

***Thank you for participating in Lehigh Gap Nature Center's
very first Migration Day celebration!***

Migration Day will celebrate the marvel of autumn bird and butterfly migration through a live Zoom workshop and two self-paced activities using the materials in this kit! The following few pages will serve as a guide to your migration exploration on October 10, 2020. Below, you will find a complete schedule, a list of materials provided in this kit, and instructions for all Migration Day activities!

Migration Day Schedule (October 10, 2020):

- **Virtual Migration Workshop (11:00 a.m.-Noon)** — Log onto Zoom to learn about bird migration and the history of hawk counting! Don't miss a special 3D presentation on raptor conservation.
- **Migration Bingo (all day)** — Through a self-paced, family-fun game, explore bird and butterfly migration and the habitats that sustain these long-distance journeys. See how many ways you can get "BINGO" as you search for animals and plants, identify threats to migrating creatures, and complete stewardship projects! All of the materials needed to complete this activity are in this kit!
- **Bird Count (all day)** — LGNC and its predecessors have been counting migrating birds for 60 years. Using the materials in this kit, keep a tally of the birds you encounter during the day!

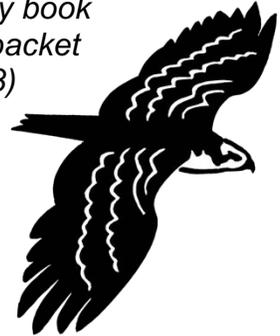
Raffle Drawing:

All participants who share photos of their Migration Day adventures will be entered into our raffle! While completing your activities take photos and send them to us at mail@lgnc.org. LGNC staff will draw three names on **Sunday, October 11 at 7:00 p.m.** Winners will receive a free Family Membership (value \$50) for 2021!

Inside This Kit:

Inside this Migration Day Explorer's Kit, you will find everything you need to complete the above activities. **Materials** include:

- *Clipboard and pen*
- *Migration Bingo cards (3)*
- *Bird Count tally sheet*
- *3D glasses (3 pairs)*
- *Binoculars*
- *Bird identification guides (3)*
- *LGNC brochures (3)*
- *CollidEscape bird-safe window material, templates, and brochures*
- *Monarch butterfly book*
- *Milkweed seed packet*
- *Garbage bags (3)*
- *LGNC trail map*
- *LGNC sticker*



Activity Instructions:

1. Virtual Migration Workshop:

Open the following link at 11:00 a.m. on October 10, and we'll welcome you to the workshop: http://bit.ly/LGNC_Migration_Day. Be sure to have your **3D glasses** ready so you can experience some special effects!



2. Migration Bingo:

Try LGNC's version of bingo! You will find three **Migration Bingo cards** attached to the **clipboard** in this kit. Your challenge is to complete as many of the bingo prompts in each category as possible throughout the course of the day! Complete this activity in your backyard, at LGNC, or anywhere else.

The front of the bingo card lists each challenge, and the back includes extra details, *hints*, and interesting facts! As you complete the challenges, check them off in the white checkboxes on the front of the bingo cards. Use the **binoculars**, **bird identification guides**, **LGNC brochures**, **CollidEscape material**, **monarch butterfly book**, **milkweed seeds**, and **garbage bags** to help complete the challenges! Some of the answers to the challenges will be revealed in videos posted online at this link:

http://bit.ly/Migration_Day_Online!

Among the 45 unique Migration Bingo challenges are the following three *stewardship activities*:

a. Bird-proof a window with CollidEscape.

Up to *one billion birds* are killed colliding with windows in the U.S. each year, according to the research of Dr. Daniel Klem of Muhlenberg College. Fortunately, this issue is easily addressed by applying products like CollidEscape to the outside surface of a window. To help bird-proof a window, cut the **CollidEscape sheet** in your kit to the desired size and shape, peel off the paper backing, and apply it to the outside surface of the window. Create raptor silhouette decals with your CollidEscape using the **templates** in your kit, or make your own design!



Although any little bit of bird-proofing helps, decals should be placed at 2x4" intervals across the pane of glass in order to fully protect against bird

strikes. Be sure to check out the **bird-window collision brochures** in your kit to learn more about this issue and to see other bird-safe window products like CollidEscape!

b. Plant milkweed seeds.

Monarch butterfly caterpillars depend entirely on milkweed as a host plant. Yet, this beneficial native plant has disappeared from many areas due to development and the overapplication of weed killers. Let's work together to support monarch butterflies by planting more milkweed. Following the directions on the **milkweed seed packet** in your kit, plant the seeds about 8 to 12 inches apart in a sunny spot. Poke a hole in the soil about a half inch deep, drop a seed in the hole, and lightly cover with excess soil. Be sure to keep the seeds watered.

Milkweed seeds require exposure to cold temperatures for a period of time in order to germinate. Therefore, fall is the perfect time to plant milkweed, as the seeds will naturally be exposed to cold winter temperatures prior to the growing season. Remember where you planted your seeds, and keep an eye out for sprouts in the spring and monarch caterpillars in the summer!



If you are interested in going a step further and raising monarch butterfly caterpillars, we've included a lovely resource, **How to Raise Monarch Butterflies**, in your kit. While the title says this book is "for kids," it is really a perfect guide for all ages to start this rewarding new hobby.

c. Pick up litter.

While laws like the Clean Water Act and Clean Drinking Water Act prevent us from disposing of waste directly into waterways, the quality of rivers such as the Lehigh and Delaware is still affected by what we do on the land. Pollutants like pesticides, fertilizers, road salt, and litter might be spread out across the land, but many still make their way to one destination – the waterways that flow through our cities, towns, and rural areas. Why does this matter? Because many of these waterways provide drinking water for our communities.



Using the **garbage bags** in your kit, pick up litter that you encounter while completing the other activities. Be careful to avoid potentially unsanitary items like discarded face masks. We can all do our part to keep the watershed clean for wildlife and people alike!

3. Bird Count:

You will find a **Bird Count tally sheet** attached to the **clipboard** in this kit. Your challenge is to find as many birds in each category as possible throughout the course of the day! Complete this activity in your backyard, at LGNC, or anywhere else. Use the **binoculars**, **bird identification guides**, and **LGNC birding brochure** to help find and identify birds. Please feel free to share your sightings with us at mail@lgnc.org!



Thanks again for participating!

If you have any questions at all, please reach out to us at mail@lgnc.org. Have fun and stay safe! We look forward to hearing about your adventures and discoveries.



We thank the Alliance for Watershed Education of the Delaware River for their generous support of Migration Day 2020!

LGNC Migration Day 2020

Bird Migration Bingo!



1. Feather



2. Climbing Bird



3. Nest



4. Food Source



5. Migrating Birds



6. Stewardship Activity: Help to bird-proof a window using the CollidEscape material provided in your Migration Day Explorer's Kit! Create raptor silhouette decals with your CollidEscape using the templates in your kit, or make your own designs! Check out your **Migration Day Explorer's Guide** for directions.




7. Soaring Bird



8. Question: Where are most migrating birds going for the winter season?

9. Question: Why do birds migrate — sometimes thousands of miles?

10. Question: Why did many raptor populations go down in the mid-1900s?

11. Question: Where has LGNC been counting migrating birds since 1961?



12. Buteo



13. Invasive Birds



14. Scavenging Bird



15. Accipiter



- 1. Find a feather on the ground.** Did you know that tail and wing feathers have different shapes? Tail feathers (rectrices) have barbs the same length on both sides of the vane. Wing feathers (remiges) have short barbs on one side of the vane and long barbs on the other! Which did you find?
- 2. Observe a bird climbing the side of a tree.** Bonus if you can identify it! For help, use the binoculars and the *Backyard Birds*, *Birds of Prey*, and *Northeast Hawks* guides provided in your Migration Day Explorer's Kit!
- 3. Find a bird's nest and identify three things the bird used to build it.** The primary reason birds build nests is to lay, incubate, and care for their eggs. However, some species do not build nests at all! Some lay their eggs in mounds or even on a bare cliffside.
- 4. Find a good source of food for a migrating bird.** Birds need to bulk up for their long journey south. We can help migrating birds by adding bird-friendly food sources to our yards! Check out the following link for a list of bird-friendly plants recommended by the National Audubon Society:
<https://www.audubon.org/news/10-plants-bird-friendly-yard>.
- 5. Observe a migrating bird.** Bonus if you can identify it! For help, use the binoculars and the *Backyard Birds*, *Birds of Prey*, and *Northeast Hawks* guides provided in your Migration Day Explorer's Kit!
- 6. Stewardship Activity:** Help to bird-proof a window using the CollidEscape material provided in your Migration Day Explorer's Kit! Create raptor silhouette decals with your CollidEscape using the templates in your kit, or make your own designs! Check out your *Migration Day Explorer's Guide* for directions.
- 7. Observe a soaring bird.** Bonus if you can identify it! For help, use the binoculars and the *Backyard Birds*, *Birds of Prey*, and *Northeast Hawks* guides provided in your Migration Day Explorer's Kit! Soaring birds depend on warm, rising pockets of air called *thermals* to stay aloft. For birds that migrate thousands of miles, thermal soaring helps to save energy that would otherwise be lost by flapping their wings.
- 8. Where are most migrating birds going for the winter?** This was discussed during the morning Zoom session!
- 9. Why do birds migrate?** This was discussed during the morning Zoom session!
- 10. Why did many raptor populations go down in the mid-1900s?** This was discussed during the morning Zoom session!
- 11. Where has LGNC been counting migrating birds since 1961?** This was discussed during the morning Zoom session!
- 12. Observe a Buteo.** Bonus if you can identify it! For help, use the binoculars and the *Birds of Prey* and *Northeast Hawks* guides provided in your Migration Day Explorer's Kit!
- 13. Observe a European Starling or House Sparrow** – invasive birds that can be harmful to some native migratory species. Both species were brought to North America on purpose by people who wanted to introduce plants and animals from Europe. Starlings, in particular, were introduced simply because Shakespeare wrote about them! Both are aggressive species that take over cavities, such as trees and bird houses. This can take away habitats from native birds like bluebirds, chickadees, and House Wrens.
- 14. Observe a type of bird that scavenges for food.** Bonus if you can identify it! For help, use the binoculars and the *Birds of Prey* and *Northeast Hawks* guides provided in your Migration Day Explorer's Kit!
- 15. Observe an Accipiter.** Bonus if you can identify it! For help, use the binoculars and the *Birds of Prey* and *Northeast Hawks* guides provided in your Migration Day Explorer's Kit!

LGNC Migration Day 2020 **Monarch Migration Bingo!**



1. Monarch Butterfly



2. Milkweed Seed Pod



3. Any Fall Caterpillar



4. Nectar Source



5. Any Cocoon or Chrysalis



6. Stewardship Activity: Help support the monarch butterfly population by planting the milkweed seeds provided in your Migration Day Explorer's Kit! Monarch caterpillars will love to feast on these native plants once they grow. Check out your **Migration Day Explorer's Guide** for directions.



7. Butterfly Weed (Native)

8. Question: Where are migrating monarch butterflies going for the winter?

9. Question: Up to how many miles can a monarch butterfly migrate south?

10. Question: Why are monarch butterflies not so good to eat?

11. Question: Why has the monarch butterfly population been going down?



12. Any Leaf That's Been Munched...



13. Any Other Fall Butterfly



14. Cabbage White (Invasive)



15. Butterfly Bush (Invasive)

1. **Observe a monarch butterfly.** Bonus if you can tell if it is a boy or girl! To learn the difference, check out the *How to Raise Monarch Butterflies* book provided in your Migration Day Explorer's Kit!
2. **Find a milkweed seed pod and spread its fluffy seeds in the air!** Learn about milkweed pods in the *How to Raise Monarch Butterflies* book provided in your Migration Day Explorer's Kit!
3. **Find any fall caterpillar.** Bonus if you can find a monarch butterfly caterpillar! To identify a monarch caterpillar, check out the *How to Raise Monarch Butterflies* book provided in your Migration Day Explorer's Kit!
4. **Find a source of nectar for adult monarch butterflies.** While milkweed is the one and only *host plant* for monarch caterpillars, adult butterflies get their energy from the nectar (sugar water) of many flowers. To attract monarch butterflies to your yard, it is important to provide a variety of native nectar sources that bloom during the spring, summer, and fall. Check out the following link for a list of monarch-friendly native nectar sources recommended by the Xerces Society: http://bit.ly/Monarch_Host-Plants.
5. **Find a moth cocoon or a butterfly chrysalis.** Bonus if you can find a monarch butterfly chrysalis! To identify a monarch chrysalis, check out the *How to Raise Monarch Butterflies* book provided in your Migration Day Explorer's Kit!
6. **Stewardship Activity:** Help support the monarch butterfly population by planting the milkweed seeds provided in your Migration Day Explorer's Kit! Monarch caterpillars will love to feast on these native plants once they grow. Check out your **Migration Day Explorer's Guide** for directions.
7. **Find butterfly weed** – a native species of milkweed! Be sure to look for any bright orange flowers lingering into the fall. This species is a close cousin of the larger *common milkweed* plant, which has a ball of pink flowers when in bloom. All milkweeds get their name for their milky (and poisonous!) sap that is visible when the leaf is torn.
8. **Where are migrating monarchs going for the winter?** Find the answer in the *How to Raise Monarch Butterflies* book provided in your Migration Day Explorer's Kit! Also learn more by watching the monarch butterfly video at this link: http://bit.ly/Migration_Day_Online.
9. **Up to how many miles can a monarch butterfly migrate south to their wintering grounds?** Learn the answer by watching the video at this link: http://bit.ly/Migration_Day_Online.
10. **Why are monarch butterflies not so good to eat?** Learn the answer by watching the monarch butterfly video at this link: http://bit.ly/Migration_Day_Online.
11. **Why has the monarch butterfly population been going down?** Learn the answer by watching the monarch butterfly video at this link: http://bit.ly/Migration_Day_Online.
12. **Find a leaf that a caterpillar might have eaten.** According to the research of Doug Tallamy, oak trees host over 500 caterpillar species!
13. **Observe any other fall butterfly.** Use the “**Butterflies of the Lehigh Gap Nature Center**” pamphlet to identify it!
14. **Observe an invasive cabbage white butterfly.** This invasive species has a natural range across Europe, Asia, and North Africa, and it was accidentally introduced to Quebec, Canada around 1860. The species has since spread across all of North America. It is considered a farm pest.
15. **Observe butterfly bush** – an invasive plant common in backyard gardens. Although it is popular for attracting many butterfly species, butterfly bush provides a less nutritious source of nectar compared to native flowers. To best support our native butterflies, always select native nectar plants, such as those at this link: http://bit.ly/Monarch_Host-Plants. Also refer to the “**Home Landscaping for Communities & Wildlife**” guide in your Migration Day Explorer's Kit.



LGNC Migration Day 2020

Habitat Bingo!

1. Any Living Thing That Needs Water...



2. Watershed



3. Dead Tree



4. Spring



5. Riparian Zone



6. Stewardship Activity: Keep the watershed clean for migrating birds, monarch butterflies, and other creatures by disposing of litter in the garbage bags provided in your Migration Day Explorer's Kit! Check out your Migration Day Explorer's Guide for directions.



7. Berry



or Other Fruit

8. Question: Where does all of the water in the Lehigh and Delaware rivers end up?

9. Question: How many square miles of land shed water into the Delaware River?

10. Question: How many people get their drinking water from the Delaware River?

11. Question: Name two stresses that harm the Delaware River.

12. Tree Cavity



13. Two Sources of



Pollution

14. Tree Seeds or Nuts



15. Any Insect Home



- 1. Find any living thing that needs water to survive.** Psych! ALL living things need water to survive!
- 2. Find a watershed.** (Hint...look below your feet!) Bonus if you can name it. Learn the answer by watching the watershed video at this link: http://bit.ly/Migration_Day_Online.
- 3. Find a dead tree** – an important source of food for some migratory birds!
- 4. Find a spring** – a place where groundwater flows to the surface of the Earth. Springs can provide a clean source of water for migrating birds and many other creatures. The ground filters water naturally as it passes through layers of soil and rock.
- 5. Find a riparian zone** – an area of plants growing alongside a waterway. Aside from being an important habitat, riparian zones are buffers that protect our waterways by catching and filtering out pollution that runs off the land. At the same time, they drink up lots of water and prevent flooding on the land! Never mow right up to the edge of a waterway.
- 6. Stewardship Activity:** Keep the watershed clean for migrating birds, monarch butterflies, and other creatures by disposing of litter in the garbage bags provided in your Migration Day Explorer's Kit! Check out your **Migration Day Explorer's Guide** for directions.
- 7. Observe a berry or other fruit.** These are an important source of sugars for migrating birds.
- 8. Where does all of the water in the Lehigh and Delaware rivers end up?** Learn the answer by watching the watershed video at this link: http://bit.ly/Migration_Day_Online.
- 9. How many square miles of land shed water into the Delaware River?** Learn the answer by watching the watershed video at this link: http://bit.ly/Migration_Day_Online.
- 10. How many people get their drinking water from the Delaware River?** Learn the answer by watching the watershed video at this link: http://bit.ly/Migration_Day_Online.
- 11. Name two stresses that harm the Delaware River.** Learn the answer by watching the watershed video at this link: http://bit.ly/Migration_Day_Online.
- 12. Observe a tree cavity** – a hole in a tree where a bird might live. Screech-owls, woodpeckers, and other native birds build their nests in cavities!
- 13. Find two sources of pollution.** Look for things that people have put into the environment that can harm wildlife. Pollutants can exist in the air, water, and soil.
- 14. Find tree seeds or nuts.** These are an important source of sugars, proteins, and healthy fats for migrating birds.
- 15. Find an insect home.** In addition to being pollinators, many insects are bird food! Insects provide an important source of proteins for migrating birds.

Bird Count Table

Type of Bird	Number of Bird (Use tally marks to keep track!)
 Songbirds	
 Crows	
 Doves	
 Swallows	
 Hummingbirds	
 Woodpeckers	
 Hérons	
 Geese	
 Ducks	
 Gulls	
 Hawks	
 Owls	