Most of us have become accustomed to using GPS for even the simplest trips. We have become dependent on the little magic box to the point where we want to go and how to get there. Autopsies have confirmed that in people with much experience using GPS, the cerebral portion of our brains (the hippocampus) used for memory, mapping, and navigation becomes atrophied compared to the same structure in people who have had no little or no experience with GPS.

Clearly, navigation is such a complex activity that it has a physical effect on the brain. One of the biggest mysteries in nature is how creatures as small as birds, who have, after all, “bird brains,” manage unimaginable feats of navigation throughout the globe, even across thousands of miles over unfamiliar territory. These journeys would tax humans even with modern navigational tools. Yet these journeys are performed routinely, twice every year, by all manner of migrating birds, large or small.

Navigation is indeed a complex process that involves spatial orientation to local positioning, perception, an intense level of attention, a response to timing, and ultimately, a cognitive process of decision making. These actions are not easy for a large mammal such as we are, so how can birds do this?

Historically, the fact that birds periodically “disappeared” was a mystery in and of itself. Some people felt that the birds hibernated in hiding, or changed form to appear similar to the birds that did remain in the local area. In the 17th century, it was proposed that birds went to the moon in the winter.

Once it became clear that birds in fact traveled long distances, generally avoiding cold weather, flying off to mating areas, and going to areas of greater resources, the issue of navigation arose. At first this ability was simply ascribed to “instinct.” In fact, such an instinct, for example, to migrate, is inborn in young birds. But this is a rudimentary impulse and does not explain the whole story. We know there is an instinct to migrate because at the appropriate time, captive birds who cannot see any clues outside will demonstrate a behavior called *Zugunruhe*, or migratory restlessness. The German compound word means “movement anxiety.” Birds will become very restless and try to fly, even when caged. And their movements are in the direction in which they would actually fly if they were free to do so.

So young birds will initiate a migratory flight, but that is only the beginning. The fascinating aspect is that there is a learning process involved. As they travel, they build a cognitive map of their flight. The exact nature and extent of that map is still not well defined, but it’s clear that a bird's map may be huge, covering not only the narrow path of its journey, but spanning oceans or continents. This enables them to recalculate their course (to use a GPS phrase) even if they become greatly displaced by storms, winds, or even artificially, as when scientists capture them, place them in a box, and drive them a thousand miles away!

So the young bird starts with an impulse to migrate with a one-direction compass. Then as the bird matures a map is generated which can be used to navigate farther and with more refinement.

But what tools are available to the bird in order for the map to be useful? That is a question still the object of much research.

Continued on page 7.
Field Trips
Field trips are open to the public and free of charge, but contributions are always appreciated. All birding experience levels are welcome. Field trips require reservations. To sign up for a trip, email Lucy Duncan at town_point@bellsouth.net to secure your space. You must provide your full name and phone number to be added to the list. This information will be used to contact you in case of inclement weather or issues preventing a safe field trip. Bring binoculars and/or a spotting scope, as well as sunscreen, insect protection, appropriate shoes, hat, water, and snacks on all trips. Please do not wear scented cologne, perfumes or aftershave on field trips. It distracts from the experience in nature, and some participants are highly sensitive to it. Questions? Call Lucy Duncan, 850-932-4792.

☐ Saturday, September 10—Backyard birding along Pensacola Bay’s north shore at Ann Forster’s yard and trails. We hope to find gulls, terns and shorebirds along the waterfront, and possibly early migrants mixed in with resident birds. The trip will be led by Lucy and Bob Duncan, and will finish before lunch. Meet at the Greer’s Cash Saver Grocery parking lot at 4051 Barrancas Ave. just east of Navy Blvd. at 7:30 a.m. You may wish to bring water or snacks for the morning. Reservations are required, see note above.

☐ Saturday, October 8—Ft. Pickens, our backyard National Seashore, birding for migrants. Birding at Ft. Pickens can yield a wonderful array of both resident and migrant species under the right conditions! You can anticipate easy walking and good opportunities to find a variety of species this time of year with leaders Lucy and Bob Duncan. Meet at 7:30 a.m. in the last parking lot before you enter Ft. Pickens (the Park West parking lot on the north side of the road, just past the pink condos at 1390 Ft. Pickens Road). If you have a National Parks visitors’ pass, be sure to bring it. We will finish by noon. You may wish to bring water or snacks for the morning. Reservations are required, see note above.

Bird Walks
Want to learn about our area birds? These short bird walks are designed to introduce “future birders” to the world of “Bird Watching.” Families with children are welcome. If you have binoculars, bring them. If not, we will have a few ‘loaners’ available. A hat, long pants and bottled water are recommended for our outdoor walks.

☐ Saturday, October 15, 2022—Soundside Foundation Nature Preserve in Gulf Breeze, Fl. Michael and Cathy Brower will lead a 2 hour bird walk. This unique preserve in Gulf Breeze has it all — shoreline, coastal woodland, pines, freshwater ponds… and the chance to see birds in varied habitats. Please arrive at 7:30 a.m., at 4335 Soundside Drive (Parking Area) Gulf Breeze, FL 32563. Please park in the parking area or along the roadside around where Brower’s 2007 Highlander Hybrid is parked. Park off the road. We hope to see waterfowl, shorebirds, wading birds, and woodland birds. To register, email Marcy McGahan at marcymcgahan@gmail.com with your name and cell phone number.

All field trips/bird walks/birds and brew are by reservation only.
FMWAS follows Center for Disease Control (CDC) guidelines and encourages every participant to be vaccinated. Official Covid Safety Protocols will be followed. For up-to-date information, check https://www.cdc.gov/.

Fall Fort Morgan Public Bird Banding
The Banding Coalition of the Americas will be banding birds.
September 30-October 7
8:00 a.m. to 3:00 p.m.
Fort Morgan State Historic Site, Alabama 180, Gulf Shores, AL
For details go to https://www.bandingcoalition.org/fort-morgan-bird-banding

Alabama Audubon announces Dr. Scot Duncan will be their new Executive Director. Scot will draw on his 27-year career in higher education and conservation biology to work at this "dream job" which he said "weaves together the things I am most passionate about in my career: science, conservation, education, advocacy, and—especially—birds.” Congratulations to Scot! He has been an FMWAS speaker and is a bird-sighting contributor who grew up birding with FMWAS.
Sign up to receive electronic copies of the Skimmer, meeting reminders and chapter news. Go to fmwaudubon.org/publications/e-letter/

Longleaf Pine Chapter  
Florida Native Plant Society
Interested in native plants, visit  
http://longleafpine.fnpschapters.org/

Chapter Meetings
(In person at Pensacola State College, on Zoom or both to be decided.)

Save the dates—Mark your calendars

Thursday, August 25
Thursday, September 22
Thursday, October 27

Meetings are at 7:00 p.m. CDT

Announcements will be:

- Emailed to those who have signed up to receive them. Please sign up if you haven’t. fmwaudubon.org/publications/e-letter/
- Posted on Facebook www.facebook.com/FMWAudubonPensacola
- Available on the Website www.FMWAudubon.org

FMWAS YouTube—Did you miss one of our Chapter Meetings? Did you like a program so much you wish you could watch it again and share it with friends? Well, we have some good news for you. In an effort to improve our Social Media presence, we have created a YouTube channel dedicated to FMWAS videos as a way to archive our programs and help them reach a wider audience.

You will now be able to rewatch and enjoy our Chapter Meeting programs and speakers exclusively on our channel. We currently have videos available from our January, February, March, and April 2022 Chapter Meeting Programs. Just visit youtube.com and search for Francis M. Weston Audubon Society, and “Subscribe” to our channel for easy access to our content.

Board Meetings—Aug 4, Sep 1, and Oct 6 on ZOOM at 6:00 p.m. Dates may change. Please contact a Board Member for details and to confirm date, time and instructions for joining if you wish to attend. See page 8. Copies of the minutes are on file with the Recording Secretary.

Need to check your expiration date, change your address or have any questions about your membership?  
Call National Audubon Society Member Services, 844-428-3826

Birds and Brew

Sunday afternoon bird outings in downtown Pensacola.

- September 18, 2022—Perry Doggrell, leader. Meet at 4:00 p.m. on the southwest corner of Seville Square catty-corner from the Pensacola Bay Brewery, 225 Zaragoza Street, for a guided walk near historic Seville Square and the Pensacola waterfront looking for birds. All skill levels are welcome, from novice to experienced birders ready to enjoy a leisurely stroll to Admiral Mason Park, Bartram Park or through the Square. Our 45 minute to one hour walk will end at the Pensacola Bay Brewery for a cold craft beer and conversation. Bring your binoculars, or if you forget them, come anyway as we may have a pair to loan. To register, email your name and cell phone number to Marcy McGahan at marcymcgahan@gmail.com.

- October 23, 2022—Steve and Cindy Coster, leaders. Meet at 4:00 p.m. in front of Perfect Plain Brewing, 50 E Garden St, for a guided walk to the historic St. Michaels Cemetery looking for birds. All skill levels are welcome, from novice to experienced birders ready to enjoy a leisurely stroll to St. Michaels Cemetery. Our 45 minute to one hour walk will end at the Perfect Plain Brewing for a cold craft beer and conversation. Bring your binoculars, or if you forget them, come anyway as we may have a pair to loan. To register, email your name and cell phone number to Marcy McGahan at marcymcgahan@gmail.com.

FMW Audubon T-shirts are for sale for $10/each for all sizes. The teal shirts, which were the most popular, have sold out except for a few XXL. We still have almost all sizes in tan and grey; however, L and XL in both colors are starting to run low. So get yours while you can - when they're gone, they're gone. Call Perry Doggrell, (850)288-0985

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**President’s Message**

Looking back on the past year, I am grateful for all the work your Board of Directors accomplished to keep Francis M. Weston Audubon Society vital and vigorous in keeping our traditional activities in place. We were able, within the confining restrictions of Covid, to provide most of the offerings you have enjoyed in the past. Thanks to the dedicated members of your Board for their hard work, and willingness to return this year with renewed energy.

As we enter a new fiscal year, we are hopefully cautious that we can plan our chapter activities with some of the restrictions of the past two years behind us. Due to the heat, we’ve postponed an event at Bruce Beach to weed, water, and work with other organizations in this collaborative project to emphasize native plants for birds; we hope to work around the city’s construction of a park on the adjacent property after the weather moderates. We will renew our monthly meetings in August, although a decision to return to the in-person format at PSC is still pending a review by your Board of Directors of our current Covid Policy of limited in-person contact. We will also consider the option to meet virtually for those members and friends who are still reluctant to meet in person.

We anticipate a more robust program of outdoor activities, as fall migrants descend upon us from their northern breeding grounds; we will continue, hopefully with fewer restrictions on group size, the monthly field trips and outreach sessions that you have enjoyed in the past (see other sections of the Skimmer for details). Our Education Chair position is vacant as I write, so our regular fall classes are in limbo as we seek to fill that position on our board (anyone who might be interested in that position please call me at the number on the back of this newsletter). You will be able to continue to keep track of our monthly activities thanks to our Publications, Publicity, and Website chairs who are constantly updating those media.

Please join us in one or more of the upcoming events this year, and, as always, good birding.

*Jim Brady*

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**Tripping—Walk with Me**

I am privileged to live in a place I’ve loved since I was a little girl. My family lived on Cervantes Street next door to an early version of the Golden Girls. Miss Ethel owned the house and Miss Cecil and Miss Louise who lived there were my future husband’s (Dan) great-aunts. Several times a summer my future father-in-law would drive up-town in his ancient Buick and collect (usually) Aunt Cecil and me for a morning beach trip.

Time passed and I met Dan when I was a senior in high school. He was already going to Auburn and I was headed there. He was working two quarters and going to school the short quarters so even though our dating was sporadic my visits to the bayou were elevated to fishing in the Gulf. We were engaged by my sophomore year. From the time he was little he planned to build his forever house on this land. We did just that in 1985 after careers in Atlanta. It was perfect for us both.

For years our daily schedule started with a walk-around and unless it is pouring rain, I still do the loop. First I go down the pier to speak to the herons—Great Blue and Green. Then I walk the beach looking for my three Stingrays who have territories right where the wavelets lap and stir tid-bits out of the sand. I can stand two feet away from them but if a stranger is with me, they flee. I loop back inland when I reach the neighbor’s and walk the old dune line back to the Pirate Ship (a platform that Dan and I built with lumber delivered by Hurricane Ivan.) It gives a good view of the estuary north of our house. There are nesting Red-winged Blackbirds, an Osprey nest, Clapper Rails.

It has been a pleasure to be able to share our yard with neighbors and with Audubon field trips, counts and classes.

*Ann Forster*
Bird Observations After a Hurricane

Birds are resilient creatures, and hurricanes can provide rare opportunities for amazing encounters with these feathered friends. While working storm restoration at the Pensacola Fairgrounds during Hurricane Sally, I had such an encounter. While walking towards the main building one afternoon, I was stopped in my tracks by the prettiest, small yellow and orange bird. It was perched on the door handle of a set of double glass doors that provided entrance to the main building. This seemed very odd to me, so I walked closer to make sure it wasn’t injured. It flew to a nearby handrail for the walkway, stayed for a few seconds, and then flew away. The fairgrounds are nothing but a few buildings, animal stalls for livestock, a very large asphalt parking lot, and a grassy field area. To see something this colorful was out of place. I cannot say for certain what bird species this was. I had never seen it before and couldn’t find it in my birding book. My initial assumption was a warbler or tanager, but I’ll never know.

Just as hurricanes disrupt our lives and change our landscapes, they do the same for birds. Storms can disorient them as they bring down trees and cause damage to nesting sites and food sources. What can we do to help our feathered friends during and after a storm? From my experience, leave your feeders out for as long as it is safe. Birds will feed up until the weather won’t allow them and then they will return in between wind and rain bands if they can make it. Consider sprinkling birdseed on the ground under shrubs. If you take your feeders down, hang them back up as soon as the storm passes. After Hurricane Ivan in 2004, I went to rehang my hummingbird feeders and had barely stepped out my backdoor before I had a hummer at every feeding port while I held it in my hands!

Alea Williams

Skimming —When Will We Ever Learn

As I was pulling out of the driveway I noticed movement in the undergrowth. I stopped to get a better look, and was amazed to see a bobwhite stealing through the brush—with six or seven chicks trailing in single file behind her. As they approached the street in front of us she stopped, regarding it suspiciously, never minding me following quietly behind. Amazing. I hadn’t seen a bobwhite in years, and here, at my feet, a bevy. But not as unexpected perhaps as it might seem. I chose this house, this lot after all, this subdivision, for just this wilderness setting.

I live on a bay front lot, on a cul-de-sac, in a forest of oak, pine, magnolia and hickory trees. A protected wetlands, with a series of ponds and run-off channels, surrounding the subdivision. The developer, along with the federal government, took pains to save as many of the mature native trees as possible in laying out the streets, and preserving the wetlands. So my neighbors and I must learn to abide our local wildlife, from bobwhites to black bears. And we have them all. From my deck I’ve spotted fox, armadillo, raccoon, possum, black bear and 160 bird species. Maybe a coyote once. Living adjacent to a protected wetlands may not suit every householder—bears can be a nuisance—but it was exactly what I wanted, and more importantly, what most of us should strive for: the protection of our natural heritage—our native trees and the birds and animals that depend on them. But just next door there’s Highway 98.

Soon the forest that fronts this roadway will be mostly gone—cleared completely for future commercial and residential development, with no regard whatsoever for the nature of the land, its trees, its wildlife. Traffic and attendant carbon monoxide will worsen air quality while these few remaining oxygen-fixing forests are decimated—to widen the roadway and clear the land—completely—for more development. It didn’t have to be this way. A tree ordinance could have saved the nature of the land, just as in my tract next door.

How was it that the developer of my tract, just next door, managed to save so much open space and still make room for people? If there really are developers who care about saving open land in a housing tract—just for nature—why can’t we find ways to encourage them, reward them? Our hope for preserving natural open space in our county depends on the intelligent planning of land—for people, nature and clean air.

Jere French
This report covers the period April to June 2022. Spring migration was rather slow this season with many typical trans-Gulf migrants low in numbers or absent. The Duncan migrant trap yard in Gulf Breeze did not have one Scarlet Tanager or a thrush! Unprecedented! The reason was that a very strong easterly wind influence prevailed most of the time during the last two weeks of April, the height of Spring migration. The upside of this was unprecedented numbers of migrants that normally migrate north up the Florida Peninsula or western Atlantic and sometimes miss us altogether. Cape May and Blackpoll Warbler numbers were unusually high, whereas trans-Gulf movements were shifted farther west of us as birds were wind-drifted toward Louisiana and Texas. In spite of fallout conditions (rain in the Gulf) on several occasions, fallbacks did not occur as the timing was all wrong for us and birds approached the coast ahead of the rain or well after it passed. One new species was added (pending FOSRC acceptance) to the three county list, an Elegant Tern* photographed by Jim Anderton at Destin Pass on 11 June.

Rare visitor from the west, a Western Tanager* was in the Duncan yard in Gulf Breeze on 17 Apr (Bob Duncan). There are over 40 records of the species locally. The Red-billed Tropicbird,* possibly the same bird that appeared here in 2017, was spotted by Rob Jamieson on 18 Apr and was seen subsequently but sporadically through 6 Jun (Johnny Green, Bob Potomski, Matt & Cindy Johnstone). The bird frequented the Little Sabine – Shoreline Park area. Black-bellied Whistling Ducks, first recorded in our area in 2003, continue to be reported and are apparently well established breeders. Rare visitor from the west, a Yellow-headed Blackbird* was in Gulf Breeze 23 Apr (Bob Duncan). Marilou Lehmann reported 18 Wood Storks in Blackwater River State Forest 28 Apr. The species does not breed locally with the closest colony in Leon County and these birds are probably en route from the MS catfish farms where they winter. A Western Kingbird* was in Gulf Breeze 29 Apr (Bob Duncan). The sparsity of noteworthy birds for April in this report attests to the rather dull Spring migration here.

May began with a Lesser Black-backed Gull* in Destin 5 May (Bruce Purdy). This European species is now rare but regular in our area and may be breeding as close as Greenland or Labrador. Rare visitor from the tropics, a Black-whiskered Vireo* was at Ft. Pickens 8 May (David Muth) and another was there 13 May (Jerry & Brenda Callaway). Thirty-one Purple Gallinules at International Paper Wetlands 10 May must have been impressive (Jerry & Brenda Callaway). A White-crowned Sparrow* at Ft. Pickens 13 May was an all time late departure date by 4 days (Jerry & Brenda Callaway). Blackwater River State Forest hosted 154 nesting pairs of Red-cockaded Woodpeckers this Spring (fide Larry Goodman). Rare in May, 3 Horned Grebes* were at Pensacola Beach 15 May (David Muth). A Black-throated Blue Warbler* in Gulf Breeze 21 May was an all time late departure date by 5 days (Bob & Lucy Duncan). Also late departing were 2 Marbled Godwits* at Ft. Pickens 25 May (Jeff Madsen). They were the latest ever departing by 17 days. Also late in departing by 12 days was a Savannah Sparrow* at the Okaloosa County Sewerage Treatment Facility 31 May (Jim Anderton).

A new nesting location of Cliff Swallows* was discovered by Rusty Prichard 4 Jun located under a US 90 bridge along the causeway. Eight to 30 birds were counted between 4 and 9 Jun by Prichard, Marilou Lehmann and Bob & Lucy Duncan. They were first discovered in Northwest Florida by Peggy Baker and Carole Tebay in May 2012 nesting under the railroad trestle in Milton. Eighteen Wood Storks were found at Shoreline Park 15 Jun (Scot, Lucy & Bob Duncan). Three pelagic Masked Boobies* were spotted out in the Gulf by Scot & Lucy Duncan from Ft. Pickens entrance (Pelagic Perch) 17 Jun.

The Skimmer welcomes reports of noteworthy birds. If you have something to report, please call Bob or Lucy Duncan at 932-4792 or email at town_point@bellsouth.net.

* Species with asterisks need documentation so that they can become part of the ornithological record.
Bird Navigation
continued from page 1.

The following represents a sample of the known facts and hypotheses of avian navigation. Of course at first the obvious factors of using the sun and stars was considered. And in fact birds apparently can observe the stars, but not in the way humans use celestial navigation. Rather, birds appear to notice the rotation of the stars around the north star, and determine angular directions from this determined north direction. They can eventually learn to do this even if they are only able to see a few stars. Similarly, the sun is an important navigation tool, but its use is not instinctive. A bird must learn the daily solar paths. This can only be accomplished if the bird is able to observe the sun throughout the day. Then it can learn the rapidity of its motion, and therefore form a mental picture of the sun's arc. Once a bird is adept at this solar navigation, it can become a preferred visual cue, rather than looking at landmarks. Interestingly when bird's eyes are covered with frosted lenses they can still navigate unerringly to their destination, so navigation is obviously multi-factorial.

Another aid to navigation that has recently sparked interest is the sense of smell. Birds appear to be aided in finding their way to familiar surroundings not only by seeing familiar landmarks, but by smelling familiar smells associated with their local area. The navigational tool which is most interesting, however, is the use of the earth's magnetic field. The fact that magnetism had a part to play in bird navigation was first showed over 40 years ago by a Cornell University scientist who attached small magnetic bars to pigeons. The control birds had non-magnetic brass bars attached. When the weather was overcast, the birds with the magnets became disoriented and had difficulty navigating back to their lofts.

Back in the 1960s, European scientists also noted that if birds in their period of Zugunruhe that were trying to fly south in their cages were exposed to an electromagnetic field, they became confused and flew in all directions.

So how does a bird process the earth's magnetic field? The complete answer is not clear yet, but much has been learned in the past few years. At first it was postulated that tiny magnetic sensors, iron-containing cells in the bird's beak were the organ of magnetic sensing, but this appeared not to be the case. Something in the bird's beak is important for navigation, because severing the nerves from the bird's beak to the brain will impair navigational activity. But just what is “detecting” the magnetic field? One clue comes from quantum mechanics. Certain chemical reactions can generate what are termed radical pairs. These are compounds with free, or unpaired, electrons. Electrons have a quantum mechanical property called “spin-angular momentum,” or spin for short. This property is not a simple spin as you would see on a bowling ball, but a characteristic of the subatomic particle which can be characterized as a vector (and therefore with direction and magnitude). Spin takes two forms, and can be represented by an arrow pointing up or pointing down. Particles with spin behave like microscopic magnets. Stable atoms in most molecules have electrons arranged in pairs with opposed spins (one with up arrow, and one with down arrow). These magnetic moments therefore cancel each other out. When a radical pair is formed, the unpaired electrons may have opposing spins or parallel spins. When first formed the radical pairs will shuttle back and forth between opposing and parallel spins, millions of time a second, for a few microseconds. Although the earth's magnetic field is too puny to affect most biologic processes or chemical reactions, it may carry enough force to influence the radical pair electrons’ alternating spin changes.

The complex process is thus postulated:
1. A chemical found in the birds retina, cryptochrome, will respond to blue light by generating radical pairs.
2. The radical pair begins rapid oscillations between spin states. The earth's magnetic field affects these oscillations.
3. The modified oscillating states undergo chemical reactions that change them into what's called a “signaling state.” The proportion of changes in the oscillating pairs depends on the bird's orientation in the Earth's magnetic field.
4. Neurotransmitters from the retina then signal a portion of the bird's brain called the Cluster N, where, mysteriously, the navigational data is processed. These postulates have received significant support from laboratory results, but are far from being proven as the actual mechanism of navigation in an intact bird. Scientists are still trying to confirm that radical pairs are actually formed in the cryptochrome of bird retinas. But it's an intriguing hypothesis, and many feel it is on the right track. We know the earth's magnetic field is involved in bird navigation; we know that external electromagnetic fields can confuse birds. It would be fascinating to prove that birds can actually “see,” not just feel, the earth's magnetic field.
Blackpoll Warbler—Long Distance Navigator (Alaska to northern South America). Photo taken in Anchorage, 6/6/2022.

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