

Chapter News

A MESSAGE FROM PRESIDENT KRISTINE RIVERS

The 2019 COT intern training class began this week, with 20 enrollees. As I introduced them to our chapter I remembered well my own first day in orientation and the amount of excitement and anticipation that I felt. I can't wait to get to know each and and to learn what brings him or her to TMN. The interns will be joining us at our September chapter meeting, so please give them a warm welcome.

It's the time of year when we begin making plans for changes to Board membership, and some people (including myself) will be stepping down from their current roles. If you've never served on the Board, I encourage you to give it some thought. It's a great opportunity to gain a deeper understanding of how the organization works and to become involved in shaping its future. Dave Brandes heads the Nominating Committee, so contact him if you're interested.

I am so excited about our upcoming **Fall Field Day on October 9th!** As a reminder, **the October chapter meeting will be held at Quintana Beach County Park, 330 5th Street, Quintana.** We'll have a brief business meeting before breaking into groups and rotating through six different activity stations: Seining in the Gulf; Beachcombing; Wetland Development; Beach Life; Dune Vegetation; and Dune Life. We'll be out on the beach, so please be sure to wear

appropriate clothing and footwear, sunscreen, insect repellent, etc. If you'd like to help drag the seining net, don't forget your waders!

We're also offering two optional afternoon activities: Birding at the Jetty, and Sea Turtle Nest Detection. It should be a fun day!

Did you know that our Brazoria County beaches are eroding faster than any others in the world? Our guest speaker for September, Dr. Glenn Jones, will provide some insight on that topic in his presentation, "The World's Most Erosive Coastline." Instead of Nature Notes, we've invited Dr. Susan Heath from Gulf Coast Bird Observatory to tell us about a citizen-science project related to Loggerhead Shrikes, for which she needs volunteers. **The September meeting will be held at First Presbyterian Church, 130 S. Arcola Street, Angleton.**

Is there a topic you'd like to know more about that we haven't yet covered? Suggest a potential speaker to Bill Ahlstrom, or better yet, let him know if you're interested in giving a presentation yourself. We have so much knowledge within our own chapter, and we'd love to learn more on a subject about which you feel passionate. See you soon!

Kristine Rivers is the president of the Cradle of Texas Chapter. She can be reached at rivers@tmn-cot.org.



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Masthead photo of Lostak Lake, Danbury, by Lorenda Baldwin.

Texas Master Naturalist Program
Cradle of Texas Chapter
Chapter News – September 2019

REMINDER:

The COT Calendar is overflowing with volunteer and AT opportunities throughout the fall season. Check them out!

Texas Master Naturalist Program—Cradle of Texas Chapter
General Meeting and Advanced Training
Wednesday, September 11, 2019
First Presbyterian Church
130 S. Arcola Street, Angleton, TX 77515-8903

8:30 AM – 9:00 AM	Fun and Fellowship Morning Snack Team: Oron Atkins, Janet Jackson Ellis, Mary Helen Israel, Larry Peterson, Mary Schwartz, and Bob Whitmarsh
9:00 AM – 9:40 AM	General Membership Meeting <i>This meeting is approved for 1.00 hour volunteer time</i>
9:40 AM – 10:00 AM	Nature Notes Speaker: Dr. Susan Heath, Director of Conservation Research, GCBO Topic: “LOSH: Urban Loggerhead Shrike Project”
10:15 AM – 12:00 PM	Advanced Training Speaker: Dr. Glenn Jones Department of Marine Sciences, Texas A&M Galveston Topic: “The World’s Most Erosive Coastline” <i>[Hours for Advanced Training (AT) TBD at close of meeting]</i>

Dr. Glenn A. Jones, Professor, Department of Marine Sciences at the Texas A&M University—Galveston, holds a Ph.D. from Columbia University (1983), an M.S. from Columbia (1979), and a B.S. from the University of Rhode Island (1977).

The Department of Marine Sciences provides high-quality undergraduate and graduate education and research in the physical sciences related to the coastal and marine environment as well as in management and policy decision-making for the utilization and preservation of marine resources. The department is located at Texas A&M University Galveston Campus, a special-purpose institution of higher education for undergraduate and graduate instruction in marine and maritime studies in science, engineering, and business, and for research and public service related to the general field of marine resources.

—Department of Marine Sciences, Texas A&M University at Galveston
<https://catalog.tamu.edu/graduate/galveston/marine-sciences/>



Dr. Glenn A. Jones

Membership Data Report by Pete and Peggy Romfh, Data Managers

Congratulations to those who will be receiving awards at COT's September 2019 General Meeting:

Recertification 2019 (Warbler Pin)

Jerry Eppner Robert Salzer

250 Hours Milestone (Silver Dragonfly Pin)

Mary Schwartz

5000 Hours Milestone (Gold Dragonfly Pin with Diamond)

Tom Morris

Impact Data YTD—January 1—July 31, 2019

10,999 Adults 28,176 Youth 39,175 Total

Hours Totals YTD—July 31, 2019

11,287 Hours VT 1,227 Hours AT 99 Volunteers



At the August 2019 General Meeting, Membership Director John Boettiger (far left) and President Kristine Rivers presented volunteer-hour-milestone awards to: Herb Myers, 1000 hours, Larry Ruhr, 500 hours, Chip Sweet 500 hours, and Don Sabathier, 1000 hours. Photo by Dick Schaffhausen.

Spotlight on Quail Predators: Raptors

continued from page 8

the same as those eating the most quail. Hawks are a primary predator of quail throughout Texas, but all hawks and other birds of prey are protected by state and federal law, unlike other mammalian predators such as raccoons and coyotes. So how can you help quail to evade their deadliest predators?

Perkins *et al.* (2014) determined that when attempting to evade a raptor, quail flew farther, faster, and landed in areas with relatively taller vegetation. This same study also found that quail only utilized woody shrub cover during raptor trials and did not utilize it during hunter, mammalian, and researcher threat simulations. Almost one-third of the times a quail was pursued by a hawk, it went underground (into a burrow) to escape the hawk. Improving habitat through careful management of woody plants can help minimize raptor predation and provide both escape and mid-day coverts for quail. Woody vegetation with dense branches, such as catclaw acacia (*Acacia greggii*), lotebush (*Ziziphus obtusifolia*), agrita (*Mahonia trifoliolata*), and littleleaf sumac (*Rhus microphylla*), hide quail from avian predators while providing shade and sometimes food as well. Half cutting mesquite trees is one way to increase suitable woody cover for quail.

Source: September 4, 2019, *Wild Wonderings*, Texas A&M Natural Resources Institute
<https://tinyurl.com/quailpredators>

HOGGTOBER FEST FIRST SATURDAY IN OCTOBER

THE VARNER-HOGG PLANTATION
CORDIALLY INVITES YOU TO JOIN US
FOR FUN AND ACTIVITIES IN OUR 2ND
ANNUAL HOGG-TOBERFEST!

SAT. OCTOBER 5TH 12 PM- 9 PM

ADMISSION • Kids Activities
\$3.00/ Kids 5 & under • Vendors
are FREE • Concession Stand

BEER TICKETS • Live Entertainment
\$4.00 Per ticket • Bucket Raffle

CONCESSIONS • Bergarten
Everything is \$1.00

Located at the Varner-Hogg Plantation.
For additional information please call (979) 345-4656

Tom Morris Achieves 5000-Hour Service Milestone

Tom Morris is a member of the COT Class of 2004. He also certified as a Texas Master Naturalist in 2004 and has recertified every year since. Tom was awarded the President's Call to Service Award in 2013. Among his many activities as a Master Naturalist, Tom has led COT members in Audubon Christmas Bird Counts and has also led numerous group trips to birding destinations including Matagorda Bay and King Ranch.



Row 1: Tom with Mickey Dufhilo and Ed Barrios at squids AT class in 2013 (photo by Pete Romfh); Tom with Dick Schaffhausen, Pam Peltier and Angelika Fuller on 2013 whooping crane trip (photo by Jerry Krampota); **Row 2:** Tom with Kirby Rapstein and Marty Cornell at 2011 Family Day at Hanson Riverside Park (photo by Neal McLain); Tom at the 2009 Hog Wild Holiday Party (photo by Neal McLain); Tom with Rich Tillman and Larry Kirby on the 2017 whooping crane trip (photo by Jean Britt); **Row 3:** Tom on the 2013 King Ranch trip with Jerry Krampota, Barbara Rapstein, Pam Peltier, and Angelikja Fuller (photo credit unknown); Roy Morgan and Tom receiving President's Call to Service Award in 2013 (photo by Neal McLain); Tom with Carolyn May-Monie and Tom Collins at the COT chapter's 10th anniversary celebration (photo by Neal McLain).

Scientists Find High Levels of Plastics in Arctic Snow from Coastal News Today

<https://tinyurl.com/arctic-microplastics>

Scientists say they have found high levels of small plastic particles in Arctic snow. Their findings provide more evidence that plastic is entering Earth's atmosphere and traveling great distances around the planet.



Scientists from the Alfred Wegener Institute use the board helicopter from the icebreaking research vessel Polarstern to collect snow samples. Even in the Arctic, the snow is polluted with microplastics. Photo by Kajetan Deja

A new report describing the discovery was published in *Science Advances*. A German-Swiss research team collected snow samples from the Arctic and other areas. They included northern Germany, the Bavarian and Swiss Alps, and the North Sea island of Heligoland. When the researchers examined the samples in a laboratory, they were surprised to find very high levels of microplastics.

Microplastics are very small pieces of plastic. These plastic particles are generally smaller than five millimeters in length. Other studies have found microplastics in the environment. They come from the disposal and breakdown of man-made plastic products and industrial waste.

Melanie Bergmann co-wrote the report on the new study. She told *The Associated Press* that while her team did expect to find some microplastics in the samples, they were surprised by the very large amounts. Bergmann is a researcher at the Alfred-Wegener-Institute in the German city of Bremerhaven.

The study found the highest levels of microplastics came from the Bavarian Alps. One snow sample from the area had 154,000 microplastic particles per liter. Samples collected from the Arctic had much lower levels. However, even samples from the Arctic contained up to 14,000 particles per liter, the study found. Earlier studies found signs of plastic in Arctic areas. Those microplastics were found in coastal

areas, sea ice, the seafloor and the seawater's surface.

The new study attempted to explore how some of the material could have been carried in the atmosphere. A limited number of earlier studies did find microplastics in the air of some cities, including Paris, Tehran and Dongguan, China. Bergmann said in a statement she believes the new study clearly shows that "the majority of the microplastic in the snow comes from the air." She said this idea is supported by research that studied the atmospheric movement of pollen from plants. In those studies, scientists confirmed pollen had traveled great distances to reach the Arctic. Other studies found that dust particles – which are similar to microplastics – traveled more than 3,500 kilometers from the Sahara Desert to the northeast Atlantic.

Bergmann said the new study suggests that much of the microplastic found in Europe and the Arctic comes from the atmosphere and snow. "This additional transport route could also explain the high amounts of microplastic that we've found in the Arctic sea ice and the deep sea in previous studies," she said.

The research team discovered many kinds of microplastics. Some were from paints commonly used to coat the surface of automobiles and ships. A rubber-like substance was also found that could have come from vehicle or boat parts or packaging materials, the report said. While there is growing concern about the effect of microplastics on the environment, scientists are still studying their possible harmful effects on humans and animals.

Bergmann said she hopes the new study will lead to more research on this issue. She also said she believes that microscopic plastic particles should be included in worldwide observations of air pollution levels. "We really need to know what effects microplastics have on humans, especially if inhaled with the air that we breathe," Bergmann said.

Bryan Lynn wrote this story for Voice of America Learning English based on reports from the Associated Press, Reuters, Science Advances, and the Alfred-Wegener-Institute. George Grow was the editor.

How to Handle A Massive Seaweed Invasion? Yucatán Towns Get Creative from *Coastal News Today*

by Jen Karetnick, *Public Radio Tulsa* <https://tinyurl.com/sargassum-creative-response>



Men walk between the sargassum towards a boat in Playa del Carmen, Mexico, May 2019. Photo: Victor Ruiz, AP.

The water off the coast of the Riviera Maya was warmer than I expected but far murkier. Endless pieces of seaweed, floating on and just below the surface, wrapped themselves like wet masking tape around my flippers and mask as I examined the second-largest reef in the world. "It's the sargassum," my divemaster from Tulaka Diving told me resignedly. "It's coming over from Brazil and getting worse every year."

Sargassum, a brown macroalgae, is wreaking environmental havoc in the Mayan Riviera, located along the Caribbean coastline of Mexico's Yucatán Peninsula, as well as the Caribbean, coastal South America, and Florida. The seaweed invasion is being fed by modern agricultural practices. As the Amazon is deforested to make way for farming, fertilizer used on that land is running off into the Amazon River and the ocean, encouraging blooms. Fertilizer runoff from other parts of the world is also fueling the problem.

The seaweed isn't just grouping in the water but washing up in unsavory masses on beaches from Cancun to Tulum. There, it stinks like a cracked Easter egg that someone forgot to hard boil. The odor is a tourism problem. Local governments and resorts are struggling to combat sargassum with all manner of measures, which include employing *sargaceros* to rake it up manually.

Grand Residences Riviera Cancun, located in Puerto Morelos, collects the sargassum from its beach every morning with a special lightweight crawler that simultaneously filters out the sand. From there, the seaweed dries, then passes through a crusher. The staff then distributes the product like dirt throughout the property's grounds; since the odor is gone, guests don't even notice. But sargassum is also a food-chain nemesis. "It suffocates the reef, suffocates the beaches, and suffocates the turtles nesting," says Denis

Normandin, a partner in the at-sea Sargassum harvester called The Ocean Cleaner.

Ricardo Diaz agrees with that assessment. He's the project director at Aventuras Mayas, an environmentally conscious tour company, and the founder of the G.R.E.A.T. (Green energy, Recycling, Ecological toilets, Aqua protectors, Trash management) People Project. "The massive arrival of Sargassum to the Mexican Caribbean shores has resulted in the death of different types of fish, sea cucumbers, sea urchins, and crabs, among others," Diaz says. Marine scientists from the National Autonomous University of Mexico, based in Puerto Morelos, say that sargassum is killing dozens of species in the Quintana Roo region. Economically speaking, Diaz says, "the most affected are lobster fishermen, who have seen a reduction in supply."

This past January, the *Riviera Maya News* reported that the Tulum lobster catch was 80 percent below an estimated 200-ton-target, with only one month to go until the season ended. This year, the season began in July and will end in February 2020. Catch statistics aren't yet available, but researchers expect this year's sargassum invasion to be larger than in years past. The seaweed wads, thick as yoga mats, are doing untold damage to tidal and reef ecosystems by disrupting the photosynthesis cycle and depleting the oxygen in the water in places. Normandin, along with partners Francesco Maselli and Denis Jimenez, produced one approach to tackle the problem: The Ocean Cleaner. It's a boat and trailer that sucks the sargassum up from the surface. After it's collected, Normandin says they turn it into "a compost mixed with food scraps from hotels." Maselli says that a single boat-trailer conveyor can harvest "up to 500 metric tons of sargassum from the sea per day, depending on conditions."

The tide, however, is currently against them: Experts say conditions are ripe for overgrowth, and they predict the Riviera Maya will receive between 800,000 and one million tons of sargassum this year. Sargassum islands, formed by ocean currents called gyres, are entire ecosystems of their own. They offer shade from the sun; food for both fish and ocean birds; safety and camouflage; and even transportation for sea creatures as the mat drifts. A natural habitat for sea horses, crabs, turtle hatchlings and other juvenile sea creatures, Sargassum islands are, when in balance, a healthy part of the ocean's life cycle.

Continued next page

How to Handle A Massive Seaweed Invasion? Yucatán Towns Get Creative *continued*

More recently, though, "a recurrent great Atlantic Sargassum belt (GASB) has been observed in satellite imagery since 2011, often extending from West Africa to the Gulf of Mexico," according to a study recently published in *Science*. One of the authors of that study, Brian Lapointe, a research professor at Florida Atlantic University's Harbor Branch Oceanographic Institute in Fort Pierce, Florida, calls Denis Jimenez's Ocean Cleaner boat design "an innovative and efficient tool to help moderate the Sargassum influx."

Still, the GASB is more than 20 million tons – and growing. Normandin estimates that the seaweed, being fed *en route* from Africa through Brazil, doubles in volume every 18 days.

Others are also experimenting with new uses for all that seaweed. The Sargasso Industrial Association, a collective of five private-sector companies, is turning the macroalgae into, among other things, biofertilizer for food crops. It's already been tested on vanilla, cocoa, sugarcane and tomato crops.

Meanwhile, the Puerto Morelos Protocol, a joint effort between the town government and civic leaders to deal with sargassum, passed what is essentially a tourist tax to pay for clean-up initiatives.

These efforts are seeing results. As of Friday, Puerto Morelo's beaches were declared free of sargassum by

municipal president Laura Fernandez Piña. But that, of course, can change by the day. Aside from lobster, chefs in the region haven't necessarily noted rising fish prices or falling supply – yet. But that's largely because fishermen are following the fish with the mobility to leave de-oxygenated areas.

Sargassum is also, apparently, edible. Jabib Chapur, vice president of food and beverage at Palace Resorts, recently started to experiment with the seaweed for dishes in his test kitchen. "Basic studies were carried out on foods such as those with crunchy textures, salsas, and gummies, which resulted in very good sensory characteristics," Chapur says. But he's not putting sargassum on the menu anytime soon, he says, because he can't guarantee that it's completely nontoxic.

It's possible that the sargassum could contain high levels of bacteria or heavy metals. Recently, high levels of *enterococci* were found in the sand in Florida's Key Biscayne, a barrier island, where sargassum is tilled into the beach. Scientists from University of Miami and Nova Southeastern University believe the seaweed encounters the bacteria from humans as it nears the shore. These levels ramp up as the seaweed piles up and steams in the heat, becoming the ideal incubator.



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**BASF Planetarium
Fall Astronomy Day**
October 5, 2019
4 pm – 10 pm

Astronomy Activities

Daytime Safe Solar Viewing

Night time Telescope Viewing

Free family event, clear or cloudy

Spotlight on Quail Predators: Raptors

by Shelby McCay, Project Coordinator, Texas A&M Natural Resources Institute

Raptors, a.k.a. “birds of prey,” include eagles, hawks, falcons, owls and many other species. Which species are the main predators of quail? The primary avian predators of quail are small, agile raptors referred to as Accipiters (*Accipiter spp.*) [which include Cooper’s hawks (*Accipiter cooperii*) and Sharp-shinned hawks (*Accipiter striatus*)] and northern harriers (a.k.a. marsh hawks; *Circus cyaneus*) among others. Accipiters are considered some of the most efficient predators that quail face, with Cooper’s hawks touted as “the outstanding natural enemy of the bobwhite” (Stoddard 1931). Other raptors known to take grown bobwhites include various broad-winged hawks, a.k.a. Buteos (*Buteo spp.*, such as Red-tailed Hawks) and large owl species, such as Great-horned Owls (*Bubo virginianus*) or Barred Owls (*Strix varia*). All raptors are protected by state and federal law and therefore it is illegal to kill, trap, harass or possess these species.

How do raptors hunt quail?

Studies have shown that the reaction of quail in response to avian predators is innate and instinctive. Their short, round stature, small wings and large feet often make running an easier get-away than taking flight, but without sufficient cover, quail are “sitting ducks” when it comes to predators. Raptors mainly prey on adult quail, but there has also been evidence of raptors targeting quail nests as well. Terhune *et al.* (2008) documented three cases of three different raptors depredating bobwhite nests (Barred Owl, Cooper’s Hawk, and Great-Horned Owl) during incubation at their study sites in Georgia.

But what about the chicks? Quail chicks are precocial, meaning they are covered in down feathers when they are born and able to leave the nest shortly after hatching. Since they are so small and mobile, it is unlikely that raptors will expend the energy needed to hunt them (Terhune *et al.* 2008). Screening cover, consisting of mostly tall bunchgrasses, broad-leafed forbs, and shrubs, allows chicks to roam with concealment from predators, including raptors who may be hungry enough to make a meal out of them.

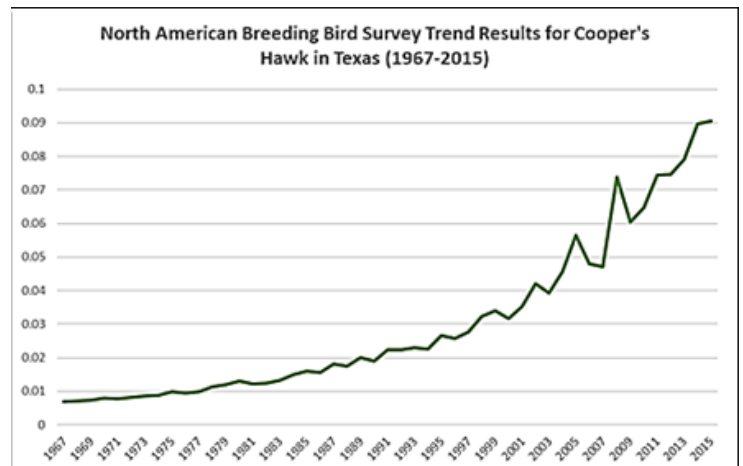
Affects raptors have on quail populations

Since the late 1960s, many raptors—including Cooper’s hawks—have increased in abundance. More hawks eat more quail, right—so does this mean they’re having a negative impact on quail populations? Are they contributing to the steep decline we’ve seen recently? The answer is not so simple.



Survival rates of bobwhites vary widely across seasons and can be influenced by a variety of factors. Bobwhites are subject to naturally high levels of mortality; in any given year, only about 20%-30% of the population will survive. Hawks, particularly Cooper’s and Northern Harriers, certainly contribute to

the death toll of bobwhites, but there are many other variables at work as well. It’s also important to remember that not all raptor population growth is happening in bobwhite habitat and that Accipiters don’t ONLY predate upon quail—they’ll also take songbirds, doves, or even small mammals and reptiles as prey. The cumulative impact of raptor predation on actual quail populations is evident only at local scales and unlikely to cause large changes in their overall population.



North American Bird Survey Trend Results for Cooper’s Hawk in Texas (1967-2015). Data from Sauer *et al.* 2017.

Raptors also have direct impacts on pen-raised quail, as they will congregate in areas where quail have been released. Perkins *et al.* (2018) found that avian predators can easily distinguish between flushes of wild and pen-raised bobwhites and had a 100% success rate when pursuing pen-raised birds, versus only a 7.2% success rate with wild birds. In one study, investigators found that hawks increased by 35%-109% during a two-month period following pen-raised quail releases but only by 11%-52% in a control site. Rather than adding their numbers to wild quail populations, pen-raised birds may just be feeding raptor populations instead.

How to reduce raptor predation on quail

One major issue with predator management for quail is that the predators that are easiest to control may not be

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Cradle of Texas Chapter Board

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- All messages are held for moderation by the TMN State Coordinator.

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