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BANDING MOURNING DOVES AT THE GREAT SWAMP

Leo Hollein

Mourning Dove (*Zenaida macroura*) banding at the Great Swamp National Wildlife Refuge in New Jersey was initiated in 2009 at the behest of the U.S. Fish and Wildlife Service. The objective was to obtain data on doves in states like New Jersey that do not currently have a dove hunting season. The states that have a hunting season started banding doves in 2003. Since Mourning Doves are somewhat migratory, birds banded in New Jersey might be recovered in other states. The banding would also provide baseline population data that would be desirable in the event a dove hunting season was ever introduced.

Forty-one states have dove hunting seasons. In the tri-state area, New York and Connecticut, like New Jersey do not have dove hunting seasons. Mourning Doves are the most popular game bird in America. About fifteen to twenty million doves are harvested every year. Mourning Doves are abundant throughout their range which encompasses most of North America except for the extreme northern areas. Doves are able to cope with hunting pressure due to their prolific breeding habits. In New Jersey, Mourning Doves raise multiple clutches. In the southern states, Mourning Doves can raise up to six broods a year. Banding doves and the subsequent recovery of banded birds aid in assessing the health of the dove population and in setting bag limits.

Mourning Doves are ground feeders that eat seeds in fields, farmlands and suburbs. They are very common at bird feeders. Their population has benefited from the increase in open areas from agriculture and residential development. Mourning Doves are named for their mournful call. Their wings make whistling sounds as they fly off. Mourning Doves (Figure 1) are about twelve inches long and weigh around four ounces. They are basically tan with pointed tails that have white edges. They also have spotted backs, blue eye rings and reddish legs.

Mourning Dove traps are two feet by two feet square wire mesh cages, about eight inches high. They have two one-way tunnel-like entrances that are easy for birds to enter but difficult to exit. Typically two to four traps are used at a trapping site. They can be arranged in a variety of configurations. Dove traps should be located in open areas near trees and/or structures. The site should contain gravel that doves imbibe (gritting) to aid in digesting seeds. Mourning Doves eat entire seeds unlike titmice, chickadees, and finches that first remove the seed husk.

The trapping sites are baited daily with white millet that doves and other birds relish. Trapping takes place three or four times a

week. The traps are checked about every forty minutes while trapping is in progress. Trapping and banding only takes place in July and August. In September dove hunting season begins in a number of states. The most productive time to band doves is in late afternoon. Dove trapping is also productive after a weather front moves in. The cold front brings in doves that had not been banded previously in the season. Between cold fronts the trapped doves are mainly those previously banded during the season.

As with most trapping operations, there is collateral capture with the dove traps. Red-winged Blackbirds (*Agelaius phoeniceus*), Common Grackles (*Quiscalus quiscula*), and Brown-headed Cowbirds (*Molothrus ater*) are frequently trapped. Occasionally Blue Jays (*Cyanocitta cristata*) and Northern Cardinals (*Cardinalis cardinalis*) are trapped. A Blue Grosbeak (*Passerina caerulea*) and a juvenile Red-bellied Woodpecker (*Melanerpes carolinus*) were also trapped. All captured birds that are not doves are relocated over a mile from the traps in the hope they will not return. Sparrows, finches and Eastern Chipmunks (*Tamias striatus*) feed on the millet but are small enough to enter and leave through the sides of the wire mesh traps. Both rabbits and

FIGURE 1. Mourning Dove. © Leo Hollein

squirrels have also been trapped. On rare occasions a Cooper's Hawk (*Accipiter cooperii*) or other raptor will try to prey on trapped birds.

Mourning Doves are the most wary of all the birds trapped as they scour the area around the trap to consume any millet that is on the outside. Trapped birds, especially blackbirds, become agitated once they realize they have been trapped and unintentionally spread millet outside the trap by flapping their wings in attempting to escape. Doves will also partially enter the tunnels and eat any millet they can reach. Doves enter the traps when the only available millet is inside.

When banding doves, the age (hatching year or after hatching year) is recorded. Hatching year doves can be distinguished from adults by the presence of beige tips on the primary wing coverts as shown by arrow 1 in Figure 2. Arrow 2 points to a molting (replacement) primary feather. The ten primary feathers are molted sequentially from the inside out. The beige tips of the coverts are lost when the dove completes molting the primary feathers and their coverts. It is not possible to determine the gender of hatching year doves. If a dove is molting its two outer primary feathers, it is not possible to determine if it is a hatching year or after hatching year dove as the primary coverts are replaced ahead of the corresponding primary. Therefore, the buff trim on the coverts indicative of a hatching year dove will not be present.

It is possible to determine the gender of adult doves. Adult male doves have slate blue heads and napes as well as pink-tinged breasts as shown in Figure 3. They are larger than female doves.

FIGURE 2 Hatching year Mourning Dove. © M. Nye

The chart presents the dove banding results for the 2009 through 2013 period. As illustrated most of the doves that were trapped and banded at the Great Swamp N.W.R. are hatching year birds. About 70% of the doves banded in five years were hatching year doves. Over the five year span the percentage of hatching year doves banded

ranged from 60% to 80%. This variation reflects the difference in annual reproductive success.

FIGURE 3 Adult male Mourning Dove. © M. Nye

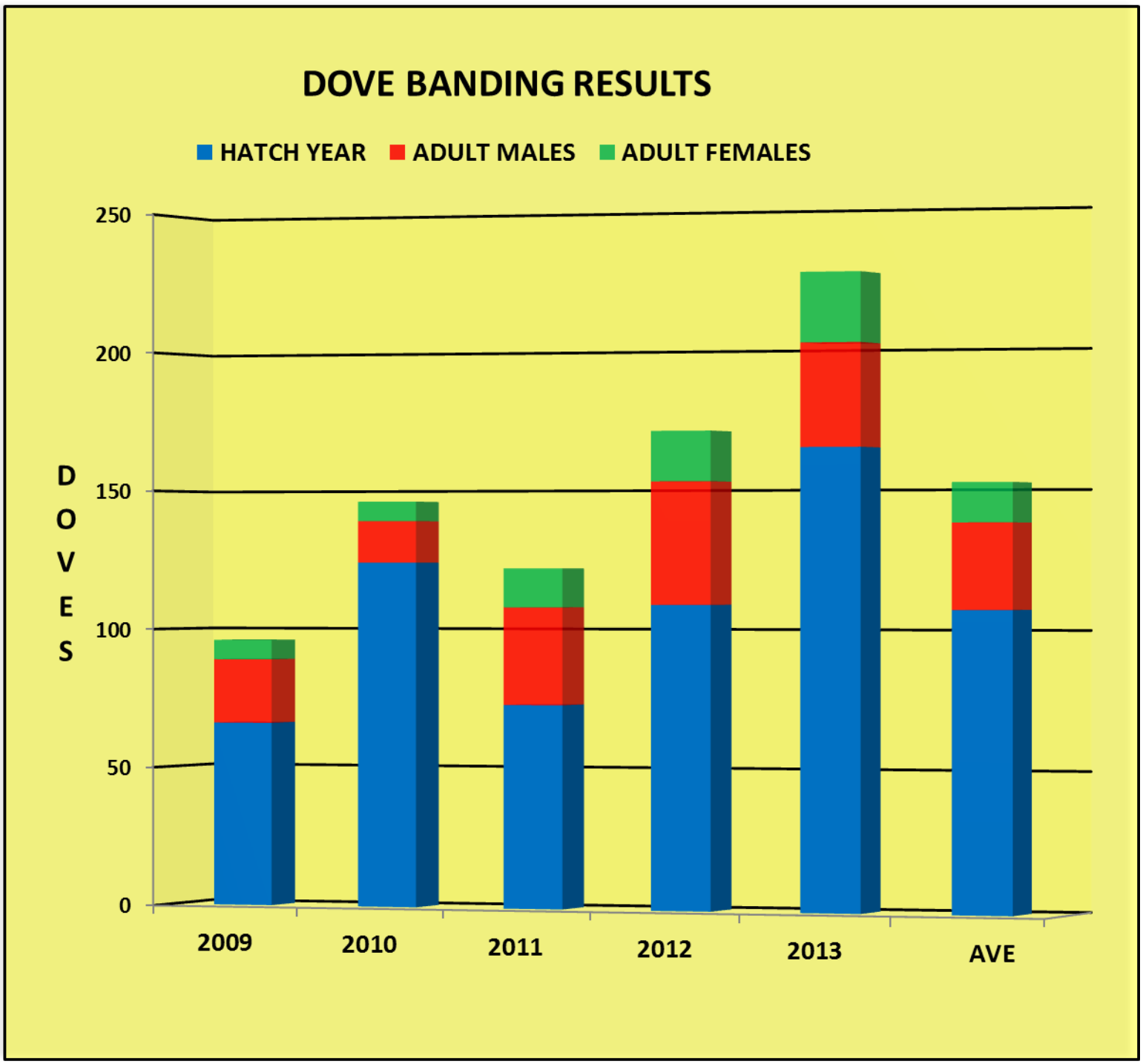
Hatching year birds are still learning to feed themselves. They are less wary and are probably hungry. This makes them most susceptible to being trapped. Some hatching year doves are trapped four or five times. These doves are either very dumb for repeatedly being trapped or very smart because they enjoyed a lot of free meals and knew that someone would free them in less than an hour.

The chart also illustrates that adult males were trapped more frequently than adult females in all five years. Adult females are difficult to trap as they are tending to their nests during the banding season. On average

only about 10% of the trapped doves were adult females while about 20% of the trapped doves were adult males.

A total of 540 doves were banded at the refuge in the 2009 to 2012 period. Eleven of the doves (2.0%) have been recaptured or recovered in subsequent years. Most were recaptured at the site where they were originally banded and released. One dove was recovered by a hunter in South Carolina.

Pennsylvania has a dove hunt and bands 2,500 doves across the state annually. They always get recoveries from the southern states. However, doves banded around Philadelphia are less migratory than those in the rest of the state. It is possible that doves in New Jersey might have fewer tendencies to migrate as suggested by the relatively small sample size.



REVIEW – PAPYRUS: THE PLANT THAT CHANGED THE WORLD: FROM ANCIENT EGYPT TO TODAYS WATER WARS

Chuck McAlexander

[*Papyrus: The Plant that Changed the World: From Ancient Egypt to Todays Water Wars* by John Gaudet. 2014. 300 pp. Pegasus. $28.95]

At some time during elementary school all of us learned about the Papyrus plant (*Cyperus papyrus*) and its use as the source of the first paper. If you reacted like I did, this knowledge was as unimpressive as last week's Jell-O at the school cafeteria. The picture of the plant in the book was about as large as the beans the class sprouted in paper cups sitting on the window sill and the existence of paper only meant some kind of work had to be done on it before you could throw it away or turn it in to the teacher. The exception was, of course, paper airplanes, which were strictly outlawed at school. So, papyrus was a non-event in the classroom and didn't make the list of things we were going to enjoy remembering from our school days. This would not be the case if any of the teachers brought anything like the knowledge John Gaudet has about the subject, or better yet, an actual Papyrus plant into the classroom.

Papyrus was responsible for a lot more than just paper. Not that paper wasn't or isn't a very large force in shaping civilization. It was and, in spite of the "electronic revolution", still is. But Papyrus, the plant, was an abundant source of building materials for many cultures around the world. It was also used to make rope, handcrafted items and could be used as a fuel when dry. In a pinch, you could even eat it, but you would prefer most anything else if even remotely available. Perhaps the most important use of the plant was as a freshwater marsh reed that purified and conserved the water while simultaneously providing a biome for a huge number of animal, insect, fish and microbial life. That is what this book is really about.

Gaudet is a professional ecologist, to quote from the book's jacket. He has worked with the U.S. government and the National Geographic Society and is still active in African, agricultural and conservation/environmental agencies. So, his cache of relevant knowledge on the subject is both deep and wide. This becomes obvious as the book progresses. His website is www.fieldofreeds.com

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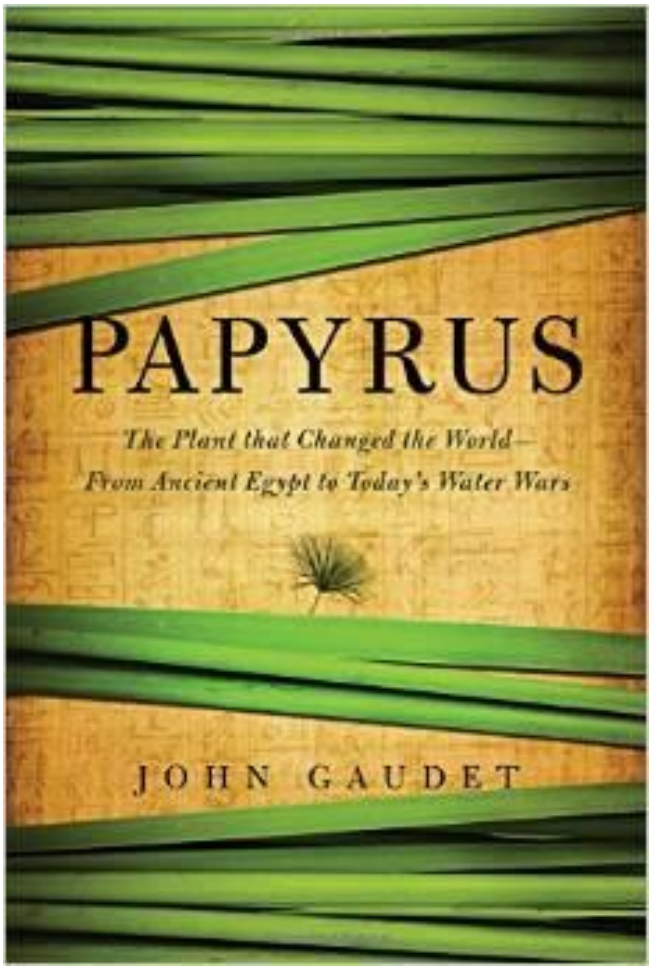

The style of the book is from an earlier era and, therefore, comfortable and familiar to me. The text gives a background to the subject at hand, delves into the importance of the plant in its many uses and functions, then spends the back half relating how all of this history is relevant to the problems and confrontations of today's world. There is no

attempt to exaggerate anything just to add excitement. The subject is interesting and relevant all by itself and needs no additional zip or splash. While there are plenty of illustrations accompanying the text, they are hand drawn and in black-and-white. There is a small section of color photographs and illustrations in the middle of the volume just to accentuate some of the drama and beauty to be found in a Papyrus swamp, but it is a bit shocking to the eye after the soft edges and stylish shapes of the illustrator's art.

The color section does serve a purpose however, just as Dorothy discovers she isn't in Kansas anymore in *The Wizard of Oz*, we are transported to the modern Congo, Zambesi, Nile and Jordan rivers as well as lakes with names as different from each other as Victoria and Chad are from Naivasha and Upemba. But, what is in a name? The rivers, lakes and marshes as well as the people who depend upon them for life itself are all suffering from the same problem: a seriously degraded and diminished supply of clean water. Gaudet takes each region in its turn and describes how things got to be such a sorry mess. He lays blame where he sees it appropriate, but wastes little time hand-wringing and whining. In each case he suggests a method to either eliminate or minimize the problem. As you have to have guessed, the solutions generally boil down to restoring papyrus marshes where they once were or starting new ones where they might provide the same water cleaning and conservation service.

Stated that way, it sounds like a simplistic solution to a massive global problem. It's not and Gaudet doesn't treat it that way. Each region has its own set of water problems that make a single formula solution impossible. This is where Gaudet really shines. His expertise, hard won by many years in the field, allows him to rise to the task and offer sensible, real world solutions that, if implemented, would make a significant difference in the lives of those close to the marshes. Those of us not so close would benefit, too. Cleaner air and water combined with more sustainable industry to feed and house the marginalized people could only lead to less war and better health for all.

There is a significant amount of science in this book, but all of it is very reachable to the layman. The only mathematical skill you will need is the ability to compare a big number to a smaller one. For example, C3 grasses like phragmites lose 833 molecules of water for each molecule of carbon sequestered. C4 grasses like papyrus lose only 277. Obviously, much more water is conserved in a papyrus swamp compared to a phragmites swamp. You learn the names of each part of the Papyrus plant and some uses for them. The relative strengths and weaknesses of papyrus, phragmites and some other marsh flora are compared. There is lots of geography, some ancient civilization, tales of the explorers, paper making techniques, reed hut differences between locations and plants used, boat/raft design and more. In other words, it's not only broadly informative, it's entertaining.

As you may have also guessed, you can't talk about this many aspects of the environment without bringing up birds. And so he does, but as a descriptive of the condition he is describing. There is a good description of the Shoebill (*Balaeniceps rex*) and its plighted condition in the shrinking papyrus marshes. Cranes and storks are used to discuss migration patterns. Herons and warblers make a showing along with a Papyrus Gonolek (*Laniarius mufumbiri*) painted in the color section in all its vibrancy. One gets the general impression Gaudet is a fully addicted birder whether he knows and admits it or not.

In sum, *Papyrus* by John Gaudet is one of the most satisfying and informative nonfiction books I have read in a good while. I strongly recommend it to all. Had there been even a single percent of the information in this book presented in the class where I first heard the word papyrus, I would have had a much better understanding of just how important this single plant was to the history of mankind and life on planet Earth.

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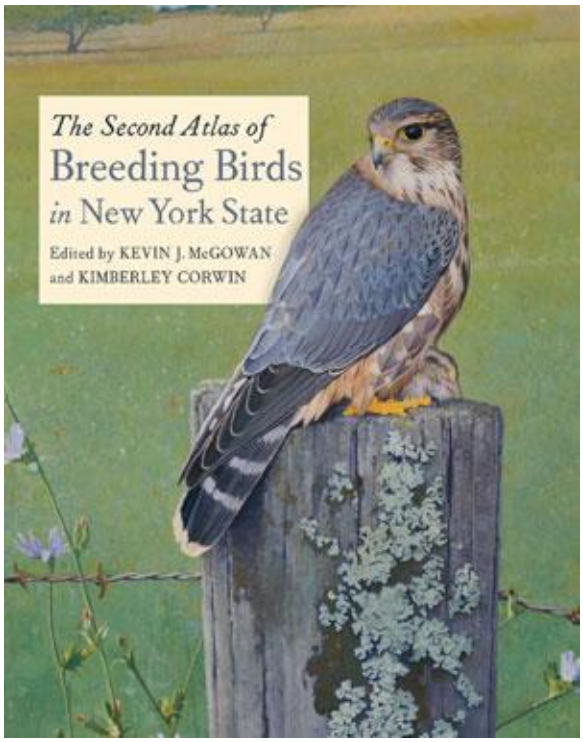
ANNUAL MEETING SPEAKER

There has been a change in the speaker for the Annual Meeting on March 10, 2015 from what was announced in the Society's Schedule of Programs sent to members last summer. Tim Birkhead is unable to speak this year. The speaker instead will be Kevin McGowan. The title of his talk is: "To Know the Crow: Insights and Stories from a Quarter Century of Crow Study". The following is from the Society's website:

The American Crow is a widespread and familiar bird across North America, but few people know much about its complicated and fascinating life. The crow displays more human-like traits than perhaps any other animal: intelligence, adaptability, sociability, and caring, with strong family values and lifelong bonds. Kevin McGowan will discuss the results of his 26-year study of crows, starting with their home and family life. From there he will let the audience decide what comes next, letting them choose from stories about flock life, winter roosts, crow creativity, urban life, crow-human interactions, life history strategies, secret sex lives, or murder and treachery.

Kevin McGowan is the project manager for Distance Learning in Bird Biology in the Education program at the Cornell Lab of Ornithology. He is the instructor for the long-running *Home Study Course in Bird Biology*, the online course *Investigating Behavior: Courtship and Rivalry in Birds*, and the *Be a Better Birder* online tutorials and identification webinars. Kevin McGowan was one of the creators of the Lab's *All About Birds* website, one of the most popular bird sites on the Internet. He was the co-editor and primary author for the book, *The Second Atlas of Breeding Birds in New York State*, and is the former curator of the bird and mammal collections at Cornell University.

Kevin McGowan received a Ph.D. in Biology from the University of South Florida for work on the behavior of Florida Scrub-Jays. He has been studying the biology of a population of crows in central New York since 1988, and has followed the life stories of over 2,000 banded individuals. An avid birder as well as a professional ornithologist, Kevin McGowan enjoys all aspects of birds (especially crows), from behavior to physiology, from ecology to evolution, and from zooarchaeology to species identification. He is interested in spreading the appreciation of birds to all possible audiences, through all possible avenues.



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