

New Hope Audubon Society Newsletter

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<http://www.newhopeaudubon.org>



My Two Cents Worth

by Tom Driscoll

As I write this column, it is 70 degrees on December 15th; not our normal weather! However, we will have some winter and colder days are on the way. In the winter, some of us are thinking about what we will be planting in the spring. Some look at seed catalogues, while others look for bulbs or visit nurseries and plant stores. Norm will be looking at what vegetables he will plant on his truck patch!

This year, I urge you to consider planting native plants and to use fewer poisons in your yard. Please consider plants that will be good for birds and insects, especially butterflies, bees, and other pollinators. Our bee and butterfly populations are down dramatically and part of the reason is our use of insecticides and the lack of native plants. If you want birds like hummingbirds in your yard, then plant flowering plants that they use. If you want to see birds like bluebirds and Cedar Waxwings in your yard, then plant berry bushes. We can all make a difference for birds and pollinating insects by planting natives in our yards!

The New Hope Audubon Society (NHAS) is working with NC Audubon to provide guidance on what plants to buy and to help nurseries and plant stores provide native plants. There is a wealth of information at www.newhopeaudubon.org/birdFriendlyNatives.html. The NHAS has also established a program to certify your yard as a bird friendly habitat as a way to help those interested in developing bird friendly yards. There is more information here: www.newhopeaudubon.org/birdFriendly.html.

An Evolutionary Puzzle By Norm Budnitz

Crested penguins breed in the southern oceans, particularly in Antarctica and the subantarctic islands. There are half a dozen species, including the



macaroni penguin (left), *Eudyptes chrysolop*



hus (photo from Wikipedia by Jerzy Strzelecki), the royal penguin (right), *Eudyptes schlegeli* (photo from Wikipedia by M. Murphy), and the southern



rockhopper penguin *Eudyptes chrysocome* (photo from Wikipedia © Samuel

Blanc / <http://www.sblanc.com/>).

All of these penguins share one rather peculiar trait. Each spring (October in the Southern Hemisphere) they pair up, chose their nest site, and then lay two eggs. The first egg, the A-egg, is always significantly smaller than the second egg, the B-egg. And



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the A-egg almost never produces a chick that successfully reaches the age of fledging. Only the B-egg actually grows and matures sufficiently to take that first leap into the ocean to start feeding itself. This is the flightless penguin equivalent of a robin or chickadee chick leaving its nest on its first flight.

Here's the evolutionary puzzle. There is a cost for making an egg. The female penguin has to use protein, fat and calcium stores in order to make each egg. If the A-egg never produces a viable offspring, why spend all that energy? Why not just lay one egg and be done with it? It seems that natural selection, the evolutionary process that weeds out such inefficiencies, should have eliminated this wasteful behavior. And yet all of these crested penguin species lay two eggs and only one is ever successful.

Let's look at some of the facts of the case. In measurements done with macaroni penguins by Tony Williams and his colleagues (Williams, 1990), A-eggs on average were 60% lighter than B-eggs. About half of the A-eggs were lost by the time the B-eggs were laid, and 99% of the A-eggs were lost by the time the chicks from the B-eggs hatched. In other words, only 1 in 100 A-eggs ever hatched. What is the matter with those A-eggs? And why does the female even bother laying them in the first place? (Williams gives no explanation of what happens to the disappearing A-eggs.)

Williams and his colleagues decided to test the A-eggs to see if there was something wrong with them. In the experimental group, after a female had laid both of her eggs, Williams removed the B-egg and replaced it with an A-egg taken from another nest. (The female in the second nest got to keep her B-egg.) So in the experimental group, the penguins brooded A-eggs. For comparison, the scientists also watched the nests of penguins that were left with both their A and B eggs; these were the 'control' nests. The A-eggs in the control nests all disappeared by the time the B-eggs hatched. Eggs were weighed, chicks were weighed and measured within one day of hatching and then periodically over several weeks until they fledged and went to sea after about 50 days. At hatching, the chicks from A-eggs weighed only 55% as much as chicks from B-eggs. But at fledging, the A-egg chicks had almost completely caught up to the B-egg chicks, either in weight or in some of the length measurements that were taken. It seems that, if allowed to develop, the A-eggs do just fine. The A-egg fledgling chicks were just as healthy as the B-egg chicks. So in the normal course of events, why do only B-eggs survive to fledging?

This seems to be a question of economics. Why go to the store (the nest), spend good money (energy for protein, fat and calcium), buy two burgers (lay two eggs), and then simply throw one away? Maybe the cost of making eggs just isn't all that high. It turns out that in penguins, which do not eat once they start the egg-laying process, only small amounts of protein, fat, and calcium are transferred from body stores each day into egg production. By comparison, Canada geese, who also fast during egg-laying, use 12-15 times as much protein and fat! So for macaroni penguins, the cost is relatively cheap. But it's not free.

Some biologists have speculated that the two-egg clutch of eggs is on the way out, that natural selection, and thus evolution, will eventually result in the crested penguin species laying only one egg, just like most of the



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other penguin species. Other biologists have simply conceded the issue and have left it as an unsolvable puzzle. Williams, on the other hand, has proposed a third possibility.

Like many species of birds, during the non-breeding parts of the year, penguins almost completely dispense with their reproductive organs. Why carry around all that extra weight, when feeding, avoiding predators, and generally earning a living is already pretty difficult. So both males and females let their reproductive organs wither away to practically nothing. Come the breeding season, however, those organs begin to grow back. The environmental cues that initiate this process are probably things like changes in day length, courting behavior, and maybe even the incredible hubbub of the crowded nesting grounds. When a female comes to shore to nest, her ovaries and egg-producing organs are growing back but are not yet fully formed. She cranks up the production line for her first egg (the A-egg), but that egg is relatively small because the system itself has to regrow. By the time the second egg, the B-egg, enters production, the system is running at full capacity, and so that egg reaches maximum weight and size.

Remember that number from the beginning of this article? Only 1% of A-eggs actually survive to fledgling chick-hood. If the cost of egg production is low in these penguins, perhaps that 1% is enough for natural selection to maintain the two-egg clutch. Or to put it another way, if egg laying is cheap, natural selection won't penalize penguins for making two eggs, especially if, every once in a while, the A-egg survives. The genes that code for the two-egg clutch will then persist in the population. And that, dear reader, is what studying evolution is all about.



Feeder Watch

By Tom Driscoll



It is 70 degrees in the middle of December! Although it is unseasonably warm, our winter visitors, Dark-eyed Juncos, White-throated Sparrows, Ruby-crowned Kinglets, and other migrants from the north are here now and they are eating seeds as long as the Cooper's Hawk isn't in sight. I am serving up much more food than in the autumn months.

I have been putting millet out for the ground feeders; unfortunately, when food is spread on the ground I am also feeding squirrels. I have been mixing safflower seeds with the mix I buy, but the birds are mostly ignoring the safflower seeds. The birds are not eating my Nyjer seed as well. Are your birds eating Nyjer? During the winter, there are periods of no or little rain, so ensure your birds have a source of water.

At this time of year, many of the birds, especially Northern Cardinals, may appear scraggly as they are molting into their new plumage. This is a gradual process that may take several months. During the winter, the juvenile birds will molt into their adult plumage for spring.

Some residents, such as American Robins and Eastern Bluebirds, eat berries from the Holly Bushes, Dogwood, and juniper or cedar trees in your yard. We have seen Cedar Waxwings in our yard eating berries. Have you seen the Cedar Waxwings yet? Our Ruby-throated Hummingbirds have departed for warmer climes. However, keep your feeders up for another month or so because we sometimes have "western" hummingbirds, such as Rufous or Calliope Hummingbirds, spend the winter here. If you are still seeing a hummingbird, please let me know!

Although I discuss the birds I am seeing or you can see at your feeders, I am hoping to receive reports and questions about the birds you are seeing. This will make the articles more interesting. If you have ideas about topics to discuss, want to report on the birds you are seeing, or have questions about the birds you are seeing, please send me an email at spttdrdshnk@yahoo.com.



NHAS Membership Meeting Speakers for 2016

Our membership meetings are held in the Visitor Education Center at the North Carolina Botanical Gardens, 100 Old Mason Farm Road, Chapel Hill, on the first Thursday of every month (except June, July, and August). Everyone, including non-members, is welcome! See you at a meeting soon!

Time/Date	Speaker	Topic
7:00 pm January 7, 2016	Jeff Pippen JP Ecology Consulting	Monitoring bird and butterfly populations on a habitat restoration ranch in Montana.
7:00 pm February 4, 2016	Natalia Ocampo Penuela & Scott Winton, Duke University	Birds and Window Collisions
7:00 pm March 3, 2016	Stephanie Krueger North Carolina Zoo	Birds of the North Carolina Zoo Aviary
7:00 pm April 7, 2016	Derb Carter Southern Environmental Law Center	To be announced
7:00 pm May 5, 2016	Norm Budnitz New Hope Audubon Society	Birds—What are they? Who are they? What do they do?

Calendar of Activities

Thu Jan 7, 7:00 - 8:30pm: "Monitoring bird and butterfly populations on a habitat restoration ranch in Montana." Jeff Pippen

NHAS Monthly Meeting at the North Carolina Botanical Garden in Chapel Hill.

Sat Jan 9, 9:00am: Stream Watch with John Kent

John will lead the New Hope Creek Stream Watch monitoring. John leads a team that conducts monthly monitoring of the pollutants and microorganisms in the creek to gauge water quality. If interested in participating, then please contact John at jnkent25@gmail.com.

Thu Feb3, 7:00 pm-8:30 pm: "Birds and Window Collisions" Natalie Ocampo Penuela & Scott Winton

NHAS Monthly Meeting at the North Carolina Botanical Garden in Chapel Hill

Sat Feb 6, 9:00am: Stream Watch with John Kent

John will lead the New Hope Creek Stream Watch monitoring. John leads a team that conducts monthly monitoring of the pollutants and microorganisms in the creek to gauge water quality. If interested in participating, then please contact John at inkent25@gmail.com.





NHAS Education Outreach

By Mary George

The focus of the NHAS Education Committee this year is on reaching out to children and teaching them about birds and bird watching. Our goal is to present at least one educational program in each of the counties represented by NHAS - Orange, Durham and Chatham. The venues for the programs has been the libraries in each county and the title for the program is "Getting to Know Your Bird Neighbors." Our first program for children was on July 11, 2015, at the Chapel Hill Public Library. The second program was in Hillsborough at the Orange County Public Library on November 14, 2015, where a room full of children and their families enthusiastically visited each learning station. A new learning station on Chimney Swifts included a Chimney Swift mask activity and a peek into a mockup of a chimney with a nest with eggs and a vigilant parent in attendance. Additional learning stations included information on feathers, bird communication, bird nests, bird flight, and migration. Participants also played the bird I.D. game, looked through binoculars and a scope at a stuffed Screech Owl, played bean bag toss, made peanut butter/pine cone bird feeders, and colored bird pictures. The next children's program will be held at the Chatham Community Library in Pittsboro on Saturday, February 27 from 1:00 – 2:30 p.m.

NHAS Educational Programs for Youth

"Getting to Know Your Bird Neighbors," given on October 14





UPDATE ON NEW HOPE AUDUBON'S BIRD FRIENDLY HABITAT CERTIFICATION PROGRAM!



The NHAS Bird Friendly Certification team did site visits to 11 properties this Fall to kick off our program! Three qualified at the Platinum level, two at the Gold level, and four at the Silver level. Two properties did not reach a certification level yet, but we advised them on what needed to be done and will revisit their properties when they request us to do so. In many cases, people are not achieving certifications or, if certified, do not qualify at a higher level because of invasive plants on their property.

It is disheartening to see the native plants being displaced by stilt grass, privet, English ivy, and other invasives as you walk through the woods in our area. Please try to do all you can to remove invasives from your yard and replace them with native plants or natural ground cover. For more information about invasive plants and their removal, see our website at: <http://newhopeaudubon.org/birdFriendlyInvasives.html>

Please keep in mind that winter remains a good time to put in new native plants as long as the ground has not frozen solid. Plants develop stronger root systems over the winter and early spring which help them make it through the hot, and often dry, summers. For more information on native plants and our certification program, please visit our website at: newhopeaudubon.org/birdfriendly.html

Go ahead now and get on the list of properties we will visit in the spring when the program resumes. Keep in mind that even if you don't qualify yet for certification, a yard survey will be of considerable value since you will find out what steps you need to take to make your property more bird-friendly! We then will come back and survey again as you make progress toward certification.

The certification team is co-chaired by Barbara Driscoll and Jim George and includes: Ben Skelton, Alan Johnson, Elizabeth Keating, and Marcia Mandel. We operate as a sub-committee of the Conservation committee chaired by Mark Kosiewski. Contact us with any questions at: newhopeaudubon@gmail.com



New Hope Audubon Officers for 2015-2016

President	Tom Driscoll		
Vice President	Bo Howes	Director	Mark Kosiewski
Treasurer	Vern Bothwell	Director	John Kent
Secretary	Pat Reid	Director	Jim George

Committee Chairs and Special Projects

Bird Friendly Habitat Certification -
Jim George, Barbara Driscoll

Important Bird Area, Jordan Lake -
Jennifer Fenwick

Important Bird Area Eno River -
Tom Driscoll

Bird Seed Sale - Mary George

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Christmas & Spring Bird Counts -
Norm Budnitz

Conservation Chair - Mark Kosiewski

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Program Chair - Mark Kosiewski

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Stream Watch - John Kent

Field Trip Chair - David Anderson

Webmasters - Norm Budnitz, Jim
George