



The Skimmer Spring 2017

Editor: Charley Winterbauer

YWCA Women of Achievement

Unfortunately, Catherine did not win the award for the Education Category. The last Skimmer gave a brief summary of her lifetime educational accomplishments. The ever gracious person that she is said she was just honored to be nominated.



Catherine at the Awards Banquet.

ALERT!!

Nandina berries are toxic to birds. Nandina, a recognized invasive, is also known as sacred Bamboo.



We would like you to remove your Nandina shrub or at least cut off the berries. If you'd like to replace the Nandina with a native, the Hearts a burstin' (Euyonmous americanus) is a great one to use.

Warbler boxes

Students made and donated over a dozen nest boxes for the Prothonotary Warbler. I have given some away but still have many. The boxes may be used for the Bluebird, however the hole size is slightly smaller than is specified for the Bluebird. You may enlarge it. If you would like one or more, contact me at cewinterbauer39@gmail.com.



Membership

With a slightly different counting scheme in place, we are approaching 200 members. We now count family memberships as 2 persons. This took the number from around 125 to close to 200. Thank you all for your support.

The Importance of Birds

Joseph Francis Minnich wrote this paper as his high school senior project.
Edited by Charley Winterbauer, President, Cape Fear Audubon Society

Excerpts from

The Importance of Birds

By Joseph Francis Minnich

According to the most recent US National Survey on Recreation and the Environment, almost 20 million Americans reported birding at least 50 days a year. Birding is not just popular; it is the country's fastest growing outdoor activity due to a 332% increase in participation since 1983 (Sekercioglu et. al, 2002).

Quite possibly the most useful service provided by birds is seed dispersal. Birds have developed a mutualistic relationship with trees over millions of years of evolution. Birds eat the seeds and fruits off of trees and in return, disperse the tree's seeds to new locations. There are two main dispersal methods used by birds, caching and endozoochory. Caching, the less common of the two, occurs when birds scatter-hoard seeds. Birds have a highly evolved spatial memory allowing them to remember exactly where they have hidden food. However, "birds cache more seeds than they eventually eat, so some seeds sprout" ("Jays and Crows Act as Ecosystem Engineers"). This service is crucial because pines and oaks cannot reproduce without the help of animals to spread the seeds found within their pinecones. Birds instinctively tend to select canopy gaps as cache sites, effectively helping to regrow forests after forest fires as well as planting trees in favorable sites, maintaining biodiversity (Whelan et al 2017).

Endozoochory is the most common form of seed dispersal wherein birds eat fruits and regurgitate or defecate out the remaining seeds (Whelan *ibid*). Along with helping to disperse seeds to favorable habitats, endozoochory has some unique characteristics that benefit trees. Naturally, seeds from fruits emit alkaloid volatiles serving as an olfactory attractant to predators such as granivorous ants. Gut passage removes these compounds causing a one-hundredfold decrease in olfactory attractant emissions. Ingestion also eradicates fusarium, a fungus causing wilting and disease in trees. Together, removal of fusarium and volatile attractants results in a 370% increased seed survival rate (Fricke et al).

Birds are just as necessary as bees in the pollination process. In fact, over 920 species of birds can pollinate plants. Birds pollinate about 5.4% of cultivated plant species on average and 10% of plants and trees in areas such Australian and Asian Islands (Whelan et al). Birds expend a lot of energy to collect nectar; therefore bird-pollinated flowers allocate more nutrients to floral structures. Bird-pollinated flowers benefit from larger flowers, more nectar and increased predator protection (Cronk et al 2008).

Birds are such efficient pollinators because they have some distinct advantages over insects. Birds have keen eyesight, in some cases 8 times greater than humans, and have the ability to fly long distances continuously. These characteristics make them especially valuable in areas where bees are inactive or cannot survive. Prime environments for supplemental bird pollination are areas with low insect population densities, high altitudes and dry, isolated islands (Cronk et al, *ibid*) Natural disasters can show the necessity of supplemental bird pollination. Hurricane Lili, for example, hit the Bahamas as a category 3, nearly wiping

out two bird species responsible for pollinating the Bahama Swamp-bush. Although the shrub species managed to survive, fruit production decreased by 74% (Whelan *ibid*).

Much of a bird's behavior is dependent on environmental cues such as climate and temperature. Varying global temperatures due to global warming have confused birds making it hard to carry out their routine tasks. One of these behaviors that have changed is migration. Birds are experiencing warmer temperatures earlier in the season than they are used to, causing birds to begin migrating earlier and departing later. These changes are so extreme that some birds in Europe have failed to migrate altogether. Over the past 24 years, the average migration ranges of North American warblers shifted 65 miles north. Migration changes have serious ramifications because they cause birds to become mismatched with their environment. Birds expect certain food sources, predators, parasites and competitors during migration so shifting patterns put birds in unfamiliar situations. (Nature Canada. Nature Canada, n.d. Web. 23 Feb. 2017.).

Clearly, birds provide us a multitude of services that benefit our society and ecosystem. Therefore, it is our responsibility to preserve and protect birds and their environments. There are two main ways to protect birds, communally by passing legislation and individually by preserving ecosystems. Climate strongholds are geographic regions which shelter animals from the effects of climate change. Without strongholds, many birds would be forced to migrate north in search of new suitable habitats. If you live in a climate stronghold, it is recommended to grow native plant species to provide birds with natural food and shelter (National Audubon Society, "Climate Strongholds" 2017). Installing a bird bath or bird feeder in your yard extends a bird's habitat also. Masonboro Island is an Important Bird Area (IBA), therefore keeping it clean helps migrating birds greatly ("Masonboro Island IBA" 2016). Participating in bird counts provides organizations such as the Audubon Society with valuable information for determining migratory patterns and climate strongholds. Finally, reducing pesticide use can prevent bioaccumulation.

Starting at home is a good start, but according to the Audubon Society's predictions, 126 birds will lose more than half of their migratory range by 2050 ("Audubon: The Climate Report" 2017). These alarming predictions call for legislation to be enacted that protects these birds and their habitats. Firstly, the primary cause of most endangered birds is climate change; therefore strict regulations on carbon dioxide emissions causing global warming must be passed. The production of fertilizers especially dicofol, should be regulated, requiring all traces of DDT to be removed before sale. Strongholds should have special protection wherein invasive plant species must be under strict control. Lastly, government jobs could be created to protect, monitor and clean pollution from IBAs such as Masonboro Island.

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Also as part of Joseph's project, he made some entertaining/educational additions to our web under Discover the Wonder of Birds. Go to www.capefearaudubon.org, home page and near bottom click on More Details. Joseph added the new pictures and then click on

[Play the Priority Bird Call Matching Game](#) and see the game he added.

Some UNCW Research

Robert Oliver Snowden is a student doing some interesting research on the Least Tern, for his Graduate Thesis. Robert's hometown is Eugene Oregon and he got his undergraduate degree from The University of Puget Sound, Tacoma Washington. He received his Bachelor of Science degree in 2012. He is now doing his research in the Biology department under Dr. Raymond Danner, a fairly new ornithologist at UNCW.



Least Tern

Robert wants to understand the nesting behavior of the Least Tern and to do this; he has devised a unique method. Using a 3D printer he replicated a Least Tern egg. Actually he created many exact replicas of the egg. An individual "fake" egg is made of bio-degradable plastic and is the correct size and shape of the Least Tern egg. The eggs are painted to replicate the Least Tern's egg. He has placed a temperature sensor inside each egg which is capable of recording thousands of data points. The temperature is recorded every 3 minutes along with date and time. With the help of our Lindsay Addison, he placed eggs in 10 nests at the south end of Wrightsville Beach and plans to place some more

The fake eggs are now in place and he reports that the Terns are sitting on eggs OK so far. He is also spending time at the beach monitoring the activity of the nesting Terns. He will be able to correlate this activity with the egg data.

He has also arranged to get the environmental data for the beach area where he has the eggs, i.e. the temperature, wind etc. and will also correlate this data along with the other data. He will remove the fake eggs after the real eggs hatch and there are chicks.

Parting Shot



Least Tern nest with Fake Logger egg. Which one is it?