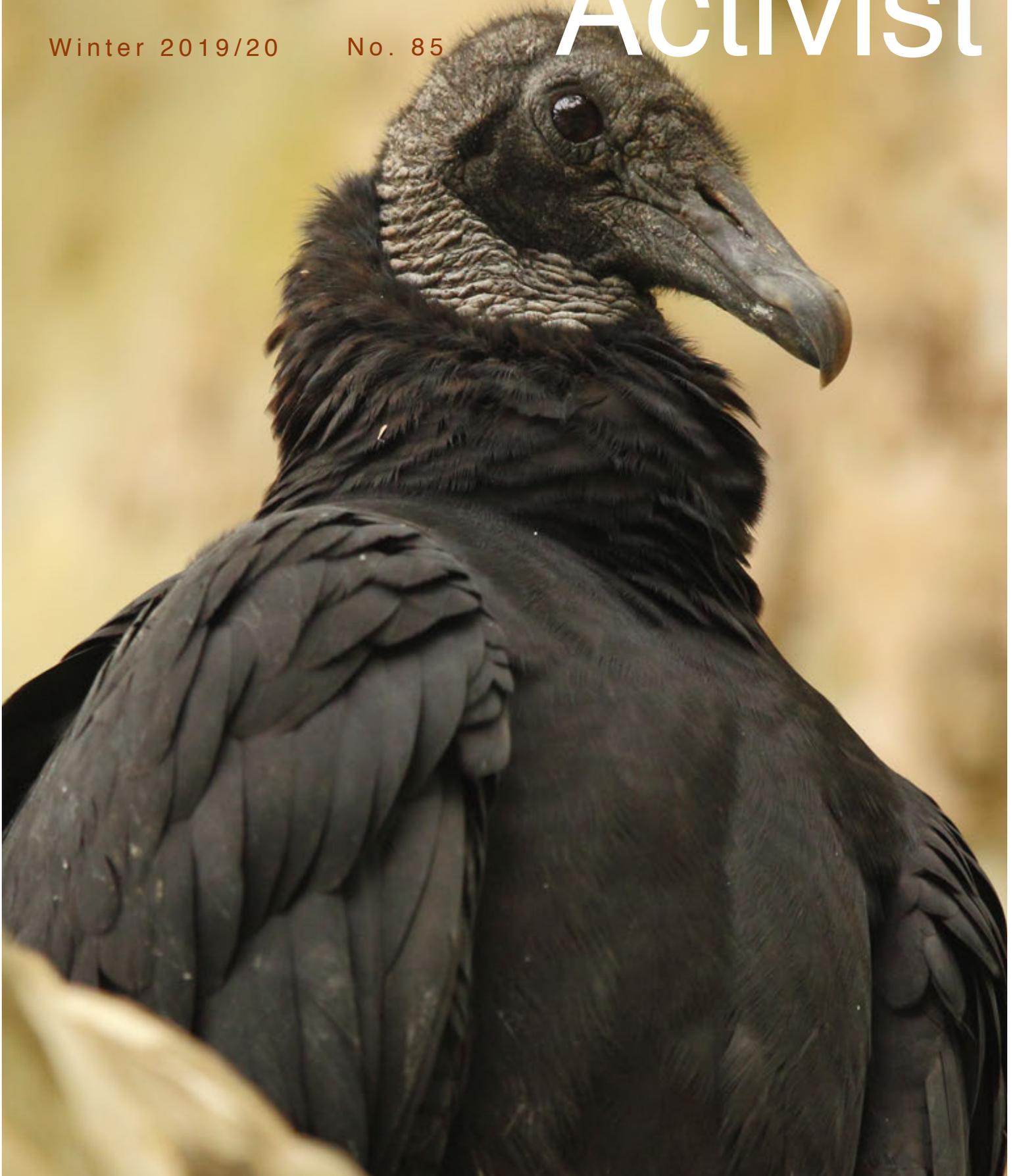


# Wildlife Activist

Winter 2019/20

No. 85



## Winter & Spring 2020 Calendar

*All activities begin at the Osprey House unless otherwise noted. For directions and more information on these events, and to find out about **additional activities**, contact the Center or visit lgnc.org.*

**January 16, 10:00 a.m.-Noon – Cabin Fever Book Club**  
We are reading *A Rum Affair* by Karl Sabbagh & Adam Nicholson.

**January 16, 7:00 p.m. – Speaker Series: Howard “Sandy” Whidden, Ph.D.**

“Long-term Studies of Bat Populations in the Delaware Water Gap National Recreation Area”

**January 18, 7:15 a.m.-Noon – Winter Bird Survey**  
Work in teams to bird a rectangular area around Bake Oven Knob. Join us at Mama’s Pizza at 12:15 p.m. to tally results and have lunch.

**February 8, 10:00 a.m.-Noon – Winter Nature Walk**  
On a mid-winter trek through the Gap, we will discuss winter tree identification and look for signs of life during the colder part of the year! Binoculars provided.

**March 19, 10:00 a.m.-Noon – Cabin Fever Book Club**  
We will be discussing *American Wolf* by Nate Blakeslee.

**March 22, 3:00 p.m. – Speaker Series: Gary Gentile**  
“Canoeing the Wilderness”

**April 4, 10:00 a.m.-Noon – “Signs of Spring” Nature Walk**

Enjoy an early spring exploration of plants and animals at LGNC! Binoculars provided.

**April 18, 9:00 a.m.-Noon – Earth Day Service Day**  
In celebration of Earth Day, help us clean up the gardens and Refuge!



**April 23, 7:00 p.m. – Speaker Series: Scott Keys**  
“Birds of the Haul Road - an Alaskan Adventure”

**May 2 – Curious Naturalist Workshops**  
**9:00-10:00 a.m.** – Spring migrants of LGNC. Enjoy the birds returning to LGNC, passing through, and those that live here year-round. Binoculars provided.  
**10:00-11:00 a.m.** – Macroinvertebrate survey. Discover the aquatic insects that live in the Lehigh River.

**11:00 a.m.-Noon** – Botany Walk. Learn to identify trees, flowering plants, and more around the Osprey House.

**June 6, 7:00 p.m. – Whip-poor-will Hike**  
Meet at the Osprey House at 6:45 p.m. or at the Translater Lane Parking lot at 7:00 p.m. We will hike up Translater Lane to the top of the mountain by dusk and then listen for Whip-poor-wills on the way back down in the dark. Bring a flashlight if you wish.

**Ornithology/Birding 101**  
**Meets every other Tuesday, February 4 - June 9**  
We will explore ornithology in the classroom, learning interesting aspects of bird anatomy, physiology, behavior, and identification. There will also be a field component to the class in which we will get outside at LGNC and other local birding spots, plus go further afield with field trips to birding hotspots within a day’s drive. Classes presented by retired LGNC Director, Dan Kunkle.  
\$25/members, \$75/non-members. Registration required.

**February 13, 7:00 p.m. – Speaker Series: Louise Bugbee**  
“History of the Lehigh River”

**February 14-16 – Lehigh Gap Area Feeder Watch**  
Contact us for information or visit our website to participate in this “citizen science” research project in your backyard.

**February 20, 10:00 a.m. to noon – Cabin Fever Book Club**  
*Engineering Eden* by Jordan Fisher Smith is our book for February.

## Lehigh Gap Nature Center Administration and Management

The day-to-day operations of the Lehigh Gap Nature Center are managed by the Executive Director, Dan Kunkle, Director of Science & Education, Chad Schwartz, and Director of Communications, Brian Birchak. Governance of the organization rests with the volunteer Board of Directors. A Board of Advisors serves in various advisory capacities on an as-needed basis to the Executive Director and the Board of Directors. Bonnie Pancoast serves as our Volunteer Liaison. Anne Zagarella and Jane Borbe are the Information Specialist team leaders. Simon Molloy is our Trail Specialist. Lee Kunkle serves as our Financial Secretary and Donna Gasser is our Membership Coordinator.

*Many thanks to our dedicated volunteers!*

### Board of Directors

Anita Collins, Ph.D., President	Marilyn Jordan, Ph.D.
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Ron Kline, Ph.D., Secretary	Janet Maurer
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Miriam Huertas	David Shaffer
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# WILDLIFE ACTIVIST

*A Newsletter Devoted to Wildlife and Habitat Protection and Restoration  
at Lehigh Gap on the Kittatinny Ridge and Beyond.*

*Published by the Lehigh Gap Nature Center*

**Winter 2019/20, Number 85**

## Contents

- 2 Executive Director's Message: The Story Continues...** by Dan R. Kunkle
- 4 President's Message** by Anita Collins
- 6 Disappearing Ice** by Bruce Rabenold
- 9 Single-use Plastics** by Lee and Dan Kunkle
- 11 Honoring Dr. Dan, LGNC's Retiring Director** by Anita Collins
- 14 Vultures and Their Value** by Caleb Hinojos
- 18 Lehigh Gap Nature Center News and Events**
  - Remembering Michal Kubik
  - A Tribute to Michal Kubik
  - In Memory of Nelson Markley
  - What's that Thing by the Pond?
  - No More Muddy Shoes!
  - LGNC Education Update
  - 2019 Nature in Photographs
  - 2019 Nature in Art
- 36 Wildlife Book Reviews**
- 40 Donations, New Members, Volunteer Service, Business Members**
- 44 Endowment Fund Update**



*Prairie Warbler, original painting by Brad Kunkle*

***Front Cover: Black Vulture by David Levandusky***

***Back Cover: Conservation Leadership Academy Rock Climbing***

**PLEASE TELL US WHAT YOU  
THINK OF WILDLIFE ACTIVIST**

Phone: 610-760-8889 | Email: [mail@lgnc.org](mailto:mail@lgnc.org)  
Website: <http://lgnc.org> | Also on Facebook

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Executive Director's Message:

## ***The Story Continues...***

by Dan R. Kunkle

This is my last message as Executive Director, before assuming the status of Director Emeritus and member of the Board of Directors. Rather than an ending, however, I see this as a time of new beginnings as the story continues.

In my tenure as Director of LGNC, I have sought to cultivate a culture of inclusiveness and appreciation for everyone who has played a part in our organization. A culture in which we seek to provide a great return on our members' and donors' investment of time or money and in which we value quality over quantity. A culture in which we value partners and work collaboratively. A culture in which we provide quality educational programs and implement innovative solutions to the difficult problems on our Superfund site. A culture in which there is a strong reliance on our highly motivated and qualified volunteers whom we give authority to do their work for us.

Our new Directors, Chad and Brian, believe in this culture and seek to maintain and enhance it. They carry their work in their hearts – passionate about conservation, the planet, and LGNC.

I have met so many wonderful people at the Nature Center and have worked at learning your names (sometimes successfully). I have had many wonderful conversations and nearly all my friends are LGNC people. I have had the opportunity to work with some remarkable young people who grew up at LGNC and quite a few interns who did academic projects or worked for the center. There was a time that I wrote all our "thank-you" notes by hand, so you knew that you were truly valued as a member. Others help with that now because there are so many

of you.

Along the way, I have also met and worked with many wonderful colleagues in the conservation community and at foundations and businesses in the area. Partners from the PA Department of Conservation and Natural Resources, D&L Heritage Corridor, Edge of the Woods Native Plant Nursery, Wildlands Conservancy, Hawk Mountain Sanctuary, Lehigh Valley Greenways, and the Alliance for Watershed Education of the Delaware River have become friends, mentors, and colleagues. The same can be said for foundation and business funders such as the Harry C. Trexler Trust, Rider Pool Foundation, Hommer Foundation, The Century Fund, Horsehead Community Development Fund, William Penn Foundation, PPL, and Air Products.

It has also been a tremendous learning experience and a pleasure to work with U.S. Environmental Protection Agency, PA Department of Environmental Protection, CBS Operations and their consultants, as well as many scientists and students as we succeeded in transforming a Superfund site into an environmental education center – the only such transformation in the country. We have also worked with many

academic partners from numerous colleges and universities, many of whom have provided and continue to provide valuable service to us in our restoration work and management of the refuge. The schools we have worked with most frequently include Moravian, Lehigh, Muhlenberg, Penn, and Cornell, but there are many more.

LGNC was founded and run by volunteers from the start, and even though we now have some paid staff, volunteers are still an important part of this operation. I will take this opportunity to thank everyone who has contributed in any way to creating and running this refuge. That includes too many



people to mention by name. It includes folks who established and maintain our habitat gardens, trail crew members who built and maintain our excellent trail system, education team members who taught many field trip groups and helped us build a reputation for excellent environmental education programs, information specialists who have been the face of LGNC at the desk when visitors walk in the door, and people who have taken on the extra responsibility of leading these groups of volunteers. It includes Board of Directors members who have given their time and talent to help our organization grow and become more sophisticated and mature. It includes members of our local Rotary Club who funded and built our pavilion which served as a classroom long before we were able to build our visitor and education center. It includes people who helped in the office or cleaned the building, managed our website, engraved trail signs, or served as financial secretary or membership coordinator. It includes folks who have volunteered on clean-up days, people who have staffed tables at community events, and so many more. I also thank all those who have helped continue our longest running research project – the Bake Oven Knob Autumn Hawk Count, which began in 1961.

We have also had financial support from all of you, our individual, family, and business members. Even if you couldn't volunteer your time, you were able to support us financially, and I hope you all continue to do so. We should all be very proud of what we have accomplished together!

Once when someone was giving me far too much credit for our accomplishments at Lehigh Gap, I reminded them that there were a whole lot of people who made LGNC possible. DCNR's Dennis Demara stopped me and said, "You are correct, Dan. One person cannot make a project like this happen alone. It takes a busload of people to do something like this. But the bus needs a driver and you have been the driver." So, the bus has a couple of new drivers now, and I will be one of the busload of people that makes LGNC work so well.

Two people deserve special thanks in this, my last Director's message. One is Bob Hoopes, who has been there every step of the way with me in this crazy adventure to create an environmental education center from a Superfund site. In the past few months, Bob has stepped in to help us complete the transition to our new leadership team. Thank you, Bob.

Finally, I thank my wife Lee, my most trusted advisor, partner in conservation, and best friend. Lee and I look forward to joining all of you as volunteers and members and look forward to continuing our friendships at LGNC. See you at the Gap.



P.S. Thanks to everyone who has contributed to the Endowment Fund to honor my contributions to LGNC. It is so important that we sustain our unique nature center. 🌿



## President's Column

by Anita Collins

I am trying to catch up on a big backlog of magazines that I have been lugging around for years. They piled up while I was away for many months working in Venezuela. I was just reading a 2017 article from *American Scientist* titled, "Why Ecology Needs Natural History" by John G. T. Anderson\*, the W.H. Drury Professor of Ecology/Natural History at the College of the Atlantic. He enhances some of my own thinking as a senior scientist who was trained just as the big breakthroughs in the understanding of DNA and molecular biology were happening. So I want to share some of his ideas and mine.

Anderson states, "The two fields' intertwined histories show that most theoretical breakthroughs are preceded by the kind of deep observational work that has fallen out of vogue in the past half century." He goes on to discuss his concern that the process of broadly-based, patient observation must be valued as an essential first step in the scientific method. In my first column about how science works, I talked a lot about the early scientists like Aristotle and Pliny the Elder, and a host of others who paved the way for the science of today simply by observing, surveying, measuring, and categorizing the world around them. Their tools were limited in accuracy, and they relied on what they saw preserved in sketches, specimens, and notes.

The **Cabin Fever Book Club** read a wonderful biography of Alexander von Humboldt\*\*. He was an explorer in South America and later in Russia who is credited as the first naturalist to think in terms of the interactions of geology, meteorology, botany and zoology, and altitude. In other words, *ecology* – back in the late 1600s. Charles Darwin

was profoundly impacted by von Humboldt's published works, was an explorer in his own right, and laid out the concept of evolution. Even in our own day, one of our great synthesizing thinkers in biology, E. O. Wilson, began by observing ants.

Recently so much biological science is focused on the way the DNA genetic code manages the biochemistry and function of the cell and tissue. Too many rarely get out of the lab to look at the organisms they study, in their natural world. I was seeing the same thing at my own lab before I retired. I had been trained in beekeeping, along with my training in genetics and animal behavior,

and was outside working in bee hives as soon as it got warm enough in the spring. The younger scientists on our staff were not beekeepers, although they were and remain top notch experts on the current techniques of DNA research and the biochemistry of cells. They relied on our "Bee Master" and technicians to do a lot of that hands-on work maintaining colonies and managing them to produce the kinds of bee samples needed in the lab.

Don't get me wrong, I'm exited about this boom in our understanding of the underlying functioning of life. If I could go back and start again (and be 25 again but not lose what I know!) I'd do it in a heartbeat. And I had a small part in describing the honey bee, *Apis mellifera*, genome. We are learning so much more about how life works at the level of the DNA molecule and the physiology that lets our different cells interact as tissues and organ systems. Think about some of the medical advances in the treatment of cancer. Just ask someone who took last year's class on Very Basic Biology.

We have measurements that far exceed what used to be done. Electronically tagged wildlife can be followed. Chemical analyses measure part per



billions. But what does it mean in real life, where the paw and the root “hit the road”? Historically, most important naturalists were travelers in “the field”. Today there are fewer “untried fields” to discover. Or more to say, the untried fields moved from the organismal level to the physiological level and the level of DNA.

But this knowledge also needs to be tied to the end product – a functioning organism interacting in its habitat. There are still some taxonomy folks organizing species by how they look and act, and Diane Fosse and Jane Goodall Wanna-Bes are out there in the woods watching and taking notes and photos. Although scat sample DNA and genetic comparisons between populations are valuable tools, good science also still needs those who do our observational work.

Therefore, I see one of our important functions at LGNC as exposing youngsters, and oldsters, to the natural world at the level of the organism. Dan, Chad, Brian, and our team of education volunteers work hard to provide what our local schools need by coordinating our field trips and demonstrations to supplement their classroom work. I was surprised

to learn that LGNC is seen as a leader in providing such a valuable resource on those terms. Apparently many nature centers just present what they happen to have on hand or what they are good at. Many kudos to our team’s efforts. If some of the thousands of kids who walk our land become young scientists and young amateurs who love nature, young politicians who protect nature, and young citizens who support the protection of nature, we will have done a great service to our community.



\*For deeper reading, pick up his book, *Deep Things Out of Darkness: A History of Natural History*.

\*\* Andrea Wolf, *The Invention of Nature*. 🐝

*Anita Mallin*



Anita teaches a group about bee keeping at Migration Fest 2014.

# Disappearing Ice

by Bruce Rabenold



**I**ce is disappearing. Whether we call it global warming, climate change, or fake news, ice really is melting in all forms all over the earth. Ice is an agent of change, an indicator of change, and a record of the changing climate. Peter Wadhams calls ice “the magic crystal” and writes of the complexity of physical ice and the historical impact of ice on our planet. He states, “We owe the whole of human civilization to the stability of our [present] interglacial climate.”

Whether we like it or not – whether we believe it or not – we are now all caught up in a global experiment to see how fast and how far the warming of the climate will change our present world. July 2019 was the hottest July ever recorded for the earth as a whole. But individual records, while dramatic, are not the real indicator of the global warming problem – it is the relentless long term warming trend that we must consider. There are no sure answers.

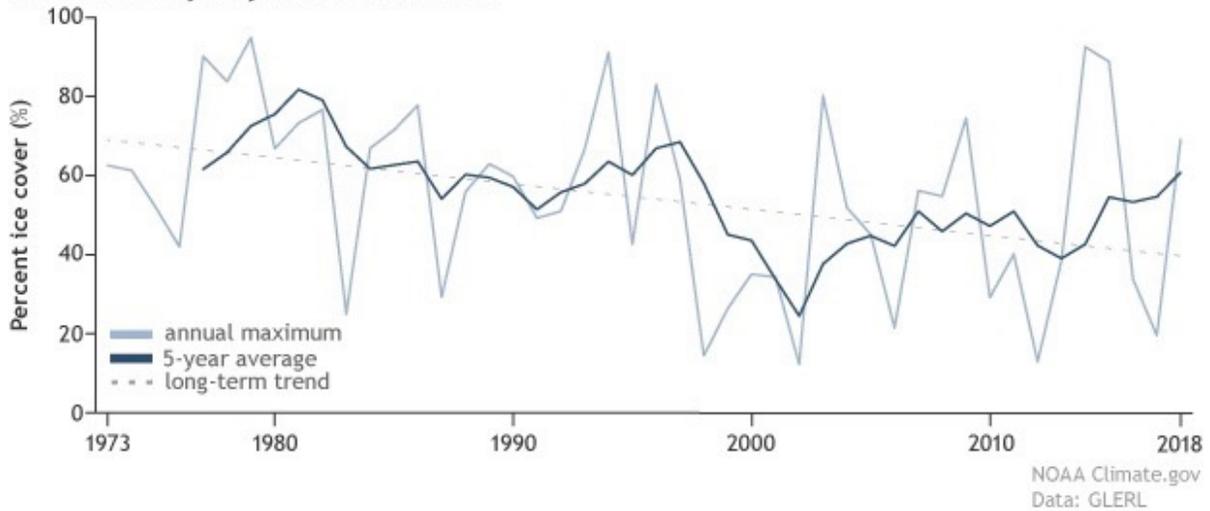
To start a dialog, we can talk about four kinds of ice in our present world: sea ice, terrestrial ice sheets, mountain glaciers, and freshwater seasonal ice. The Arctic ocean was historically frozen year round. More and more of the ocean is now open

water, as can be seen from space. Cruise ships can take tourists through the Northwest Passage, where explorers froze to death not that long ago. The yearly changes in sea ice extent are variable, but the overall trend is *less ice*.

The great ice sheet of Greenland is melting, turning the ice into rivers flowing into the ocean. Mountain glaciers are receding all over the planet. This is not just a matter of the terminus moving backwards, but also a loss of mass in the body of the glacier. Iceland is seeing diminished glaciers throughout the country. The President of Iceland has said that climate change is no longer a joking matter and expects his country to be ice free in 200 years. Antarctica is also losing ice mass from attached sea ice sheets, terrestrial ice sheets, and glaciers. All of this is happening now and is clearly visible, easily photographed and accurately measurable. In every case, we need to be very careful how we describe ‘normal’ conditions; we cannot be deluded into re-inventing a ‘new normal’ every few years.

Then there is the seasonal freshwater ice on our lakes and ponds. Not so dramatic, not such an impact as a thawing Arctic or a melting Greenland, but an

Time series of yearly maximum ice cover



The annual maximum percent ice cover in the Great Lakes has steadily decreased since 1973. (source: NOAA)

indicator of climate change and important in its own right. Thousands of lakes freeze over most winters and are used by ice fishermen, hockey players, ice skaters, and as transportation corridors.

Sigurd Olson’s essay “Northern Lights” describes an experience that could be lost...probably will be lost. Some years, the classic Iditarod dogsled race in Alaska has relocated the course away from unfrozen lakes and river crossings. The Dutch 200 km speed skating marathon, the Elfstedentocht, dating back to the 1700s, can no longer rely on canals for this famous event. Up to 6,000 entrants now need to travel to a high altitude lake in Austria to compete; 1997 was the last time the race was held on Dutch canals, and it quite possibly will never again take place in the Netherlands. Ice fishing tournaments in the upper Midwest are increasingly cancelled due to lack of safe conditions.

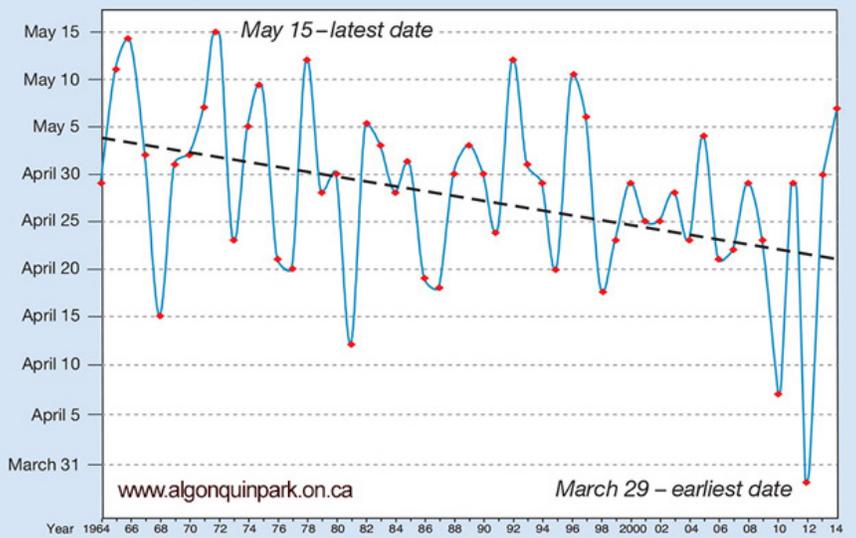
While each event cancelled is of small notice, there is still an impact to human society. Not unimportant to rural areas and small towns is that there is also a loss of recreational revenue. The Rideau Canal Skateway in Ottawa, a UNESCO World Heritage site, where up to 20,000 people skate (and spend money) a day, has fewer and fewer good ice days every winter. Loss of ice in general is taken quite seriously in Canada. A hundred years ago, there was a big business aspect to ice-covered lakes in the Poconos, as over a million tons of ice were

harvested for New York, Philadelphia, and other cities. Lakes were created, railroad spur lines built, and boarding houses constructed for the ice cutters. All nostalgic history now.

Climate.gov reports that “a downward trend since the 1970s in the annual maximum extent of Great Lakes ice cover, which reaches a maximum every year during late winter and early spring, spells trouble for the Great Lakes ecosystem and the people who rely on it.” The website continues that, “... the trend in ice cover over all of the lakes since 1973 is downward.”

Algonquin Park in Ontario is a cold place. Nevertheless, ice-out dates for Lake Opeongo, as recorded by the Harkness Laboratory of Fisheries,

Lake Opeongo Ice-out Dates Since 1964 Showing Trend



Ice-out dates for Canada’s Lake Opeongo have been earlier by 1.7 days per decade since the 1950s, according to the Harkness Laboratory of Fisheries.

have been earlier by 1.7 days per decade since the 1950s. The ice-out date can be highly variable from year to year, but the overall pattern trending is for a shorter and shorter period of ice cover. At a Shinto shrine at Lake Suwa in Japan, records of the lake ice have been kept since 1443. In the first 250 years, there were only 3 years that the lake did not freeze. Between 1995 and 2016 there were 19 ice free years. This long term observation matches shorter term occurrences throughout the world. The numbers in various studies vary greatly, mostly because of the definition of 'lake' and the portion of the earth being studied, but multiple studies show the same pattern – less ice on seasonally freezing lakes and ponds and more and more areas where there will be no ice formation in the future. There seems to be general agreement that extensive freshwater ice loss will occur within the next generation.



So what? There are some nice lakes in Florida that never freeze; lakes that provide wildlife habitat and human recreation. But if Minnesota lakes become like Florida lakes, we are losing diversity on a continental scale. How will migratory birds adapt and what else might change? What don't we know? If we create a new world, are we sure of what we are doing? Numerous researchers use the same phrase: "Ice cover acts as a reset for a lake every winter." Without winter ice, lakes warm up sooner in the spring, increasing algal blooms and decreasing oxygen levels. This is already of critical interest to municipal water managers who draw drinking water from Lake Erie (although the problems there are not limited to climate change). Different creatures will live in warmer waters; northern lake fish populations will almost certainly change as the water becomes warmer. Of course, those southern lakes are getting warmer too – mosquitos carrying Dengue Fever are

now part of the Florida environment. These wildlife studies are far from complete because we are in the process of a gigantic planetary change, and nobody knows for sure what the end result will be.

So let's skate back. Global warming is reducing freshwater ice, and this reduction in ice extent is helping to warm the Earth even faster – the very definition of an accelerating feedback loop. The 'albedo effect' is the reflective quality of the ice which reflects sunlight (heat) back into space rather than absorbing it. Open water absorbs this heat so that as ice disappears, this heat is added to the total warming of the earth. And so our planetary experiment continues.

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# Single-use Plastics

by Lee and Dan Kunkle



**8.8 million tons** of plastic waste end up in the ocean each year

**1 million plastic bottles** are made each MINUTE!

**91%** of this plastic is not recycled

*All these plastic wastes are a problem...*



Imagine hosting a party for 70 people and you make an announcement about the plates, cups, and cutlery used. Now imagine that the 70 people applaud! It happened right here at the Osprey House when we told our guests at Dad's 90th birthday party about these items. Why did they applaud? Well, we are getting ahead of our story – let's back up and start at the beginning.

The first totally synthetic plastic was invented in the early 1900s. By the second half of the 20<sup>th</sup> century, plastics had become ubiquitous and their use accelerated. Today, about 1/3 of plastic is used in building materials, another 1/3 in a variety of products such as cars, clothing, toys, and medical devices, and the final 1/3 is used in packaging. This packaging and some of the other plastic products (e.g., plastic cups, plates, and utensils) wind up being used once and are then discarded. Many of these single-use plastic items end up in landfills, some in incinerators, and in many places, it is dumped into waterways and ends up in the ocean.

While many uses of plastics are very beneficial and some irreplaceable, none of these single-use plastics is necessary. There are alternatives for each of these products and packaging materials. However, plastics are cheap, convenient, and mostly not recyclable or recycled. Here are some interesting facts from National Geographic:

- 8.8 million tons of plastic waste end up in the ocean each year!
- 1 million plastic bottles are made each MINUTE!!
- 91% of this plastic is not recycled!!!

All these plastic wastes are a problem because they do not break down easily in the environment. Some break up into microbeads and end up in the food chain, poisoning marine and aquatic life. Others last literally forever.

We can all help to address this issue by never using a single-use cup, straw, plate, or utensil when we can use dishes, glasses and silverware. We have done this at LGNC. For example, when we have our Cabin Fever Book Club meetings and serve breakfast,

we use our plates, mugs, and silverware and then wash dishes afterward. It is not as convenient, but the planet is worth the little effort it takes to wash the dishes

So, you are having a picnic or party and don't have enough re-usable plates, cups, and utensils for your guests. In the past, about your only choice was paper and plastic items. Now there are excellent alternatives, and they are becoming more affordable. There are plates made from items such as corn and sugar cane stalks or bamboo. There are cups made from corn starch that look much like traditional plastic cups but are biodegradable. A variety of utensil options exist now, including plant-based items and compostable wooden utensils made from sustainably harvested birch trees. An online search will provide you with lots of ecologically friendly options.

When shopping, you should also consider the packaging whenever possible. This is a bit more difficult because there is no legislation requiring that all packaging be recyclable, and as a result, much of it is not. This leads to a lot of non-recyclable plastic in our garbage. While you can reduce, you probably cannot eliminate all of this single-use, nonrecyclable packaging. Only legislation can help us accomplish that. Legislation is the only reason you can now purchase long lasting, energy saving light bulbs at an affordable price.

There are many other ways to reduce or eliminate single-use plastics. Use a reusable water bottle or buy a filter for your home to avoid the use of single-use plastic water bottles. Avoid single-use plastic straws. Just say no to the straw or use a washable, reusable, stainless steel straw. Use plant-based, biodegradable trash bags. The list goes on.

Like recycling or conserving energy, limiting your use of single-use plastics is something personal you can do to help the environment. Your actions will inspire others to act and hopefully grow support for the eventual elimination of all non-recyclable plastics and of single-use non-biodegradable plastics.

Now imagine your next party at which your guests applaud you for using sustainable dinnerware and 100% recycled paper napkins. Instead of ending up with several large, black plastic trash bags full of single-use plastics and non-sustainable paper products that will never break down, why not end up with sustainable, compostable products in biodegradable trash bags that will all turn into soil. Say no to single-use plastics!

**Here are a few single-use plastics we use in our every day lives and their alternatives:**

### Plastic Straws

One of the most commonly found items littering beaches throughout the planet. When you think about it, they are not needed! **Alternatives** could be using a reusable straw, a paper straw, or simply just abstaining from using one.

### Plastic Water Bottles

Plastic water bottles are found everywhere! Recycling efforts are already being overtaken by the demand for bottled water. **Alternatives** include refillable water bottles that you carry with you and drinking more tap water. If you find carrying a reusable bottle inconvenient, then collapsable options are also available.

### Coffee Cups with Plastic Lids

Yes, even "paper" coffee cups are a problem. They're lined with an oil-based plastic that is either difficult or even impossible to separate in the recycling process. Also, most plastic lids are not recycleable either. An **alternative** would be using a reusable coffee (hot beverage) container you can take with you. There are collapsable options available too.

### Plastic Bags

We all know they're a problem and there's no need to explain how and why by now. **Alternatives** in this case are widely available. Carrying a reusable bag or two or three with you is a great way to cut down on our use of this problematic plastic.

### Plastic Cutlery

This form of single-use plastic is such a problem that some countries are enacting laws banning them! They're not recycleable and end up everywhere we find other problem plastics littering the world. An **alternative** would be carrying your own reuseable spork or set of reuseable cutlery. Also, using bamboo or wood utensils at your next event would be a wonderful idea!



*These are just a few tips to get you started. If you want to explore more options, just a simple internet search will provide many answers and alternatives for you. 📌*

## Honoring Dr. Dan, LGNC's Retiring Director

by Anita Collins



This is the story of the restoration of a small portion of the earth. A damaged portion. Maybe not restored to what it was before, but to a functional ecosystem with varied habitats. Even more so, this is the story of the person who was the catalyst for this restoration. There were a lot of folks from many walks of life who helped in various ways. But he was at the center. Dan likes to call himself the “bus driver” for this bunch of people, as if he were just some ordinary yahoo with a license. But anyone who has been around those big yellow behemoths knows that there are bus drivers, and there are *BUS DRIVERS*. So, what is it about this gentleman that has helped the Lehigh Gap Nature Center come into being? I’ve talked to a lot of folks who helped grow LGNC with knowledge, advice, contacts, grant money, and just some good old sweat and dirty hands. Well after all, we LIKE being out in nature; that is the glue that holds us together. And this is what they told me.



One of our Advisory Committee members, David Shafer, CEO of Just Born Candy Co., said: “Dan is a knowledgeable, caring, passionate naturalist with a kind demeanor who can squeeze water from a few rocks causing grass to grow wherever he walks.” I’m sure Dan will be embarrassed by this, and some of the other things I’ll tell you about him. For first of all, he is a humble man. The Information Specialist volunteers manning the front desk know that he often spends lots of time talking to newcomers about the amazing transformation that has taken place here and never tells them that he is the guy in charge. Or that he has spent eighty-hour work weeks doing everything that needed to be done. Planting seeds of warm season grasses, corralling useful people, getting scientific guidance, soliciting grants, teaching children, building trails, making presentations, talking to reporters, coordinating all kinds of events, and, yes, even washing windows and fixing toilets. I’ve seen it.

As you may know, Don Heintzelman had the initial idea. He was one of a group of hawk watchers and nature lovers who were the Wildlife Information Center, the name under which we still do business. Don heard that some polluted land was up for sale and thought this group might be able to do something with it. Deals were made, grant money was found, and the restoration was on. Dan retired early from teaching high school science and jumped right into the process. Bob Hoopes, one of the first Board members, revealed that there were numerous setbacks which hit Dan hard, but his normally optimistic nature won out.

At some point, Dan developed clear vision of what LGNC could be, and he recruited others to buy into this dream of a greener mountain. But he also had a clear vision of the culture of this Center – broadly based in the local community and actively inclusive. Dan doesn't just care passionately about nature, he also cares about the people. Donna Gasser, our longtime membership coordinator, says he is amazing at remembering names, relationships, and even membership details of many of our still growing crowd of supporters. This group is definitely a partnership of all.

How does he draw others into his sphere? He



*Dan Kunkle points to a test plot sign from the restoration project.*

is passionate, positive, dedicated, persevering, and effusive about what is happening at the Lehigh Gap, making one thrilled to be a part of this project. Marilyn Jordan, who did her doctoral research right here on this land and recorded the total lack of life, met Dan just a few years ago at an ecology meeting. She says it took only a few minutes to know that this was a special person leading a special place. "Charismatic" is the term many use. She was drawn in to moving to the area when she retired and is now on the Board of Directors. Me...I was engulfed



*Dan Kunkle teaches Ecology Camp students about the wildlife of the Kittatinny Ridge.*

like an amoeba gathers its food. “Phagocytosis” is the scientific term. After a tour that laid out LGNC as a perfect site for a native bee survey, I found myself surrounded by a group of student Naturalist Club members eager to help with actual research. They ran up and down trails collecting my little bowl traps, learned to wash, sort, and pin bees (I got invited to talk about native bees at one of their meetings), and did a great job for me. You know what happens next – the vision of this amazing transformation caught me, too.

Science teacher Kunkle came to this dream with a broad background in nature. But he knows what he doesn’t know, and asks for advice. Once Wildlife Information Center owned the land, he reached out to Bill Mineo, who was shepherding the D&L Trail through the Gap. And Bill got swept up, bringing experience of naturally metal-rich areas of PA. From there, the circle widened to include warm season grass expert John Dickerson and many others. Barb Egerton, a second grade teacher, now retired and on our Board, remembers taking an in-service training class here. Afterwards, Dan asked Barb and several other second grade teachers what they needed to supplement their classroom work. He listened closely when they asked for birds, a hike, and a lab experience. All of that happened, including microscopes on the deck by the pond and donated dollars for buses. There was no laboratory space at that time. Word quickly spread within the school district about what fun it was, and soon all the second graders were visiting. I was amazed to learn that LGNC is one of very few nature educational centers that coordinates what we are providing with in-school teaching plans.

What permeates all of Dan’s interactions with kids and volunteers, local business leaders, and granting agencies is his ability to communicate clearly. He is a great teacher at all those levels, putting the science into easy-to-grasp terms appropriate to each group. And he doesn’t talk down to folks; he uses his words to entice them into helping!

Dan is a pinchpenny. He and a hoard of volunteers have built

the dream and continue building. I met a member of the Board of the Trexler Trust, a local granting agency that provides support for our operations. He told me that LGNC gives them the biggest bang for their buck of any group they assist – lots of free labor enchanted by Dan’s vision. By leveraging that free labor and other careful money managing, Dan put dollars into our endowment fund every year to carry us into the future. This fund is large enough now with many gifts that we have a paid staff beyond a single hard worker to pick up the dream as Dan steps back.

Oh, Dr. Dan Kunkle didn’t tell you Muhlenberg gave him an honorary doctorate, did he? More humility. But I’ll tell anyone who will listen that the education and conservation work he has spearheaded in the Lehigh Gap is so much more than the hundred or so pages in Ohio State University’s library that got me my title of “Dr.” And so, Dan will go with us into the future that he is still helping us visualize through enthusiasm and written five-year plans. He takes everything very seriously...except for himself, that is (he’s got a good sense of humor, too). Please join in and bring your friends and neighbors. It’s lots of fun and good for your health too! Conservation, education, research, and recreation.

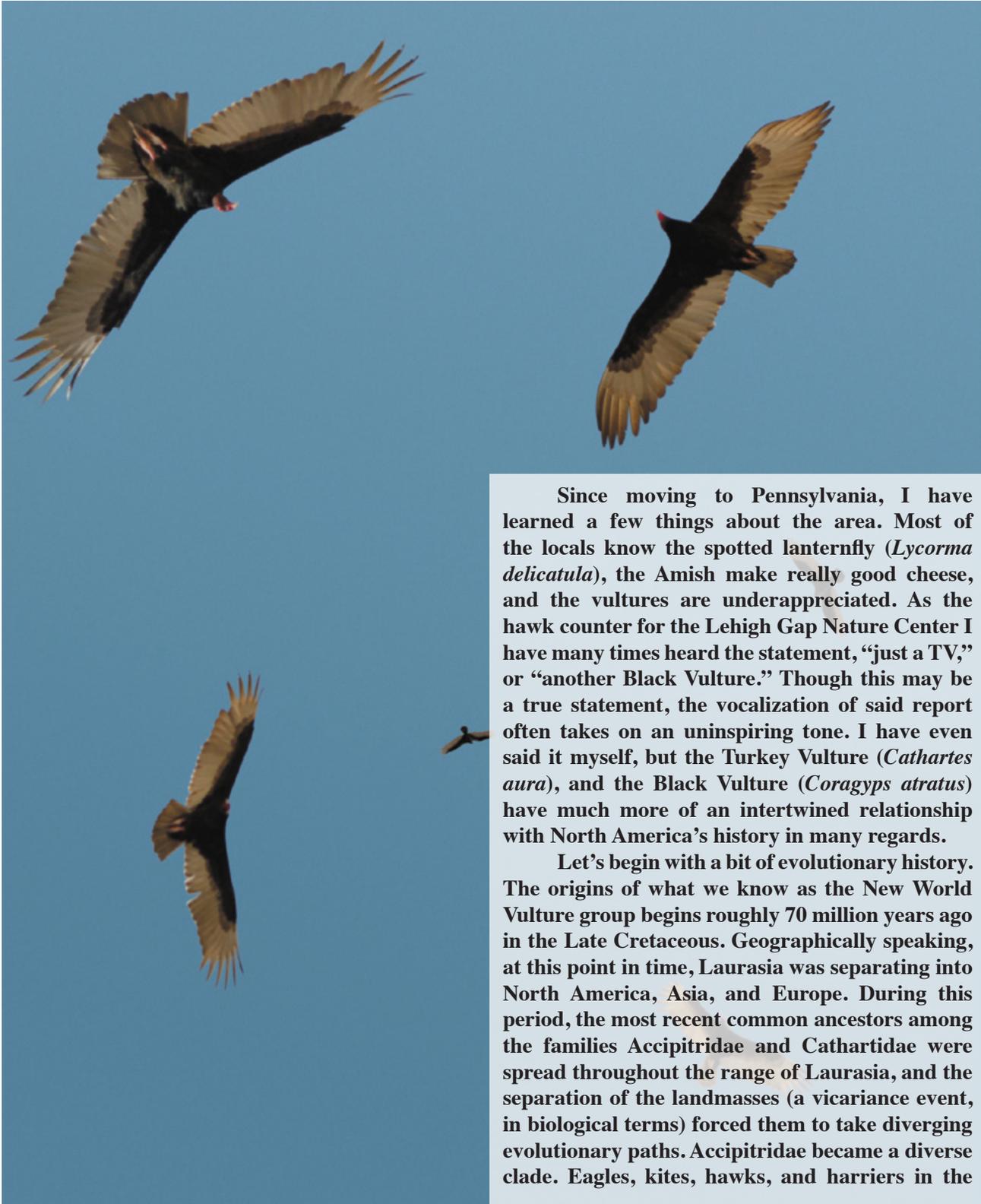
Thank you to all the people who spoke to me about their experience with Dan. Sorry I can’t list you all! 📷



*Dan Kunkle receives an award from the EPA recognizing LGNC’s restoration work.*

# Vultures and Their Value

by Caleb Hinojos



Since moving to Pennsylvania, I have learned a few things about the area. Most of the locals know the spotted lanternfly (*Lycorma delicatula*), the Amish make really good cheese, and the vultures are underappreciated. As the hawk counter for the Lehigh Gap Nature Center I have many times heard the statement, “just a TV,” or “another Black Vulture.” Though this may be a true statement, the vocalization of said report often takes on an uninspiring tone. I have even said it myself, but the Turkey Vulture (*Cathartes aura*), and the Black Vulture (*Coragyps atratus*) have much more of an intertwined relationship with North America’s history in many regards.

Let’s begin with a bit of evolutionary history. The origins of what we know as the New World Vulture group begins roughly 70 million years ago in the Late Cretaceous. Geographically speaking, at this point in time, Laurasia was separating into North America, Asia, and Europe. During this period, the most recent common ancestors among the families Accipitridae and Cathartidae were spread throughout the range of Laurasia, and the separation of the landmasses (a vicariance event, in biological terms) forced them to take diverging evolutionary paths. Accipitridae became a diverse clade. Eagles, kites, hawks, and harriers in the

new world all exist within this group. Cathartidae became the new world vultures. Clade expansion of Cathartidae directly coincided with the mid Miocene period, roughly 14 million years ago, in which many mammalian herbivores and predatory mammals increased due to speciation events. With the increased amount of mammal carrion, and the increase of open niches, their numbers grew, and lineages diverged once again. Fast forward to the 20<sup>th</sup> century, and the evidence of niche refinement grew more apparent by specific adaptations.

As automobiles began to rise in popularity in the 1920s and 1930s, the bystanders were not only sidewalk pedestrians in towns and cities. Since major highways and interstates had not yet been developed, and the travel between counties or states relied on local government regulated roads. This could be anything from a single lane dirt highway through extremely rural terrain to a two-lane paved road through the main square. What this entailed for the wildlife of the rural counties was more exposure to a modern fulcrum which would affect their way of life. For terrestrial creatures this meant a higher likelihood of mortality when crossing these roads. For aerial creatures this also meant that there was another danger, but they weren't affected as directly. Specifically for vultures, this meant that their food supply range would become more expanded. It has been stated that the increase in white-tail deer (*Odocoileus virginianus*), and the increase in roadkill in the northeastern region of the United States has allowed for northern range expansion of both species of vulture, although through different

chronologies. Also, due to their different techniques in finding the carrion, this meant that the distributions would vary.

Black Vultures do not use their olfactory senses as a means of finding food. This meant that the agricultural areas, areas that weren't covered in a high tree density, and those that were fractured by human intervention would be favorable for this bird. They rely primarily on eyesight, their use of thermals for vertical movement, and the ability to see a vast expanse of the ground. This difference can be noticed most commonly when seeing the two species flying in the same area together. The Black Vultures tend to soar higher and farther than their Turkey Vulture counterparts. Turkey Vultures' olfactory senses, much like their South American sister species, did evolve enough to incorporate it into their lifestyle. This is why they can be seen at more tree dense areas such as forests. This adaptation allowed their range expansion to cover more ground than the Black Vultures, which were initially reported as having a northern limitation of the Carolinas. Due to the demeanor of the Black Vulture, they had more of a stronghold in sympatric locations, which has seemed to prove useful for their outreach into the northerly wooded areas. Their bully-like attitude would allow them to come behind their cousin species and remove it from its prized meal.

Not only are the two species closely connected to the United States through evolutionary history and technological impacts, but through a separate agent which might not be as apparent. One less acknowledged avenue seems to be their persecution by ranchers and



*Black Vulture (photo credit: Dave Levducky)*

farmers in the early 20<sup>th</sup> century. The interest in such activities like poisoning, hunting for sport, or trapping with intent to kill come from a few places. In 1954, a researcher by the name of Parmalee was able to culture anthrax bacteria, (*Bacillus anthracis*) from the feces of both *C. aura* and *C. atratus*, and was then able to isolate and grow colonies of the bacteria to infect rabbits, guinea pigs, and even a sheep. There were also accounts of Black Vultures attacking young livestock which meant a direct attack on profits. These records alarmed farmers and were part of their reasoning for killing vultures indiscriminately. Although the poisoning could be secondary, such as leaving poison out for rodents which the vultures would invariably eat, or farmers throwing out poisoned carcasses, the message was clear. People did not want the vulture around for many reasons.

up to 16% and 17% respectively in Florida and Texas. With the ban of DDT use in the U.S., their number began to grow.

Fast forward to the 1980s and a study came out to explore the microbiota which inhabit the gut of the Turkey Vulture. Researchers were able to culture 14 species covering 11 genera. Some of the more common genera were *Salmonella*, *Escherichia*, *Enterobacter*, and *Proteus*. Symptoms from infections caused by these genera include diarrhea, urinary tract infections, fever, abdominal pain, osteomyelitis, central nervous system infections, and in the more extreme cases, death.

Although an organism that can harbor such microbiota may seem to be a bit disagreeable to some, their impact on the ecology of areas cannot be underestimated. Since they are obligate scavengers,

they are responsible for being the cleaning crew or trash collectors. This has a few benefits for humans and other organisms. The most important aspect of their waste disposal services is the reduction of carrion across the landscape. The reason for this is two-fold. Not only do they clear away carcasses and help to return nutrients to the trophic webs, but because they can harbor disease causing bacteria, they become a reservoir for the bacteria and reduce other organisms' chances of interacting with them. A good example would be that of a cattle rancher. When livestock die, they begin to rot from microbial activity and a lack of an active immune system. Without the services provided by the vultures,

ranchers would have to put themselves in more harm by interacting with the carcasses and possible transmission of bacteria.

Outside of the bacteria aspect, a viral aspect is also of concern. Rabies is common throughout the world, but there have been no indications that vultures have or are able to contract the virus. It is postulated that since their stomach pH is so acidic (1-2), they are able to neutralize the infectant. This is extremely important for helping to prevent the spread of rabies between other mammals that may scavenge on carcasses. Outside of this direct help to the ecosystem, the vulture's beneficial aspects can also be viewed



Turkey Vulture (photo credit: Dave Levandusky)

Though direct persecution would eventually dwindle, a noiseless toxin would help to decrease the population a bit more. Much like the eagles and falcons of the 60s, the vultures took hits to their population numbers due to DDT and DDE. This was due to bioaccumulation of the toxins as they rose up the food webs. DDT is the more common of these pesticides, but it was found that the harmful effects discovered were due to DDE. Once the chemical was in the predator's system it began to negatively affect the body's ability to produce an autacoid named prostaglandin. This led to a decreased uptake of calcium and caused the eggs of the birds to be thinner and more brittle. Statistically this was shown to promote decreases in populations

through a lens of bioprospecting. Since they are able to harbor these deadly pathogens and virus without ill effects, we might be able to utilize them as a model vertebrate system for a deeper understanding of disease transmission between classes of organisms.

Although this group of birds seems to be almost indestructible to microbial threats, this is not the case. Due to the rise of medications and vaccinations for use on livestock, these birds are undergoing unforeseen impacts. Although these effects have been primarily reported from Southeast Asia and Europe, it is important to understand them and utilize this information when going forward with future health programs surrounding livestock. In a report that was released in 2010, researchers looked at failed eggs and nestlings to determine why they did not thrive. The study indicated that many veterinary drugs,



Turkey Vulture (photo credit: VIREO)

primarily fluoroquinolones, were associated with internal damage to the organs. Other drugs found were antiparasitics and non-steroidal anti-inflammatories (NSAIDs). It was shown that these drugs also aided in immunodepression and hormone disruption, which allow for the bodily systems to become compromised and limited their ability to fight off common bacterial infections. This had led to decreases in population sizes throughout the old world.

By understanding the various impacts that vultures have on our health, the health of our livestock, the environment, and wildlife populations, we can begin to incorporate a healthy understanding and respect for these birds. Although this might be a hard sell to some people it



isn't very hard to understand that protecting the vultures and using them as an indicator species for various facets of ecological study means that wildlife enthusiast and average citizenry alike can enjoy not only the amazing views that a soaring vulture can provide, but also the ecosystem services that it delivers free of charge.

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## **Lehigh Gap Nature Center News and Events**

### **Remembering Michal Kubik**

by Dan R. Kunkle



For nearly two decades, many members and visitors to the Lehigh Gap Nature Center (LGNC) had their first experience handling a live snake at our festivals and events. How often do you see multiple children under five years of age walking around with snakes bigger than they are around their necks and arms? This is all thanks to an affable man with a beard and a British accent named Michal Kubik. Little did all those visitors know how important a role Michal and his family played in the founding and development of LGNC.

Michal, a long-time professor at Lehigh Carbon Community College who had recently retired, passed away in September 2019 at a far too young age. He was

just short of his 67<sup>th</sup> birthday, though few would have guessed his age from the vitality he showed. Michal's wife, Linda Frederick, and his daughter, Clare, have also been fixtures as volunteers at the Nature Center since its founding in 2003.

Michal joined the Board of Directors in 2000. At the time, we were searching for a property to purchase to create an environmental education center. He soon was elected as vice-president. In 2002, the Board of Directors embarked on a bold project to purchase land on the Kittatinny Ridge at Lehigh Gap that was contaminated by air pollution from zinc smelting. Soon after we acquired the land and were just beginning the process of turning it into a nature center, our Board president, Ken

Medd, died suddenly, and Michal assumed the role of president in January 2004. He would remain president for a decade and serve on the Board through 2015, a total of fifteen years. Michal's tenure as president of the Board coincided with the development of the Nature Center's Master Site Plan, the development of our environmental education programs with schools, and the design and construction of the visitor and education center we call the Osprey House. He was at the helm as LGNC went from idea to reality.

Perhaps the earliest major contribution Michal and his daughter Clare made was to literally bring life to events and festivals by bringing their collection of live amphibians and reptiles to display for the public. Not only did those attending the events get to see examples of our local snakes, turtles, frogs, and toads, but they also got to hold them. Many people had their first experience holding a live snake with Michal and Clare, and many a parent stood back reluctantly watching as their children handled the snakes. Michal and Clare were excellent ambassadors for LGNC and for these creatures that are often disliked or worse for no good reason. For nearly two decades, these animals have made an impact and have been centerpieces of our festivals.

Another major contribution from Michal and his family came in 2005, when Linda and Michal made a donation to start our habitat gardens, with Linda volunteering to lead the project. Linda, Michal, Clare and others removed invasive species, built walls to terrace the gardens and channel water, and then planted the first of our native plants. Those gardens now fully encircle the Osprey House and are a major asset to the Center. Linda led the garden project for eight years as it became much more than our own habitat gardens. The project spawned two other projects – the Rare and Forgotten Flora project in which we recruited and trained 26 gardeners to plant endangered, extirpated or

rare plants in their own gardens, and the Landscaping for Communities and Wildlife project led by Kate Brandes over a five-year period. Michal, Linda, and Clare spent many hours working in our gardens and developing these other projects.



Perhaps Michal's greatest single contribution to LGNC was his participation in the design team that planned and oversaw the building of our visitor and education center in 2009/2010. Michal's knowledge of construction and building materials, gained from a lifetime of home projects, proved invaluable to the team. We worked with architect Michael Jonn for two years to design our ideal structure, then altered the plans to fit the reality of the funds we were able to raise. We ended the project with a building that is highly functional and have almost no regrets about the design that was implemented. We completed the project in phases over two years and were left with no debt – we raised every penny needed for the project before we completed each phase.

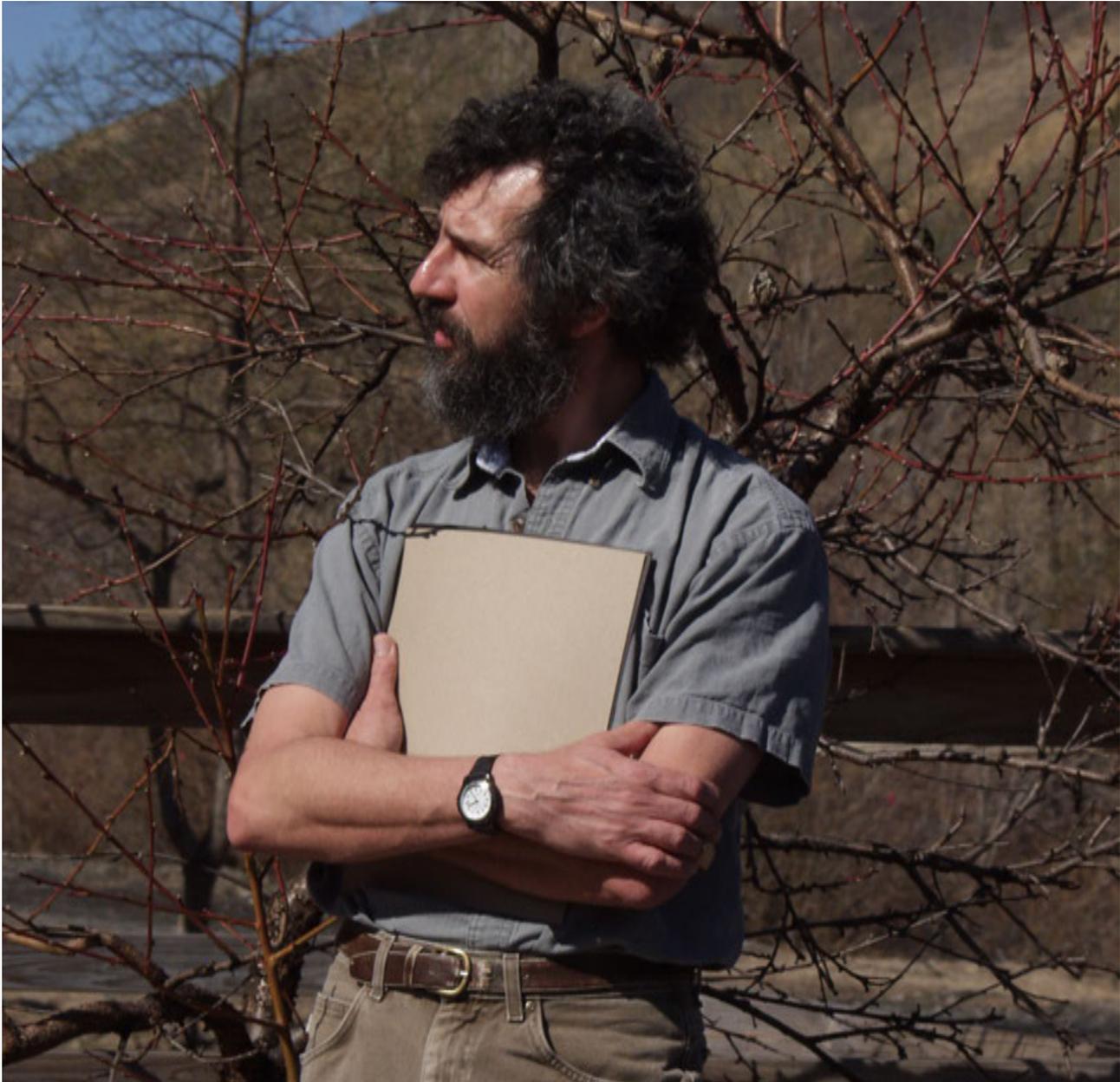
Under Michal's tenure, we retired the debt from our land acquisition, built and paid for the visitor and education center, and developed outstanding programs that are still being carried out, expanded and improved. In addition to these major achievements, Michal was always ready to help when we needed to do just about anything, as was his family. I remember digging holes for bird boxes, seeding native grasses, and removing invasive butterfly bush with Michal in the early days of the refuge. I also remember his enthusiastic support and passion for LGNC and the many ways Michal, Linda, and Clare helped make LGNC what it is today. We offer our condolences to Linda and Clare and our thanks for all you and Michal have done. We remember Michal fondly and will miss him greatly. 🖱️



Michal Kubik spreads seeds on the refuge with Kathie Romano.

## ***A Tribute to Michal Kubik***

by Sherry Acevedo



Our family has been blessed with having Michal Kubik and his wife Linda and daughter Clare be a part of our lives since our children were young. They are more than friends and considered family to us.

We met Michal and his family at Lehigh Gap Nature Center (LGNC) over ten years ago. Michal and Clare had their live reptile table of snakes, turtles, frogs, and salamanders. Michal was a proud Board member of LGNC and was

always willing to set up a reptile display, and help in any way. I recall meeting Michal and seeing him at LGNC Board meetings that I participated in when they were going through the process of securing the land, reclaiming the Superfund site, and establishing the Nature Center. His experience and advice for the environmental and educational opportunities helped contribute to a team of conservation minded professionals and volunteers accomplishing some amazing things.

When we saw Michal's display and the snakes for the first time, my son Jacob was smitten, curious, and filled with questions. My daughter, Paige, stood with Jacob listening to everything Michal and Clare explained. They both were amazed when they were each handed a snake to hold and were hooked on reptiles. Michal transferred his knowledge and passion for reptiles to them and from that point on, they were honored to be Michal's assistants to showcase and help educate other Nature Center visitors about reptiles and amphibians. I loved watching Michal smile, laugh, and talk with the kids. They looked up to Michal and Clare.

My children looked forward to annual events at LGNC and were glued to Michal, working, and handling the reptiles side by side. Even though other activities occurred during the events, both Dan Kunkle and I knew my children were with Michal, as his assistants. They helped Michal unload and reload his car and set-up the display, with the habitats and identification descriptions. They loved riding in the golf cart with Clare and me to explore the Three Ponds area. The reptile team took the show on the road when they participated in other programs and events at DeFranco Elementary School in the Bangor Area School District and Science Fun Night at Freedom High School.

Michal was their mentor and encouraged Jacob to get his own snake at home. When Jacob was given his first snake, he was so excited he had to let Michal and Clare know. We consulted with Michal on the habitat set-up, feeding schedule, etc. and loved sharing stories with him.

Michal was a mentor, carpenter, mechanic, conservationist, and herpetologist, along with so many other qualities. He (and Clare) had positively influenced our children in their love and respect for amphibians and reptiles. We were honored when Jacob and Paige each received the snake they grew up with handling to continue to take care of.



Michal was a positive influence on my husband, Alex, and me as well. He guided us in carpentry and home repairs. His craftsmanship and the intricate details of his woodworking were exceptional. A collection of seashells and ocean treasures are proudly displayed on handcrafted shelves to share their families' memories of vacations and nature exploration. He loved his family and reminisced about their adventures at Chincoteague and beyond. Michal was very proud of his daughter, Clare, and her strengths in critical thinking, independence, and passion for wildlife and nature.

His love of nature, care for the environment, and concern about climate change were of prime importance to him and to our family as well. Michal and Linda both shared their favorite pristine natural areas to visit; for instance, the wildlife refuge and national seashore at Chincoteague, where he loved the ocean and the island. During a sunrise walk on the beach on our most recent visit to the island, I was surrounded by migrating birds, Bald Eagles, oystercatchers, shorebirds, monarch butterflies, and seashells. As I took photographs and observed the area, I know why they both advised us to go there - it was breathtaking.

He was a very humble man who was receptive to learn, up for an adventure, loved reptiles and amphibians, and embraced new experiences. We all enjoyed our time together and will cherish every memory. He will forever be in our hearts and will be dearly missed.

Rest in peace, Michal. 🖼️

# ***In Memory of Nelson Markley***

by Dan R. Kunkle



*This photo of a Ruffed Grouse by Nelson Markley was featured on the cover of Wildlife Activist issue # 75.*



Lehigh Gap Nature Center (LGNC) recently lost another very important member, Nelson Markley, who passed away on Tuesday, November 19, 2019. He was 79 years old.

Nelson was born and grew up in Hamburg, Berks County, PA. By 1966, he had a Ph.D. in Mathematics from Yale University and began his career as a math professor at the University of Maryland (UMD) in College Park.

Professor Markley continued his career at Maryland for 31 years. Not only was he a mathematics professor, but he became the chair of the department from 1985 to 1991. He moved into an administrative position at UMD when he became a vice president from 1995 to 1997. In 1997, Nelson came “home” to Pennsylvania, when he was named Provost and VP for Academic Affairs at Lehigh University in Bethlehem from 1997 to 2000, when he retired. At Lehigh, he

was best known as an advocate for recruiting excellent faculty and students to create an intellectually engaged campus atmosphere.

Nelson was often published in mathematics journals throughout his career, and that did not end with retirement teaching math. After retirement, he wrote four math textbooks on topics such as probability, differential equations, and topological groups – topics of which most of us know little or never heard of. When I asked him once if his latest book was almost finished, he joked, “Yes, but don’t read the book – wait for the movie to come out.” He added that he was hoping that Meryl Streep would agree to play the lead role. Such was his sense of humor.

I was introduced to Nelson by Dennis Collins back in 2002 when Dennis (Wildlands Conservancy) was helping us with one of the land purchases that resulted in the formation of Lehigh Gap Nature Center. Dennis, Nelson, and I went for a hike together, and Nelson and I struck up a friendship that resulted in great benefits for LGNC.

Nelson had been serving on the Board at Wildlands and had great interest in conservation, nature, birds, and photography, and was very adept with non-profit organization finances. He grew up near Hawk Mountain Sanctuary, another of his favorite non-profits.

Nelson and I started scheduling a birding outing each spring at our new Lehigh Gap Nature Center. We also began meeting once a year in an advisory session where I would update Nelson on the evolution of the Nature Center and seek his advice on going forward. Many important developments occurred because of this advice, including a number of Board policies (such as gift acceptance and use of the endowment fund), better budget development procedures, and the need for a strong Finance Committee.



*Wood Stork by Nelson Markley*



*Tufted Titmouse by Nelson Markley*

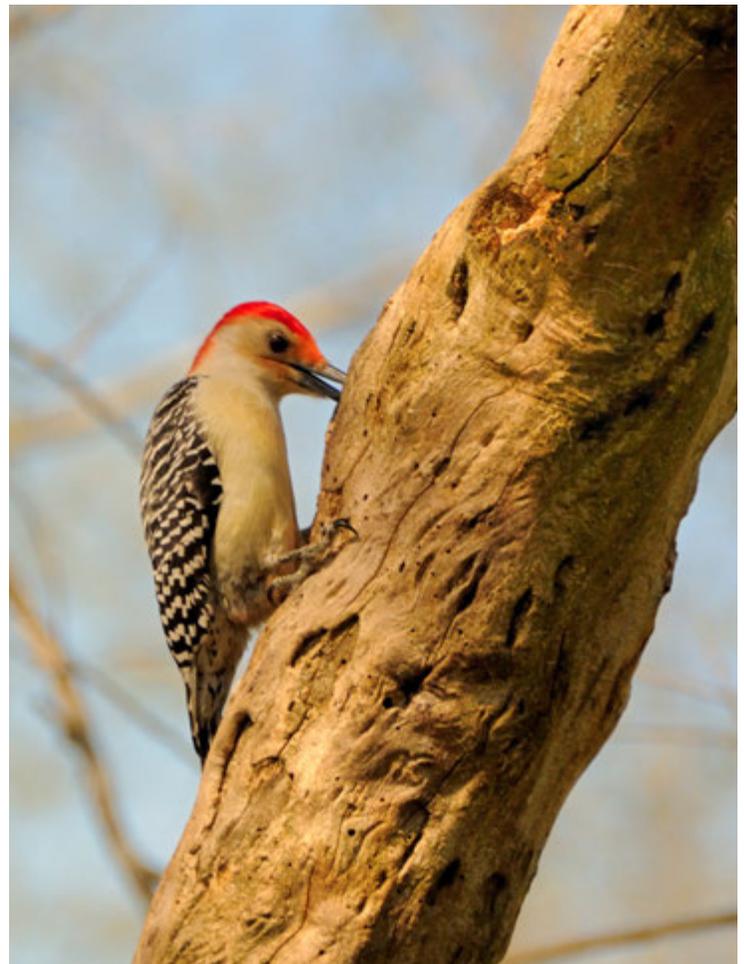
As often has happened in my tenure as Executive Director, when someone made a suggestion, I recruited that person to help implement it. Since I thought a strong Finance Committee was really important, I asked Nelson to join it and then to chair it. After a few years, Nelson also accepted an invitation to serve on our Board of Directors. He joined the Board in 2015 and remained a highly respected member until his passing. Upon sending out a message to the Board of his death, I received comments back about his being a “fine person” and “a wealth of information” that has helped our financial wellbeing. He was also commended for his “soft-spoken expertise.” I will add that he was unassuming and modest, as well – I did not learn until now that Nelson graduated from Yale.

Nelson also was a beloved member of our Cabin Fever Book Club. He suggested many of the titles we have read and always had interesting insights that got the rest of us in the club thinking. He also looked forward to the breakfasts we served and usually went back for seconds!

Nelson loved hiking and birding since his youth along the Kittatinny Ridge in Pennsylvania. Upon retirement, another passion that was combined with his outdoor enthusiasm was photography. Digital photography was just developing as Nelson retired, giving him an opportunity to begin as an avid amateur bird photographer. His photos are

published on his website, [www.nmarkley.com](http://www.nmarkley.com), and his photo of a Ruffed Grouse graced the cover of the *Wildlife Activist* number 75 in 2014. Nelson and his wife, Pat, spent their vacations in recent years traveling to Florida, the Dakotas, Africa, and eastern North America, where Nelson enthusiastically photographed birds. He spent many hours organizing these photos on his excellent website.

Nelson’s tenure on the LGNC Board of Directors and as an advisor spans the years from the founding of LGNC to the present. He was a mentor and a friend. His contributions were extremely valuable and he and his wife supported us very well financially, as well. His service to and support of the nonprofit world of the Lehigh Valley extends to other organizations, including Hawk Mountain and the Bach Choir in Bethlehem, where he served many years as Treasurer. He will be missed in all these places. We are grateful for all his contributions to Lehigh Gap Nature Center and send our condolences and best wishes to Patricia and his family. 📷



*Red-bellied Woodpecker by Nelson Markley*

# What's That Thing by the Pond?

by Chad I. Schwartz



Have you noticed something new by the Osprey House pond? Towering about twenty feet above the tannery along Paint Mill Road stands a structure that looks something like a cross between a cell tower and a Stark Trek spacecraft. Well, it turns out it's for the birds! One bird, to be specific – a beautiful species called the Purple Martin. Thanks to a generous donation from the Lehigh Valley Audubon Society (LVAS), the work of Eagle Scout Tommy Zukowski, and support from volunteers Scott Burnet, John Higgins, and Mike McCartney, this new nesting tower will hopefully provide a home for Purple Martins next spring.

Purple Martins are the largest North American species in the swallow family. They are close cousins of the purple-and-orange Barn Swallows that nest on the Osprey House porch and the green-and-white Tree Swallows that inhabit many of our nest boxes. But this swallow is rather unique, in that Purple Martins have developed a particularly close relationship with

humans over thousands of years. In fact, all martins east of the Rocky Mountains today depend entirely on human-made structures – such as the one at the Osprey House – for nesting.

Recognizing the Purple Martin's value in controlling insect pests, Native Americans historically constructed gourd nesting structures around their settlements. Today, elaborate nesting 'apartments' and artificial PVC gourds are commonly used to attract the species. The tower at LGNC, designed by Troyer's Birds' Paradise, is one of the most state-of-the-art PVC systems available. It includes many features that have been proven to maximize the nesting success of Purple Martins, while also discouraging competitive invasive species (namely, House Sparrows and European Starlings). The design also makes system maintenance and nest monitoring very easy.

Late last year, Boy Scout Tommy Zukowski, a former Ecology Camp participant, approached us with the idea to build a second Chimney Swift tower at LGNC for his Eagle Scout Project. LVAS Habitat Committee chairman, Scott Burnet, suggested constructing a martin tower to draw a new species to the refuge. With funds from the late Ted Fritzinger, LVAS purchased a tower with 18 gourds. Tommy completed the installation in June and received his Eagle Scout rank later this year.

With a little luck, Purple Martins will begin nesting in our tower in April, after returning from their wintering grounds in South America. So be sure to keep an eye on the sky above the Osprey House for this stunning swallow this coming spring and summer! LGNC's Naturalist Club will monitor the tower in 2020. In addition, an interpretive sign



*Purple Martins at Leaser Lake (photo credit: John Higgins)*

(also funded by LVAS) will be installed alongside the tower to educate trail users and answer their most common question: "What is that thing?"

For more information on Purple Martins, visit [www.allaboutbirds.org/guide/Purple\\_Martin](http://www.allaboutbirds.org/guide/Purple_Martin). 

## No More Muddy Shoes!

by Chad I. Schwartz



Visitors to LGNC's River Trail last spring and early summer may have walked away with muddy shoes, thanks to some unexpected changes to the hydrology of our popular riparian path. During the winter of 2018, slabs of 20-inch-thick ice scraped across banks of the Lehigh River. The ice jam greatly altered the riparian forest as it uprooted river birch and black willow trees through the length of the Gap. At the same time, the ice exposed a spring beneath a 50-foot section of the River Trail. We noticed that the trail grew ever swampier in the months that followed...

Later that year, we thought we had found a foolproof and natural way to improve the accessibility of the trail. With help from Eagle Scout Logan Pfaff, we lined the flooded section with flat rocks. We thank Logan for his hours of hard work selecting and transporting dozens of rocks from the mountain and carefully installing them in the trail. Several thousand school students and many other visitors were able to use the trail that season because of his project. But, unfortunately, the rocks – much like our shoes – slowly began to sink into the mud. By the spring of 2019, that section of trail was again impassible.

It was at this time that Lee and Dan Kunkle donated garden pavers to lay across the trail temporarily. This bought us some time until we planned a more permanent fix. But how could we allow visitors to experience the riparian zone and spring with dry shoes, while at the same time protect the wetland that had formed? Our solution was to create a wooden boardwalk.

Although the construction of the boardwalk was an important goal during the summer of 2019, we used this opportunity to make other habitat improvements along the trail. Growing among the various native plants that had been planted along the trail by our garden volunteers and interns over the years were many





three dozen plants from Edge of the Woods nursery, planned where she wanted to place them along the trail (based on their tolerance of sunlight and water), and organized three planting days with the Naturalist Club and the Color of Nature interns. Kelci also created an educational sign that will be installed along the trail next year.

Finally, once the habitat was restored, Brian Birchak built the new boardwalk. The completed boardwalk consists of four 12-foot sections of planking laid across 6-inch-by-6-inch untreated cedar beams (hauled with the help of volunteer Jeff Moser). Cedar was selected for its natural ability to resist rot without the need for chemical preservatives that could contaminate the spring. Now, visitors can hike the full length of the trail and get an up-close view of the spring and the new native plantings. And no more muddy shoes!!

This project would not have been possible without the support of *Lehigh Valley Greenways Conservation Landscape*, which provided a mini-grant to fund the restoration of the trail. C.F. Martin Foundation, the Alliance for Watershed Education of the Delaware River, and several private donors also helped us complete the project. Be sure to check out this new and improved section of the River Trail next time you visit the Osprey House! 📸

*Kelci Knirmschild led the replanting effort on the River Trail!*

invasive species – most notably glossy buckthorn and Asiatic bittersweet. Task number one was wrangling these aggressive plants. Because the trail is actually situated on Lehigh County’s property, we partnered with the Department of Parks and Recreation to carefully treat the invasives with herbicide. Once this job was complete, we began trail and habitat enhancements.

As part of her Alliance for Watershed Education Fellowship, intern Kelci Knirmschild led an effort to replant the trail with native species. While it was tempting to select the ‘pretty’ plants (like cardinal flower), Kelci thought it prudent to plant species that stand a good chance at out-competing the invasives when they eventually return. Kelci selected about



# LGNC Education Update

by Chad I. Schwartz

“Hey, it’s the nature guys!” “It’s the snake lady!” “Yay, Lehigh Gap!” These are among the many nice words we’ve heard from students who we’ve recently encountered in the community. It is always a thrill when the students we teach recognize us (whether at their school or in the local grocery store!) and remember the programs they’ve enjoyed with LGNC. Perhaps most rewarding is seeing these students bring their families back to the Nature Center – some from as far away as Allentown – to share what they’ve experienced. The word is spreading! LGNC is gaining a very positive reputation for our fun and engaging lessons.

This has once again been LGNC’s busiest year of education to date. In addition to adding and growing our programs for the community, we have partnered with more schools than ever before to provide quality science and nature education. Many thanks to our members, volunteers, and donors for their commitment to LGNC’s mission and for making our education program a success! Continue reading to see what we’ve been up to over the past few months...

## Summer Camps

Summer camps are the focus of LGNC’s schedule once the spring field trip season comes to an end. For the past three years, we have offered one camp each month of the summer – Young Ecologists Summer Camp in June, Watershed Camp in July, and Conservation Leadership Academy in August. This year, we revamped each of our camps to provide new experiences for area youth.

Our longest-running camp, **Young Ecologists Summer Camp**, immersed students in the field of

ecology for the 22nd year this summer. A total of 15 campers in grades 5-7 investigated different areas of ecology over four days as they explored the Kittatinny Ridge and two state parks. On the first day, the students studied birds while enjoying a live raptor presentation by **Carbon County Environmental Education Center** and hiking at LGNC and to the Bake Oven Knob Hawk Watch. The second day focused on aquatic ecology. The campers studied freshwater invertebrates in pond and stream ecosystems and toured Beltzville Dam with the **Army Corps of Engineers**.

Day three included geology and botany hikes at Hickory Run State Park/Boulder Field. To wrap up the week, the students hiked over the mountain along LGNC’s trails. All week, the campers competed in an ecology-themed scavenger hunt that challenged them to identify and photograph a list of living and nonliving things at each location.

The third iteration of our **Watershed Camp** featured a tour of the Lehigh River Watershed from the river’s source, through the Lehigh Gap, and into Lehigh Valley. Along the way, the 12 campers in grades 6-12 sampled aquatic invertebrates in order to assess the water quality at each stop. The first day introduced the students to the ‘pristine’ watershed – the upper reaches of the Lehigh River within the Lehigh Gorge. Also, to gain an understanding of the ecology of the river’s headwaters, the campers toured the glacial Cranberry Bog in Tannersville with **Kettle Creek Environmental Education Center**. Then, through a biking and canoeing trip with **Wildlands Conservancy**, the students explored the ‘industrialized’ watershed on day two.



Watershed Camp

The third day addressed efforts to restore and protect watersheds, with LGNC's project being the focus. Finally, the week concluded with an opportunity for the campers to enjoy the river on a rafting trip with **Jim Thorpe River Adventures**. Once the water quality results were tallied, the students learned that, although the cleanest water is found in the northernmost reaches of the Lehigh River, the river as a whole has recovered from previous human impacts.



*Conservation Leadership Academy*

The sixth **Conservation Leadership Academy** provided a variety of fun outdoor experiences and educational opportunities, as well as leadership training and exposure to conservation careers, for 15 middle and high school students from Allentown. This camp is made possible thanks to our ongoing partnership with the **PA Dept. of Conservation and Natural Resources** at **Jacobsburg Environmental Education Center**. LGNC's Color of Nature interns co-lead many of the Academy activities.

Each day, the campers ventured by van from Allentown to local and state parks and other points of interest. On day one, the group learned the sport of disc golf at Allentown's Lehigh Parkway and hiked at LGNC. Day two began at Lafayette College, where the students toured college buildings and participated in a lecture and lab activity. We then travelled to Jacobsburg State Park to learn archery and conduct a stream study. On the third day, the campers experienced the thrill of vertical-face rock climbing at Ralph Stover State Park. Day four took the students to Beltzville State Park to tour the dam, canoe on the lake, and learn about fossils. Last but not least, the Academy participants rafted the Lehigh River to end their adventure-packed week.

### School Programs

LGNC is on track to teach about 10,000 students in 2019. During the summer months, our education interns provided programs for the Allentown School District and the local Northern Lehigh schools. Between September and November, LGNC hosted 30 field trips for a total of about 1,500 students. In addition to our annual field trips for Lehigh, Palmerton, Allentown, and other schools, a special donation from LGNC member **Pam Hoffner** allowed us to add Schuylkill Haven and Lehigh high schools to our list of education partners. Schuylkill Haven requested something new – an off-site field trip that included a macroinvertebrate study in a headwaters stream and a forest ecology and hawk watching hike at Bake Oven Knob.

The fall field trip season has now transitioned into the in-school season. LGNC staff visit local schools weekly to provide fun, hands-on standardized test prep and after-school enrichment. We have already scheduled about 40 field trips for the spring season.

We acknowledge the dedication of Education Team volunteers **Ann Zagarella, Barb Egerton, Lee & Dan Kunkle, Donna Gasser, Jan Maurer, Kathie Romano, Nancy Taras, and Pam Hoffner**, who have all led field trip stations. We could not possibly reach so many students without their help.



*School Programs*



Bonnie Pancoast sets up for Migration Fest.

### Community Programs

In the midst of our school programs, LGNC also offers a full slate of (mostly free!) weekend and evening nature activities for the public. **See the schedule on the inside cover** of this magazine for information on our upcoming events. LGNC's late summer and fall programs were attended by hundreds of children and adults eager to learn and enjoy the outdoors. Below are a few notable programs and events.

**Nature at Night**, one of our brand-new events for 2019, drew a crowd of 50 people to explore the Refuge after dark in July. Following a bat and nocturnal insect walk, we scanned the vegetation along the D&L Trail in search of caterpillars. How do you find caterpillars at night, you ask? With a black light flashlight, of course! Few people realize that many caterpillars glow under ultraviolet light. As we illuminated the canopy with black light, we discovered over a dozen glowing moth larvae. Insect experts **Stephen Kloiber** and **Jon Mularczyk** also delighted guests with their collection of live caterpillars – including a behemoth hickory horn devil.

As autumn migration kicked off in late August, LGNC hosted the second annual **Autumn Migration Birding Workshop** for about 25 people. After a presentation at the Osprey House explaining the science of migration, the group travelled to the Bake Oven Knob Hawk Watch. Although few birds aside from the ubiquitous vultures were observed, all of the attendees were thrilled with the beauty of Bake Oven Knob.

Back for the first time in two years thanks to more cooperative weather this summer, LGNC partnered with **Pocono Whitewater/Pocono Biking**

to lead a **Bike and Raft** excursion through the Lehigh Gap in early September. This event, open to 20 people, included a guided tour of the Gap from land and water. The group biked one mile from the Osprey House to the Bobolink Trail, where LGNC staff led a discussion about the history and restoration of the refuge. The group then continued biking another two miles to Bowmanstown, where they launched a flotilla of rafts. The rafters stopped halfway back to the Osprey House to study aquatic ecology and water quality. The results were excellent!

Thanks to the support of **Lehigh Valley Audubon Society**, the careful planning of LGNC's **Volunteer Liaison, Bonnie Pancoast**, and the hard work of countless other volunteers, **Migration Fest** grew to include new displays and activities. This September marked the eighteenth year LGNC held the festival. Migration Fest is a free all-day event celebrating Kittatinny Ridge ecology and the marvels of bird and butterfly migration.

In addition to a variety of interactive watershed and migration displays, artisans, and vendors, the event featured a hike to Bake Oven Knob, a bird walk around the Osprey House, and two monarch butterfly tagging walks. We also welcomed two guest speakers – **Kathie & Eric Uhler of Pocono Wildlife Rehabilitation Center**, who educated visitors on the wildlife of the Lehigh River Watershed, and **Fred Stine of Delaware River Keepers**, who presented on issues impacting the Delaware River. About 250 people stopped by throughout the day. Oh, and of course the hotdog bar was a huge hit for lunch!

LGNC's largest event of the year, the **More or Less 10K Trail Run and 2-mile Scamper**, went off without a hitch, despite the blustery, early-November weather and challenging race route. A record 125 or so runners participated in the run, which traversed nearly every trail on the Refuge and ended on top of the mountain about 1,000 feet above the Osprey House. It only took about 48 minutes for the first-place winner to cross the finish line. We thank all the runners who participated, **Dr. Michael Martinez** for organizing this event for nine years in a row, **Dedicated Fitness** for guiding the runners, **Szoke Brothers** for providing parking, and the many LGNC volunteers who made the event 'run' so smoothly.

Check out **lgnc.org** to learn more about LGNC's latest happenings! 📸



Robert Hoopes speaks at the Volunteer and Member picnic.



Elizabeth Fleming volunteers at Migration Fest.



Lehighon students learn the story of Marshall's Mansion.



Lehighon High School students monitor succession in the grassland.



Visitors tag monarch butterflies at Migration Fest.



Participants in the Lehigh Gap Bike and Raft study aquatic life.

## 2019 Nature in Photographs

Thank you to all of the photographers who made our 2019 photography show an amazing event! The show's 89 entries were judged by Phil Campbell, Anita Collins, and Jeannie Carl.

Unfortunately, we will not be hosting a photography show in 2020. We're looking to 2021 for our next show, so be on the lookout for future announcements!



**People's Choice Winner: "The Stare" by David Levandusky**



**1<sup>st</sup> Place, People at LGNC: "Reptile Bonding" by Sherry Acevedo**



**1<sup>st</sup> Place, Pollinators & Plants:  
"On Thistle" by Scott Keys**



**President's Prize:  
"Blasidiocarp Slalom"  
by Richard Rupnik**



**1<sup>st</sup> Place, Raptors & Reptiles:  
"Preparation" by Scott Keys**

## 2019 Nature in Art Exhibition

Thank you to the 27 artists who contributed 55 entries in November's Nature in Art Show! It was a very successful event. All judging was People's Choice – winners were voted for by visitors to the show throughout the week.

For 2020's show, there will be no categories; however, **all art work should depict nature.** There will also be no judging, and awards will all be People's Choice with at least three prizes.



**1<sup>st</sup> Place, People's Choice:**  
**"Woodpeckers" Carving by Dennis Barr**



**2<sup>nd</sup> Place, People's Choice**  
**"Maple Leaves" Gourd**  
**by Terry Kloiber**

**3<sup>rd</sup> Place, People's Choice:**  
**"Canal Walk" Watercolor**  
**by Kay Stauffer**



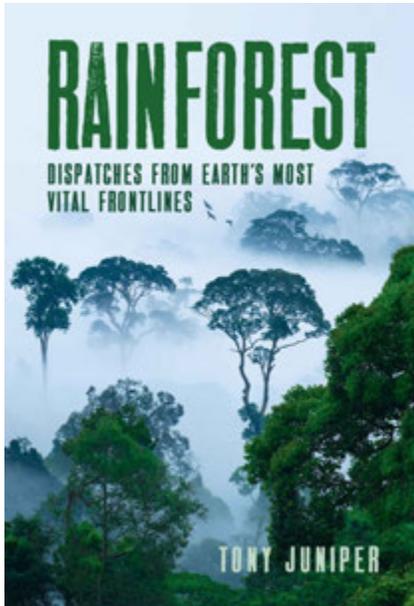
**Tied 3<sup>rd</sup> Place, People's Choice**  
**"Sunday Stroll" Pastel**  
**by Mary Anne Shafer**

## Wildlife Book Reviews

Robert E. Hoopes (REH) and Grant Stevenson (GS)

**Rainforest: Dispatches From Earth's Most Vital Frontlines** by Tony Juniper. 2019. Paper. 447 pages. Island Press, Washington, DC. \$22.00.

It is all about water. The process of recycling water back into the atmosphere through vegetation is called



transpiration. Water is pulled up by suction through the roots of plants all the way to the leaves, including at the tops of tall trees, traveling in tiny tubes called xylem. When it reaches the leaves of the plant, the water is released through tiny pores on the underside of the leaves that open to enable

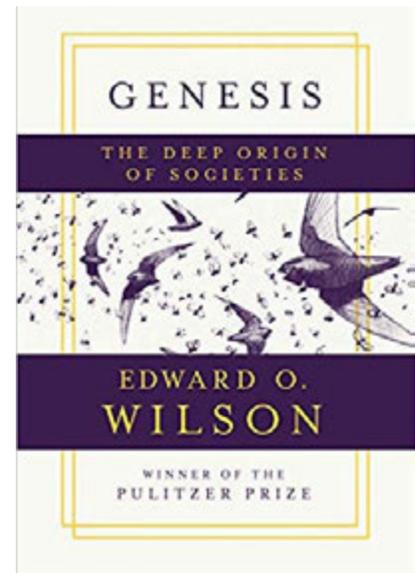
carbon dioxide to be extracted from the air. As the water is released from the leaves, the sudden drop in pressure inside the xylem to the atmosphere turns the liquid water into water vapor. In parallel, the trees also release oxygen, which is the product of photosynthesis whereby the plants use sunshine to split water molecules to get the hydrogen needed to make sugars to fuel the plant's growth. The above process sounds complicated but it is the basic process by which water is pulled from the earth and sent into the atmosphere, enabling it to be transported aloft and return to the earth's surface in the form of rain. From this basic starting point, the author explains how this process functions on a macro-level in the world's rainforests. He explains the important roles rainforests serve, the current state of the world's rainforests, and efforts underway to preserve them. He presents the bad and the good...from Indonesia's near total destruction of its rainforests over two recent decades paralleling the country's rapid development, to Costa Rica's doubling of its forested cover since the mid-1980s while also doubling its per capita

Gross Domestic Product. Looking to the future, the author notes that new international agreements, company policies pledging zero deforestation in their operations, and new data-based tools give hope to protecting, saving, and perhaps expanding our remaining rainforests. But he also notes that the time is short and aggressive action is required. *REH*

**Genesis: The Deep Origin of Societies** by Edward O. Wilson. 2019. Cloth. 133 pages. Liveright Publishing Corporation. \$23.95.

Wilson discusses the evolutionary origins of altruism, a topic he is most suited for by experience, arguing that it has its roots in the most basic eusocial insect societies and those of other taxa, including birds. It is neatly illustrated by behavioral scenes of social animals conducting social activity, such as predator defense.

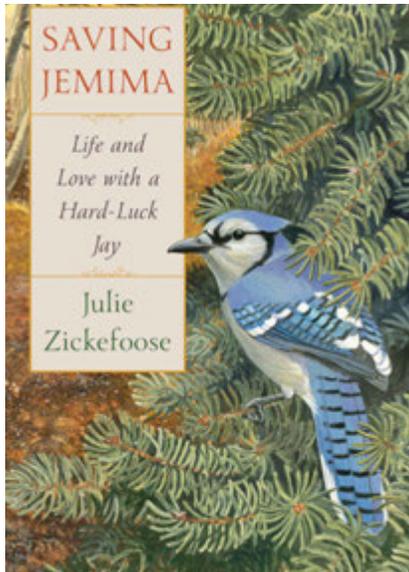
He weaves an enticing little accumulation of much of his life's work in a new synthesis, well worth the read of the nature enthusiast and amateur evolutionary biologist. The final chapter discusses human evolution of altruism, in his word a "mystery"—especially in our degree. It remains up to the reader whether altruism bodes well for our future. *GS*



**Saving Jemima: Life and Love with a Hard-Luck Jay** by Julie Zickefoose. 2019. Cloth. 254 pages. Houghton, Mifflin, Harcourt, Boston, MA. \$25.00.

It started with a Facebook message on May 16, 2017 alerting author Julie Zickefoose about a baby Blue Jay, maybe 11 days old, on the ground and hungry. The messenger was requesting Julie's

guidance on what to do. Julie told her to check above the bird for a nest and/or a screaming Blue Jay. Finding none, Julie instructed the messenger to offer the bird cat food or soaked kitten chow and water. She also said that Jays are difficult and need to be fed



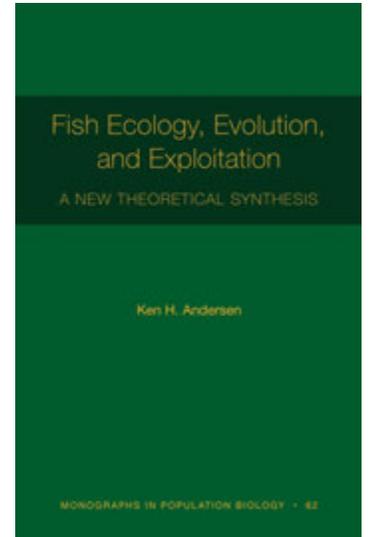
every hour. Better bring the bird to her. Thus began a season-long odyssey as Jemima Iris Jay (yes, the jay has a name) is nursed back to health and eventually returned to the wild. This heartfelt story, complete with numerous color photos of the maturing Jemima,

is filled with the imaginable trials and tribulations of raising a wild bird to adulthood in one's home, uncaged, with an additional twist. Julie's numerous Instagram and Facebook posts about Jemima's progress attracted the eye of a filmmaker producing an hour-long PBS show on butterflies and moths. The producer needed a shot of a bird (you can't make this stuff up), like a Blue Jay, eating a caterpillar to emphasize their importance as fuel in the natural world. So, Jemima Iris Jay became a film star in addition to being a rescued baby bird. The rest of the story is the rest of a good read. You will enjoy this book. *REH*

**Fish Ecology, Evolution, and Exploitation, A New Theoretical Synthesis**, by Ken H. Anderson. 2019. Paper. 257 pages. Princeton University Press, Princeton, NJ. \$105.00 (Hardback).

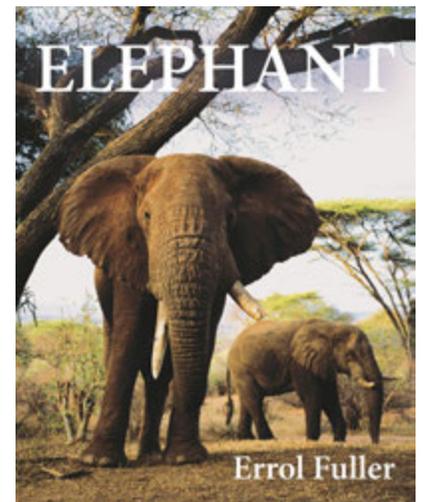
The importance of effectively managing the earth's fisheries cannot be overstated in light of the estimated 10% of the global human consumption of protein that comes from these fisheries. This book presents a new and novel approach to fisheries management utilizing a mathematical theory and models that describe fish stock demography (statistical study of births and deaths), the structure of fish communities and the evolutionary ecology of fish. The current framework for fisheries management

focuses on managing single stocks of fish. The author emphasizes that new models are needed to address the multispecies aspects of fisheries. The author presents what he calls the size and trait-based framework for fish populations and communities in a single integrated theory of fisheries management. The author's model is heavily math based and the detailed mathematical formulas are included throughout the book. Recognizing that most readers will not be fluent in this high-level math, he takes care to explain the various parts of the model in terms that the average reader can readily grasp. This book is an interesting exploration into the future of global fisheries management. *REH*



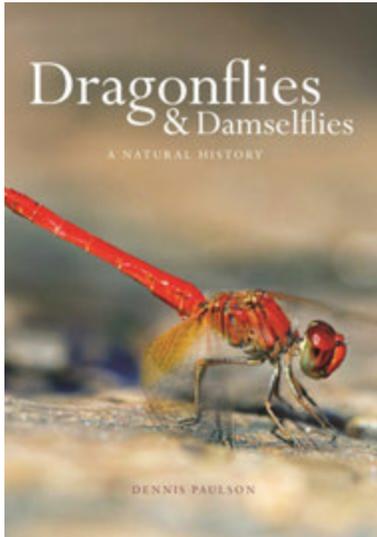
**Elephant** by Errol Fuller. 2019. Cloth. 287 pages. Princeton University Press, Princeton, NJ. \$29.95.

In a beautifully illustrated book with many color photographs, Fuller tells the story of the elephant both in pictures and text, tracing its evolution from prehistoric mammoths and mastodons to the African and Asian elephants of today. He also expounds on the elephant's role in various cultures, their behavior, and social life. This book is more



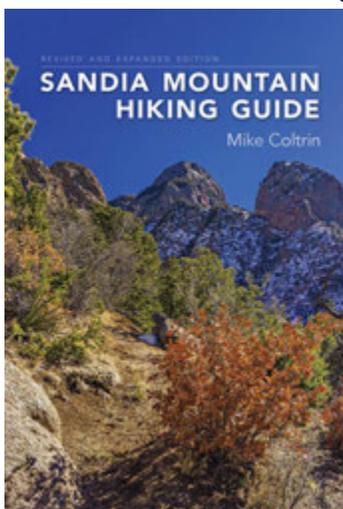
of a journey through time told with pictures and the accompanying text highlighting interesting facts about the elephants along the way. It is an easy, non-scientific account of these remarkable and instantly recognizable creatures, both beloved and treated as beasts of burden (and much worse) by humans. Fuller makes this journey entertaining for the reader. *REH*

**Dragonflies & Damselflies, A Natural History** by Dennis Paulson. 2019. Cloth. 224 pages. Princeton University Press, Princeton, NJ. \$29.95.



The Odonata order, around for at least 250 million years, is comprised of 6,308 described species to date, divided into two major groups: dragonflies and damselflies. They occur on all continents except Antarctica and all islands large enough to contain fresh water. Carnivores throughout their lives, they are also food prey for fishes, amphibians, reptiles, and mammals. They are beautifully colored and perform aerial acrobatics that delight patient observers. This book is a wonderfully illustrated natural history of dragonflies and damselflies, filled with many beautiful color images. It covers their feeding habits and how they keep from being eaten, how they breed, and their lifecycle. Distinguishing the two groups is fairly simple. Dragonfly wings are always held open and perpendicular to the body axis. Damselfly wings are normally held closed and parallel to the abdomen. This book is a great introduction to these beautiful flying creatures and can enhance your future walks through summertime pastures and other wet areas. *REH*

**Sandia Mountain Hiking Guide** by Mike Coltrin. 2019. Paper. 237 pages. University of New Mexico Press, Albuquerque, NM. \$24.95.

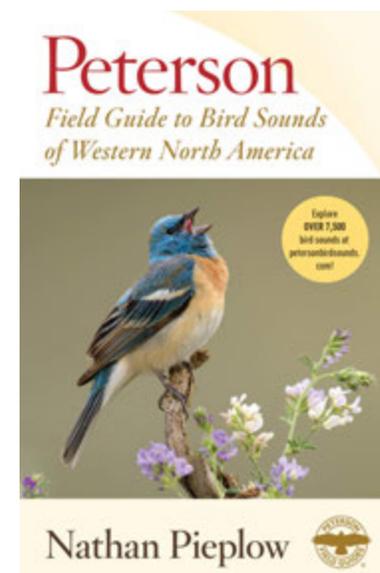


The Sandia Mountains, 10,678 feet in elevation at the tallest point, dominate the Albuquerque, NM, eastern skyline. Nearly half of this mountain range has been designated as the

Sandia Mountain Wilderness Area, with special rules in place to preserve its natural state. This handy, spiral-bound hiking guide describes more than 60 trails in the area, highlighting interesting features about each trail, difficulty, elevation changes, and map references. Appendices in the back of the book provide additional details, including a list of family friendly trails and GPS data points for specific locations on the various trails. For those planning to visit this area and hike the Sandias, this is a must-have guide. *REH*

**Peterson Field Guide to Bird Sounds of Western North America** by Nathan Pieplow. 2019. Paper. 632 pages. Houghton, Mifflin, Harcourt, Boston, MA \$28.00.

This not-for-beginners guide to bird sounds makes it possible for the first time to look up unfamiliar bird sounds “just as one can look up an unfamiliar word in the dictionary.” While it certainly is not as easy as the above quote from page 1 of this book makes it sound, the book lays out in great detail how to do it, complete with many graphic sonograms of many different western North American bird species. Included in the first chapter is a tutorial on how to use the book and the sonograms, how to train your ear to listen to the various parts of the bird’s song, call, or chip note, and how to relate what you hear to the structure and detail included in the book. As noted, this guide from the heralded Peterson series of field guides is detailed and technical, taking birding by ear to a whole new level. With study and practice, one can learn to visualize the sound of a bird in the field, use the visual index in the book to find a list of similar sounds, and then turn to the species accounts for more information about your possible bird or listen to potentially similar sounds on the referenced website. Good birding by ear to all who venture here. *REH*



## *Like to Read? Like to Write?*

Want to be in the next  
*Wildlife Activist*?

Then let us know!!!

We receive many books from many publishers  
that have to be *read and reviewed!*

**If you are interested, contact us at  
[mail@lgnc.org](mailto:mail@lgnc.org)  
to find out more information.**



### **AMAZON SMILE Program**

If you purchase items from Amazon and you participate in the Amazon Smile program, LGNC gets a half percent of everything you spend if you designate us for the donation. When you designate us, you need to use our official IRS name: **Wildlife Information Center, Inc.** Use this web address to connect to Amazon on behalf of LGNC/Wildlife Information Center: <http://smile.amazon.com/ch/22-2741693>. If you bookmark the page and click on it each time you shop at Amazon, it will automatically load the page that directs the donation to the Nature Center. Thanks!

### **Thrivent Financial Customers**

For any LGNC members or friends who are also members of Thrivent Financial (formerly Lutheran Brotherhood and AAL), please note that you can direct your Thrivent Dollars to Lehigh Gap Nature Center. Our official IRS name is **Wildlife Information Center, Inc.** and that is the name listed on the Thrivent website. Log on to your account at *Thrivent.com* and click on “Memberships and Benefits” and “Thrivent Choice.” Thrivent must make donations from their profits to nonprofit organizations. The funds do not come from your account. Please direct your Thrivent Choice Dollars to Wildlife Information Center (Lehigh Gap Nature Center), Slatington, PA.

## New Members and Special Donations

Thank you to everyone who renewed their membership with LGNC. Your support really makes a difference at the Lehigh Gap. The following renewed above the basic or family level or contributed to a special fund:

### New Members

Judy Cernobyl  
Priscilla & Rett Orom  
Jerry Mraz  
Rachel Roland (Sustaining)  
Rita Snyder

### Renewed at Sustaining Level (\$100 or more)

Appalachian Mountain Club, Delaware Valley Chapter  
Jacqueline & Robert Adams  
Carolyn & Thomas Albright  
Sandy & Kevin Artz  
Association/Northern Lehigh County  
Elizabeth & Joseph Bechtel  
Jane & Gregory Cook  
David Cundall  
Annette & Jeffrey Drobil  
Barbara & John Egerton  
Barb, Kelsey & Eugene Gallagher  
Donna Gasser

Fran Gaugh (quarterly donation)  
Hallman's Service Station  
Ruth & Harry Hill  
Bob & Jean Hoopes  
Robert Keith  
Dave Krammes & Mary Cook  
Barbara Malt  
John Matthews  
Susan & Francis Mullane  
Daniel Poresky  
Susan & Bruce Rabenold  
Willard Richards  
Ana Garcia & Bonnie Runk  
Rural Preservation  
Joyce & William Schwab  
Michael Shafer  
Margaret & Paul Shinsec  
Lee & Deb Siglin  
The Smith Family (Gregory & Joyce Smith)  
Claudia & David Steckel  
Michael & Sybil Stershic  
Joan & Dennis Strong  
Carol Thomas

Ann Marie & John Traynor  
Marie & Win Tweed  
Frank Waksmunski  
Linda Weber  
Constance White  
Lynn & Scott Wilson

### Renewed at Contributing Level (\$250 or more)

Mary Getty & James Kikuchi  
Marie Helmold & Kevin Dealy  
Patricia & Nelson Markley  
Parkland Nurseries  
Liza Ovington  
Meredith Wright

### Renewed at Patron Level (\$500 or more)

Christine Allen (monthly donation)  
Slatington Lions Club

**Renewed at Golden Eagle Donor level (\$1,000 or more)**  
Ken Leffler

### Education Fund

Pamela & Phillip Ansell  
Elizabeth Mescavage  
Frank & Susan Mullane  
Daniel Poresky  
Kathie Romano  
Carolyn & Harrison Solt

### Lehigh Gap Fund

Richard Boucher  
Rodney Fritzingler – monthly donation for car sales and referrals (**total now exceeds \$8,300**)  
Donna Hartenstine  
Dr. & Mrs. Eric O. Pettit  
Joyce & William Schwab  
Michael Shafer  
Christina Van Gelder

**NOTE:** Donations received after November 18, 2019 will be acknowledged in the next Wildlife Activist.



## Donations

### Grants and Contributions

#### \$10,000 or more

- PPL Electric Utilities (EITC donation)
- Trexler Trust (Operating Funds)
- William Penn Foundation (AWE ND Team)
- William Penn Foundation (AWE Fellowship)

#### \$5,000 to \$10,000

- Air Products Foundation (Education)
- The Neffs National Bank (EITC donation)
- Pam Hoffner (Education)

#### \$2,500 to \$4,999

- Keystone Savings Foundation (Microscopes)
- Lehigh Valley Audubon Society (Migration Fest)
- Lehigh County (Quality of Life grant)

#### \$1,000 to \$2,499

- Horsehead Community Development Fund (Education)
- William Penn Foundation (River Days)

#### Up to \$1,000

- Egan Bellesfield (Eagle Scout donation)
- Lee Cooker
- Frank Dickman (Binocular sales)
- Johnson and Johnson Easy Match for Liza Ovington
- Lehigh Valley Community Foundation
- Barb Wiemann (Thrivent Dollars)

### Library Donations

- Tommy Davies
- John Leskosky
- Dan Kunkle

## In-Kind Donations

- **Rodney Fritzing** continues to donate \$5 to the Lehigh Gap Fund for every car he sells at Rentschler Chevrolet, Chrysler, Dodge, Jeep.
- **John Gallagher** donated fine turned wood bowls and mushrooms.
- **Attorney Holly Heintzelman** provides legal services.
- **Lee Kunkle** donated journals made from old book covers.
- **Bonnie Pancoast** donated materials for displays.
- **Parkland Leo Club** made displays and engaged visitors at Migration Fest.
- **Reading Escapades & Math Explorers, Inc.** (**Christine Allen**) sponsors LGNC's EcoArt After School program each month.

## Special Donations

- **Phil Campbell** donated books.
- **Elizabeth Fleming** donated two aquariums for the lab.
- **Rick Gaeta** donated a feeding device for snakes; bird seed for feeders.
- **John Gallagher** donated the proceeds from his Pollinator Day and Migration Fest sales of turned wood items.
- **Greg Grammes** donated a 32" television.
- **Lee & Dan Kunkle** donated a new refrigerator of the Great Hall kitchen; matted painting by Jon Boone.
- **Carol Mickey** is donating all proceeds from wire trees in the LGNC gift shop.
- **Lynda Wolfe** donated lesson plans.
- **Anne Zagarella** donated a new Wood Duck box for the tannery pond.

## The Dan Kunkle Honorary Fund

As you have heard by now, Dan Kunkle, the long-time Executive Director of the Lehigh Gap Nature Center, will retire from managing the Center and join the Board of Directors at the end of 2019. Over the last two and a half decades, Dan has been the central figure in the development and growth of the Lehigh Gap Nature Center. During this period, he has enriched the lives of thousands of children, adolescents, and adults.

From his long-time dream of creating and building an education center where people can learn about caring for the environment, to today where the Lehigh Gap Nature Center fulfills that dream to overflowing capacity, Dan's contributions to the Center and the community are immeasurable. Throughout this journey, he has maintained the singular focus of sustainability for the LGNC so that it can continue to exist and serve the community well into the future, long after his eventual departure.

At this crossroads in his professional career, Dan asks for just one thing to honor his many years of service to the members of the Lehigh Gap Nature Center and to the community. *He asks that you consider making a contribution to the Center's*

*Endowment Fund.* To do so would strengthen the Center's economic future, honor Dan, and make you a continuing part of the Center's future success.



The Center's Endowment Fund was created many years ago. It has grown significantly over the years from memorial contributions in honor of loved ones and other thoughtful donations. Through sound financial management, a small portion of the Endowment Fund is now able to be drawn each year to support the Center's annual operations. As the Endowment Fund continues to grow, so will its annual contribution to Center operations. At some point in the future, it is hoped that the Endowment Fund will be in a position to support and sustain the Center's annual operating budget

and grow sufficiently to allow us to expand on the research, restoration, and educational opportunities... honoring Dan and his long-time dreams for the Center.

Thank you for considering this request. Contributions to the Center's Endowment Fund can be forwarded to the Lehigh Gap Nature Center, referencing the: *Dan Kunkle Honorary Fund.*

*Robert E. Hoopes*  
LGNC Board Member and Treasurer

## Volunteer Service

The Lehigh Gap Nature Center gratefully acknowledges the volunteer service of the following individuals *from July 1-December 1*: **Jane Borbe and Anne Zagarella** for coordinating the Information Specialist team and to all the Info Specialists listed below; **Donna Gasser** for coordinating memberships, mailings, and many other things; **Bob Hoopes** for serving as our Controllor in his role as Treasurer; **Bonnie Pancoast** for serving as our Volunteer Liaison; Maize keepers – **Gerry Madden and Joe Mock**; **Erna Lake** for embroidering LGNC apparel items for the gift shop; **Barb Wiemann** for serving as our Archivist; **Jim Gabovitz and Allentown Hiking Club** for cleaning up the Chestnut Oak and Double G trails; all of the speakers who have participated in our 2019/20 Speaker Series; **Doug Burton** for leading the 4B Walks; **Stephen Kloiber and Jon Mularczyk** for assisting with the Nature at Night program; **Emma Birchak** for helping with the Lehigh Gap Bike & Raft; **Bonnie Pancoast** for planning and organizing Migration Fest and **Barb Egerton, Elizabeth Fleming, Lee & Dan Kunkle, Jon Levin, Cheryl Novak, Daniel Pancoast, Parkland Leo Club, and Kathie Romano** for helping to make the event shine; **Dr. Michael Martinez** for organizing the trail run and **Dedicated Fitness, Elizabeth Fleming, Donna Gasser, Greg Grammes, Donna Hartenstine, and Lee & Dan Kunkle** for assisting; **Patty Passick** for leading our monthly EcoArt classes; **Anita Collins, Lee Kunkle, Gerry Madden, Cheryl Novak, and Kay Stauffer** for setting up the Nature in Art show, and **Lee and Dan Kunkle** for organizing the event; **Nancy Taras** for leading the Cabin Fever Book Club and **Lee Sivak** for providing breakfast for the group; **Barb Egerton, Donna Gasser, Lee & Dan Kunke, Jan Maurer, Cheryl Novak, Bonnie Pancoast, and Anne Zagarella** for helping to plan the Holiday Open House; all the Bake Oven Knob Hawk Watch volunteers (see the next issue of the *Hawkwatcher*); **Access Services and C.A.R.E.S.** for helping us keep the Osprey House clean and organized; **Jennifer Ketay Brock** for proofreading/editing the *Activist*; and, of course, our **Board of Directors and Board of Advisors**. It is difficult to thank all our wonderful volunteers enough – you are the heart and soul of Lehigh Gap Nature Center.

### *Interested in volunteering?*

Contact Volunteer Liaison  
**Bonnie Pancoast** at  
[volunteering@lgnc.org](mailto:volunteering@lgnc.org)

### Scout Projects

Ben Connolly – kiosk at LNE Trailhead  
 Nathan Fry – replaced nest boxes  
 Nathan Greene – Turtle basking platforms at Three Ponds

### Trail Crew Volunteers

Jim Gabovitz	Nick Rosato
Anne Griffin	Dennis Strong
Simon Molloy	Barb Wiemann

### Garden Group

Barb Egerton	Joanne Molloy
Donna Gasser	Cheryl Novak
Deb Hamburger	Leon Rodenbach
John Hoffer	Kathie Romano
Ed & Jan Maurer	Joan Strong
Janet Minnich	

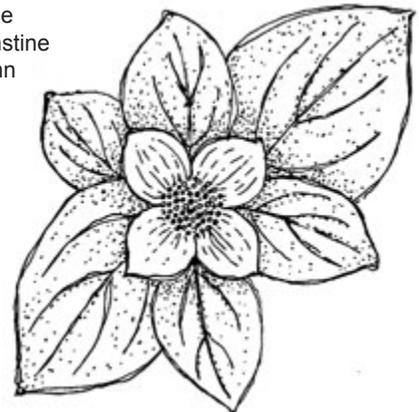
### Education Team

Doug Burton	Jan Maurer
Barb Egerton	Kathie Romano
Donna Gasser	Nancy Taras
Pam Hoffner	Anne Zagarella
Lee Kunkle	

### Information Desk Volunteers

The following individuals have served as Information Specialist volunteers in the past six months:

Dan Ahrens	Gary Nagy
Debbie Barr	Bruce Rabenold
Jane Borbe	Tim Sidor
Mary Coover	Nancy Thatcher
Donna Gasser	Anne Zagarella
Dan Gaughan	
Dennis George	
Donna Hartenstine	
Janet Hermann	
Lish Howard	



**NOTE:** *With all this activity, we are likely to miss some of our volunteers – let us know if we did, and we will add the names to the next Activist volunteer page.*

# **Lehigh Gap Nature Center Business Members - 2019**

## **Supporters**

Arfan Realty, Northampton  
Attorney Holly Heintzelman, Lehighton, 610-377-3111  
BB&T, Walnutport, Lehighton, Palmerton  
Bechtel's Pharmacy, Slatington, 610-767-4121  
Becky's Drive In, Walnutport, 610-767-2249  
Bennett Dodge, Lehighton, Bennett Pre-owned, Palmerton, 610-377-2642  
Blue Mountain Ski Area, Palmerton, 610-826-7700  
Carbon Surgical Associates, Palmerton, 610-826-4595  
Dan's Camera City, Allentown, 610-434-2313  
Edge of the Woods Native Plant Nursery, Orefield, 610-395-2570  
Hallman Service Station, Slatington, 610-767-7667  
Hill Home Forge Bed & Breakfast, Jim Thorpe, 570-325-0216  
Key Bank, Slatington, Palmerton, Lehighton  
George I. LaRose Insurance Ltd., Palmerton, 610-826-2397  
Livengood Excavators, Walnutport, 610-767-5073  
Lizard Creek Campground, Lehighton, 570-386-2911  
The Neffs National Bank, Neffs, PA, 610-767-3875  
Parkland Nurseries, LLC 610-395-2717  
PenTeleData, [www.ptd.net](http://www.ptd.net), 1-800-281-3564  
Pocono Whitewater Rafting, Jim Thorpe, 570-325-8430  
Rentschler Chevrolet Chrysler Jeep Dodge Ram, Slatington, 610-767-1171  
William G. Schwab & Associates, Attorneys at Law, Lehighton, 610-377-5200  
Shulman & Shabbick, Attorneys at Law, Palmerton, 610-826-3122  
Service Construction Company Inc., Lehighton, 610-377-2111  
Shea's Hardware, Inc., Palmerton, 610-826-2412  
Sherry Dental PC, Lehighton, 570-386-6910  
Steckel and Stopp: Attorneys at Law, Slatington, PA 610-767-3861  
St. John Neumann Regional School, Palmerton/Slatington, 610-826-2354  
T.K. Thomas Funeral Home, Palmerton, 610-826-2270  
Tribe Yoga, Fogelsville, 484-239-8711  
Wagner's Auto Body, Orefield, 610-398-3166

## **Members**

Campton-Schisler Funeral Home, Palmerton, 610-826-2377  
Cornerstone Therapeutic Massage & Bodywork, Lehighton, 484-347-6228  
Hager Furniture, Palmerton, 610-826-2900  
Reading Escapades & Math Explorers, Inc., Palmerton, 610-826-7323

***We encourage our members to support these local businesses that support  
Lehigh Gap Nature Center.***

## Endowment Fund Update

Thanks to numerous donations, memorial gifts, bequests, leaf tile sponsorships, designation of Thrivent Dollars and Amazon Smiles purchases, quilt raffle proceeds, and a major donation to the Endowment Fund from an anonymous source, the LGNC Memorial/Endowment Fund now *exceeds \$1 million* in value. We have reached our medium-term goal for the Fund, and now have our sights set on a long-term goal of \$2 million. The current Board and staff are very interested in building a sufficient Endowment Fund to ensure the long-term sustainability of Lehigh Gap Nature Center. Donations go to the main Endowment Fund unless designated for one of our two special sub-funds – **Internship** and **Arboretum/Gardens**.

Memorial/Endowment Fund donations were received from the following: the Estate of George Ashman; Lee & Dan Kunkle *in memory of Michal Kubik and Nelson Markley*; Diane Mellen *in memory of Paul Hoopes*; Mary Polakovics *in memory of Mike Polakovics*; and Anonymous, Barbara Wiemann, Joyce & William Schwab, Liza Ovington, Kent & Jane Roberts, Linda & Robert Freedman, Lynn & Gary Fedorcha, Janet Starner, Barb & Doug Fogal, Patricia & Carl James, Elaine & George Beam, Elsa Kerschner, Joe Colosi, Donna Gasser, Henry & Barbara Dorward, Marilyn Jordan & John Gallagher, Barb & John Egerton, Slatington Lions Club, Sandra & Kevin Artz, Hali & Ron Kuntz, Pam & Phil Ansell, Lynn & Andy Harakal, Linda & Roy Christman, Scott Serfass, Marjorie Balliet, Florence & Clarence Smith, Faith Zerbe, Ann & Mark McManus, James Kikuchi & Mary Getty, John & Christine Leskosky, Mary Ann Jenkins, Chris & Daniel Rappaport, Marie & Win Tweed, Barbara Malt, Kathie & Frank Romano, Nancy & John Boyer, Eleanor Petrich, Mary & Neil Bogin, Diane & Alan Severance, John Weeks & Elizabeth Collins, Barbara Bollinger, Bob Hoopes, Andrew Kovalchick, Janet & Ed Maurer, Ann Hussein, Margaret Libonati, Brenda & Jere Shade, Eric Pettit, Julie & Luis Pineiro, Genevieve & Dan Nickischer, Indianland Garden Club, Kathleen & Frank Hager, Mary & David Kocis, Carol Thomas, Cheryl Novak, Connie & Gary Nagy, and Mike & Sybil Stershic *in honor of Dan Kunkle*.

Anyone can help build the Endowment Fund by making donations in memory or honor of family members and friends. **Please consider naming the Lehigh Gap Nature Center as the charity of choice for memorial donations, or to honor someone on a**

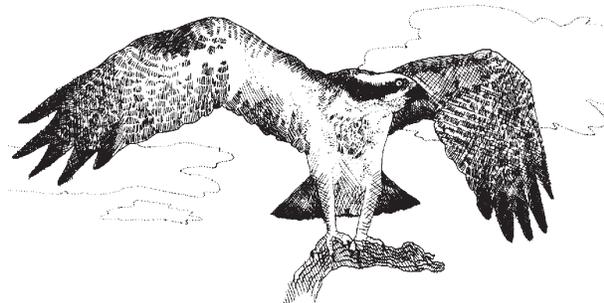
### **birthday, holiday, or special occasion.**

Individuals can obtain significant tax benefits from donations of such items as appreciated stocks, real estate, whole life insurance policies or other valuable assets that would be taxable if sold or redeemed by the owner. You may also want to talk with us about charitable remainder trusts and other planned giving opportunities that allow you to donate assets in return for a lifetime annuity. A couple who are members of LGNC recently informed us that they have set up a trust and that the Nature Center will receive the capital invested in 2020.

**Another way of helping the financial needs of the Lehigh Gap Nature Center is to include our organization in your will.** Donations can include anything of value such as real estate, stocks and bonds, works of art, or coin and stamp collections. Suitable language could include the following: “I give, devise and bequeath to the Lehigh Gap Nature Center (Wildlife Information Center, Inc.), a nonprofit corporation exempt under Internal Revenue Code Section 501(c)(3), whose present address is P.O. Box 198, Slatington, PA 18080-0198, the sum of \$\_\_\_\_\_ and/or (specifically describe property).” Or you may decide to designate a percentage of your estate as a bequest to LGNC.

Members and friends who have included us in their wills or made us a beneficiary of a trust or insurance policy become members of the **Osprey Society**. Please let us know if you have named LGNC as a beneficiary, and we will acknowledge that future donation by naming you as a member of the Osprey Society. Current Osprey Society members are Dan Kunkle and Stephen Boudreau.

Endowment Fund donations are gifts that permanently help generate income for the Lehigh Gap Nature Center’s operations. **This is one of the most important ways you can help LGNC – donate to the Endowment Fund now and/or make a bequest to us in your will. Thank you for your support.**



**NOTE:** Donations and memberships received after December 1, 2019 will be acknowledged in the next *Wildlife Activist*.

## Support the Lehigh Gap Nature Center

The Lehigh Gap Nature Center is a member-supported conservation organization. The mission of Lehigh Gap Nature Center is “to protect the wildlife and enhance the habitats of our Refuge, the neighboring Kittatinny Ridge, and the Lehigh River Watershed through conservation, education, research, and outdoor recreation to improve the quality of life of present and future generations.” Our office is located in the Opsrey House at the Lehigh Gap Wildlife Refuge, our 750+ acre wildlife sanctuary. Our research projects, education programs, library, and internship programs need special support. Memorial fund donations will be permanently invested to produce interest to help operate the Center. All dues and donations are federally tax deductible to the fullest extent allowed by law.

“Friends” receive “Lehigh Gap Update” newsletter twice a year. All other members receive *Wildlife Activist* two times per year and an annual issue of *American Hawkwatcher* with the year’s Bake Oven Knob Hawk Count.

*Thank you for supporting LGNC*

### Membership Form

Renewal                       New Member

*Donation Level*

<input type="checkbox"/> Friend of LGNC	\$25	Name:	_____
<input type="checkbox"/> Individual	\$40	Address:	_____
<input type="checkbox"/> Family	\$50		_____
<input type="checkbox"/> Sustaining	\$100		_____
<input type="checkbox"/> Contributing	\$250	Phone:	_____
<input type="checkbox"/> Patron	\$500	Email:	_____
<input type="checkbox"/> Golden Eagle Donor	\$1,000		

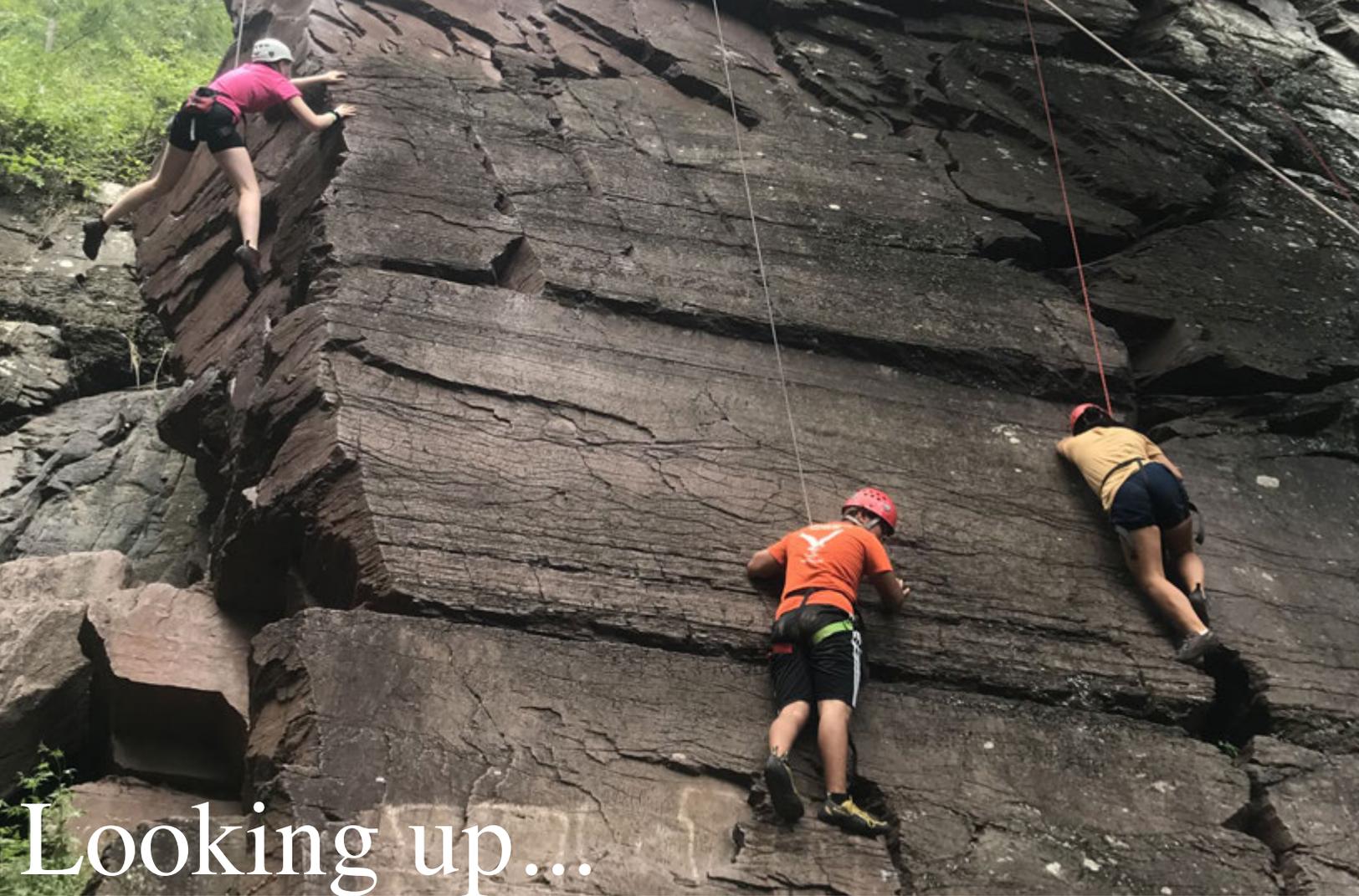
Please mail this form with check payable to:  
**Lehigh Gap Nature Center**, P.O. Box 198, Slatington, PA 18080

#### ADDITIONAL SPECIAL DONATIONS

- \$ \_\_\_\_\_ **Lehigh Gap Capital Fund** --supports improvements/maintenance on Refuge
- \$ \_\_\_\_\_ **Memorial/Endowment Fund** -- interest used to operate Nature Center
- \$ \_\_\_\_\_ **Educational Fund** -- supports the Center’s education programs and internships
- \$ \_\_\_\_\_ **Library/Archives Fund** -- funds subscriptions, books, archival storage
- \$ \_\_\_\_\_ **Research Fund** -- supports the Center’s wildlife research projects/internships

#### Gift Membership Offer

Members who renew at the Sustaining (\$100) or higher level may name a family member or friend for a gift membership to LGNC. Help us spread the word by nominating someone for a gift membership with your generous renewal.



Looking up...



**LEHIGH GAP  
NATURE CENTER**  
(Wildlife Information Center)  
P.O. Box 198 • Slatington, PA 18080  
610-760-8889 • [www.lgnc.org](http://www.lgnc.org) • [lgnc@ptd.net](mailto:lgnc@ptd.net)

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