

GUY HARVEY

MAGAZINE

The Art of Ocean Conservation
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Golden Opportunities

The Stunning Seascape of the Golden Isles

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Women on the Water

Females Finding Fun Fishing





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by Dr. Guy Harvey





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CAPT. SPUD WOODWARD



A native of Georgia, Capt. Spud Woodward turned his childhood fascination with the natural world into a 34-year career working as a professional fisheries biologist. He received a Bachelor of Science degree in aquatic biology from Augusta College in Georgia and a master's in wildlife and fisheries science from the University of Tennessee. Woodward recently retired from the Georgia Department of Natural Resources but remains neck-deep in the industry as owner of a fish and wildlife management consulting and communications business. He also serves as the Georgia governor's appointee commissioner to the Atlantic States Marine Fisheries Commission and is a member of the South Atlantic Fishery Management Council.

A well-published writer and photographer with credits in such publications as *TIDE* magazine, *Outdoor Life*, *Sport Fishing*, *Georgia Game and Fish*, and *Georgia Outdoor News*, Captain Woodward has been a certified scuba diver since 1984 and a USCG licensed vessel operator since 1995. From 1988 to 2000, Woodward also was a sponsored saltwater competitive angler participating in king mackerel tournaments throughout the South Atlantic and Gulf of Mexico. A lifelong, avid outdoorsman, the captain enjoys freshwater and saltwater fishing, turkey hunting, wing-shooting, diving, and communicating about these pursuits through words and images.

JOHN KRIVEC



These days (a.k.a. the “selfie era”), most people want to be in front of the camera. But being behind the lens is now and always has been John Krivec’s passion. He was first, um, exposed to photography in Atlanta when he assisted some of the city’s top shooters on catalog and magazine assignments. Watching the pros do their thing inspired John to see if he could slip into that role himself. Trying to break into a tough industry led him to wedding photography, where he excelled in capturing couples tying the knot.

“Those early projects were a lot of fun,” John said. “They let me use all of those different skills I’d learned and adapt them to the craziness of a wedding day.”

After one too many weddings, and maybe too many demanding mothers of the bride, John packed up his camera gear and set out to capture the world, on film, that is. It was while he traveled the planet—from Alaska to Asia—that he discovered what he loved to pursue the most: landscape and travel photos.

With the soles of his traveling shoes getting thin, he returned to Georgia, but instead of landlocked Atlanta, John headed for the coast where he could blend water, land and sky into one setting. The Atlantic shoreline from Savannah south to Jacksonville, and the islands of St. Simons, Little St. Simons, Jekyll and Sea Island became John’s home and primary subject. In his limited free time, John knocks the dust off of his backpack and hits the road to add images to his library. He’s crisscrossed the United States 10 times and has no plans to stop. In fact, as this issue was being wrapped up, he was heading on a 10-day photo jaunt to Acadia and Maine. Surely, more incredible images will arise from that trip.



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ANOTHER BUSY YEAR

Even though there are still a couple months left in this year, the first 10 months have been busy and productive for the Guy Harvey organizations. We've continued our vital research on sharks, billfish, and roosterfish, I've made presentations to literally thousands of people about marine conservation, and we've continued to spread that message via *Guy Harvey Magazine*, social media, and all of our digital platforms. In between everything, I've still been able to find time to pursue my passions: fishing, diving and, of course, painting!

One programme that we're extremely excited about and is showing great promise is our roosterfish study in Panama. There's really very little known about these beautiful, pelagic predators except that they're an adrenaline rush to catch and can bend a rod to the breaking point. In an effort to gain meaningful data to conserve this fabulous sport fish, we implemented a long-term tagging effort through our partnership with Tropic Star Lodge. In 2017, we tagged 82 fish and will continue to collect data and monitor the population well into the future.

I was honored to receive the award of Honorary Chancellor and Doctor of Humane Letters from President Anne Kerr at Florida Southern College in Lakeland, Florida, earlier this year. And, I gave the keynote address at the Science, Technology, Engineering, Arts and Mathematics (STEAM) fundraising luncheon for the Palm Beach State College Foundation, where 700 corporate leaders and professors came to hear me emphasize the growing threats facing our oceans.

My daughter Jessica and I, along with a team of volunteers, launched a new investigation on the silky shark (*Carcharhinus falciformis*) from our home base in Grand Cayman. Silkies are the second-most caught shark globally, following the

blue shark, and are significantly understudied. With the current pressure these animals are under from commercial longliners and the shark fin trade, we're planning on documenting their movements to better understand their behavior in order to save them from further exploitation. Luckily, Caribbean countries, including the Cayman Islands, have designated their entire waters as shark sanctuaries, making it a great place to start to discover where else this pelagic species travels.

In addition to studying silky sharks, the GH Ocean Foundation worked with two major fishing tournaments in Grand Cayman this year—the Kirk Slam Dolphin Tournament and the Cayman Islands International Fishing Tournament—to provide support for an ongoing research project to study oceanic whitetip sharks (OWT) in the Caribbean. Although these two tournaments target dolphinfish, billfish, wahoo, tuna and marlin, they often hook oceanic whitetip sharks incidentally. When this happened, anglers radioed researchers already stationed in the fishing grounds, for them to take the shark and attach a satellite tag. GHOF researchers were thrilled to deploy five Smart Position or Temperature (SPOT) tags during the two events, one of which was attached to a 7.5-ft., 200-lbs. OWT. Teams that assisted with the research were rewarded \$1,000 for their efforts, including the boats *Runaround 3*, *Down the Hatch* and *Bloodline*. Once the most abundant large predator on the planet, oceanic whitetip shark populations have been reduced 98% in the past 30 years, so our research is increasingly critical to saving this species.

We've also had two major victories for billfish and sharks this year. NOAA



increased protections of mako sharks in U.S. Atlantic waters and the Billfish Conservation Act (BCA) was signed into law in August. Recent stock assessments of makos done by the International Commission for the Conservation of Atlantic Tunas (ICCAT) show that their populations in the North Atlantic are overfished. In 2017, the GH Research Institute presented a paper at the ICCAT meeting. I believe our efforts influenced NOAA's decision. The BCA now prevents billfish from being sold in the continental U.S., which has been the world's largest importer of billfish in past years. Many of these great fish have come from Costa Rica, so perhaps the passage of the BCA will help to protect the species along all parts of the Central American coast.

Yes, it's been a busy year, and I'm not even including the conservation cruise with Norwegian Cruise Line or the various fishing shows we attended. In another milestone, we teamed up with the state of Georgia's Department of Natural Resources (DNR), as you'll see within this magazine, to highlight the incredible conservation work they're doing. This is the seventh edition of *Guy Harvey Magazine* that has celebrated the work the state agencies do to keep our fisheries sustainable. We have been quite impressed by what Georgia's DNR has been able to accomplish and I'm sure you will be, too, as you read through this issue. Our thanks go out to those men and women who dedicate their lives to protecting our natural resources.

Finally, I can't leave you without thanking you for supporting this magazine, the Guy Harvey Ocean Foundation and the Guy Harvey Research Institute. We're having our 10th Annual GHOF Fundraiser on November 3rd in Ft. Lauderdale to raise money for our research and celebrate another great year. Please come if you can. Check the website www.guyharvey.com for details.

I hope to see you there! 🐟

Fair winds and tight lines!



GUY HARVEY, PhD

is an internationally-acclaimed artist, fisherman, scientist, and world traveler, who devotes much of his time and money toward ocean conservation.

Goofy Foot Sur-furs hit St. Augustine Beach

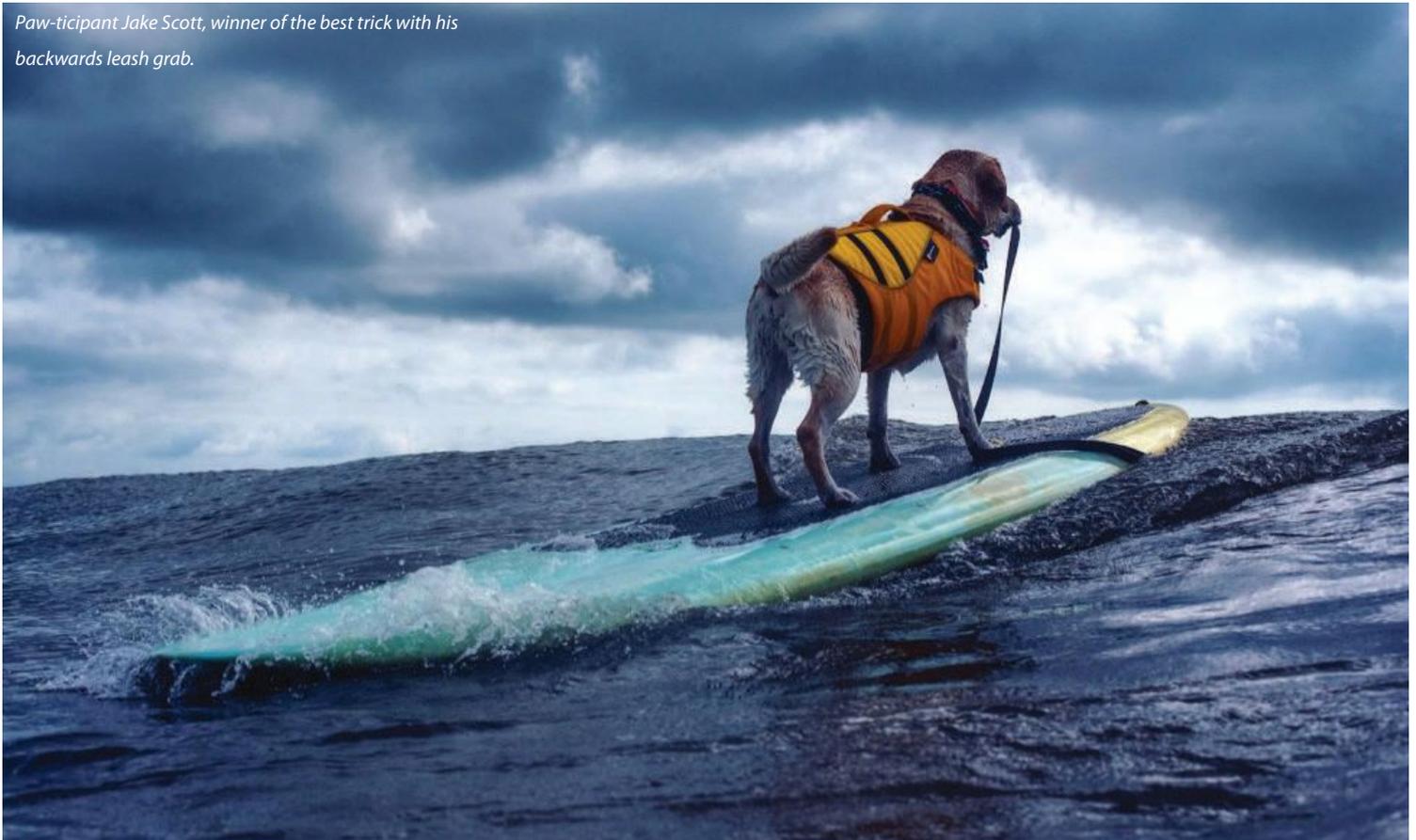
In July, dogs and their owners hit the beach to “hang 20” for a charity event at the Guy Harvey Resort in St. Augustine Beach, located on one of the best, dog-friendly beaches along the East Coast that offers up perfect, beginner-level waves. Gathering directly outside the new Guy Harvey Resort, beginners, first-timers, and seasoned water dogs with their humans joined Guy Harvey Resorts, Surf Station, Tito’s Vodka, K9s for Warriors, Faux Paws pet boutique, Petco, and Del Mar Veterinary to raise money and awareness for K9s for Warriors, a local 501c-3 organization.

K9s for Warriors provides service canines for military veterans suffering from post-traumatic stress disability, traumatic brain injury, and other traumas resulting from military service post-9/11. They are the nation’s largest provider

of service dogs for disabled American veterans and are credited with matching 323 military veterans with their service dogs. The dogs are rescued directly from shelters, other rescue organizations and select breeders. These service dogs perform a multitude of tasks for their owners, including helping them to cope with panic attacks, waking them from night terrors, enhancing their physical mobility and easing their anxiety in social situations.

Four-legged and two-legged contestants alike participated and took the term “goofy foot sur-fur” to another level while entertaining all with their personalities, charm and talents. All shapes and sizes participated, from a miniature Australian shepherd named Roxy to a 100-lb. American bulldog named Rocky. Dogs competed for prizes and awards provided by Faux Paws pet

Paw-ticipant Jake Scott, winner of the best trick with his backwards leash grab.



boutique, Starfish Vision, maker of the Guy Harvey dog collar, Jared Jeffs Photography and Petco.

The event kicked off with Captain Scott Cushine, the adventure coordinator at the Guy Harvey Resort St. Augustine Beach, and his helpful young mermaid Aria playing a conch shell, the bagpipe of the sea, to signal the start of the event. A low, haunting blast rolled above the waves, then faded into the distance as the competitors lined up and waited to hear their names called.

Then, the fun began, as sure-footed and not-so-sure-footed dogs with their owners all competed to show off their style and skills for celebrity judges, who decided which teams were worthy of moving on to the next heat. There was Chris Johnson from American Ninja Warriors, beloved St. Augustine author Gary Williams with his celebrity, 4-legged sidekick Guen, and Faux Paws owners Mark and Lynn Small. Many locals cheered on local favorite, Jake Scott, the yellow lab who surfed backwards and held his own leash, a trick which is now affectionately called “The Leash Grab” within the St. Augustine Surf Community.

Not all dogs were local, though. First time sur-fur Jinks traveled from Gainesville to take part in the event, and Lily from Stuart, who brought her own hot pink, Hawaiian-print life vest and surfboard complete with custom paw print decals. She could “hang 20” with the best of them!

Judges watched for best solo surfing, best tandem, best style, rookie of the year, crowd favorite, best wipeout, best trick, longest rides and more. A fun time was enjoyed by all and Guy Harvey Resorts is already preparing for next year's event in July 2019, so there's plenty of time to get your puppy in training, up on the surfboard and out in the waves! Watch for details, and don't miss a fun day at the beach with your 4-legged friends when visiting St. Augustine Beach. 🐾



Above: Roxy, the Australian shepherd, overall winner and winner of tandem surfur. Below: Paul, the corgie, hangin' 20 and winner of the longest ride.



The SKA - Fishing Focused and Family Oriented

BY **GARY CAPUTI**

Back in the early 1990s, a group of folks with a passion for catching line-ripping king mackerel had an idea. There were lots of kingfish tournaments, but no sanctioning body. So, naturally, they took action and started the Southern Kingfish Association (SKA). The original idea was to raise competitive king mackerel fishing to the level of other professional sports. They partnered with existing kingfish tournaments to create the Southern Kingfish Tournament Trail and offered larger cash purses to encourage participation in more tournaments. The season ended with a special king mackerel championship.

Over the years, anglers from the southeastern and Gulf states began to flock to the new association. In the first few years, membership rose to more than a thousand, creating a driving force in saltwater tournament fishing. That many anglers competing against each other began to affect fishing in unexpected ways. The development of today's highly-popular center console boats was impacted by the tournament trail, as well as rods, reels, line, leader, terminal gear and accessories like downriggers and outriggers.

Today, 27 years later, the SKA is still the largest saltwater tournament trail in the country with 40 sanctioned events and a highly anticipated annual National Championship (held in Morehead City, North Carolina, November 2018). Dozens of industry leaders like Mercury Motors and Garmin Marine Electronics support the trail, and over 5,000 avid anglers are on the membership roster for 2018.

SKA prides itself in being family-focused. Competitions are open to men, women and children and, in many instances, entire families compete together as a

team, sometimes three generations from a single family on one boat.

In 2014, the SKA was acquired by Florida's Sarasota National Boat Owners Association, a family-owned and operated marine organization since the early 1980s. NBOA provides boat insurance and membership benefits such as 24/7 emergency on-water towing, marine financing, extended boat warranties and discounts on boating safety gear.

"We were extremely impressed with the SKA and everything it stood for from our experience as a sponsor," said President and COO of the National Boat Owners Association Cary Hanson. "With a presence at so many of their tournaments, we knew the membership base well and felt it would be a natural extension of our current operation."

"An integral part of the SKA's success comes from the support of our sponsors, such as Mercury Marine, Garmin Electronics, Loadmaster Trailers and Strike Zone Fishing," Director of Operations David Worsham said. "The tournament trail is quite an operation. We're on the road, traveling and attending 40 tournaments each year. The sponsors willingly give back to our anglers, who use their products and services. This relationship really helps make the tournament trail a success."

Saltwater anglers across the Southeast have always joined SKA to be a part of something bigger. That remains true today. Instead of just fishing their local tournaments, SKA anglers are ranked among thousands of teams. Anglers' achievements are followed by family, friends and fans, making the sport of the catch that much sweeter.



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There's a lot for kids - from arcade and board games to a human-sized checkers board. There's an 18-hole mini golf course, 18-hole disc golf course, swimming pool, whirlpool, playground, horseback riding, arcade, movie-theater and activity center.

Solarize Your Dock

Most dock lights are powered with standard household 110V wiring that runs from shore. This can be extremely dangerous and, sadly, many people die each year by electrocution because water and electricity can be a deadly combination. This is why the U.S. Army Corps of Engineers dock lighting specifications do not allow shore power. After two brothers, aged 8 and 13, were electrocuted at the Lake of the Ozarks in 2015, inventor Julian Jordan decided to take action. The result is the Hercules solar powered dock light. Not only is the solar light in compliance with Corps specifications, but it also meets their "Dark Sky Friendly" requirements, meaning that the light is directed down toward the dock and not into the sky.

While this product was built with safety in mind, it's also a great fit at remote locations like hunting and fishing camps and any off-grid application.

Part of the genius behind the Hercules is its low power consumption LED lighting, which allows the use of 12V batteries that can also charge boat batteries,



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or even power boat lifts (a power inverter is necessary for this). When fully charged, the powerful, 155-amp-hour battery can run the light for three nights without recharging from the sun. It generally takes about a day of sunlight to fully charge the battery.

Manufactured in North Carolina by Ultimate Gig Lights, the Hercules comes as a kit and can be assembled in about 30 minutes. Its four parts can be disassembled just as quickly for easy storage in case of hurricanes or strong storms.

Eliminating the risk of high-voltage electrocution was the main goal of the Hercules, but it also provides convenience, ease of assembly and, most importantly, lots of light. The solar panels and battery life are guaranteed for three years but their life expectancy can be as many as 20 years.

Retail cost is \$1,895. For more info, visit www.ultimategiglights.com. 



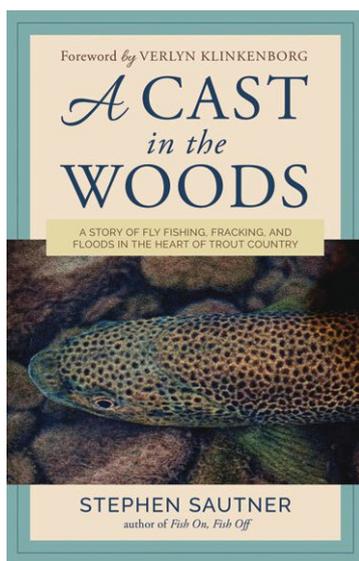
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Cabin Fever

"A Cast in the Woods:" Former *New York Times* "Outdoors" columnist tells the story of a fishing cabin perched precariously between the forces of nature and man.

When angler and author Stephen Sautner bought a streamside cabin and some land in the heart of fly fishing country in New York's Catskill Mountains, he thought he had reached angling nirvana.

Little did he know what would come next: a series of historical floods

that virtually destroyed the stream and woods around his property, followed by a land rush over fracking for natural gas.

In *"A Cast in the Woods: A Story of Fly Fishing, Fracking, and Floods in the Heart of Trout Country,"* Sautner takes on these threats—between casts for wild trout and other gamefish. He painstakingly restores the stream while battling invasive

species and pests. He becomes a reluctant activist, fighting against fracking wells planned just a short walk from his front porch. Along the way, he gains a better understanding of stewardship and the interconnectedness between angling and the natural world.

The book describes not only the perils of cabin ownership, but also the joys: from taking his young son on "stream walks" to catch frogs and crayfish to his lovingly planned, environmentally-friendly outhouse where composting worms do nature's dirty work.

Interspersed between chapters, Sautner's fishing journal entries underscore the Catskills' haunting draw to fly anglers for the past 150 years. He casts dry flies for large wild brown and rainbow trout in the Upper Delaware River. He hunts scale model brook trout on tiny nameless streams. He wrestles leg-sized carp out of a farm pond at the request of a local farmer and neighbor.

In a review by *The Nature Conservancy*, Matt Miller says, "This is more than a fishing book, but I'd be remiss if I didn't note that Sautner is perhaps the best writer on this sport today."

Sautner has a keen eye for the natural world (he is a communications director for the Wildlife Conservation Society, which runs the Bronx Zoo). His descriptions of everything from the tiny mayfly nymphs that live in his stream to the black bears that lord over the woods around him serve as the reader's woody yet lyrical trail guide.

In 2016, he wrote the acclaimed *"Fish On, Fish Off,"* touted by *Trout Magazine*: "Grippy and entertaining... with a great knack for wit and humility." 🐟

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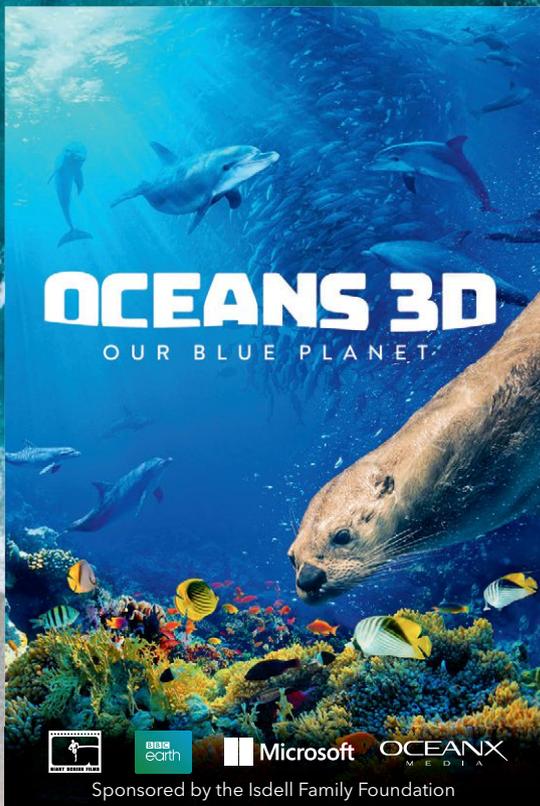
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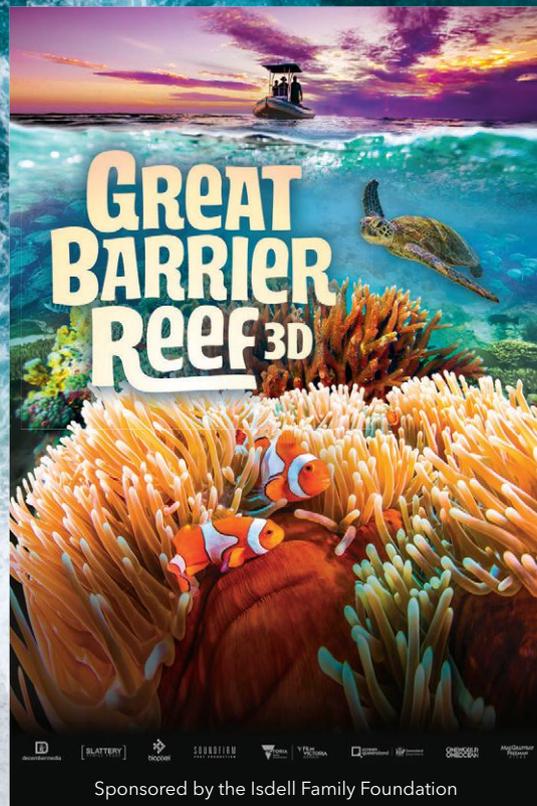
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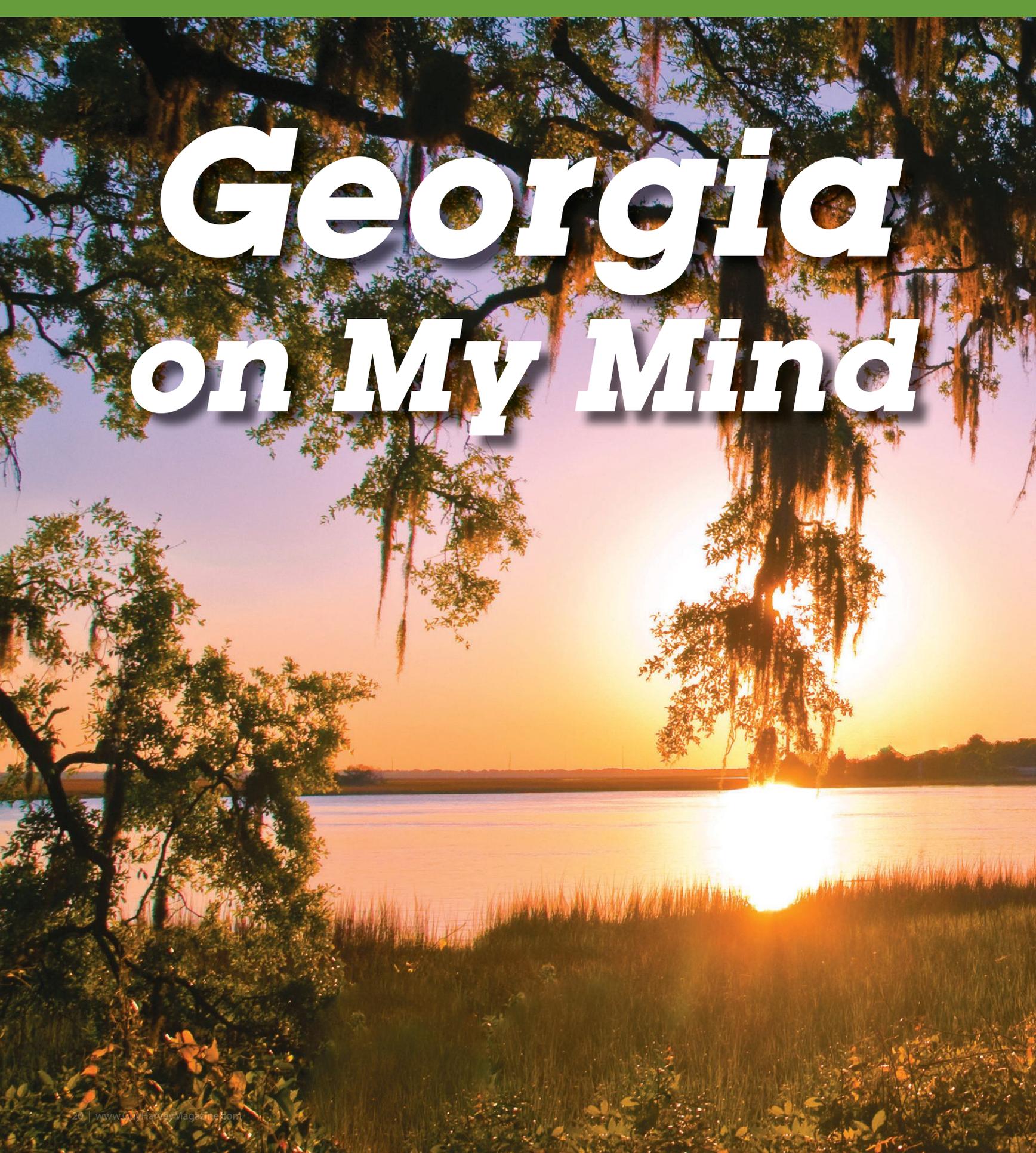
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Georgia on My Mind



With just more than 100 miles of Atlantic shoreline, the Georgia coast still boasts incredible saltwater fishing opportunities. Although the waterfront is relatively short, it holds more than one-third of the entire Atlantic Seaboard marshland. The rivers and bayous provide vast habitat for shrimp, crabs and inshore species like flounder, redfish, trout and tarpon. Offshore, you'll find a range of pelagic species from marlin to tuna to mahi mahi to wahoo.

In the following pages, we take a look at how the Coastal Resources Division of Georgia's Department of Natural Resources is working to conserve the habitat and sea life and keep a sharp eye on sustainable fisheries. It's never an easy job, but these men and women dedicate their lives daily to the health and welfare of the coastal environment.

For more info: ExploreGeorgia.org

GOLDEN OPPORTUNITIES

Four Islands of Fishing

BY FRED GARTH

Fire in the sky over the salt marshes of St. Simons Island, one of Georgia's Golden Isles. Photo by John Krivec.



Warning: Google maps will fry your brain. Forget about your teenager's addiction to Snapchat. Many fishermen, like me, are hooked on high-definition, aerial images. Before we hit a new spot, my fishing buds and I will zoom in and out of satellite maps sizing up the fishiest territory.

"Look at that!" one will say. "See, right there! Where that creek washes over that sandbar into that deep hole. I guarantee that holds some hoss daddy bull reds on an incoming tide."

"Yep," another will say. "Looks real fishy." Sound of carbonated beverage opening.

My reason for admitting this is because I found myself drooling slightly...again...as I surveyed the deep green images of Georgia's Atlantic coast—specifically the islands of St. Simons, Sea Island, Little St. Simons and Jekyll Island—aptly known as the Golden Isles. I wiped some spittle from my chin as I surveyed the tangled mass of rivers, tributaries, deltas, estuaries, bayous and marshland. The humongously expansive area makes up approximately one-third of the entire Atlantic Seaboard's marshland, even though the entirety of Georgia's footprint along the Atlantic Ocean is just over 100 miles. From St. Marys River on the Florida border up to the Savannah River that borders South Carolina, the coast is one massive estuarine nursery, a magnificent sea life delivery room.

I'm no stranger to coastlines with a Napoleon complex. My home sits

near the Alabama Gulf Coast with just 55 miles of salty waterfront, which the Nick Saban lovers have packed with wall-to-wall high-rise condos that block the view and breeze. Since this was my first voyage to the Golden Isles, I kind of expected a lot of the same beachfront clutter that comes with concrete condos and boats gone wild. Oh, how wrong I was. The Golden Isles have a “treeline” height restriction on buildings, ensuring that none of the hotels blot out the sun.

After driving for five hours and negotiating gnarly construction and congestion of I-95 around Jacksonville, my ticker slowed to a purr as I entered the fairyland world of St. Simons Island. I had ducked under the shade of thick, Spanish-mossed oaks and pines and was tooling along at a blazing 15 miles per hour on a scenic two-lane, passing quaint board and batten eateries, mom-and-pop shops, and quiet stretches of residential bliss. I even turned off the namaste yoga CD I'd been playing to calm my road nerves.

As I putted merrily along, my little perma-grin began to spread. I'd chanced

upon what looked like an old, converted service station where a literal mob of people waited anxiously outside. I eased into the parking lot when I saw the sign: Southern Soul Barbeque. A half-rack and bowl of Brunswick stew later, I was back on the two-lane picking pork from my molars and doing the Buddha rub on my belly. A cold beverage was in order. Uh, I guess I mean, another cold one.

The more I meandered around the island, the more I chilled. The landscaped yards, slow pace and simple quaintness is peaceful. It's all accented, of course, by sprawling green fields of manicured Bermuda and bent grasses—world-class golf that attracts hackers and pros alike. Not surprisingly, big money-winning PGA pros like Matt Kuchar, Zach Johnson, Kevin Kisner and Davis Love, III, live and train there. I tried to recall my handicap and remembered that just playing the game is my handicap. The tiny white ball mocks me.

Anyway, you get the idea. These Georgian barrier islands, that have hosted family vacationers for many decades, have maintained their gentle pace and



Old growth oaks and golf are a quintessential fabric of the Golden Isles. Photo courtesy of Golden Isles CVB.



Catching bait to catch the fish. Photo by John Krivec.

charm. It's not at all by accident. Ironically, Scott McQuade, president & CEO of the Golden Isles Convention & Visitors Bureau, also serves on the board of directors for the St. Simons Land Trust. One of his jobs is to attract visitors to the area; the other is to protect and preserve the natural assets of the area from over-development.

"I think this demonstrates how tourism and the environment are both essential to economic sustainability," McQuade said. "It's in everyone's best interest to preserve the natural beauty of these islands."

The St. Simons Land Trust's mission attracts donors big and small, and from both residents and visitors alike. "We've already protected over 1,000 acres," McQuade said. "And one of our goals is to protect another 1,000 acres, or roughly 20% of the island."

The Land Trust also recently launched a program for local businesses to participate in donating 1% of their revenue to the trust and its mission. It's not just a proficient fundraiser but, perhaps most importantly, it promotes community involvement.

While St. Simons has maintained its charm, it's neighbor—Little St. Simons Island—is a throwback in time. The 10,000-acre, privately-owned barrier island is now an all-inclusive resort with just 16 rustic but well-appointed cabins. And there, my journey continued.

Captain Dave Snyder of Hook & Knife Fishing Charters and who also runs the Halyard Restaurant Group, picked me up in his 20-ft. bay boat early the next morning. Manager Scott Greene of the LSSI Lodge joined us. My radar detected exactly zero fishing rods on the boat. I'd read about LSSI's pristine, seven-mile-long beach, where guests wade fish for monster bull reds, tarpon, flounder and trout.

"We only have time for a quick tour," Scott told me. "But next time you come, we'll go fishing. I promise." Turns out, the tour was well worth the trip.

Scott explained their deliberate conservation policies, from recycling and composting to biodegradable cleaning products to a draft beer Kegerator that reduces bottle usage. Of course, it's a Georgia-made beer called Sweetwater. Conservation is not just their mantra, it's their lifeblood. I mean, how many resorts have a full-time ecological management staff? Only one, to my knowledge. But don't be fooled into thinking that this is just glorified camping. *Mais non, mon amie*. Award-winning cuisine is prepared by on-site chefs. There's full use of bicycles, fishing tackle, motorized skiffs and kayaks. They grow their own fruits and veggies, watered with rain collected in barrels. It all adds up to why the lodge has been voted the #1 Top Resort in the American South for the third year in a row by *Condé Nast Traveler* Readers' Choice Awards. That's all well and good, but I'll reserve full judgment until I come back and hook up a big bull red or tarpon.

I departed deep nature and pointed my nose toward the high-end luxury of Sea Island. I'd already heard that Sea Island is the only resort in the entire world to achieve four Forbes Five-Stars, 10 years in a row. Scott McQuade had told me that each island was distinctive. So far, he was spot on.

Sea Island is just a short cast away from St. Simons Island, separated only by a 200-foot-wide serpentine river. While the two islands border one another, you can feel the air of affluence blowing as you ease past the stucco gate house, along the palm tree-lined promenade toward the resort. The upscale exclusivity definitely appeals to a well-heeled crowd looking for a place to get away in style. As with the other Golden Isles, this one still immerses you in nature with abundant flora, fauna



Above: A massive tarpon caught at the beach on Little St. Simons Island. Photo courtesy of LSSI.

and huge shade trees that deliver a relaxing ambiance.

This five-mile-long, narrow stretch of land is sandwiched between extremely fishable marshes to the west and a pristine, private beach that runs the entire length of the island's eastern shore. Catamaran sailboats and beach lounges dot the shoreline that is geographically perfect for enjoying ocean-melting sunrises.

Since 1928, the resort has hosted presidents, world leaders, celebrities and sport champions. They even let me in, too. As I entered the cavernous lobby of The Cloister, their gorgeously appointed hotel, I was greeted by a stately, gray-haired gentleman who kindly waved me into the inner sanctum. There was lots of stone, marble and travertine leading toward mahogany passageways that were lined with historic photos of the island and resort. My mind wandered. My pallet instinctively craved the velvety sensation of a Château Margaux. Mmm.

Suddenly, I was zapped back to real time by Mike Kennedy, my Sea Island contact and fellow hardcore fishing freak. Turns out fishing is a Kennedy family tradition and Mike's dad, Larry, is a local legend. Although he retired recently, Larry guided for 40 years and had the first flats boat in the area. An avid fly fisherman, he also opened two fly fishing stores called the Bedford Sportsman. His son Larry now owns Kennedy Outfitters on St. Simons. Mike is also representing the family name quite well. He oversees all recreation at Sea Island, which includes a fishing operation that, frankly, shocked me. They have seven, 27-ft. Rambo center-consoles with single 250s, an 18-ft. Gordon flats boat and a 39-ft. Contender with

triple 350s and a full tower. Oh, kayak anglers can choose from six Hobie Pro Anglers. But what really blew my mind is that Mike and his team are running 2,500 trips a year! They range from inshore kids' fishing excursions to blasting 70 miles offshore for tuna, wahoo, dolphin and marlin.

"We have kids who've never fished and we initiate them with their first ever catch," Mike said with a prideful smile. "I'm not just saying this because I live here, but the fishing is off the charts. We're catching tarpon right here in the salt marshes, along with bull reds, specks, tripletail—I mean, it's seriously a fishing paradise."

I left with a new-found respect for the 1% fishing genre.

I'd successfully immersed myself into three Golden Isles and had just one more to go. Thankfully, I was blessed with tour guide extraordinaire Cheryl Hargrove, with Georgia Tourism. I knew I was in for a ride when she screeched to a halt in her canary-yellow convertible VW beetle. I realized I should have packed my helmet. Funny, smart, energetic and with red curls flying in the wind, Cheryl whisked me to the popular vacation land of Jekyll Island. The first thing you see when you arrive is the marina and the fishing pier stocked with anglers. With six-to-eight-foot tides, the water flows in and out of the marshes with great purpose and produces some nice bent rods for the dock dwellers.

I'd fished for tripletail (see *Last Cast*, page 80) the day before, off of Jekyll, and now got the land tour. It's the only Golden Isle with a road that circumnavigates



Above: Roseate spoonbill search for a snack in the saltmarsh. Photo by John Krivec.

the entire island so we buzzed around, stopping at a few hot spots, including the Georgia Sea Turtle Center and Driftwood Beach—two of the most celebrated attractions.

Like the rest of the islands, Jekyll is wooded and low key. With fewer hotels and homes than the other isles, there's a vast amount of undeveloped land and parks. Sure, you can find a crowd if you want to, or easily seek out a deserted beach for a romantic picnic, if that's your thing.

I highly recommend zipping around in a convertible, but you can also get the wind-blown look on the 25 miles of paved bike paths that access beaches, forests, campgrounds and the Jekyll Island Historic District, a National Historic Landmark.

After a whirlwind tour, we headed back to St. Simons and buzzed past Southern Soul BBQ, which ignited my hunger gremlins. I leaned on Cheryl's local knowledge for some grub.

"We're near Halyards," she said. "Why don't we see if Dave's there?"

As we were a few sips into a cold beverage, Dave popped out of the kitchen in his chef's jacket. The dude has all the bases covered—fishing guide, boat captain, chef, restaurant owner, author, member of the South Atlantic Fishery Council and

many other volunteer pursuits. I was expecting him to tell me he was once an astronaut. Instead, he ducked back into the kitchen and brought out a wave of delectable cuisine—from his signature fried chicken livers (don't hate it if you ain't ate it) to perfectly seared scallops to Georgia shrimp tacos. I'd seen the shrimp boats offshore and decided to make polite conversation.

"So where do they catch most of these shrimp?" I asked.

Within seconds, Dave had his phone screen displaying satellite maps of the shrimping grounds followed by a visual tour of the area. He pointed out redfish holes, tarpon spots, tripletail locations, inshore hotspots, offshore honeyholes. Yet another reason to like this guy.

I didn't want to tell the chef/captain I'd already seen this movie, so I just listened, continued to chow down, and count my many blessings that there are still places like the Golden Isles where the fishing is off the hook, the scenery is blissful, the people are hospitable and the food abides.

Special thanks to Cheryl Hargrove and her yellow convertible VW Beetle.

BIG BROTHER IS LISTENING

By Capt. Spud Woodward

Using advanced acoustic technology, Georgia biologists are unraveling the mysteries of marine-fish movements.





Tony Blount is multi-tasking at the helm of the Georgia Department of Natural Resources' research vessel *Marguerite*, eyes glued to the dual screens of an electronic chart plotter and sonar, one hand on the steering wheel, one hand on the throttle, and legs braced against a rolling swell left from a recent winter storm. He's looking for something about the size of a kitchen trash can in the Atlantic Ocean—an acoustic receiver housed in a buoy suspended just off the seafloor.

After a few minutes of circling around the waypoint icon on the plotter screen, a small smudge appears on the sonar. A sharp blast on the vessel's signal horn cues the deployment of a marker float and anchor attached to a replacement receiver/buoy unit. Ten minutes later, a two-person dive team back-rolls into chilly, green waters following the marker-float line to the bottom, 60 feet below.



The dive crew relaxes while marine biologist Chris Kalinowsky downloads data from the acoustic receiver they brought up from the seafloor.

Blount's multi-tasking skills pay off when the divers find the receiver within 10 feet of the dropped marker-float anchor. They quickly exchange the new unit for the old, and five minutes later, the divers with the recovered unit are back onboard the *Marguerite*.

Marine biologist Chris Kalinowsky removes the receiver from its housing and carries it into the wheel house. Placing it next to a portable computer, he downloads the receiver's data records via wireless connection.

"Looks like a few hundred detection records on this one," he comments to his fellow team members. "Let me see if I can identify the species." After a few minutes and several dozen keystrokes, he pushes back from the computer.

"Several Atlantic sturgeon, a black drum, a red drum, and..." He hesitates a few seconds before finishing his sentence. "I'm not sure I should tell you, but this

receiver also has multiple detections of a great white shark."

The last species in the list gets the attention of the divers, one of whom asks, "When's the last time the white shark was detected?" Kalinowsky looks up from the computer with a sheepish grin and replies, "Maybe it's best I don't answer that question."

TAG, YOU'RE IT

Throughout the history of mankind, we've been intrigued by the movements of animals. During our earliest hunter-gatherer days, our lives literally depended on knowing when and where animals could be found throughout the year. Those

days are over for most of us, although anglers who pursue migratory fish in the world's oceans still play the same hide-and-seek game, albeit with the advantage of modern technology. Entities such as the Georgia Department of Natural Resources' Coastal Resources Division, charged with the management and conservation of those same migratory fishes, have likewise benefitted from advances in modern technology.

Foremost amongst those have been improvements in animal acoustic telemetry—the process in which sound-producing tags attached to aquatic animals provide information on behavior, movement and habitat preferences. Each tag produces a unique sequence of pings that can be detected using fixed or mobile acoustic receivers. This allows researchers to identify individually-tagged animals and their specific locations. The pings travel through the dense medium of water where they are detected by an acoustic receiver tuned to the proper frequency.

Thanks to advances in batteries and micro-circuitry, modern acoustic tags have longer lifespans and come in a wider variety of sizes. Likewise, the technology to detect acoustically-tagged animals in the marine environment has improved. Modern acoustic receivers can be attached to a fixed structure such as a navigation buoy or anchored to the seafloor where they remain in constant listening mode for months at a time. Gone are the frustrating days when handheld listening devices were tediously deployed from boats maneuvering through a grid of coordinates in an oftentimes hostile ocean.

Arrays of acoustic receivers can be placed in strategic locations within coastal rivers, estuaries and open-ocean environments. Animals tagged with an acoustic transmitter are detected when they come within 400 meters of a receiver. The identifying code of the tag is recorded, along with the date and time. For as long

as a tag remains within detection distance, a receiver will record information. A single receiver can store thousands of detection records for multiple tagged animals.

Receivers are periodically retrieved, data downloaded, and batteries replaced before the receiver is returned to its former location and placed back in listening mode. Currently, marine scientists representing governmental, non-governmental, and academic entities have deployed more than 2,000 receivers along the South Atlantic and Gulf of Mexico coastlines.

“The expansion and maintenance of acoustic-receiver arrays over a wide area is allowing researchers to conduct large-scale migration studies that wouldn’t have been possible just a few short years ago,” explains Kalinowsky.

TRIPLETAIL TRAVELS

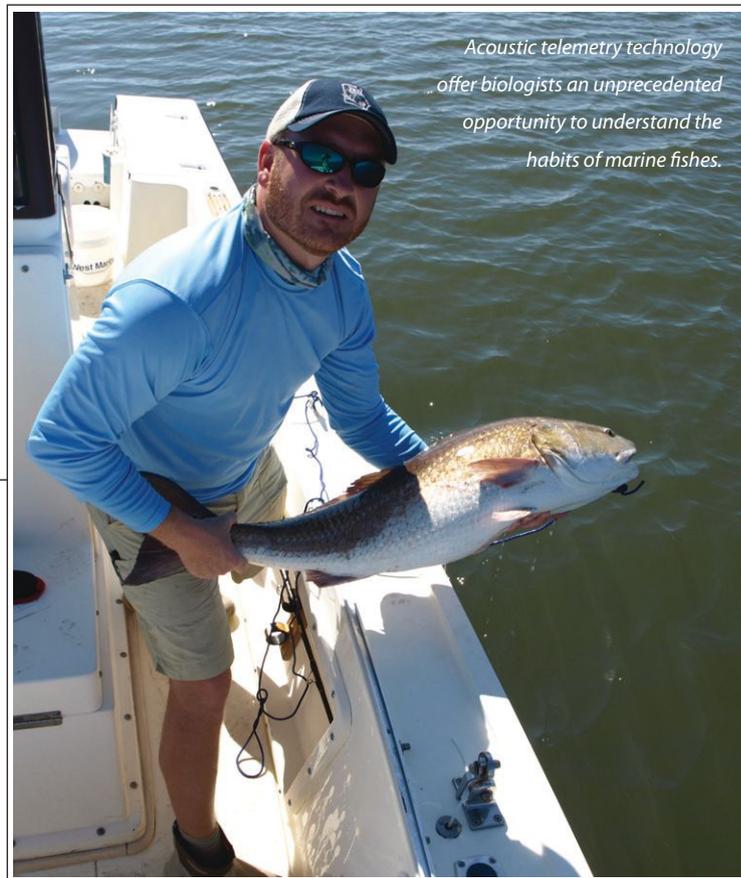
For decades, fisheries biologists in Georgia have used acoustic telemetry to research the behavior of freshwater and marine fishes, albeit with crude technology compared with what’s available today. Past studies documented seasonal movement of striped bass between estuarine and freshwater environments, ensuring protection of critical spawning and nursery habitats, and homing behavior of adult red drum that helped convince anglers of the need for the reduction in harvest of juvenile fish. More recently, telemetry studies have revealed new information about an obscure species growing in popularity with anglers and seafood lovers alike, the tripletail.

With an appearance more like that of a freshwater sunfish than a migratory ocean-going species, the drab-colored tripletail reaches weights over 30 pounds and yields delicate-firm fillets that lend themselves to a variety of preparations. Anglers typically target the fish around structures such as pilings and buoys. However, a unique sight-fishing opportunity occurs each spring when tripletail can be found floating on the surface of the Atlantic Ocean just offshore of Jekyll Island, Georgia.

“Very little is known about the biology of tripletail, and we saw an acoustic-tagging study as a great first step to expanding our knowledge,” Kalinowsky says. “We surgically implanted tags in 57 tripletail captured in the Ossabaw estuary near Savannah and learned immediately that these fish were resident in the estuary throughout the summer and into the autumn. As water temperatures cooled, the fish were no longer detected by our receivers.”

Through collaboration with other researchers, Kalinowsky learned that many of those missing fish had traveled to South Florida, where they spent the winter before migrating back northward, many returning to the Ossabaw estuary. Several of the tripletail completed two migratory cycles, making the Georgia to Florida to Georgia trip twice.

Concurrent with Kalinowsky’s study, other Georgia DNR biologists and cooperating anglers tagged tripletail caught near Jekyll Island with conventional external tags. Several of these fish were recaptured along the east coast of Florida, reinforcing the results of the telemetry study and suggesting Georgia and Florida



Acoustic telemetry technology offer biologists an unprecedented opportunity to understand the habits of marine fishes.

share a migratory population of tripletail. This information led to cooperation between the two states, which have synchronized their angler size and creel limits for the species.

STURGEON SOJOURN

The ancient Atlantic sturgeon dates back at least 70 million years. The species once thrived in Georgia’s coastal rivers but declined in abundance during the second half of the 20th century. Overharvesting, primarily for eggs (processed as caviar), continued through the 1990s until a coastwide harvest moratorium was implemented by state and federal authorities. This moratorium is expected to continue to at least 2038.

An anadromous species, adult Atlantic sturgeon—some measuring seven feet in length and weighing several hundred pounds—migrate from the ocean into freshwater rivers to spawn. Juveniles typically remain in their natal river from one to six years before migrating back out to the ocean. However, their movements while in the open ocean are much a mystery. Enter the biologists with their acoustic tags.

Using funding from the National Oceanic and Atmospheric Administration in partnership with South Carolina DNR, Kalinowsky established a network of 24 receivers in the nearshore Atlantic Ocean in hopes of detecting acoustically-



tagged Atlantic sturgeon swimming along the coastline. Receivers are attached to navigation buoys in Georgia's St. Simons shipping channel and anchored to the seafloor in two lines that extend from six to 14 miles offshore from the Brunswick-Golden Isles area.

"The goal of the sturgeon project is to establish and maintain arrays of receivers from the mid-Atlantic to the southern extent of the species' range off Northeast Florida. We hope to better define when and where Atlantic sturgeon are during the ocean-going phase of their lives," he says.

"So far, we have more than 102,000 detections of 192 individual sturgeon, some of which were tagged as far away as New York," he adds. "The greatest number of detections have occurred during the fall and winter. While we can't necessarily explain why those fish have traveled so far to the south during that time, it does show that the Georgia coast serves as important habitat for not only sturgeon that use our coastal rivers but for the overall Atlantic Coast population."

COBIA CONUNDRUM



The cobia is a pelagic species that grows to more than 100 lbs. and is equally prized for its tenacious fight and palate-pleasing qualities. During annual migrations, the fish range from South Florida to the mid-Atlantic, but the details of these travels are sketchy, leaving fishery biologists with uncertainty regarding management. Researchers like Kalinowsky are using acoustic telemetry to improve our understanding of cobia.

"Thus far, we have relied on genetic analysis and returns of conventional tags from cobia to determine if there are distinct groups of the species in the Southeast United States. Currently, the population is split into two groups for management purposes, with the Georgia-Florida border as the demarcation line. There are different catch limits for both groups, so it's important that management boundaries accurately reflect the biology and habits of the species," Kalinowsky explains.

Thus far, researchers have implanted tags in 142 cobia caught and released in various locations along the coasts of Virginia, North Carolina, South Carolina, Georgia and Florida. Using a sophisticated method called network analysis, they

will try to explain how cobia move throughout the South Atlantic. This method can help biologists and resource managers understand if fish are randomly distributed and mixed throughout the region or if portions of the population remain separate.

If detections show the fish are frequently mixing with each other during important life-history phases like spawning, or when they might be more susceptible to harvest, it could call to question the accuracy of current management boundaries. If not, then resource managers and anglers can have increased confidence in current conservation strategies.

PISCATORIAL POTPOURRI

When Kalinowsky sits at the computer to download data from an acoustic receiver, it's a little like Forrest Gump's box of chocolates—he never knows what he'll find. While he hopes to see the detection of a sturgeon from the Hudson River or maybe a cobia from Cape Canaveral, he might find something quite unexpected.

"So far, we've detected 662 individual animals representing 33 species. Most of our detections were fish, but we've also collected data on loggerhead and Kemp's Ridley sea turtles. Probably the most surprising information to come out of the project is the number and diversity of sharks frequenting our coastal waters," he says.

To be exact, Kalinowsky's receiver array has detected 295 individual, acoustically-tagged sharks representing 14 species. From white sharks originating in Massachusetts to sand tigers from Delaware Bay to bull sharks tagged in South Florida, it seems Georgia's coastal waters are a veritable Grand Central Station for the toothy critters.

"The expansion of acoustic-receiver arrays along the Atlantic Coast has created an exponential effect for data collection. Now, instead of one researcher depending on an array for detection of the fish, scientists have the detection power of dozens of other receiver arrays working for them. All of us involved in acoustic telemetry are excited to share data, knowing that only through collaboration can we better understand fish migration and behavior," he says.

This collaboration of scientists is producing a windfall of information that will not only help fisheries' biologists better understand the lives of marine fishes but will also aid resource managers in perfecting conservation strategies. Thanks to funding sources like Federal Aid in Sport Fish Restoration, Georgia fishing license fees, NOAA, the Georgia Natural Resources Foundation, and the Animal Telemetry Network (ATN), Kalinowsky and his colleagues will be keeping their ears to the ground, or at least to the seafloor. 🐟

WRECKS, REMNANTS AND RUBBLE TO REEFS

Subway Cars, Tanks, Ships and Concrete Enhance Georgia's Offshore and Inshore Fisheries

BY CHRIS WOODWARD



If corrosion was not a factor, a scuba diver off Georgia might easily come across the derelict wreck of a vintage '57 Chevy, its cherry-red paint dulled by encrusting growth. In the 1960s, Georgia fishing clubs sank old cars off the coast, hoping to create fish habitat along the region's vast, sparse ocean shelf, sources say.

In fact, artificial reefs made from flimsy metal—everything from car bodies to washing machines—took the often-covert plunge throughout the southeast Atlantic Coast and the Gulf of Mexico back then, well before biologists and agencies began a more science-based and responsible approach to creating habitat in the marine environment.

A half-century later, research and practical experience have delivered a successful formula for building and maintaining more robust structures useful for fish and marine organisms as well as anglers. Today, a diver might encounter a New York subway car or even a military tank while submerged.

HARSH ENVIRONMENT

"The state of Georgia has about 100 miles of coastline. The seafloor off its shores is largely composed of sand and mud until you get about 30 miles out into the open Atlantic Ocean," explains January Murray, marine biologist and habitat unit leader for the Coastal Resources Division of Georgia's Department of Natural Resources (DNR). "Given Georgia's limited, natural live-bottom reef habitat, deployment of suitable manmade materials provides a firm foundation for sessile (stationary) organisms and shelter and forage for structure-oriented fishes."

Offloading subway cars to create a series of artificial reefs off the coast of Georgia.



While neighboring Florida features numerous vibrant coral and other natural reef formations near its shores, Georgia features only one similar area of any size: Gray's Reef, a 22-sq.-mile marine sanctuary located 17 miles off the state's middle coast.

Georgia also endures extreme tides (six to nine feet twice daily) that generate tremendous erosive forces. Its estuaries terminate the state's river systems, adding sediments that create the pudding-like "pluff" mud found along the marsh shoreline and at the bottom of many tidal waterways. Under such tough conditions, inshore fish certainly benefit from additional stable habitat, where they can escape currents, avoid predators and find food and shelter.



State biologists became involved with inshore and offshore artificial-reef building in the early 1970s. "But it wasn't the fishermen who asked for it—it was the old coastal fisheries office of DNR," says Duane Harris, retired director of the Coastal Resources Division and one of the initial state artificial-reef project leaders. "We saw what Florida was doing—the Jacksonville Offshore Fishing Club was very active—and we knew we didn't have habitat close to shore. It looked like it was something we could do and get some state and federal funds to do it."

Harris says the coastal office initially acquired truckloads of rejected steel-belted radial tires from Kelly Springfield Tire Company. A reef crew pinned sets of eight tires together vertically, filled the bottom tire with concrete, and bent steel rebar over the top tire. They took the tire rolls offshore and deployed the first ones at F reef, nine miles east of Jekyll Island in depths of 35 to 45 feet.

Unfortunately, many of those first tire units failed, falling apart and scattering over the ocean floor to be covered by shifting sand. Their use was discontinued in favor of more suitable materials.

OFFSHORE OASIS

During the mid-1970s, decommissioned World War II Liberty ships became available to states for reef building, Harris remembers. Ironically, Georgia birthed many of those same vessels at a shipyard in the coastal town of Brunswick.

"We paid \$37,000 to have two brought down and cleaned up. Most states that got those ships traded the scrap for the cost of towing," Harris says. The ships—the 440-plus-ft. *Edwin S. Nettleton* and the *Addie Bagley Daniels*—were sunk by Navy Explosive Ordnance Disposal teams: one at HLHA (originally G reef), and one on J reef.

Ships offer high profile in the water column, creating current eddies and hosting marine organisms, including fish species such as amberjack and barracuda. They also tend to mostly stay put once sunk. "But all bets are off during a hurricane," Harris notes. "Hurricane David broke a Liberty ship in half and moved it 300 yards away."

Sunken vessels, however, don't attract the same diversity of fish as found on lower-profile structures, such as concrete rubble piles or commercially-made reef or pallet balls. "You need a combination of habitat types at your reefs—high profile and low profile," he says.

And that's just what Georgia's coastal division has accomplished over the years with financial assistance from public and private

partnerships. In fact, the push for artificial reefs was instrumental in the decision by state legislators to require a recreational license for saltwater fishing, Harris recalls.

Public funding and resources have come from agencies and sources such as:

- ***Federal Aid in Sport Fish Restoration (excise tax on fishing equipment)***
- ***Georgia General Assembly (fishing-license revenues)***
- ***Georgia Department of Transportation***
- ***New York Metropolitan Transit Authority***
- ***Department of Defense***

Private funding and resources have come from entities such as:

- ***Coastal Conservation Association—Georgia***
- ***Coastal Georgia saltwater fishing clubs***
- ***Fieldale Farms***
- ***Fish America Foundation***
- ***Georgia Power***

Since the mid-1970s, more than 85 additional vessels—ranging from a confiscated Ukrainian steel-hull sailboat used to smuggle refugees into the U.S. to 200-ft. surplus barges, tugs, and dredges—have dotted the now 31 offshore reef sites, which lie 2.5 to 70 nautical miles from shore.

Along with those vessels nestle concrete power poles, bridge rubble, 3- to 5-ft.-high reef balls of varying designs—made from concrete with holes cut throughout—subway cars and M-60 battle tanks. Georgia procured the subway materials in 2009 from New York's Metropolitan Transit Authority, which

needed a cost-effective way to dispose of more than 1,200 retired cars. Stripped of their running gear and emptied of oil and fuel, each car weighed close to 10 tons.

The U.S. Army faced the same issue in the mid-1990s, needing to eliminate thousands of obsolete armored vehicles. After establishing the REEF-EX initiative, the federal government made available its decommissioned tanks and armored personnel carriers to states as artificial reefs.

Reservists prepared the vehicles by draining all fluids, removing transmissions, engines and hydraulic systems, and then steam-cleaned the remaining metal. The U.S. Army Corps of Engineers certified the vehicles' environmental safety before deployment.

At the same time, CCA-Georgia members successfully lobbied state legislators to increase the DNR budget with additional artificial reef dollars. Several coastal fishing clubs and offshore tournaments added funding, and Georgia ordered 55 M-60 battle tanks to deploy at five offshore reef sites. These 50-ton hulks with their 12-in.-thick armor should, theoretically, last up to 100 years before corroding.

SHALLOW SUCCESS

While peculiar props such as tanks, subway cars and even airplanes garner most of the attention when they're sunk in offshore waters, artificial reefs for inshore estuaries and beaches can generate equal habitat success. However, most are built from concrete piles, utility poles, reef balls and PVC pipes—not your glamour substrate.

Within seven of Georgia's estuaries lie 15 reef sites: 13 in the intertidal zone and two in deeper areas. Materials include road beds, bridge railings, concrete rubble, and—in at least a mildly odd twist—metal poultry-transport cages.

According to records, the state's inshore-reef-building project began in the mid-80s as fishing interest in these estuarine waters grew. Scientists also hoped to jumpstart an expansion of native oyster

populations back to historical abundance. Oyster reefs stabilize shorelines, filter water impurities, and provide nutrients and shelter for marine life and fishes.

From 1984 to 1999, DNR deployed material whenever available and when funding allowed. But in 1999, the well dried up, and the project lay dormant for five years until a University of Georgia shellfish researcher pioneered a new collection project to make reefs out of recycled oyster shells.

Although Georgia's commercial oyster harvest remains small, coastal residents still love their oysters. Individuals and the restaurants and markets who serve them ship the bi-valves in by the truckload from Gulf Coast states. Most of the empty shells become discards, finding their way into landfills.

UGA's Dr. Alan Power encouraged these establishments to save their shells, and his team constructed self-serve drop-off centers where residents could bring the remains from their backyard roasts. Ultimately, the DNR became a partner in Power's initiative, permitting projects and attracting funding to deploy the recycled shells at appropriate sites in the estuaries. The hard shells attract larval oysters, which attach themselves and eventually encrust ever-larger areas, eventually mimicking the natural oyster reefs.

In 2007, CCA-Georgia worked with the Fish America Foundation to provide \$20,000 to pay for two oyster projects. At one site, along the shoreline of the Sapelo River near a renovated boat ramp, the surrounding marsh had eroded because of boat wakes, wind-driven waves and repeated groundings of various vessels. Volunteers and DNR staff deployed 100 mesh bags of oyster shells, 125 live oak limb bundles (each three feet in diameter), and 600 pieces of concrete-coated bamboo, humorously known as "spat sticks," given their attractiveness to larval oysters or "spat."

By late 2009, the material remained in place and hosted hundreds of small oysters. Erosion had slowed, and marsh-grass growth had expanded.



MONEY MATTERS

While most agree about the benefits of manmade habitat in estuaries, some researchers and anglers continue to question the role of offshore artificial reefs. Some say such structure only attracts fish from other sites to new, known locations where they can be overexploited. Others argue that whenever you create habitat, you increase fish populations.

But dropping objects into the ocean on a barren seascape, such as the ocean bottom off Georgia, is quite different from building structures near natural

reef environments.

“There is also still debate about whether we should spend money to make reserves or to create habitat (artificial reefs),” Harris says. “Most states would love to build more, but it’s hard to get money to do it.”

Over the next 12 months, Murray and her DNR team plan to deploy concrete rubble and pallet balls at DRH reef, and drop repurposed concrete donated by several federal sources at the BSF beach reef. If funding becomes available, five additional offshore deployments will follow before next summer.

Inshore, the agency plans four more

enhancement and

maintenance projects for

2018 and 2019. Murray says DNR expects additional funds from sales of Georgia’s new Marine Habitat vehicle tag, which features the state saltwater fish—the red drum.

“The [habitat] unit always has projects pending donations, partnerships and external funding,” she says. “The pending work is placed in a queue—first in, first out. If funding is identified, then the work should move forward in 2019.”

THROUGH THE YEARS

For nearly 50 years, the state of Georgia has built artificial reefs to enhance fishery habitat along the nearly featureless shelf off its coast. The 31 offshore sites comprise more than 71,000 acres. Inshore, the 15 permitted sites cover nearly 80 acres.

Following is a timeline for many of the major developments and deployments both inshore and offshore. To see a map and download coordinates, visit coastalgadnr.org and click on Artificial Reefs & Marine Habitat.

INSHORE

- 1984-1999:** 15 intertidal and subtidal project sites are permitted by the U.S. Army Corps of Engineers in seven estuaries in all of Georgia’s six coastal counties. Materials including road beds, bridge railings, metal chicken transport cages, reef modules and concrete rubble are deployed when available.
- 1999:** Project goes dormant until 2004.
- 2004:** University of Georgia Marine Extension and Georgia Sea Grant begin G.E.O.R.G.I.A. oyster-shell program to collect discarded shells and place them into reef formations.
- 2007:** Coastal Conservation Association–Georgia funds two oyster restoration projects.
- 2014/15:** 26 concrete power pole sections deployed to Little River East Reef; 13 steel drum frames and 23 concrete power poles placed at Jove Creek Reef.
- 2016:** Fish-aggregating devices placed at Troupe Creek and Joe’s Cut Reef.
- 2018:** Concrete culverts, rubble and pilings deployed at four locations.

OFFSHORE

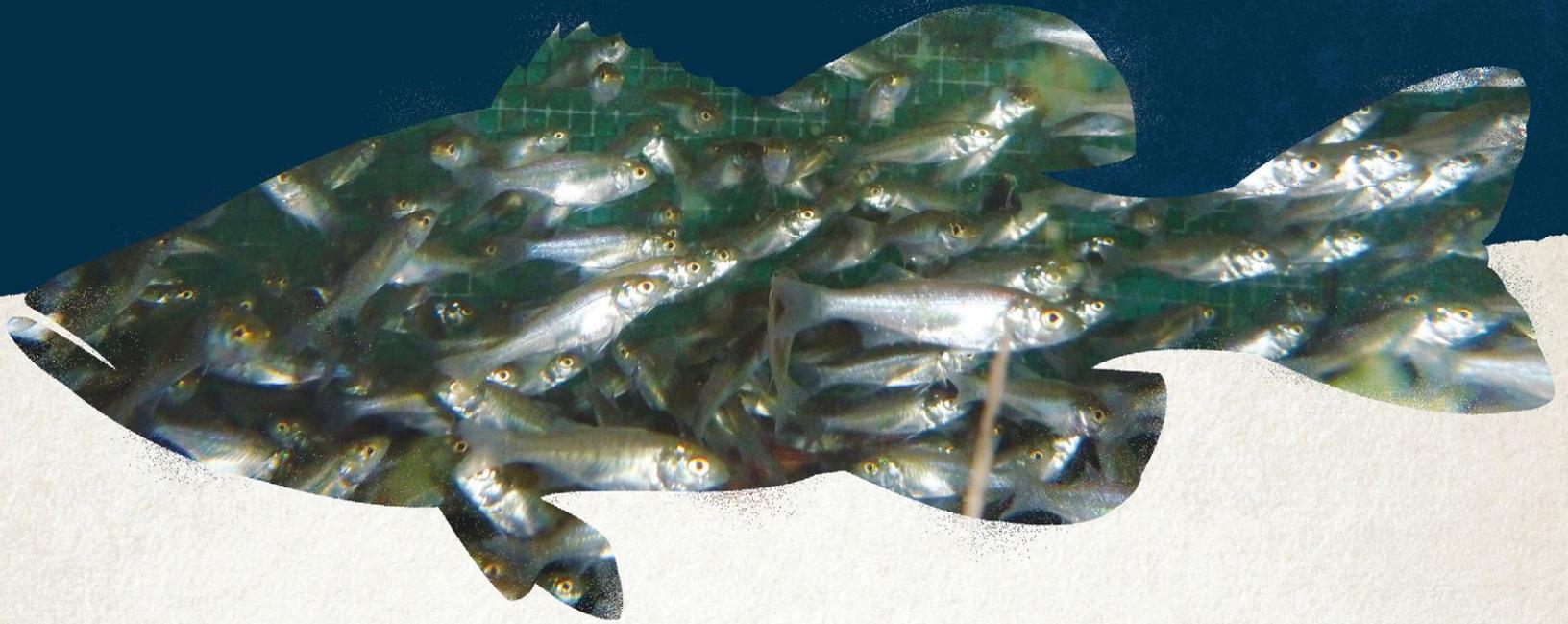
- 1969:** WR2 reef area (later renamed CDH) designated around the wreck of the cargo ship *Esparta*, sunk during World War II, 13.5 nm east of Cumberland Island in

45 to 55 feet of water.

- 1970:** Offshore artificial reef project officially begins under the authority of the Georgia State Game and Fish Commission.
- 1971:** Site permitting initiated with multiple locations (F, HLHA, JY) under one Regional Permit (RP 36) issued by the U.S. Army Corps of Engineers for a five-year cycle.
- 1973:** 100-ft. tug *Tampa* sunk at G (now HLHA).
- 1974:** 1,900 tire units deployed at G (now HLHA).
- 1975:** Two Liberty ships, both originally constructed in Brunswick, GA, during the second World War, were sunk at HLHA and J reefs.
- 1975-1985:** Sporadic deployments of retired tugs, barges and dredges at different sites.
- 1986-91:** Wharf/bridge rubble first deployed at five sites.
- 1995:** M-60 battle tanks first deployed at six reefs.
- 1995-98:** Pallet balls first deployed at nine locations.
- 1998:** Saltwater anglers licensed increasing funding for artificial reefs.
- 2009:** Subway cars deployed at six sites.
- 2011:** RP 36 reapproved and modified in 2014; eight Navy Towers deployed 30 to 60 nm offshore.
- 2011:** Georgia Power and Valmont-Newmark donate concrete transmission poles for deployment at A reef; subsequent materials went to CDH.
- 2012-13:** 346 pallet balls dropped at three reef sites; 39-ft., steel-hulled vessel sunk at KTK.
- 2013-14:** 254-ft. hopper barge with 330 poultry-transport cages sunk at KC reef.
- 2015-2018:** Two barges, hundreds of concrete transmission-line poles, rubble and hundreds of poultry cages sunk at four different sites.

OF SHIPS & STRIPERS

BY CAPT. SPUD WOODWARD



Can commercial shipping and striped bass coexist in the lower Savannah River? State and federal authorities are working together to make it happen.

If General James Oglethorpe were alive today, he'd see a city of Savannah much different than the one he founded in 1733 along the river of the same name. Instead of watching Mary Musgrove and her husband trading deer hides, he'd find massive container ships laden with goods from around the globe. The trademark public squares and a few colonial-era buildings are all that remain of his original planned city, which is now Georgia's third most populous metropolitan area.

As the city grew, so did the port. Today, it's one of the busiest in the United States, handling more than four million containers a year and accounting for more than 400,000 jobs throughout the state. So, it has become necessary to alter the river's natural condition to accommodate more and larger vessels. However, these alterations have changed the river in ways no one could have predicted, especially for the native striped bass.

From the Appalachians to the Atlantic

Originating in the Appalachian foothills and receiving water from more than 10,000 square miles, the Savannah River serves as the boundary between Georgia and South Carolina. Constrained by large and small dams, the upper river bears little resemblance to its former self. After tumbling over rocky shoals near Augusta, the river sluggishly winds its way for 200 miles alongside pine and hardwood forests and through cypress swamps on its way to the sea.

At the coast, the river splits into three channels and forms an estuary. The southernmost Front River is the largest of these channels and the location of the Port of Savannah and the city waterfront. The shorter and smaller Middle River merges back into the Front River just west of Savannah near Port Wentworth. The much longer Back River joins Front River east of the city to form the shipping channel that extends into the Atlantic Ocean.

The Back and Middle Rivers, although relatively narrow and shallow streams compared with the Front River, are nonetheless very important to the ecology of the estuary as they deliver fresh water to sustain the diverse plant and animal community of the Savannah National Wildlife Refuge. This 29,000-acre property operated by the U.S. Fish and Wildlife Service contains 28% of the freshwater marsh remaining along the East Coast.



A defining feature of the lower Savannah River and the terminus of all of Georgia's Atlantic-slope rivers is twice-a-day tides varying between six to nine feet in amplitude. These tidal flows push vast quantities of salty Atlantic Ocean water in and out of the estuaries found at the mouth of these rivers. This salty water mixes with fresh water, creating an ecosystem supporting a staggering diversity of plant and animal life.

For thousands of years, this mixing of fresh water and salt water in the lower Savannah River was controlled entirely by natural processes. Not anymore. Human activities such as operation of upstream reservoirs, surface-water withdrawals and dredging have changed the way the river interacts with the ocean.

Wrestling a River

During the colonial period, the Savannah River between the city and ocean was shallow, averaging 12 feet in depth, but adequate for ships of the day. As vessels grew larger, channel depth and width became limiting, as did shoaling, wrecks and other obstructions. Over the years, the U.S. Army Corps of Engineers and other government entities have intervened with various solutions to improve navigability for ships of ever-increasing size and number.



The 1,200-ft. CMA CGM Theodore Roosevelt container ship passes the City of Savannah waterfront on its way upriver to port facilities.

The Savannah River estuary historically provided one of Georgia's best fisheries for trophy striped bass.



In 1954, an existing lift-span bridge just upstream of the city waterfront was replaced by a new cantilever truss bridge with more vertical and horizontal clearance to allow the passage of ships to rapidly developing port facilities inland of the city. By the 1960s, the Savannah River channel had been deepened to 34 feet, widened and lengthened. Turning basins were created and quickly enlarged to provide maneuvering room for larger ships.

In 1965, the first containerized cargo was brought to the Port of Savannah, and the die was cast for a new era in port growth. These first container ships carried about 2,500 TEUs (20-ft. equivalent units), but soon, larger ships were afloat. Once again, the depth and width profile of the channel, and the clearance of the existing cantilever truss bridge were limiting factors for port traffic. The existing bridge was replaced with a cable-stayed bridge in 1991 with a vertical

clearance of 185 ft. at high tide and a horizontal clearance of 1,023 ft. In 1994, the channel depth was increased to 42 ft. to accommodate larger ships carrying up to 4,800 TEUs.

Port managers and the Corps quickly learned that frequent dredging was required to maintain deeper depths in the shipping channel and port berths. In 1977, a water-control structure known as the tide gate was constructed in the Back River just upstream of its confluence with the Front River. A manmade connection between the Back, Middle and Front Rivers known as the diversion canal was also created. The tide gate would open on the incoming tide and close on the ebbing tide, trapping water and routing it through the diversion canal to flush sediment out of the Front River, reducing the frequency of dredging.

Growth of the port has continued apace with the growth in global commerce.

The planned and now completed enlargement of the Panama Canal made it necessary to ready the port to receive even larger ships. The goal of the ongoing Savannah Harbor Expansion Project is to increase the harbor and channel depth to 47 at mean low tide, widening the channel in several locations and enlarging the Kings Island turning basin. Once completed, container ships like the 1,201-ft.-long and 158-ft.-wide Cosco Development with a capacity of 13,000 TEUs will be routine visitors to the Port of Savannah.

Hold the Salt, Please

When Oglethorpe's ship *Anne* dropped anchor off the future site of the city of Savannah, the river at that location was fresh water from surface to bottom. In those days, the saltwater wedge (where fresh river water mixes with saline ocean water) occurred about seven miles downstream of the city.

By the late 1960s, the saltwater wedge had moved upstream to the city of Savannah. Now, under conditions of low river flow and higher-than-average tides, salty water can be found as far inland as 20 miles west of the city. The consequences of this change have included a loss of freshwater plant communities in the wetlands of the lower Savannah River, especially in the Savannah Wildlife Refuge, and a disruption of the spawning activities of native striped bass.

Historically, the Savannah River hosted Georgia's most important riverine striped bass fishery. Adult fish spawned in the estuary during the spring and moved upstream during the summer, escaping unacceptably warm water temperatures near the ocean. They returned to the estuary in the autumn, staying through the winter and gorging on shrimp and highly nutritious forage fish such as Atlantic menhaden. The concentrated abundance of adult fish in the lower Savannah River sustained an exciting recreational fishery.

Once plans for construction of the tide gate and associated alterations were announced, fisheries biologists strived to learn more about the reproductive biology of striped bass. Their efforts revealed that most fish were spawning in low-salinity areas of the estuary, specifically the Back River upstream of the planned location of the tide gate. They predicted that operation of the tide gate would markedly increase the salinity of this area, possibly disrupting striped bass spawning. They were also concerned that free-floating striped bass eggs would be carried through the diversion canal into the Front River where the salt content of the water would prove lethal to eggs and newly-hatched larvae.

Throughout the 1980s, striped bass continued to

use traditional spawning areas, but as predicted, egg and larval fish survival was declining and reached critical levels by the end of that decade. Ultimately, this information led, in part, to the conclusion that negative environmental impacts of tide gate operation outweighed the benefits of less frequent dredging. The tide gate was taken out of service in 1991, and the diversion canal was filled in 1992. The final step in this process occurred in 2017 when the tide gate was completely removed, restoring the Back River to a more natural condition.



Bringing Back the Bass

In response to the declining striped bass population, the states of Georgia and South Carolina implemented a harvest moratorium in 1988 and 1991, respectively, to protect remaining adult fish. In 1990, the Georgia Department of Natural Resources began releasing hatchery-reared stripers in the Savannah River to reestablish a self-sustaining striped bass population. Also, adult stripers were no longer removed from the Savannah River estuary to serve as brood stock for the Georgia DNR Richmond Hill Hatchery.

During the decade of the 1990s, more than one million striped bass were released. Most were one to two inches in size with the remainder six to eight inches in length. During the rearing process, these small fish were exposed to



Gavin Midgett lends a hand (literally) by mixing eggs and milt to produce a new generation of striped bass.

Biologists tag striped bass with acoustic transmitters to better understand the movements and habitat preferences of the species in the Savannah River.



oxytetracycline, a chemical that binds with the otolith or ear bone of the fish, leaving a mark that fluoresces under ultraviolet light. Biologists use the presence of this mark to distinguish between hatchery-reared fish and the offspring of wild fish.

During follow-up surveys, biologists learned that the larger hatchery-reared fish survived better than their smaller counterparts and discontinued releasing the smaller fingerlings. Since 2000, almost 400,000 of these larger fish have been released with annual stocking rates adjusted based on environmental factors and the results of striped bass population monitoring. This year, approximately 30,000 fish were released at the upstream end of the estuary.

Each year, Georgia DNR biologists use electrofishing to survey the striped bass population in the Savannah River estuary. They collect a sample of fish estimated to be one to two years of age based on their length to compare the occurrence of hatchery-reared and wild fish in the population. This survey also provides information on the overall abundance of striped bass. The results of this annual survey have been both encouraging and frustrating.

The good news is that abundance of striped bass over two years of age, while somewhat cyclical, is much higher than during the bleak years of the 1990s and early 2000s. The harvest moratorium was lifted in 2005, with a 27-in. minimum length and two-fish creel limit implemented to allow for a trophy fishery while still preventing overharvest of a recovering population.

The not-so-good news is that most of the population is hatchery-reared fish, indicating that the ability of the wild population to sustain itself is still in question. Despite an increased number of spawning-size fish in the population, reproductive success remains low.

What Does the Future Hold?

While efforts to restore the hydrology and ecological functions of the Back River were underway, the Front River dredging and widening created a pathway for more saline water into the upper reaches of the estuary. Studies at the University of Georgia have suggested that the Front River may have more importance for striped bass spawning than previously thought. If so, habitat restoration in the Back River, while a major step forward, might not be enough to bring the striped bass population back to a self-sustaining condition.

Unlike earlier alterations of the river, the ongoing Savannah Harbor Expansion Plan was subject to a rigorous review for environmental impacts, especially to native fish species such as striped bass and sturgeon. Consequently, modifications were made to the plan to lessen and mitigate adverse environmental impacts based on input from state and federal natural resource management agencies and conservation groups. These modifications include installing an oxygen-



injection system to increase dissolved oxygen levels in the deepened waters of the Front River, wetland acquisition and projects to restore a more natural and increased flow of fresh water into the Savannah River estuary.

Since 2013, Georgia DNR and South Carolina DNR have partnered in a biotelemetry study to document the movements and habitat preferences of striped bass in the Savannah River. Georgia DNR biologists have tagged more than 35 stripers with sound-producing acoustic tags. South Carolina DNR maintains an array of 50 receivers located in the river between Savannah and Augusta. These receivers constantly listen for tagged fish, providing unprecedented information about movement of fish between the estuary and the upper river. Results of this ongoing study are helping biologists better understand what other factors might be limiting the recovery of the striped bass population.

Integral to the near-term future of the striped bass fishery will be the continued release of hatchery-reared fish and monitoring of the population. Thus, funding from port operations has been provided to Georgia DNR to sustain such efforts. It is the hope of resource managers that a critical mass of adult fish will eventually exist, producing offspring that will find a hospitable environment in the Savannah River estuary.

In the meantime, anglers who want to match wits with a tidewater striper have cause for optimism as the Georgia Department of Natural Resources working with other state and federal officials strives to make sure the Savannah River is a place of ships and stripers. 🐟

Right: Striped bass that start life at Richmond Hill Hatchery provide exciting fishing opportunities in reservoirs and rivers throughout Georgia.

Richmond Hill Redo

Every spring, the Georgia Department of Natural Resources' Richmond Hill Hatchery is a beehive of activity as staff prepare for another season of spawning striped bass and white bass. Since 1968, more than 600 million striper and hybrid striper fry have been hatched at the facility. This year alone, more than 1.4 million striped bass fingerlings and 850,000 hybrid striped bass fingerlings were produced.

Original construction of the Richmond Hill Hatchery began in 1933 as a project of the Civilian Conservation Corps on land originally owned by Detroit auto legend Henry Ford. The 87-acre facility located near the coastal city of Richmond Hill, Georgia, about 25 miles south of Savannah, includes 31 fish production and rearing ponds totaling more than 19 acres of water. In addition, the hatchery has three ponds used for youth fishing events.

Nine different types of fish are reared at the hatchery. Each year, approximately 250,000 bluegills,

100,000 redear sunfish, 200,000 largemouth bass and 90,000 catfish are produced for stocking into public waters and for distribution to pond owners to establish fish populations in their new or renovated ponds. In 2013, Georgia DNR received a five-year grant to begin stocking American shad into the Ogeechee River. Stocking began in 2014, and since that time, more than 2.7 million American shad fry have been released.

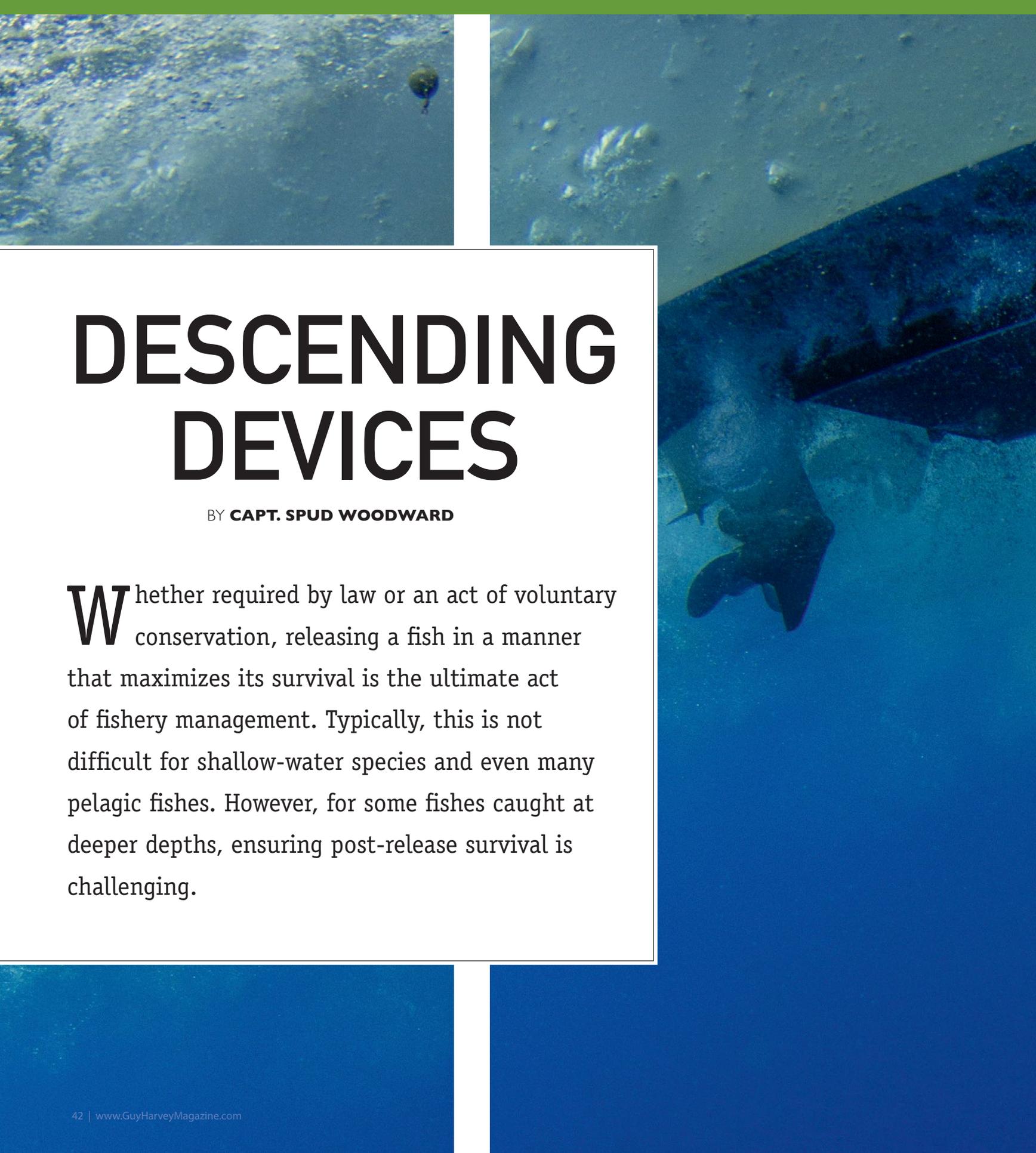
The hatchery is the only facility in the state to produce striped bass and hybrid striped bass fry. Using adult striped bass and white bass captured from inland reservoirs and rivers, staff produce fertilized eggs that are placed in special jars supplied with moving oxygenated water—a process that duplicates natural incubation in flowing rivers.

After about 44 hours, the eggs hatch and the larvae are stocked in ponds where they feed on plankton. Within 30 days, the surviving larvae are now fingerlings about one inch in length and ready for transport in special trucks to Georgia's many reservoirs and rivers.

In 2012, the production and rearing ponds received a major overhaul. In 2016, construction began on a new hatchery building with state-of-the-art technologies for fish husbandry. Scheduled for completion this year, the 8,000-sq.-ft. facility will allow for increased egg-hatching capacity. There is also a 1,600-sq.-ft. outdoor tank area that will be used for American shad spawning, fish holding and fish rearing.

Each year in June, the staff of Richmond Hill Fish Hatchery celebrates National Fishing and Boating Week by hosting a youth fishing event. National Hunting and Fishing Day is observed each year in September with Outdoor Adventure Day, which includes a youth fishing event, archery, kayaking and hunting simulators. Approximately 250 to 300 children and their parents participate in these events each year. The hatchery also offers a series of three nature trails for visitors to enjoy.



The background of the page is a composite of underwater photographs. The top left shows a diver in the distance. The top right shows a close-up of a shark's head. The right side of the page is dominated by a large, vertical image of a shark swimming in deep blue water. The bottom of the page is a solid dark blue color.

DESCENDING DEVICES

BY **CAPT. SPUD WOODWARD**

Whether required by law or an act of voluntary conservation, releasing a fish in a manner that maximizes its survival is the ultimate act of fishery management. Typically, this is not difficult for shallow-water species and even many pelagic fishes. However, for some fishes caught at deeper depths, ensuring post-release survival is challenging.



A red snapper being delivered back home by a SeaQualizer.

These fish can experience barotrauma — the effects of sudden pressure change, caused by a rapid ascent from seafloor to surface on the end of a fishing line. The symptoms include bulging eyes, a distended abdomen, and lack of equilibrium when returned to the water. Some fish die as a direct result of the injury caused by the barotrauma, while others make easy pickings for predators lurking near the surface. Regardless of the cause, mortality of these released fish is contrary to conservation and a source of frustration to anglers and resource managers alike.

For the past several decades, anglers have been advised to treat barotrauma in a fish by puncturing its air bladder. Specially designed tools, essentially a hollow needle in a handle, facilitated venting, as this practice is called. There's no doubt venting has been beneficial, but there is a better way. Several devices are now available that allow the angler to return fish to depth, alleviating the effects of barotrauma and bypassing some of those hungry mouths. Collectively known as descending devices, these devices range from very simple to highly sophisticated and are proven to increase survival in deep-water species. On the simple end of the scale is the Shelton Fish Descender, originally developed for West Coast rockfish but useful for smaller reef fish found in the Southeast and Caribbean. Retailing for a modest \$6, it's an S-shaped wire hook clip that connects into the fishing line, allowing fish to be released with the same tackle used for catching. The fish to be released is connected to the device by passing the sharpened point through that fish's lower lip and lowering it into the water with the point of the device in a downward position. A weight rigged above or below the device carries the fish down to the desired depth where a quick upward motion of the rod tip reverses the position of the device, affecting the release.

On the other end of the sophistication scale is the SeaQualizer device. A technological marvel, it's a small, metal cylinder with a line clip on one end and set of spring-loaded jaws on the other, which grip the lower lip of the fish to be released. The device is attached to a weighted line on a rod and reel, handline, or downrigger. The magic of the device happens within the cylinder, where an adjustable pressure sensor allows fish to be released at specified depths. Once the device and fish reach the target depth, the jaws open, allowing the fish to swim free. The SeaQualizer comes in three models: the original with release settings for depths of 50, 100 and 150 feet; the

shallow or Striper model for 30, 50 and 70 feet; and a deep-water device for deployments at 100, 200 and 300 feet. Each model retails for \$60.

Descending devices hold great promise to improve reef-fish survival but their use is voluntary at this point. Researchers are working with different designs in various depth profiles and geographic areas to quantify the benefits of the devices. Once that happens, fishery managers will be able to determine if mandatory use is warranted.

Meanwhile, the marine industry is doing its part thanks to Martin Peters, manager of Government Relations at Yamaha Marine Group, who contacted the Georgia Department of Natural Resources seeking opportunities for his company to improve marine fisheries management in the South Atlantic region. Georgia DNR staff asked for input from the leadership of state marine fish management agencies from North Carolina to Florida, and a decision was made to create a FishSmart Red Snapper Conservation Project.

Thanks to the support of Yamaha Marine Group, NOAA Fisheries, American Sportfishing Association and other partners, anglers and guides in the South Atlantic region are receiving free descending devices along with information about best practices for handling fish. Participants will be surveyed about their experiences, and the results will help resource managers understand and address any barriers to the use of descending devices.



Taking a few extra minutes to release a fish with a descending device may seem inconvenient and the cost of more sophisticated devices may be off putting. However, we owe each fish we release the best chance of survival. After all, they are the future of fishing.

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A vibrant sunset over a marshy landscape. The sky is filled with horizontal bands of deep red, magenta, and purple, transitioning to a dark blue at the top. The foreground is dominated by tall, green grasses and reeds that are reflected in the calm water. The background shows a dark silhouette of a tree line against the colorful sky.

JOHN KRIVEC

a photo portfolio of Georgia

The sun sets against a painted sky over the famed Marshes of Glynn, penned by poet Sidney Lanier.





Above: With four tides within each 24-hour period, the waterways throughout the Golden Isles set the perfect stage for a variety of activities.

Right: One of the few places that allows horseback rides on the beach, this activity is not to be missed while visiting Georgia's Golden Isles.





Left: A remarkable habitat for coastal wildlife, the marshes are home for crabs, shrimp, birds, dolphins and more.

Below: Brunswick's Sidney Lanier Bridge is the tallest cable stayed bridge in Georgia, and offers breathtaking aerial views of the vast marshes and rivers in the Golden Isles.





Above: The mysterious hand-carved St. Simons Island Tree Spirits are local legend in the Golden Isles. Spend an afternoon on a scavenger hunt to find each one hidden throughout the island. Pick up a Tree Spirit map at the Golden Isles Welcome Center, where the Mermaid Cora Tree Spirit can be found.

Right: Once the entrance to a prominent plantation, the Avenue of the Oaks features a tunnel of centuries-old live oak trees that create the perfect setting for photos.







Hauntingly beautiful Driftwood Beach on Jekyll Island is the most iconic beach in the Golden Isles.



The St. Simons Lighthouse is one of only five remaining lighthouses in Georgia, and is open to the public. Climb 129 steps to the top to see breathtaking views of St. Simons Island, Jekyll Island and Brunswick.

MEET THE CHEF |

LOCAL, COASTAL CUISINE

BY **GHM STAFF**

When choosing a seafood restaurant, many of us inquire about the chef. Like, what makes him or her such a seafood aficionado? So, let's just say the chef is also a local fishing guide. That would be a pretty good sign. Who better to provide guests with fresh, tasty seafood than someone who also catches it and cleans it?

Such is the case for Captain/Chef Dave Snyder, owner and head pot banger at Halyards Restaurant on St. Simons Island, Georgia. Born and raised in Michigan, Snyder first discovered his love for cuisine at the University of Georgia. Instead of feasting on the wonders of 2 a.m. pizza and fried cheese sticks, Snyder was experimenting in the kitchen with exotic spices and innovative cooking methods. From college, he landed in the New England Culinary Institute in Vermont, then catapulted to New York City where he sharpened his skills at The Essex House, Zoe, Union Square Café, and The Mark. After earning his toque in the big city, Snyder eventually came to his senses and returned to the Deep South where he became executive chef at Azalea in Atlanta before eventually settling in St. Simons Island. In 2000, he opened Halyards on St. Simons and, in 2006, launched Tramici, an Italian “neighborhood” eatery. Most recently, Snyder focused on spicy comida south of the border with La Plancha, which means “hot griddle” in Español.

The three restaurants are some of the island’s and region’s favorites because, well, the food is delicious and most is sourced locally—especially the seafood. His close relationship with local fishermen and farmers, and desire for the sustainability of the environment, are part of what makes the restaurants so popular.

When he’s not fishing or cooking, Snyder is a tireless community volunteer. He serves on the advisory panel for snapper/grouper species for the South Atlantic Fishery Management Council and has worked with the South Atlantic Fishermen’s Association to improve the sustainability and health of the South Atlantic, the availability of local fish, and the financial future and heritage of the



Chef Dave Snyder | Halyards

fishing industry. Snyder also serves on the board of directors for the Chamber of Commerce; the Golden Isles CVB; the Georgia Restaurant Association; the Coastal Symphony of Georgia; the Boys and Girls Club of Southeast Georgia; and Hospice of the Golden Isles. He is also a founding board member of the St. Simons Food & Spirits Festival, benefiting Hospice of the Golden Isles.

Apparently, he never sleeps.

In 2012, the Georgia Restaurant Association named Snyder a finalist for Restaurateur of the Year and selected him as one of four chefs to represent the GRA’s Georgia Grown program in 2013. The following year, Halyards and Tramici were named Businesses of the Year by the Brunswick and Golden Isles Chamber of Commerce.

With all of the time he dedicates to community service, when does he have time to fish?

“That’s why I started guiding,” Snyder said with a sly smile. “That way, when I have clients, I have to fish!”

His most recent venture, Hook & Knife Charters, allows him to share his love of angling in the Golden Isles region with visitors to the area and, if they’re successful, perhaps cook what they caught at one of his restaurants. Now, that is full service—from hook to cook.

For more information, visit HookandKnifeCharters.com or www.halyardrestaurantgroup.com. 🐟

Deviled Crab

Serves 4

Ingredients

- 2 lbs Lump blue crab meat
- 2 T Bacon fat
- ½ ea Yellow onion, minced
- 1 ea Red pepper, minced
- 1 ea Celery stalk, minced
- ½ ea Pasilla dry pepper, reconstituted and minced with seeds
- 2 C Diced tomatoes and juice
- 1 T Tomato paste
- 2 ea Eggs
- 1 T Sour cream
- 1 ea Lemon, juiced
- 1 T Worcestershire
- Breadcrumbs as needed

Preparation

1. Sauté onions, peppers, celery and pasillas in bacon fat over medium heat for 10 mins.
2. Add tomatoes and paste, and cook until almost dry. Cool.
3. Mix all but breadcrumbs, and season with salt and pepper.
4. Add breadcrumbs to bind.
5. Stuff into shells and bake at 400 degrees for 10 minutes.
6. Serve with remoulade.



Caramelized Onion and Crab

Scampi Sauce for Sautéed Trout

Serves 4

Ingredients

- 6 ea Vidalia onions, sliced thinly
- 6 oz Butter, unsalted
- 2 oz Red wine vinegar
- 2 oz Honey
- 2 C White wine
- 2 ea Garlic cloves, sliced
- 1 ea Thyme sprig
- 1 oz Chive, chopped
- 1 oz Parsley, chopped
- 1 ea Lemon
- 10 ea Cherry tomatoes, sliced

Preparation

1. Sauté all but 1 cup of onions over high heat in olive oil for 10 minutes.
2. Reduce heat to medium and add 1 oz butter, salt and pepper to taste.
3. Caramelize onions for 30 minutes or until brown. You may need to change to smaller pan.
4. Add vinegar and honey, and reduce to dry. Reserve.
5. Combine wine, remaining onions, garlic and thyme and bring to boil.
6. Reduce to almost dry and whisk in butter to make sauce.
7. Strain.
8. Combine caramelized onions, ½ lb. crab meat and butter sauce. Season with chives, parsley, lemon juice, salt and pepper.
9. Garnish with tomatoes.



Clams Casino

Serves 4

Ingredients

- 10 ea Sapelo Island clams, raw on half shell
- 2 oz Marrow, chopped (can substitute bacon)
- ½ ea Shallot, minced
- ½ tsp Sauté mix
- ½ ea Red pepper, minced
- ½ C Chardonnay
- ¼ C Parmigiano Reggiano
- 1 T Oregano, chopped
- Salt and Pepper to taste

Preparation

1. Render marrow and sauté shallot together until lightly brown, discard most fat.
2. Sauté peppers and sauté mix for 3 minutes, add wine and reduce until dry. Cool.
3. Season mixture with cheese, oregano, salt and pepper.
4. Place mix on top of clams and bake at 400 degrees for 15 minutes.



Crab Bisque

Serves 4

Ingredients

- 1 C Celery, small dice
- 1 C Yellow onion, small dice
- 1 T Garlic, minced
- ¼ C Old Bay Seasoning
- 1 C Dry sherry
- 1 qt Lobster stock
- 1 qt Heavy cream
- 3 T Cornstarch
- 3 T Water, cold
- 1 lb Crab claw meat
- 1 oz Worcestershire
- 1 tsp Tabasco

Preparation

1. Sweat celery, onion, and garlic for 10 minutes over low heat. Sprinkle with seasoning and cook for 2 minutes.
2. Deglaze with sherry, reduce by 75%.
3. Add stock, bring to boil then reduce by half.
4. Add cream, boil, turn down heat and simmer for 10 mins.
5. Combine cornstarch and water to make slurry.
6. Thicken with cornstarch slurry.
7. Add claw meat, season with Worcestershire, Tabasco, salt and pepper.



GUY HARVEY

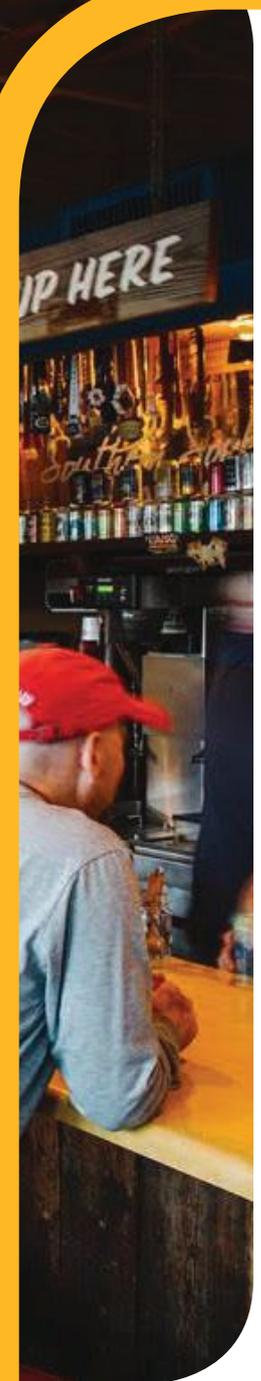
GUYHARVEY.COM



Restaurant Roundup



Patrons lining up at Southern Soul BBQ on St Simons Island.



The Sustainable Restaurant Association (thesra.org) describes doing good by: sourcing fish responsibly; celebrating local/seasonal; serving more vegetables, better meat; supporting the community; valuing natural resources; and supporting farmers. Here are a dozen restaurants to tempt your palate while touring the Georgia Coast.

Love's Seafood and Steaks Restaurant

6817 Chief of Love Rd, Savannah 31419
912-925-3616; Open Tuesday – Sunday
lovesseafood.com

Since 1949, this family-owned restaurant has served the very best in fresh seafood and premium beef; no prepackaged items here! Casual, waterfront dining on the banks of the Ogeechee River, 15 minutes from downtown Savannah. Film location for *Forrest Gump*.

Sunbury Crab Company

539 Brigantine Dunmore Rd., Midway 31320
912-884-8640; Open Wednesday – Sunday; call-ahead wait list available.
sunburycrabco.com

Fresh steamed blue crabs caught daily right off the dock. With a panoramic view of Sunbury Harbor, Sunbury Crab was named by *Coastal Living Magazine* #13 of "The 20 Best Seafood Dives of all Time, Ranked" in May 2017.

Marker 107

2943 Kilkenny Road, Richmond Hill 31324
912-727-5999; Open Wednesday – Sunday
marker107.com

From the St. Catherine's she-crab soup to cast iron scallops, crab cakes, and fresh, fried seafood, Marker 107 offers the freshest catch straight from the dock. The stunning view from Kilkenny Creek makes this a special dining experience.

The Grey

109 Martin Luther King, Jr. Blvd., Savannah 31401
912-662-5999; Open Tuesday – Saturday for lunch and dinner, Sunday for dinner.
thegreyrestaurant.com

Executive Chef Mashama Bailey gives diners a personal take on Port City southern food, always fresh and local, in this restored, 1938 Greyhound bus terminal-turned restaurant in downtown Savannah. Accolades abound: patron's named The Grey restaurant of the year for 2017/18; James Beard Foundation nominated Mashama as a finalist in the Best Chef Southeast award category for 2018.



Skipper's Fish Camp Oyster Bar and Grill

85 Screven St, Darien 31305
912-437-3474; Open daily 11am-9pm
skippersfishcamp.com

Seafood and ribs are the specialties, as is the award-winning, lightly fried, wild Georgia shrimp. Casual, waterfront dining and separate bar with views across the Altamaha River in historic downtown Darien.

Southern Soul Barbeque

2020 Demere Rd, St. Simons Island 31522
912-638-7685; Open daily 11am-9pm
southernsoulbbq.com

Southern Living named Southern Soul “The South’s Best BBQ” two years in a row (2017 and 2018), and Guy Fieri featured the restaurant on *Diners, Drive-Ins and Dives*. No wonder, given their focus on slow-cooking meat and quality ingredients. Their Brunswick stew recipe is so good, it was featured in Garden & Gun’s cookbook! A casual, must-visit institution at the roundabout.



Georgia Sea Grill

407 Mallery St., St. Simons Island 31522
912-638-1197; Open daily 5-9:30pm
georgiaseagrill.com

This locally-owned restaurant and wine bar specializes in dishes from the farm, the field, and the sea. Fresh fish can be prepared a variety of ways (Cajun spiced, bronzed or pan roasted); the shrimp and grits features roasted tomato and house-made tasso gravy.



Steffens Restaurant

550 S. Lee St., Kingsland 31548
912-729-5355; Open daily for breakfast and lunch,
dinner Monday – Saturday
steffensrestaurant.com

Since 1948, this old-school diner has served up southern comfort food with all-natural and often locally-sourced ingredients. Handcrafted burgers, homemade biscuits, handspun, old-fashioned milkshakes, along with the local fried Georgia shrimp, make this a local favorite.



The Fish Dock at Pelican Point

1398 Sapelo Ave, Crescent 31304
912-832-4295; Open Tuesday – Sunday
fishdockrestaurant.com

Captain Charlie Phillip welcomes you to his family-owned restaurant featuring a sea-to-table menu. Watch little neck clam processing while you wait, or stroll the Sapelo River dock to see fishing boats arrive with the daily catch of snapper, grouper and sea bass.

Halyards

55 Cinema Lane, St. Simons Island 31522
912-638-9100; Open Monday – Saturday
halyardsrestaurant.com

Upscale, locally-or Georgia-sourced seafood, poultry, game and beef dishes, where sauces, soups and sweets are freshly prepared every day. Dinner menus change with the seasons at this relaxed grill with outdoor lounge. One of the trio of restaurants—Halyards, Tramic and La Plancha—owned by Chef Dave Snyder (*profiled in this issue*).

The Wharf

370 Riverview Drive, Jekyll Island 31527
912-635-3612; Open 11:30am - 11:00pm Monday -
Thursday; 11:30am - 12:00am Friday & Saturday; and
12:30pm - 11:00pm Sunday.
jekyllwharf.com

Located on the Jekyll Island Historical District Pier, The Wharf is the island's only waterfront restaurant and bar offering amazing marsh views, especially at sunset. Enjoy weekly live music and a fare of Southern coastal favorites.

Lang's Marina Restaurant

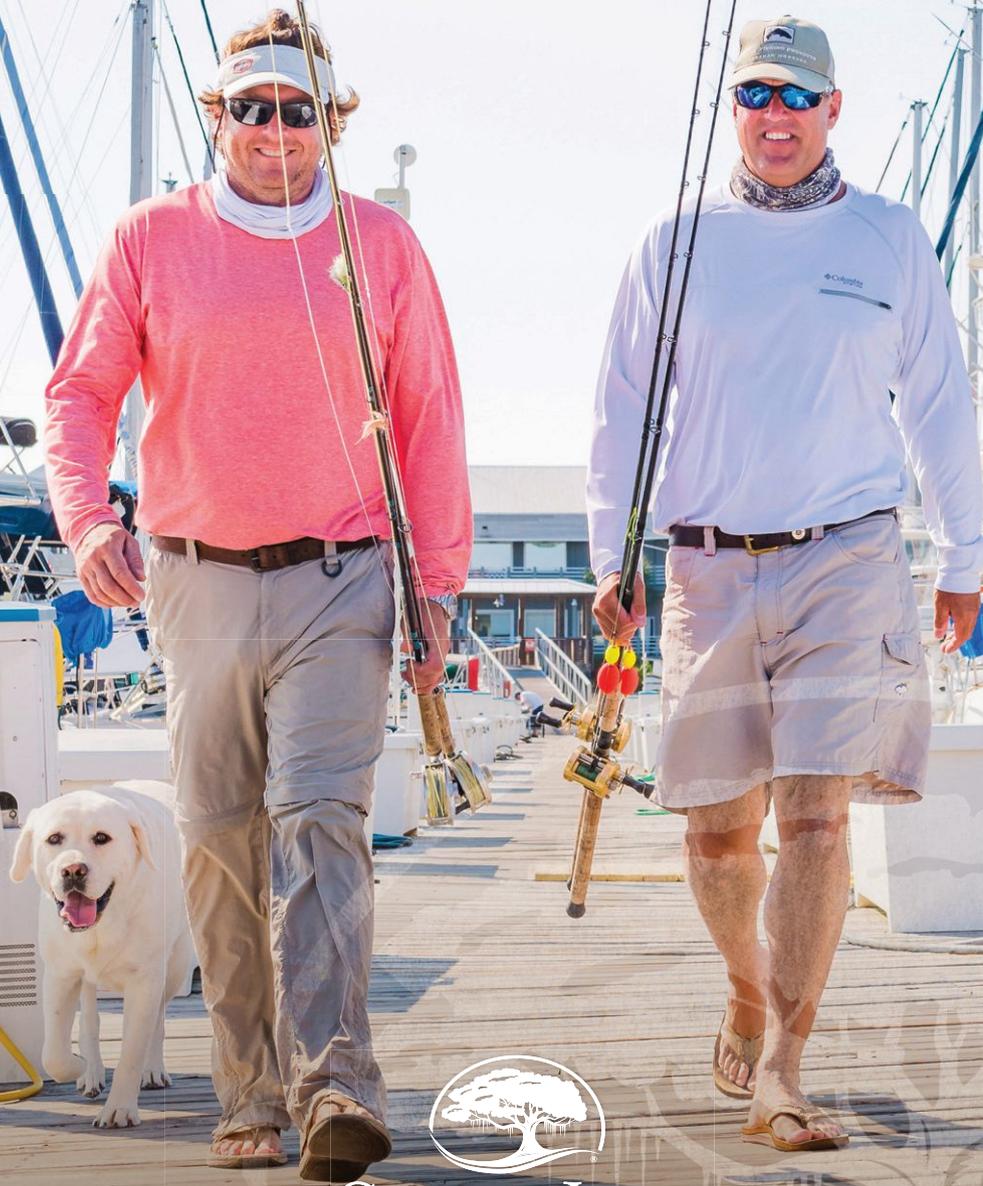
307 St. Marys St, St. Marys 31558
912-882-4432; Open Tuesday – Saturday, 11am-9pm
facebook.com/langsbestseafood

Located on the waterfront, looking out toward Cumberland Island National Seashore, Lang's serves up local seafood—especially wild Georgia shrimp—from their own fleet of boats.



Want more suggestions for where to eat on the Georgia Coast? Check out the listings in the state culinary guide, *Georgia Eats*, featuring “100 Plates Locals Love”
For more info go to: www.exploregeorgia.org/article/100-plates-local-love 🐟

Where the catch of the day is the day itself.



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Photography by: Benjamin Galland, h2o creative group

 **Georgia**[®]
On My Mind



GEORGIA GROWN



Detour off Interstate 95 along the Georgia Coast and you'll find a scenic highway meandering through marshland, historic downtowns and old plantations. U.S. Highway 17 was the original auto route to Florida, once known as the Dixie Highway. Today, it's known as the newest "Georgia Grown Trail" officially designated by the Georgia Legislature. Drive along the 100-mile stretch, spanning from Kingsland on the Florida border to Savannah crossing into South Carolina, to experience the bounty of harvest from both the land and sea.

To understand the coast, and its heritage of agriculture and aquaculture, one

must look at the terrain—of marsh and islands, forests and rivers. Rice fields and sugarcane once dotted the landscape. Ruins of the **McIntosh Sugar Mill Park**, built in 1825, are still evident in St. Marys, while **Hofwyl-Broadfield Plantation**—a rice plantation dating back to the early 1800s—is now a state park north of Brunswick. Rice was cultivated here until 1913, and then fifth-generation Dent sisters started a dairy farm to keep the land and preserve their family's legacy. A walk of the expansive grounds with marsh vistas and century-old live oaks leads you to the antebellum home where a guided tour gives a glimpse into plantation life. At the



bountiful harvests. Visitors and residents alike reap the benefits of the local fisherman through great local dining and fresh seafood available from one of the many seafood markets open year-round. Family-owned **City Market** in Brunswick has been selling fresh catch—local grouper, flounder, trout, oysters, scallops and shrimp—daily since 1948. **Shell Creek Seafood** in Townsend specializes in Wild Georgia Shrimp and other coastal seafood. Both businesses will pack up your order to go, or ice down your catch for home.

While aquaculture makes this Georgia Grown trail unique, there's plenty of places to sample the flavors and edible treats made in the Peach State. At **Georgia Peach World** in Townsend, you'll find all things peaches at this country store—ice cream, jam, shine, smoked peach BBQ sauce—plus boiled peanuts, homemade salad dressings, Vidalia onion salsa, pecan treats and other Georgia products. **Turnip Greens** in Darien and **Uncle Don's Market** on St. Simons Island also offer fresh produce and Georgia-made edibles. **The Salt Table** in Savannah sells a wide collection of salts, seasoning blends, teas and other Georgia Grown products. For a sweet treat to enjoy or take home, stop in to **Sugar Marsh Cottage** in Darien for specialty confections including sumptuous shortbread coquilles, chocolate-shaped shells, and artisan toffee flavored with sea salt. Pick up the original benne wafer or famous key lime cooler at the **Byrd Cookie Company** in Savannah, makers of fine candies since 1925.

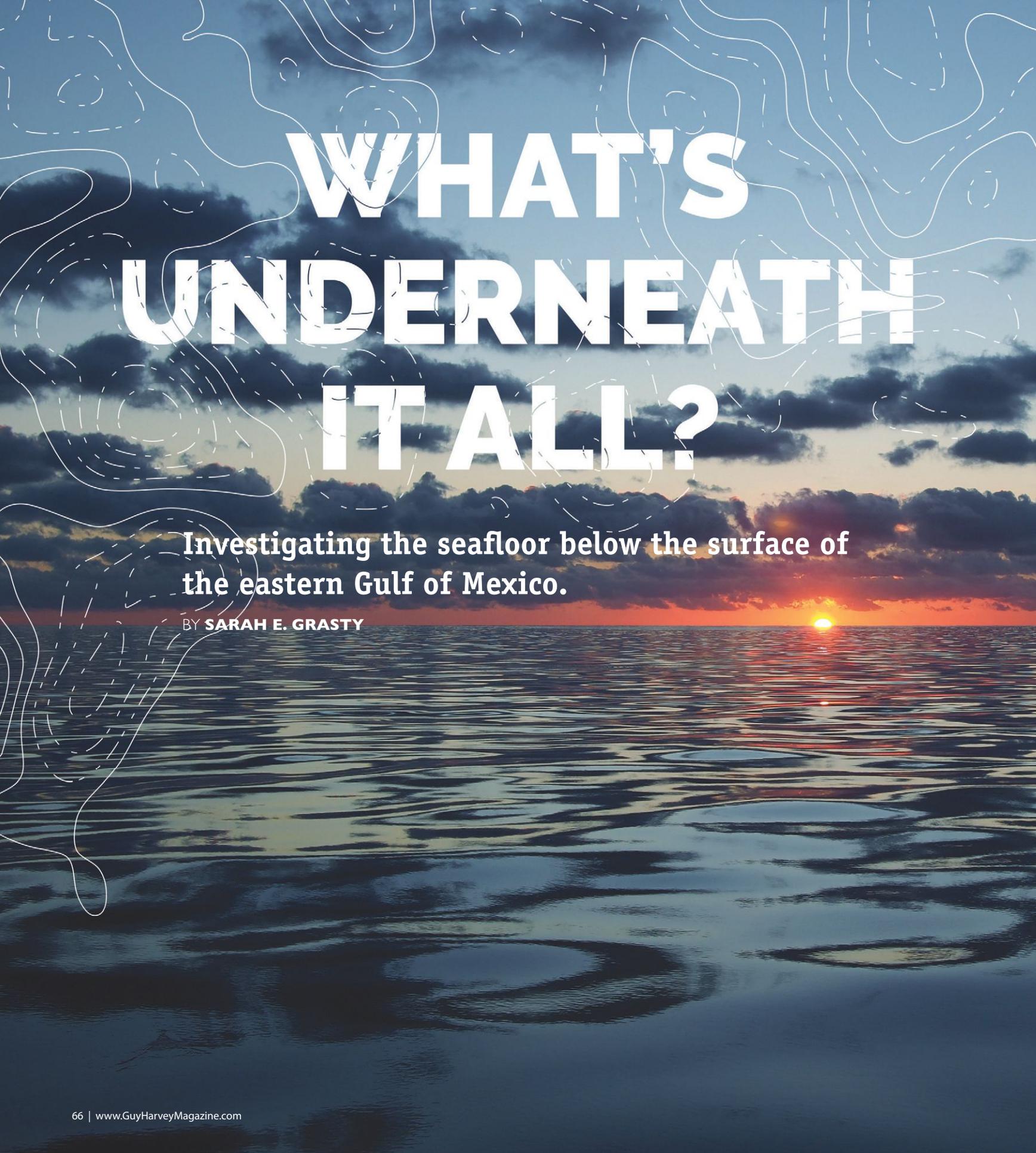
Spirits abound on the coast, as well. **Richland Rum** recently opened in historic downtown Brunswick, offering tastings and tours of the local distillery. A free tour of **Ghost Coast Distillery** in Savannah shares how hand crafted spirits are created; try the B&H Honey Whiskey featuring Savannah Bee honey or sample small batch vodkas in **The Cocktail Room**. And if wine is your beverage choice, try **Rabbiteye Winery & Market** in downtown Brunswick; third-generation **Bell Farms** grows and harvests

Richmond Hill History Museum, learn how auto icon Henry Ford (who wintered here for more than 25 years) attempted to grow rubber and iceberg lettuce as experimental crops. At the **Pin Point Museum**, located in the old A.S. Varn & Son Oyster and Crab Factory, you can experience the distinctive Gullah/Geechee African American culture (whose ancestors were enslaved plantation workers) through interactive exhibits and expert guided tours.

Shrimp harvesting has been a mainstay for generations along the coast. Annual festivals in Brunswick and Darien “bless the fleets” to ensure safe passage and

blueberries in nearby Bristol, then turns their crop into a collection of award-winning blueberry wines. **Golden Isles Olive Oil Gourmet Market & Wine Bar**, on St. Simons Island, now offers wine flights and cheese boards in addition to oil and balsamic pairings, gift baskets and Georgia-made treats.

Explore Georgia's coast by traveling the Georgia Grown US Highway 17, then take home a distinctive local product that will keep Georgia on your mind long after you visit. To plan your Georgia Grown holiday on the coast, visit ExploreGeorgia.org (www.exploregeorgia.org/region/the-coast) 



WHAT'S UNDERNEATH IT ALL?

Investigating the seafloor below the surface of
the eastern Gulf of Mexico.

BY SARAH E. GRASY



For most people, maps have become a universal part of life—just consider how often you open maps on your phone, tablet or computer. With the addition of satellite imagery, we now have amazing detail of the world around us. Beautiful images, even of the most remote places on earth, can be found with just a few clicks...except when it comes to the blue portions of maps.

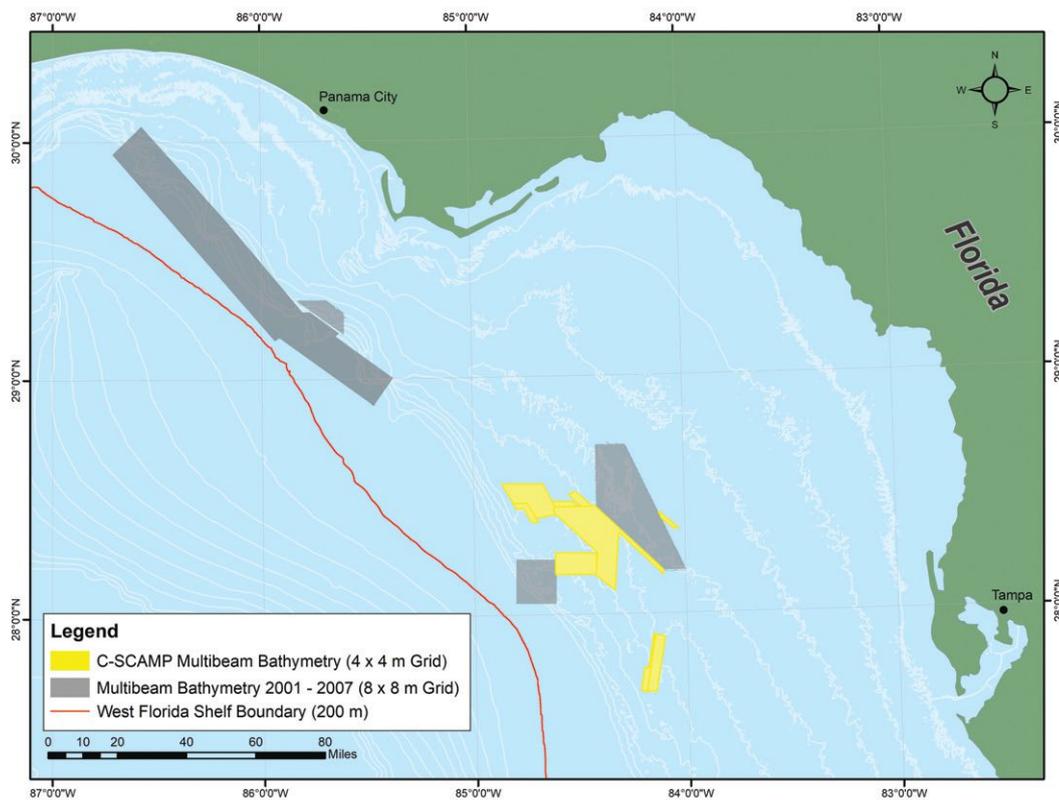
As soon as we dive beneath the surface of the ocean, information becomes extremely sparse. Yet, we need maps of seafloor topography, called bathymetry, to better understand and conserve fish populations and their habitats. On land, we know that black bears live in forests, alligators live in swamps and people like to hang out in McDonalds. There are similar patterns for where snapper, grouper and sea turtles live. To accurately evaluate their population and condition, it helps to know the location, size and type of neighborhood(s) they prefer.

Exploring the seafloor not only helps to find fish and their habitat, but also reveals where to mine sand for beach renourishment projects, where oil wells should or should not be, and where marine conservation areas should be located. Aside from the seafloor being incredibly expansive and expensive to reach, the types of technology (e.g., satellites) we use to map land are not useful for the deep sea.

Taking inventory of the seafloor also gives us a better understanding of impacts from environmental disasters, à la Deepwater Horizon. High-quality, current and comprehensive baseline data reveals the state of the environment before a disaster occurs. With this information, we can properly assess impacts to the water quality, fish populations, and so on. Luckily, this is precisely the type of work being pursued throughout the Gulf of Mexico by researchers at the University of South Florida (USF) College of Marine Science along with colleagues at the Florida Fish and Wildlife Research Institute (FWRI) and the National Oceanic and Atmospheric Administration (NOAA). The ongoing effort is the Continental Shelf Characterization, Assessment and Mapping Project (C-SCAMP). Information about the West Florida Shelf (WFS) from 60 to 600 feet deep is being collected by combining bathymetric mapping, visual surveys and water column acoustics. This is unlocking secrets of the seafloor in the eastern Gulf of Mexico, as well as the fish and sea turtle populations found among them.

The first area mapped by C-SCAMP was in December of 2015 at the “Elbow,” a popular offshore fishing spot about 90 miles west of St. Petersburg, Florida, in 150 to 220 feet of water. Subsequent visual surveys revealed the area to be lush with mangrove snapper, creolefish, lionfish and extensive reef fish-abundant hard bottom.

The work then began in 2016 to map the region between the Middle Grounds and Steamboat Lumps—an area aptly dubbed the South-West Florida Middle Grounds (SWFMG). Though the SWFMG does not have the same extent of hard bottom as the Elbow or the Florida Middle Grounds, the team has still found scattered pockets of low-relief hard bottom where mangrove snapper, red grouper and bigeyes were a common sight. They have even mapped the shipwreck of the *M/V Holstein*, which lies within the SWFMG region.



Left: The C-SCAMP group is focusing its efforts in the region between the Florida Middle Grounds and Steamboat Lumps protected areas. The yellow polygons indicate the extent of their work as of early-2018.

Right: An example of the multibeam bathymetry that C-SCAMP collected southwest of the Florida Middle Grounds (left) as well as the contour map derived from those data.

Another area where C-SCAMP discovered diverse fish populations was along the Gulfstream Natural Gas Pipeline (GSPL). The GSPL is essentially a 400-mile-long artificial reef that connects Mobile Bay and Tampa Bay. It varies whether the pipe is completely buried, partially exposed, or exists above the sand alongside large piles of dredging rubble on each side, yet one thing is constant: fish are found along nearly its entire length. Thus far, C-SCAMP has mapped and imaged about 70 miles of the structure. Along the way, they've seen a wide variety of marine life, from goliath groupers to schools of mangrove and red snapper, as well as loads of lionfish and several loggerhead turtles.

As of October 2018, C-SCAMP's mapping efforts had resulted in over 700 square miles of newly mapped area. This has allowed them to begin developing large-scale habitat maps, which we hope will help aid in management decisions like stock assessments and protected area delineations.

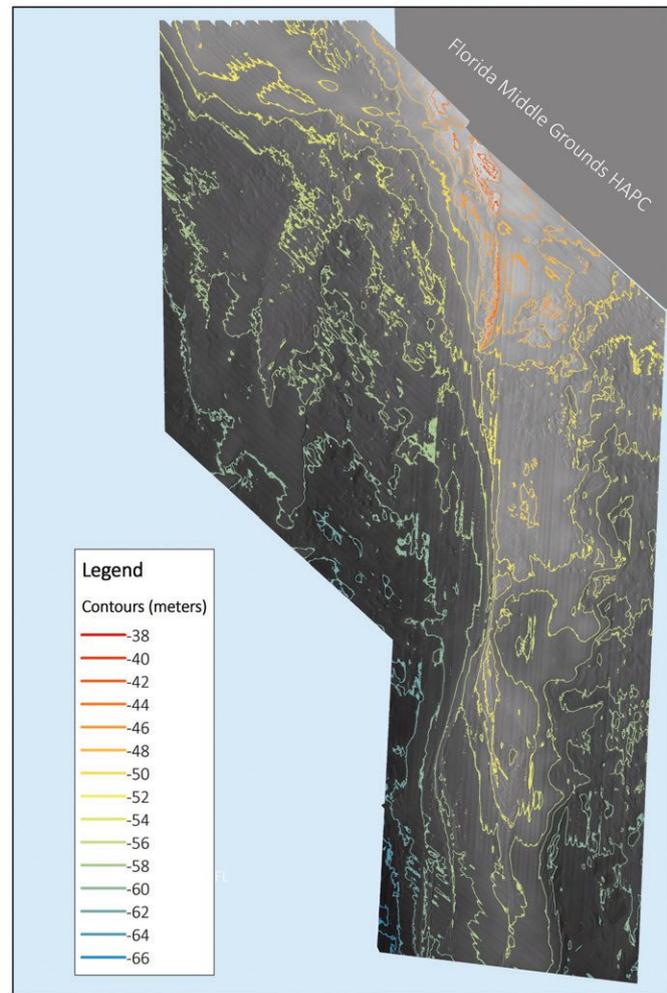
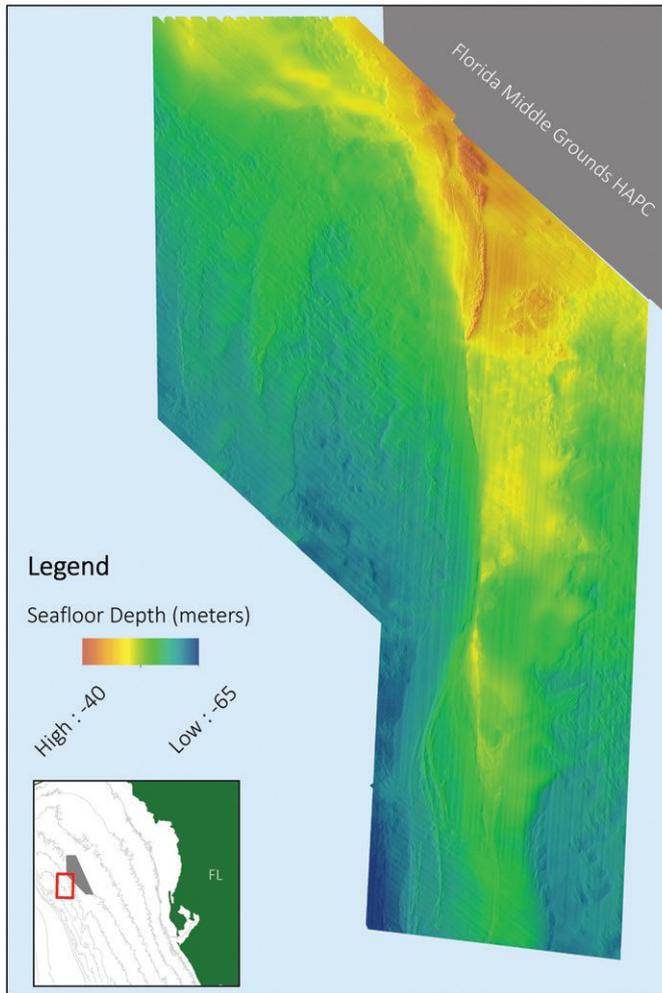
Keeping the Momentum Going

The main users of all these data were originally expected to be management agencies and research institutions. However, information is frequently uploaded to the C-SCAMP website and can be freely downloaded by the public. In true entrepreneurial spirit, some companies have packaged C-SCAMP's data and are selling it for a fee. However, over the last couple of years, Tampa Bay area

fishermen have reached out to the C-SCAMP group for more information about how to use the free data posted on the project website. With some assistance, these individuals were able to find some productive areas to spend their time offshore fishing. Just last year, a Tampa Bay area fisherman contacted the group for information about the Elbow, and after making it out to the popular offshore fishing spot in late 2017, C-SCAMP was excited to hear that he and his family hauled in several sizable red grouper and red snapper.

Listening to the Seafloor

For the C-SCAMP group, data collection is dependent on two main types of technologies: active acoustics and cameras. The acoustics used include two systems: a multi-beam sonar (Reson SeaBat 7125) for mapping the seafloor, and a water-column sonar (Simrad EK-60 Echosounder) to analyze fish biomass. Both of these systems send out sonic pulses to the seafloor and are not too different from the common depth sounder and fish finders found on most boats. The main difference for the multi-beam sonar is it can map 3–5 times the water depth at extremely high resolution; and for the water column acoustics, information can be turned into counts of fish of known sizes. Towed underwater cameras are then used to collect video for verifying the acoustic datasets by directly viewing the seafloor features on the maps and the organisms living there.



Seeing the Seafloor

Using the bathymetry (depth of the seafloor) and backscatter (bottom roughness and composition) maps generated from the multi-beam sonar data, planning for the visual surveys can then begin.

A towed video system developed at USF is used to observe the features depicted in the map(s) and simultaneously take inventory of associated reef fishes and other flora and fauna. This system is called the Camera-Based Assessment Survey System (C-BASS) and it has six video cameras for a near 180-degree field of view, as well as instruments that measure water temperature, salinity, chlorophyll concentration and water clarity. The platform is towed behind a research vessel at 3–5 knots and kept 6–10 feet above the seafloor. The system continuously records and stores video from all cameras and the data streams from the environmental sensors. Though small reef fishes are occasionally observed, the C-BASS is best suited for observations of the larger-bodied, reef fish species—particularly snapper, grouper, amberjack and porgies.

To make sure the counts of the fishes within the various habitats are

accurate, acoustic and visual technologies can be combined and compared. The C-BASS cameras do a good job of seeing targeted species that are fairly close to the seafloor, but certain species of fishes stack up in the water column above the height where the camera is being towed. As a compliment to the camera images, C-SCAMP concurrently runs a Simrad EK-60 Scientific Echosounder—the amped-up fish finder mentioned earlier. This piece of technology is important to understanding where fish exist throughout the entire water column (surface to seafloor) and how many are present.

One major advantage to this visual/acoustic survey approach is it can be used over almost all bottom types. This is particularly advantageous when the area being studied is protected or very rugged, meaning survey gears often used in the past (e.g., trawls and bottom longlines) are not feasible. Because visual gear is inherently non-destructive to the habitat and non-extractive of the marine life being studied, this type of approach also better conserves resources. The use of C-BASS aligns with a global shift that has begun in the last decade with agencies and institutions studying marine resources, such as fish have moved toward relying on visual-based observations as opposed to extraction-based or intrusive methods.



A large school of amberjack imaged by the C-BASS in the Elbow, a popular offshore fishing area west of Tampa Bay.

Narrowing the Scope

Considering the enormity of the West Florida Shelf and the comparatively modest scale of C-SCAMP's scope, it was necessary to prioritize and focus efforts. When the project began in mid-2015, team members combed through database after database to find any and all existing datasets of high-resolution bathymetry maps available for the WFS. Upon doing so, they found that only approximately 5% of the WFS had publicly available bathymetry data.

To further prioritize efforts, the group consulted with experts from the United States Geological Survey (USGS), Florida Fish and Wildlife Research Institute (FWRI), the National Marine Fisheries Service (NOAA-NMFS), Gulf of Mexico Fishery Management Council, Ocean Conservancy, as well as other academic institutions and the commercial and recreational fishing industries. This helped round the team's diverse set of knowledge, which includes marine technology, computer science, mechanical and electrical engineering, geology, and biology. By combining their skills with the committee's expertise, it was time to decide where to begin mapping. By the end of their first meeting, they settled on focusing

efforts in the region between the Florida Middle Grounds and the Steamboat Lumps Marine Protected Area.

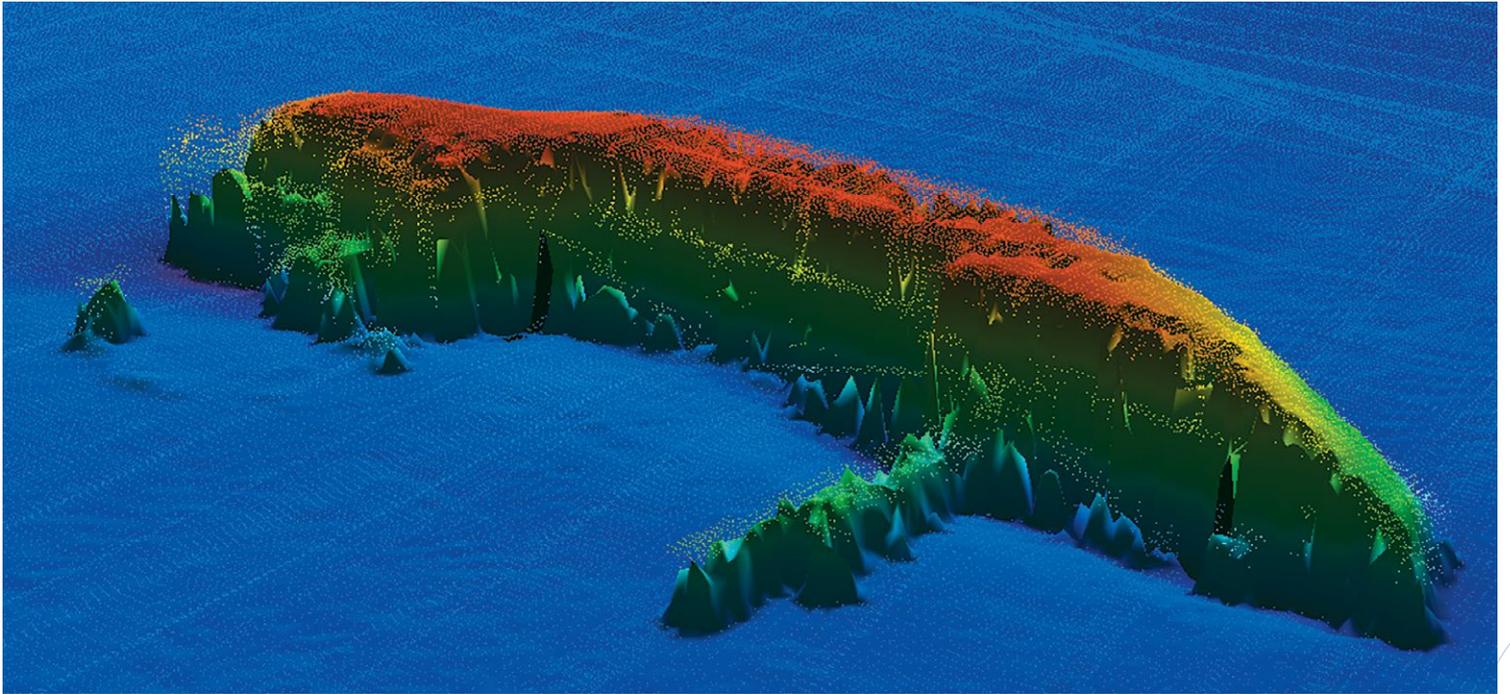
Aside from collecting heaps of data, C-SCAMP is creating a single, easily digestible map. By combining the depth, shape and composition of the seafloor with the video-based information, they can better understand what characterizes the different neighborhoods of the West Florida Shelf. Just like a satellite image of the land, they are generating maps that guide us to where different species live.

By the time this part of the project ends in mid-2019, C-SCAMP hopes to double the amount of publically-available bathymetry maps available for the West Florida Shelf and bring the total coverage closer to 10%. This may not seem like much, but just consider it took over 10 years for the first 5% to be completed.

It is the hope that C-SCAMP's efforts, alongside others in the Gulf of Mexico, are just the beginning of large-scale mapping in our coastal seas. And who knows? Perhaps one day it will be just as quick and easy to pull up maps of the seafloor on your phones, tablets and computers as it is today for their land-based counterparts. 🐟

For more information, additional maps and video, please visit C-SCAMP's website at www.marine.usf.edu/scamp. As the project progresses, mapping products will be continually updated with downloadable KML (Google Earth compatible) and GeoTiff (Geographic Information System Program compatible) files that are for open use. Please email cscampdata@usf.edu for further questions and assistance. The project's data is also archived and served through the National Oceanic and Atmospheric Administration's National Centers for Environmental Information. This work is made possible through the National Fish and Wildlife Foundation (NFWF; GEBF Grant #45892) and the University of South Florida's College of Marine Science. The author would also like to acknowledge and thank the lead investigators of this project, Dr. Steven Murawski, Chad Lembke and Dr. Stanley Locker, as well as the rest of the C-SCAMP members for their hard work.

*Follow us on Twitter! @CSCAMPscience
Find us on YouTube! C-SCAMP Videos*



Above: A 3-D rendering of the M/V Holstein which sunk in fall of 1992 during a large storm. Photo by Matthew Hommeyer.

Below: The Camera-Based Assessment Survey System (C-BASS) resting on the aft deck of the R/V Weatherbird II during a research cruise. Photo by Chad Lembke





Women ON THE Water

BY MARILYN DeMARTINI

WHAT DO WOMEN WANT?

This age-old question has plagued mankind for centuries, but the Recreational Boating & Fishing Foundation (RBFF) has the answer. Women want to be outside and on the water. There is no male bashing and no inference that women need anything more than their male counterparts to enjoy the outdoors, but RBFF has identified the need for women to feel they belong. Women want to learn to feel comfortable and unintimidated in sports that have been traditionally male-dominated.

The RBFF recently announced “Making Waves,” an initiative to empower women and girls “to cast off labels and rock the boat—with a fishing pole in hand.” Statistics show that women helped drive an 8.2% spike in fishing participation over the past five years and 45% of new anglers are female. RBFF also learned that, surprisingly, moms are taking kids fishing more than dads. But other statistics showed that women were not returning to the sport. One woman in five felt that they didn’t belong, stated Stephanie Vatalaro of RBFF. “They obviously were interested and trying fishing at a higher rate, but we needed to do something to get them excited about being an angler—getting their fish on!” she replied. The RBFF is now dedicating efforts via public relations and events with media, retailers and manufacturers to improve the industry’s approach to women.

RBFF’s Oregon Day helps young girls feel the power of fresh water fishing. Photo courtesy of RBFF.



“Making Waves” joins RBFF’s multicultural and family outreach programs “Take Me Fishing” and “Vamos a Pescar,” which aim to increase participation in fishing and boating while preserving and conserving natural aquatic resources. However, such outreach is not new. Ask Betty Bowman of “Ladies Let’s Go Fishing” and Judy Rhodes of “DIVA WOW,” founded in 1997 and 1999 respectively, and they will tell decades of stories of pioneering women in the outdoors.

Betty Bowman worked in marketing for Wellcraft when there were few women in the industry. She learned to fish and boat by watching her co-workers, building her own body of skills, learning to understand what they were doing and why. While attending an ICAST fishing trade show, she heard a speaker say that the boating and fishing industry wasn’t picking the low-laying fruit—women. She realized that most women didn’t have exposure or the opportunity to go fishing and she wanted to create a program to help women experience the sport. The Florida Fish & Wildlife Commission backed her and Bowman put together programs, an office, and now, over 20 years later, has 5,000 graduates.

“Ladies Let’s Go Fishing” seminars teach the “No Yelling” method of learning equipment, vernacular and, most importantly, the “whys” of fishing. “Women want to learn things before they get out on the water and get yelled at,” says Bowman. “They are hands-on and want to know ‘why’ things are done and how. Once they feel confident to get on the water and learn to fish, they feel comfortable getting out on a boat.”

Bowman and her team teach land-based seminars, then rely on fishing guides to get women out on boats to fish. That service is paid separately from the seminars, but it is the real take-away for women, some taking it seriously and becoming competitive anglers.

Sponsors like RBFF, Mercury, Power Pole and others have helped with gear and financial backing. “The boat ramp can be a very intimidating place,” says Bowman. So, launching a boat from a provided Magic Tilt Trailer has been an important part of her clinics.

Most classes are on saltwater fishing, but Bowman does some fresh water programs and has added adventure trips to Cuba and tournaments in the Florida Keys to keep women coming back for more.

“We’ve learned a lot about this market because we’ve surveyed women,” she says. “We’ve seen the numbers grow because when one woman goes fishing, she brings her whole

social circle,” Bowman states. “Women just want to feel comfortable walking into a tackle shop and asking questions. I wish I had been able to take this course!” she adds.

Judy Rhodes was a Texas rancher’s daughter, so she grew up roping cows, riding horses, and hunting with her father and brothers. Her husband was equally supportive of her passion to get other women into the outdoors as Rhodes set out on an educational mission, creating DIVA WOW, (Women Outdoors Worldwide). “When my sons graduated high school, I closed the kitchen and vowed that no woman was going to be left behind in enjoying the outdoors,” she says.

Rhodes began with shooting sports then segued into fishing and has even added equestrian and dog training to DIVA WOW’s repertoire. She serves women from 9 to 92 years of age and teaches the joy of the outdoors in a “women-friendly” environment where they become “friends and sisters.”

“Women are eager to participate—we like to have fun!” Rhodes says. She now has 53 million followers and 150-650 women participating in various educational programs because of traditional and social media and word of mouth. Those members in 50 states and 21 foreign countries help DIVA WOW with R&D as they network with women worldwide about the outdoors.

for sponsors to jump on the bandwagon, support the effort with money and product and take advantage of the growing women’s market.

Companies like Simms Fishing Products and Temple Fly Outfitters (TFO) are providing equipment and putting on events with their retailers. After participating in a DIVA WOW event, Kimberly Penick, customer service rep for TFO said she wanted to share her knowledge of fly fishing and was welcomed (with a “Hell yeah!” from Judy Rhodes) into the volunteer instructor network.

Having fished with her grandfather and father for years, Penick has an innate sense of the outdoors and is passionate about sharing it with men, women and young people. She credits women like Rhodes for the growth in outdoor sports. “This was a man’s world and now fewer women are intimidated. It is important to learn the fundamentals and that protective equipment is important—having the right clothing, glasses, waders, and rod and reel for the right species,” she says. She also notes that TFO is very supportive in providing equipment to non-profits to help the growth effort. She encourages women to go to their local retailers to take lessons and join local fishing clubs. “Life is better outside!” she states.

Simms has a 10-year track record with an event called “Chica de Mayo,” done with River’s Edge, an outfitter with two locations in Bozeman, Montana. The



Girls take on salt water angling, proving the RBFF motto: “I’m not afraid to make waves!” Photo courtesy of RBFF.

annual celebration, which includes instruction, cocktails, networking, and auctions, grew from 60 to 300 women and this year, raised \$5,000 for Casting for Recovery, a non-profit that uses fly fishing as therapy for breast cancer survivors.

Building on that success, Simms is rolling out a national event called “Women Are Fly,” with a support template and materials for its 550 retailers in the U.S. and Canada to utilize in hosting their own events. Says Diane Bristol, senior director of Employee and Community Engagement, “We want to help women learn about the sport and feel comfortable in fly shops. Fishing isn’t gender specific. Women get families out to fish and they bring friends. More women are getting into it and sticking with it. This is a public issue—it

“Women talk—we want to know everything, and we tell each other about what we’re doing. Women want to share fun,” she says. She also notes, “Women like to do it right and look good doing it. We need clothes that fit a woman’s body—we want the fashion—the boots, the glasses,” which has opened the door

supports conservation and it is really taking hold. The more people we get into the sport, the more they understand the importance of clean water and healthy fishing,” she adds.

Social media has fueled additional growth in women’s participation in



Amanda Buer is Instagram-ready with her catch and RBFF ad line, "I don't wait for respect, I reel it in!" Photo courtesy of RBFF.

fishing, as evidenced by a Facebook and Twitter feed from "Girls Kickin' Bass." Retired Ohio State Troopers Dianna White and Lisa Taylor had fished together for years and decided to get a boat to enter tournaments. They started the social media accounts to talk about fishing, develop a presence, and encourage more women and girls to get out and fish. They compare fishing to motorcycling,

another sport they enjoy and where they see women's participation growing. "Women are becoming empowered to do new and non-traditional things," says White, "We have been the only women in the tournaments we enter, but we've received a warm welcome from the guys—they even ask us for fishing tips!"

These fishing females want to share their passion and often take groups of friends out on their pontoon boat to try the sport—and they see the enthusiasm growing. "There's nothing I'd rather do!" states Taylor, who hopes to also teach fishing at Ohio University, where she currently teaches law enforcement.

RBFF entrusted its newest program, "First Catch Centers," to Shane Wilson, a long-time educator and founder of "Fishing's Future," a non-profit that educates and brings families together around fishing. Wilson, a passionate fisherman and elementary school teacher says, "Education is the future of fishing." A staunch Midwesterner with strong family ties, Wilson witnessed the lack of time families spend together and the number of single mothers who need activities to share with their children. He created a five-level curriculum that includes water safety/rules and regulations; tackle box basics; equipment; knots; casting; and preparing for fish. Groups of parents and children rotate through 20-minute segments, learning the basics with different instructors. At the end, each child is encouraged to hug his or her parent and say, "I love you!" For both, the experience can be life altering. "We use fishing as a way to get families together," says Wilson. "The parents see the joy in their kids' faces, everyone learns skills and they find something to share."

The volunteer Fishing's Futures organization has 80 chapters in 21 states, so the new RBFF First Catch Centers in Texas and Pennsylvania are a natural extension of Wilson's original program. This two-year pilot program is an effort to combine the fragments of local programs with retailers and government departments like the U.S. Fish & Wildlife Service, to provide equipment, create youth programs, and host events to bring families together to learn about fishing. By growing participation, RBFF sees the industry's growth and continued efforts to support conservation and diversity in outdoor sports. "We are fishing's future," states Wilson, "This is the right time and fishing is the gateway to the outdoors."

To learn more, visit: www.rbff.org, www.takemefishing.org/makingwaves, <http://news.takemefishing.org/first-catch-centers>, www.fishingsfuture.org, www.ladiesletsgofishing.com, www.DIVAWOW.org, www.facebook.com/GirlsKickinBass/team.



Best of the Best

Each year, during the sweltering heat of Orlando in July, the American Sportfishing Association holds the world's largest sportfishing trade show. It's called ICAST, the International Convention of Allied Sportfishing Trades. Thousands of fishing business people descend upon Mickey Mouse Land to network, conduct business, party, and gawk at the latest and greatest gear.

One of the coolest aspects of the four-day event is the new products showcase, which is a massive room filled with every kind of fishing gear imaginable competing to win a Best of Show award in one of 25 categories. This year, there were 974 products entered by 331 companies hoping to grab bragging rights for the next 12 months.

Following are some of the winners, which were chosen by attendees who voted by individual ballot during the show.

Best of Boating Accessories:

Johnson Outdoors Marine Electronics, Inc.

Product: Minn Kota Ultrex
johnsonoutdoors.com



Best of Footwear:

Rivers Edge Products

Product: Fish Sandals

riversedgeproducts.com



Best of Giftwear:

Number 6 Brands

Product: Cauldryn Coffee

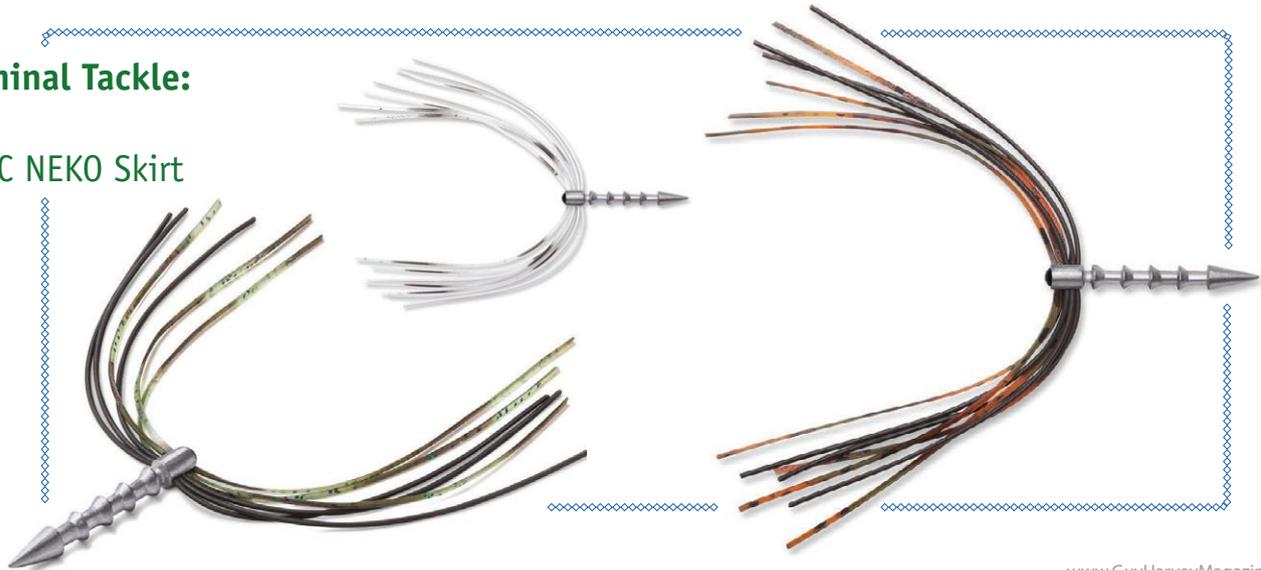
number6brands.com

Best of Terminal Tackle:

Rapala

Product: VMC NEKO Skirt

rapala.com





Best of Electronics: Garmin USA
Product: Garmin Panoptix LiveScope
garmin.com



Best Freshwater Reel:
Shimano American Corporation
Product: Curado DC Baitcasting Reel
ameritech.net



Best of Technical Apparel:
AFTCO/American Fishing Tackle Company
Product: Hydronaut Heavy-Duty Waterproof System
aftco.com

Best Fly Fishing Rod: St. Croix Rods

Product: Mojo Trout

stcroixrods.com



Best Freshwater Rod: St. Croix Rods

Product: Legend Glass

stcroixrods.com



Best Saltwater Reel:

Shimano American Corporation

Product: Tekota 500 Levelwind Reel

ameritech.net



Best Saltwater Rod: St. Croix Rods

Product: Mojo Yak

stcroixrods.com



HOOKED ON TRIPLETAIL



FRED GARTH

For the past 25 years, Fred D. Garth's articles have appeared in numerous books, magazines and newspapers around the world. Read his blog at: GuyHarveyMagazine.com.

My grandpa used to like to say, "There's more than one way to skin a cat." That was a gruesome image for a five-year-old to process. And who skins cats anyway, grandpa? What he meant, of course, is most tasks can be accomplished in various ways. For fishing people, there's no more apt saying. We will try just about anything—short of fishing naked—to hook up. We have tackle boxes full of bizarre-looking lures, a boatload of rods, stinky fish tonics, all manners of dead and live bait, and endless methods of casting, reeling, popping and jerking. And, most importantly, is holding our mouths in perfect position.

After five decades of fishing, I thought I'd seen every cat-skinning method of angling. That is, until I accepted an invitation from some dudes in Georgia to stalk the elusive and tasty tripletail. Full disclosure here, these weren't your typical Bubbas; they were the top dogs (bulldogs, I assume) from Georgia's Department of Natural Resources (DNR). I'd been invited by Doug Haymans, the new DNR director of the Coastal Resources Division, and Spud Woodward, who had just retired from that same position, to fish Georgia's stunningly beautiful Golden Isles region. Rounding out the crew was the Big Dog himself, Mark Williams, Commissioner of Georgia's DNR. Needless to say, I was honored to share a day of fishing with folks who've dedicated their lives to the health and sustainability of the fishery. As you might expect, we followed the rules meticulously.

I've caught a few tripletails over the years along the northern Gulf of Mexico and they're always fun. They put up a good fight, jumping sometimes and diving deep a lot. They can also liven up even the most boring dinner plate. The somewhat prehistoric-looking fish is so named because it has two, fat fins adjacent to the tail, which gives the appearance of three tails. It's an unusual critter with odd habits. They're usually spotted floating flat on the surface of the water like an ocean sunfish. The prevailing theory is they're creating a shadow for unsuspected prey to hide in. Or they're just sunbathing.

Tripletail tend to hang around surface structures, mainly crab trap buoys and such. The general fishing 101 is to spot them lounging on the surface and then throw a live shrimp close to their ugly noses. Having never fished the 100 miles of Georgia's coast, I looked forward to slinging some live shrimp high and far. But as we motored a couple of miles offshore, I was baffled. There were no crab trap floats, no structure, no buoys. Just wide open water. Considering the company I was with, I kept my flap shut.

Doug was manning the elevated helm, which gave him the best vantage point. As we baited our hooks with pissed-off shrimp, Spud outlined the plan of attack. "Look for something that resembles a paper plate on top of the water," he said.

"Huh?" I asked. "Did you say paper plate?"

"Yep, for some reason they go through a color change. They're completely white, like a paper plate."

"That's a new one," I said.

"As far as we know," Spud said, "this is the only place where anyone has witnessed this type of behavior."

Doug cruised around somewhat aimlessly at idle speed. He seemed to know what he was doing, so I admired the shoreline of Jekyll Island about a mile away and scanned the surface for paper plates.

"They get easier to see as the sun gets higher in the sky," Doug explained.

Sure enough, after less than 10 minutes of searching, Doug spotted the first tripletail. As Spud had declared, she was white. Live shrimp flew and splashed down nearby. The fish casually disappeared. Not interested. A few minutes later, we cast at another one. Same result. Then another and another, and each ignored the shrimp we dropped within sniffing distance. Then, I hit one in the face with a flying shrimp. Not on purpose. My cast was just too close. He splashed wildly and dove. We weren't having trouble finding them, they just weren't eating. We'd seen about 20 fish and had made multiple casts when Mark finally enticed one to



Left: Georgia's Department of Natural Resources Commissioner Mark Williams gently cradling a tripletail. Below: Former DNR Director Spud Woodward tags a tripletail. Photos by Fred Garth.

eat his shrimp. I checked Mark's mouth position: slightly opened with a sly smile.

I did my best to imitate his expression—even without the Copenhagen bulge—and BAM! I caught the next fish. Works every time.

Doug kept finding fish and we kept chunking shrimp. We ended up landing six or seven nice fish and spotting more than 50. Even though it's one of the most delicious fish in the sea, we released them all. I do like a nice fillet on the griddle, but catch and release seemed like the right thing to do considering the circumstances. Of course, we tagged each with a dart tag.

The excursion was deemed a massive success so we eased back to the dock feeling proud and satisfied. I did a lot of listening as these dedicated men discussed the challenges they face, like, eradicating invasive species, balancing commercial and sport fishing, state versus federal rules, fish stock assessment, growing hatchery fish, and so on and so forth. It's a tough job, but these guys are always looking for new and innovative ways to skin cats. My old grandpa, who I fished with often, would be proud. 🐟



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