Williamsburg Bird Club
April 17, 2024
Hybrid meeting; Conducted in-person at Quarterpath Rec Center, Room 2, Quarterpath Rd, Williamsburg and via Zoom hosted by Ann Carpenter; at 7 pm

Attendance: 19 (including the 3 student presenters and Dr. Cristol) in person; 16 via Zoom

President's Remarks: President, Nancy Barnhart, welcomed those assembled in person and on Zoom. We tried something new: holding our social gathering with refreshments at 6:30 before the meeting. Almost everyone attending did arrive for the early gathering and it appeared to be well received. Nancy announced there would be a brief business meeting after the program followed by a raffle

Program – Report from the 2023 Ornithology Grant Recipients: Patty Maloney, Vice President Programs, turned the microphone over to Dan Cristol.
Before Dan Cristol, W&M Chancellor Professor of Biology, introduced the three students who were awarded the 2023 Bill Sheehan/Ruth Beck Ornithology Grants; he expressed gratitude for the over 45-year-old relationship between our club and the W&M Biology Dept. He noted how important our club's donation of $599 to each recipient is to these budding scientists conducting research projects on a slim budget.

The first student, Julianne Abenoja from Alabama, who is an undergraduate sophomore studying neuroscience and on a premed track, described her research project, "*Pinpointing the Source of Avian Mercury Contamination in the Shenandoah River Watershed: Songbirds, Spiders, and Toxicology."*
Between the 1920's – 1950's, a DuPont factory poured mercury into the South River, a tributary of the Shenandoah River. The contamination spread deep into the surrounding flood plains. In 2016, DuPont, as a result of a law suit, agreed to pay $50 million toward cleaning the mercury they'd dumped. The songbirds in the area show high blood levels of mercury which decreases their survival and reproductive abilities; delays brain development; affects bill coloration (important for attracting mates); and changes singing behavior. Julianne's focus of research was whether the birds mostly get mercury from the river or the flood plains which would indicate which should be cleaned first. The birds' diet mostly consists of wolf spiders who are non-web-building predators that hunt by foot (cursorial) and get their mercury contamination from eating insects. Are the insects they are eating semiaquatic that spend most of their lives in the water and, like May flies, leave to mate and die on ground or are the spiders eating terrestrial insects that live in the flood plain where the plants are saturated with mercury? To determine what the spiders are eating, Julianne grinds up wolf spider guts from the contaminated area, and, via DNA metabarcoding, can extract the DNA of the different insects eaten. Using local cursorial spiders fed on mealworms, she's also determined how long after feeding the DNA of mealworms could still be found in their guts. DNA identification is done in a California lab and she is awaiting results which could impact where financial resources should be focused.

The next student, Alina Grossweiner from Chicago, who is a 2nd year grad student, described her research in "*All that glitters is not water: Exploring polarized light-based attraction to solar panels in birds"*. Collision, associated with upwards of 1 billion deaths per year, are the second leading cause of bird fatality after cats. One source of collisions is solar panels. It is poorly understood how many birds as a result are dying each year; if all bird species are affected equally; and why birds are attracted to the panels in the first place. One of the main hypotheses is that birds are mistaking solar panels for water. In

nature, water is the greatest producer of polarized light. Solar panels produce even higher levels. We can't see polarized light but birds do. Migratory species use vertical polarization to help orient themselves. It is possible that birds associate horizontal polarization with water but this has not been tested under a controlled setting. Alina is researching how much birds use polarized light to help them identify water as well as whether higher polarization is preferred by birds searching for water. She described how she conducts tests at the W&M lab with 12 Zebra Finches in specialized boxes built with the help of our funding. Controlling the amount of polarization with filters, she's testing the finches to determine whether they prefer high versus low polarized water. It is too soon to identify results but, to date, goals are being met and the research looks promising. Results may help lead to solar panels being designed that attract birds less.

The last student, Cara Hall, also from Chicago, and a junior undergrad, described her research: "*How Environmental Toxins Affect Bird Behavior: Investigating the effects of experimental lead exposure on movement activity in House Sparrows*." Cara initiated her project working with previous grad student, Joey Di Liberto, who'd earlier spoken to us about his research on the effect of lead pollution in House Sparrows. Lead was banned in paint in 1978 as well as lead pipes in new plumbing 10 years later, but mining and degradation of lead has dispersed this 'legacy' lead into the soil, air, and water, and remains in the environment to varying degrees. Cara's research involves testing the effect of varying degrees of lead in House Sparrows. The tests were done on 3 groups of sparrows: no lead exposure; lead exposure equivalent to that of Flint, Michigan; and high lead exposure found at Broken Hill, Australia. She placed them in a novel activity box where their reaction was documented. The sparrows were also placed in a box that forced them to fly upwards and out. Sparrows exposed to lead ions put in their drinking water demonstrated lessened activity and lesser take off force. There was no difference documented between the two levels of lead exposure. But there was a big difference between lead and no lead. These results provide important documentation of the negative impact of lead on birds.

Announcements:

Field Trips – George Martin, Field Trip Coordinator: George reported the following:

Saturday, April 20: Newport News Park led by Jason Strickland. Meet at the parking lot by the ranger station at 8am.

Saturday, May 18: Chippokes State Park in Surry County led by Nancy Barnhart at 8am. This last field trip of the season will require taking the Jamestown Ferry, probably at 7:20 am. We will car pool to consolidate the number of cars. Lunch at Surry Seafood to follow.

Bird Walks: Nancy reported the following for Scott Hemler.

Saturday, April 28: Monthly walk at NQP at 8 am led by Nancy Barnhart.

2024 Spring Bird Count: Nancy reminded us that our annual Spring Bird Count will be held on **Sunday, April 28**. She encouraged folks who wanted to be included on a team to contact her or Jim Corliss.

The Flyer: Nancy reported that our editor, Mary Ellen Hodges, has requested that submissions be made by Friday, April 26th. She is interested in photos, articles, book reviews from members.

Programs – Patty Maloney, Vice President (Programs): Patty announced the following:

- **May 15, 7:00 pm:** Presentation by Nancy Barnhart on her birding adventure in India.
- **June 26, 6:00 pm:** Outdoor gathering at the Chickahominy Riverfront Park with updates on

the Purple Martin Project by Cheryl Jacobson and the project team.

Lights Out Program: Nancy described the goals of this program being to get cities to turn off the lights in buildings during the 2 months of spring and autumn migration from 11pm to 6am. It has been difficult to implement because landlords prefer keeping lights on to increase market appeal. But a number of big cities have agreed. Cape Henry Audubon Society in Norfolk is trying to get Norfolk to adopt the program. Nancy reported that, at their request, we have granted them permission to use our club's logo as supporting them in their efforts.

WBC Records Archive at W&M Library: Nancy reported that Jay, the archivist, has suggested that we hold an open house to introduce to the community and students that the records are available to all. As a result, our records may be used in future research. The activity will also promote the presence of our club.

Virginia Capitol Trail Foundation: Nancy reported that the foundation has asked us to partner with them to promote the trail. She and Deborah Humphries will be leading a bird walk starting at the kiosk across the street from the Jamestown Settlement at 8 am on May 5th. The walk is promoted as a WBC activity and Nancy invited members to participate.

End of Meeting: Five free raffles were held along with continued offering of refreshments organized by Cathy Flanagan.

Nancy Barnhart adjourned the meeting at 8:02 pm

Respectfully Submitted,
Cathy Millar, Secretary Williamsburg Bird Club,
April 21, 2024