: Zoom Into Birds

Try using the iPad to learn more about each of these amazing birds.

Zoom in on the images, read about each bird and hear its call or song!

How many birds did you look at on the iPad? _____

Activity: Discover Hummingbirds

Keep exploring, and find the hummingbird case just outside the library.

How many different kinds of hummingbirds are in the case?

Can you find one with a very long bill? Use the key to find its name and where it lives, and write that information here:

See the wall panel to the right of the case for answers to these questions.

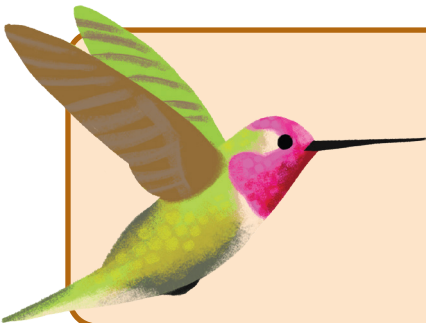


Activity: How fast can *you* flap your "wings"?

Try it for **20 seconds**, counting your wing-flaps (one flap = raising your arms up and back down). Then multiply by three to get your "wing flaps per minute."

Number of wing-flaps _____ x 3 = _____ (flaps/minute)

Whew! No wonder these birds are constantly looking for food to give them energy!



Did you know?

Hummingbird wings are very small so the birds have to work extra hard to stay in the air. Many hummingbirds beat their wings about 70 times per SECOND during flight, and up to 200 beats per SECOND during a high-speed dive!

Activity: A Bird's-Eye View

Walk out to the **Arthur Allen Bird Observation Tower** and compare that view with the one downstairs in the observatory. What new things can you see?

Activity: Eggsploration



Look at the eggs in the case—what differences do you see among them?
What similarities?

How might the shapes of these eggs be helpful in their environment?

Why do you think they are marked that way?

See the panel above the display case for a discussion of these questions.

WHAT DID YOU THINK?

Let us know what you liked about this guide and how we can make it even better.

What did you like best?

What would you change or add?

Name (optional):

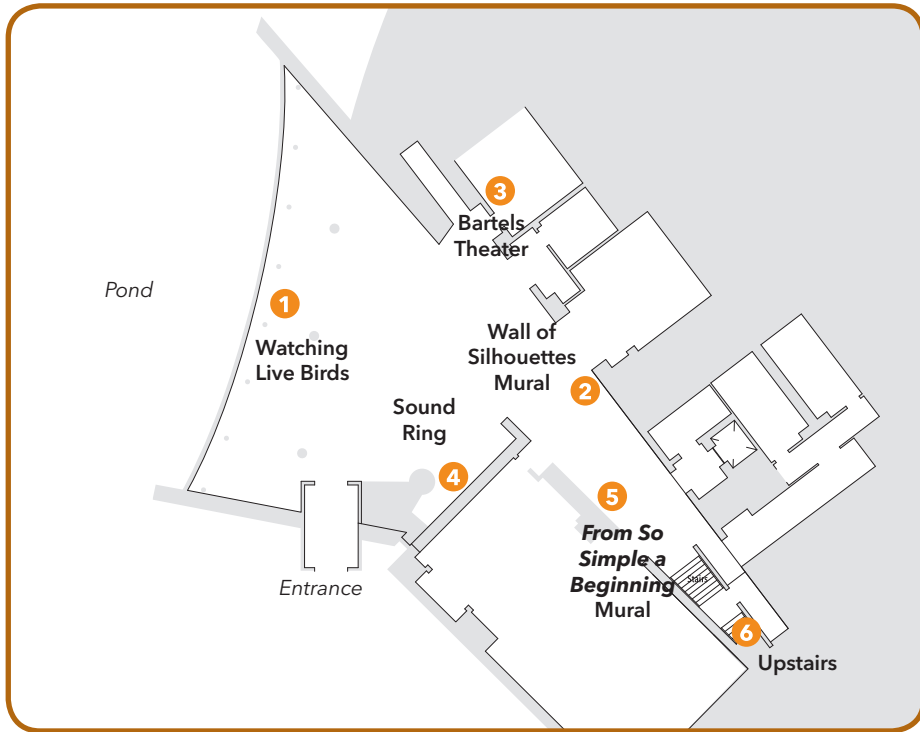
Thanks so much for your feedback and for helping to make this new resource even better!

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Location of Visitor Center Exhibits



Glossary

Diversity—the variation in number and kinds of birds (or other animals) in an area.

Evolution—the process by which different kinds of living organisms have developed and diversified from earlier life forms.

Habitat—the place that provides the water, food and shelter a plant or animal needs to survive.

Ornithology—the scientific study of birds.

Species—a group of animals or plants that are similar and can produce young with each other; "species" is used for both singular and plural.

Endangered species—a species with a population small enough to be in danger of becoming extinct.

Extinct species—a species that has no living members left on earth.

Taxonomic family—a group of species that are related to each other. For example, all hummingbirds are in the family *Trochilidae*.