





## First South is how you buy land.



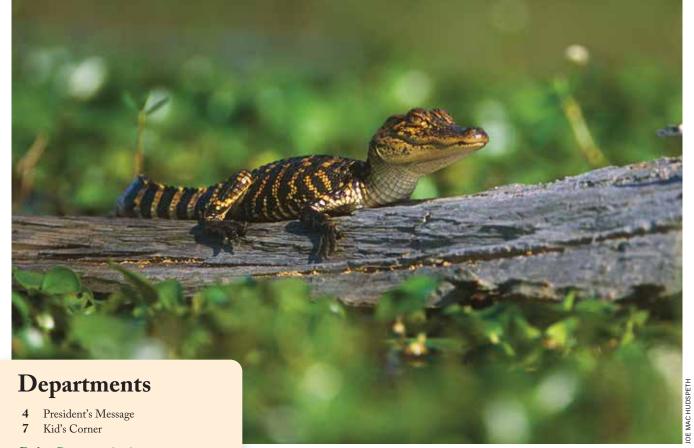
800-955-1722 | FirstSouthLand.com





#### Summer 2023

Vol. XXXI No. 2



#### Delta Conservationist

- 9 Board Member Highlight: Pierce Brown
- 12 Partner Highlight: Taharga Hart, Assistant State Conversationist, **USDA-NRCS**

#### Management

- 26 Oxbow Lakes
- 32 The Great Reset
- 35 Shipland WMA

#### Delta Flavor

14 Ricotta-Stuffed Squash Blossoms

#### Delta Sportsman

- 20 Mississippi's Boating Rules and Regulations
- 23 Pre-Season Deer Prep
- 24 Shooting Away the Summertime Blues...
- **30** Q&A with Stephen Sullivan

#### Delta Fauna

33 The Hidden Killer

#### Delta Flora

28 Delta Native Pollinator Plants

#### Delta Wildlife News

6 Welcome, Ron Selby

#### **Features**

#### Mississippi Wildlife Heritage Museum

One of Mississippi's best-kept sportsman secrets is the Mississippi Wildlife Heritage Museum, located in the small Delta town of Leland.



#### **Invest In The Future Of Our Wildlife Resources**

Not a member? Join Delta Wildlife today by scanning the QR code. Check out page 22 to learn more about what we can do you for you.

Cover photo by Joe Mac Hudspeth



#### President

Pierce Brown, Schlater

#### Chairman of the Board

Tommy Goodwin, Greenville

#### Treasurer

Frank Howell, Stoneville

#### Board of Directors

Jimmy Bruton, Hollandale Emily Carter, Glen Allan Will Choate, Yazoo City Paul D. Dees, Greenville Hayes Dent, Yazoo City Terry Dulaney, Clarksdale Scott Flowers, Clarksdale Lawson Gary, Greenwood John Howarth, Jr., Cleveland Austin Jones, Moorhead Bryan Jones, Yazoo City Bill Kennedy, Inverness Louis Lambiotte, Vicksburg Mike Lamensdorf, Cary Powell Litton, Greenwood Rance Morgan, Leland Murry McClintock, Tunica Gibb Steele, Greenville Mike Sturdivant Ill, Glendora Bill Ryan Tabb, Cleveland Louie Thompson, Tchula Rod Veazey, Indianola

#### Past Presidents

Paul D. Dees, Greenville Bobby Carson, Marks Bowen Flowers, Clarksdale John Murry Greenlee, Yazoo City Allan Grittman, Ruleville Austin Jones, Moorhead Bill Kennedy, Inverness Bill Litton, Greenwood Jim Luckett, Dublin Randy Sewall, Coahoma

#### Magazine Production Staff

Lia Guthrie, Graphics and Design Manager Ashley Kumpe, Graphic Design Bethany Haggard, Print Manager

#### Delta Wildlife Staff

Ron Selby, Executive Director Jody Acosta, Nuisance Wildlife Specialist Matthew Dzianmiski, Wildlife Technician Henry Fraiser, Wildlife Technician Sam Franklin, Wildlife Biologist Parker Frew, Wildlife Biologist Steele Henderson, Wildlife Technician Will Prevost, Wildlife Technician Riley Ryburn, Wildlife Biologist

Delta Wildlife is a private, non-profit corporation dedicated to developing and properly managing wildlife habitat in the Delta and part-Delta Counties of Northwest Mississippi. Delta Wildlife Magazine is published quarterly by Delta Wildlife, P.O. Box 276, Stoneville, MS 38776. This is Volume XXXI, Number 2, published in the Summer of 2023. Members of Delta Wildlife receive this publication as a benefit of membership. Delta Wildlife welcomes suggestions and contributions from readers. All materials should be sent to the Production Manager's attention. Materials are reviewed and approved by an editorial committee. Advertising rates are available by calling (662) 686-3370 or emailing mcbrooks@deltacouncil.org. The appearance of advertisers, or their identification as a member of Delta Wildlife, does not const

#### Message from the President

BY PIERCE BROWN



s I step into my new role as President of Delta Wildlife, I am honored, eager and enthusiastic to see what this new season has in store. Over several decades, Delta Wildlife has been a tremendous resource for me personally, and having served on the Board of Directors since 2015, I've witnessed a remarkable amount of growth in programming, outcomes and community outreach.

Most recently, Delta Wildlife wrapped up the Spring Habitat Seed Program, providing over 120,000 pounds of corn, soybeans, milo and rice to Delta Wildlife members at a reduced cost far below market price to use for wildlife habitat enhancement. This program, established more than 20 years ago, is a cornerstone for our mission to conserve, enhance and restore the Mississippi Delta and provides an opportunity for

our members to visit our facility and interact face-to-face with the staff. If you missed the Spring Habitat Seed pick-up, be looking for a letter in the mail about the Fall Habitat Seed Program, usually in September.

Another conservation effort our staff has been working on is building and supplying nesting boxes and predator guards for our resident Wood Duck populations. Some of these new boxes have been installed on several Delta WMAs through a partnership with the MS Department of Wildlife, Fisheries and Parks, T.C. Energy and the MS Department of Corrections. If you are interested in purchasing some of these boxes, please contact the

It's been about six weeks since the deadly storms ripped through our South Delta communities. Delta Wildlife did not hesitate to load up and head out to help board windows, tarp roofs and clear debris, as well as help cook and feed volunteers from out of state. In the wake of such a disaster, I've never been more proud to be a part of this organization and support our neighbors, and we continue to pray for them.

I would also like to take a moment to welcome our new Executive Director, Ron Selby. I believe Ron is an excellent addition to our leadership team and brings a wealth of skills to the table. See page 6 for a full profile of Ron.

In conclusion, I look forward to serving this term as President, and I encourage our readers and members to reach out to me or our staff if you need assistance or just have a general question.



#### 2023 Delta Wildlife Committees

#### Membership Bowen Flowers, Co-Chairman

Emily Carter, Co-Chairman Austin Jones, Vice-Chairman Bill Kennedy, Vice-Chairman John Howarth, Jr. John Murry Greenlee Pierce Brown Rance Morgan Rod Veazey Scott Flowers Will Choate Bernie Jordan Bill Litton Ike Brunetti John Montfort Jones Kirk Malmo Pete Hunter Peyton Randolph Randy Sewall

#### **Fisheries**

Paul D. Dees, Chairman Austin Jones, Vice-Chairman Louie Thompson Ben W. Pentecost Billy George Janous Bob Eley Brian Ikerd David "Guy" Ray Gwin Smith Lewis "Mac" McKee Mark Fratesi Pete Hunter Randy Sewall Ray Crowell

#### **Forestry**

Jim Luckett, Chairman John Murry Greenlee, Vice-Chairman Jimmy Bruton Mike Lamensdorf Rod Veazev Terry Dulaney Alex Gates Billy George Janous Bruce Leopold David Young Duncan Moore George Smith Mac Durastanti Milford Hough Murry McClintock Reggie Dill Sells J. Newman Walton Gresham

#### **Backyard Habitats** & Non-Game Species

Bryan Jones III, Co-Chairman Emily Carter, Co-Chairman Bobby Carson, Vice-Chairman Bill Kennedy, Vice-Chairman Jim Luckett Neal Smith Mike Sturdivant, Jr. Sledge Taylor, III **Dudley Stewart** John Montfort Jones

#### Magazine, Education, and Public Relations

Bowen Flowers, Co-Chairman

Emily Carter, Co-Chairman Austin Jones, Vice-Chairman Bill Kennedy, Vice-Chairman Hayes Dent Mike Sturdivant Sledge Taylor Bill Litton Bobby Carson Kenner Patton Kirk Malmo Sam A. Newsom Scott Coopwood Thomas E. Guillot, Jr.

#### Mourning Dove, **Bobwhite Quail** & Small Game

Bryan Jones III, Co-Chairman

Emily Carter, Co-Chairman Bobby Carson, Vice-Chairman Bill Kennedy, Vice-Chairman Hall Barret, III Mike Lamensdorf Scott Flowers Sledge Taylor Austin Frye Austin Jones B.T. Steadman Cameron Dinkins, IV Chip Upchurch Dan Branton David "Guy" Ray Duncan Moore Ed Moody Erle West Barham Grant Brabham Hunter Mitchell Jay Janous Kirk Malmo Mark D. Morrison

Ralph Owens, Jr. Sells J. Newman Pat Patton Tommy Goodwin Travis Satterfield Tripp Hayes Tucker Miller III

#### Waterfowl Randy Sewall, Chairman

Allan Grittman.

Vice-Chairman Bill Kennedy Gibb Steele Louis Lambiotte Murry McClintock Rod Veazey Terry Dulaney Arthur Abercrombie Austin Frye Austin Jones B.T. Steadman Billy George Janous Boyd Atkinson Brian Ikerd Bryan Jones Burke Fisher Cameron Dinkins, IV Charles M. Merkel, Jr. Chip Upchurch Craig Rozier David "Guy" Ray David Coon Drew St. John Duncan Moore Edward E. Milam Erle West Barham Frank Rawlings Fred Poindexter Ganes Clements Grant Brabham Hunter Mitchell James McArthur, Sr. Jason Beasley Jay Janous Jerry Stevens Jimmy Sandifer, Jr. John Green John M. Dean, Jr. John Montfort Jones

John Nowell

Kirk Erickson

Kirk Malmo

Kit Stovall

Peyton Randolph

Rodney Tharp

Russ McPherson

Smith Stoner

Steve Gelvin Ted Connell Thomas Lusco Tom Tollison Tommy Goodwin Travis Satterfield Trip Braund Tucker Miller III Wade Litton Will Jones Will Long William McNamara

#### White-tailed Deer & Eastern Wild Turkey

WP Brown

John Murry Greenlee, Chairman Austin Iones, Vice-Chairman Louie Thompson Murry McClintock Rod Veazev Will Choate Alex Gates B. Iones Bart Freeland Bobby Carson Boyd Atkinson Brian Ikerd Bruce Leopold Cameron Dinkins, IV Craig Rozier Dan Branton David Young **Dudley Stewart** Duncan Moore Ed Robinson Gus Pieralisi, Jr. James C. Robertson, III Jay Janous Jimmy Donahoo Joe Alderman Kit Stovall Lewis "Mac" McKee Mark Sledge Mattson Flowers Peyton Randolph Pittman Edwards, Jr. Robert Dale, Jr. Rodney Tharp Smith Stoner Steve Garrett Tom Tollison Tucker Miller III Will Redditt Will Weathers

4 Delta Wildlife | SUMMER 2023

Will Young

William Deviney



### Ron Selby Named Executive Director of Delta Wildlife and Delta F.A.R.M.

on Selby has been named the Executive Director of Delta Wildlife and Delta Farmers Advocating Resource Management (Delta F.A.R.M.), two natural resource and conservation stewardship organizations serving the Mississippi Delta from its headquarters in Stoneville.

Ron is a long-time Delta resident currently residing in Grenada. He earned a Bachelor of Science from Delta State University and an MBA from Millsaps College. He brings more than 30 years of personal and professional experience to the table from an agricultural and wildlife perspective.

"Ron is the perfect fit to lead these two organizations — a tremendous sportsman who has an impressive background in agriculture, sales and administration," said Tommy Goodwin, Past President of Delta Wildlife.

Delta Wildlife was founded in 1990 by farmers, sportsmen and business leaders to establish an organization dedicated to the conservation, enhancement and restoration of the wildlife and natural resources of the Delta and part-Delta counties of Northwest Mississippi. Delta F.A.R.M., founded in 1998, is an association of growers and landowners in the region who strive to implement recognized agricultural practices that conserve, restore and enhance the environment of Northwest Mississippi.

"We welcome Ron to this new role, and his selection has been met with overwhelming support from both Boards of Directors, the memberships and our staff. Both organizations are operating at peak efficiency, and Ron's selection and leadership will only enhance our efforts," said Delta Wildlife Chairman Allan Grittman.

"We welcome
Ron to this new
role, and his
selection has
been met with
overwhelming
support from
both Boards of
Directors, the
memberships
and our staff."



Lynnlee
Rushing, 5
Daughter of Alison
and Claude Martien.
First deer! 152 lbs.
White-tailed deer
harvested with a
Ruger American
compact in 300
black out.
Nov. 12, 2022.
Adams County.



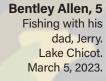
Cam Redwine, 2
Son of Kalyn and Brad Redwine.
Bolivar County.



Ellie Redwine, 5
Daughter of Kalyn and Brad Redwine.
Bolivar County.



John Grittman Sykes, 4
Son of Anna McClain and Dalton Sykes.
First turkey! French Camp, Miss.







Cara Allen, 4 Fishing with her dad, Jerry. Lake Chicot. March 5, 2023.

6 Delta Wildlife | SUMMER 2023 | Delta Wildlife 7

KID'S CORNER Delta Conservationist

#### Blane Williams, 11

Son of Daphne and Joel Williams. First duck! Bluewinged Teal. This first duck harvest was made possible by Jody Acosta at his family farm in Slaughter. Our hunt party included Jon Coner and Dan Prevost. Sept. 24, 2022.





Bryce Redwine, 15 Son of Jacki and Peewee Redwine. April 10, 2023. Washington County.



Jaycee Holeman, 18
Daughter of Jessica and Jason
Holeman. Catfish. April 10, 2023.
Washington County.



Craig Davenport, 18
Catfish. April 10, 2023.
Washington County.







**Riley Bevill, 13**Daughter of Tiffany and Robbie Bevill. First deer!
Nov. 6, 2022. Washington County.



#### Board Member Highlight:

#### PIERCE BROWN

Delta Wildlife President

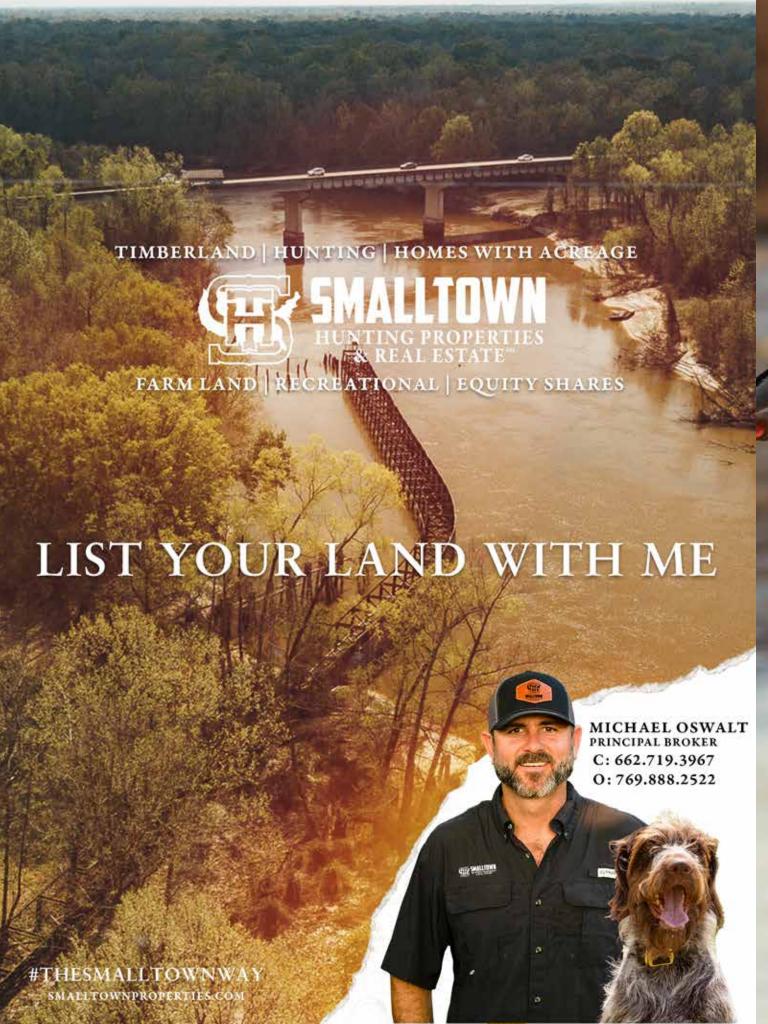


elta Wildlife is pleased to announce Pierce Brown as the new President of the organization. He is a lifelong resident of Schlater and is no stranger to community service and leadership in the Delta. He has been an active member and Board Member of Delta Wildlife for years and has served on multiple committees.

"Delta Wildlife has been an important tool that I have utilized many times," said Pierce. "The staff is a wealth of knowledge and very eager to help. They have helped me with new projects that I wouldn't have attempted alone. Each of them is a leader in their field of study and always just a call away. I'm excited to be working with the team and to see all the new projects in the pipeline come to fruition."

A fourth-generation farmer, Pierce graduated from Pillow Academy, then the University of Mississippi in 2000, and headed straight back to Schlater to work their family farm with his father, Bill, and uncle, Craig, where they produce cotton, corn, soybeans and wheat. "I have been working on our farm since I was eight years old, and my dad and uncle taught me everything I know about farming," said Pierce. "Most recently, we have been working toward improving our soil health through cover crops, biologicals, crop rotation and microbes."

Pierce and his wife Meredith have three sons, Louis (12), Hayes (15), and William (17). When he isn't farming, Pierce enjoys hunting and fishing, as well as golf, tennis and running.



#### YOU CAN'T OWN THE SKY, BUT YOU CAN OWN THE LAND.



When it comes to financing rural land for hunting, fishing, or just living, nobody can provide more rural lending expertise than Southern AgCredit. So spread your wings. Give us a call, and buy some some land in the country today.

Begin. Grow. Improve.

Hunt.



SouthernAgCredit.com (800) 449-5742

Delta Conservationist Delta Conservationist

#### Q&A with Delta Wildlife Partner

#### TAHARGA HART

#### Assistant State Conservationist, USDA-NRCS

Q: As Assistant State Conservationist, please discuss your job mission.

A: As Assistant State Conservationist for Field Operations in the Mississippi Delta (Area 4), I am responsible for 14 counties: Bolivar, Coahoma, Holmes, Humphreys, Leflore, Issaquena, Quitman, Sharkey, Sunflower, Tallahatchie, Tunica, Warren, Washington and Yazoo. In Area 4, I manage field operations, associated programs and budget formulation and execution. I also oversee the development of conservation plans for work that includes cropland, pastureland, forest land and urban and rural areas. Finally, I assist resource teams in developing and maintaining effective working relationships with federal, state and local agencies, groups and individuals in order to improve the conservation partnership, which includes communicating agency commitment and the importance of the

My mission aligns with the USDA-NRCS mission, which is to provide conservation solutions to agricultural producers so that they can protect natural resources while feeding a growing world. We promote conservation practices in the Mississippi Delta to help producers improve their operations, reduce production costs and conserve natural resources. In addition, through one-on-one, personalized advice, we work voluntarily with producers

and communities to find the best solutions to meet their unique conservation and business goals. We contribute to climate change mitigation through our efforts.

Here at NRCS, we invest an average of \$8 million every day into conservation systems that help producers stay profitable and productive. Through our voluntary conservation programs, NRCS helps producers, soil and water conservation districts and other partners protect and conserve natural resources on private lands throughout the United States. The work at NRCS is made possible by the Farm Bill and is delivered through a host of programs, like the Conservation Technical Assistance Program (CTA), the Environmental Quality Incentives Program (EQIP) and the Conservation Stewardship Program (CSP), Regional Conservation Partnership Program (RCPP), Emergency Watershed Protection (EWP) and Watershed Rehabilitation (RE-HAB) just to name a few. As NRCS continues its service to the nation, the agency will build on its historic conservation legacy to address modern natural resource challenges. NRCS will further the nation's investment in conservation by seizing opportunities for agriculture in areas like environmental services markets and soil health.



NRCS will continue to forge new alliances while strengthening its traditional partnerships to make the most of what it can bring to the conservation table, to work effectively locally and at the landscape scale.

#### Q: What are some current or ongoing efforts to benefit conserva-

A: NRCS cooperates with several local partners in the Delta to provide Initiative Programs. All initiatives are collaborative efforts of all the partners. These include Mississippi Soil and Water Conservation Commission and local Soil and Water Conservation Districts (Mississippi River Basin Initiative {MRBI}), Delta F.A.R.M./Delta Wildlife (CCPI-DELTA) and Yazoo Mississippi Delta Water Management District to improve irrigation systems and efficiency. These partners are also represented in local workgroups for county-based programs and initiatives. Coordinating organizations: The conservation efforts in the Delta are coordinated with and supported by other agencies and organizations such as the Mississippi Department of Environmental Quality, Mississippi Farm Bureau, The Nature Conservancy, U.S. Army Corps of Engineers (COE), Agricultural Research Service

(ARS), Mississippi State University (MSU), Alcorn University, Farm Service Agency and United States Geological Survey.

#### Q: What are some of the challenges or opportunities you face in reaching these goals?

A: Taking care of local natural resource issues. Promoting outreach activities to help producers understand the NRCS planning process and program implementation, as well as to provide producers with opportunities to address their conservation needs.

Increasing the number of conservation jobs available. Recruiting students or individuals from communities to introduce the principles and benefits of natural resource conservation through education and to build an understanding of careers in agriculture, natural resource conservation and related employment that will help to build the future of sustainable farming by preparing a diverse next generation of producers and conservationists.

Conserving resources in small-scale and urban agriculture. Promoting partnerships that improve the NRCS's ability to connect with underserved producers and underserved communities on small acreage and increase their participation in NRCS conservation programs in order to meet the needs of communities for sustainable food production.

#### Q: What are some of your recent successes?

A: My greatest achievement, in my opinion, has been helping people in helping the land. We enjoy collaborating with individual farmers, landowners, local conservation districts, government agencies and Tribes to address their resource concerns. We like being able to interact with landowners on a daily basis and address problems that arise so that those concerns can be alleviated.

Another accomplishment is being able to see the results of our efforts. I must say that I enjoy seeing landowners/farmers with whom we have worked become conservation advocates. I am amazed when they are inspired and want to tell other landowners about what the NRCS has to offer.

To me, it appears that we are leaving a legacy that will outlast our projects. Seeing one of our landowners/farmers give a presentation to new and veteran landowners/farmers about their project allows me to feel like we've made an impact.

Please keep in mind that we cannot do this work alone; we collaborate with conservation partners such as Delta Wildlife to develop conservation solutions.

Another success across the Delta is Soil Health, which has

My mission aligns with the USDA-NRCS mission, which is to provide conservation solutions to agricultural producers so that they can protect natural resources while feeding a growing world.

been the main focus across the Delta by offering the Soil Health Initiative, Cover Crop Initiative, Climate Smart Initiative and other program initiatives in the Delta. (Below is the Fiscal Year 2022 recap.)

#### Q: What is the history of your partnership with Delta Wildlife?

A: Delta Wildlife is an organization NRCS has partnered with for many years to assist with wetland hydrology and vegetation restoration on WRP and ACEP-WRE easements throughout the state. They have assisted with the topographic survey and design process as well as completing the restoration on each assigned easement. They have also helped on easement monitoring as well as feral swine damage assessments and treatment plans to protect the wetland infrastructure on easements.

They have been an excellent partner who shares with NRCS the goal of wetland restoration throughout the Mississippi Delta. Partnerships allow our organization to broaden and deepen its conservation efforts. Our conservation partnerships' federal, state and nonprofit have a wide range of expertise in terms of discipline, location/area and focus. As conservation partners, these organizations share their unique areas of knowledge and conservation work to increase conservation on the land.

As an NRCS employee, we will continue the relationship established many years ago to conserve our natural resources and collaborate to offer programs such as the Regional Conservation Partnership Program (RCPP). RCPP demonstrates the power of public-private partnerships in delivering results for agriculture and conservation by leveraging collective resources and collaborating on common goals. Delta Wildlife plays a critical role in this process by implementing conservation measures for Mississippi Delta producers.

Fiscal Year 2022 Recap			
Cover Crop Initiative	76 contracts	20,717.1 acres	\$4,259,977.67
National Water Quality Initiative	49 contracts	4,671.8 acres	\$2,774,519.50
MS Surface Water Conservation Program	20 contracts	3,123.8 acres	\$1,982,731.35
Climate Smart Agriculture and Agroforestry	71 contracts	6,038.9 acres	\$1,613,193.72
Mississippi River Basin Initiative	148 contracts	29,179.3 acres	\$10,134,776.50
CSP FY 22	253 contracts	155,802.2 acres	\$28,851,604.68
Ag Land Classic	96 contracts	73,751.2 acres	\$12,031,923.36
MRBI Classic	15 contracts	19,605.3 acres	\$4,227,515.65
Ag Land Renewal General	26 contracts	21,865.5 acres	\$4,653,684.82



#### Ricotta-Stuffed Squash Blossoms

#### BY DANIELLE PREWETT

As published on themeateater.com

PREP TIME - 45 MIN » COOK TIME - 10 MIN » COURSE - SMALL BITES » SKILL LEVEL - INTERMEDIATE » SEASON - SUMMER » SERVES 4-6

#### **INGREDIENTS**

- ✓ 1 to 2 dozen squash blossoms
- ✓ 1 cup ricotta cheese
- ✓ 1 small handful of basil leaves, thinly sliced
- ✓ 1 clove of garlic, minced
- ✓ Flaky salt and lemon wedges to serve
- ✓ Vegetable oil for frying

#### **BATTER**

- ☑ ½ cup cornstarch
- ✓ ½ cup all-purpose flour
- ✓ 1 tsp. baking powder
- ✓ 1 tsp. kosher salt

#### **PREPARATION**

- 1. Brush or carefully rinse the outside of the squash blossoms to clean, then gently open the flowers and remove the stamens.
- 2. In a small bowl, stir the ricotta, basil and minced garlic to blend. Season to taste with salt and pepper.
  365°F.
  Dip each blossom into the batter and let the excess drip off Carefully drop into the
- 3. Fill a pastry bag or plastic Ziploc bag with the ricotta. Cut a small corner or the tip of the bag to pipe the cheese inside the blossoms. Use your fingers to press the petals to seal. If you don't use all of the ricotta, save leftovers for swiping across toasted bread.
- **4.** Make the batter by blending all of the ingredients in a large bowl until smooth.

- Don't overmix.
- 5. Preheat a large pot over medium-high heat and fill with 1 to 2 inches of oil. Heat to 365°F.
- 5. Dip each blossom into the batter and let the excess drip off. Carefully drop into the hot oil. Work in batches as needed and fry for 2 to 3 minutes or until crispy. The crust will not turn golden brown like many other batters.
- 7. Transfer the fried blossoms to a plate covered with paper towels to soak up excess oil. Sprinkle with flaky sea salt and a squeeze of lemon to serve.



#### **CHEF'S NOTES**

A highlight of summer gardens is eating the beautiful flowers that grow from squash plants. Also known as squash blossoms, these delicate treasures are perhaps best showcased by stuffing them with herbed cheese and frying in a light and airy batter. It's arguably the best way to eat them.





Full Service Steel & Fabrication





1715 North Theobald Greenville , MS 38703 Open 7:30am—4:30pm Monday—Friday **USED PIPE** 

12" TO 36"

FLASHBOARD RISERS, CULVERTS
WELL CASINGS,

TAIL WATER RECOVERY SYSTEMS

DELIVERED TO YOUR FARM

WE WILL WELD 'EM UP, YOU JUS DROP 'EM IN!



14 Delta Wildlife | SUMMER 2023 | Delta Wildlife | SUMMER 2023

### Sportsmen's History

#### Leland, Mississippi, Museum is a Treasure Trove of All Things Hunting, Fishing and Outdoors

ne of Mississippi's best-kept sportsman secrets is the Mississippi Wildlife Heritage Museum (MWHM), located in the small Delta town of Leland. You can find it on the corner of Third and Broad in the historic Joe Turner Hardware building. The building is over 100 years old, and the curators have done an impeccable job maintaining as much of the original building as possible. The creak of handsomely worn original pine floors, along with the wash of natural light from the large glass storefront, are a nostalgic nod as you enter the

There are rooms upon rooms of almost anything a sportsman

can imagine, from the expected deer wall mounts to historical and conventional hunting books and tall-tale novels, turkey calls, spurs and beards, photos of Delta sportsmen past and a lot of the unexpected as you travel the winding towering showcases - and don't forget to look above your head or near your feet for even more surprises.

As you walk past the front counter of smiling faces and stacks of brochures, flyers and t-shirts, one of the first exhibits you'll

notice is the dozens of antique fishing lures housed in bins that once held bolts, nuts and nails. Outdoor enthusiast Billy Johnson, the originator of the museum, said that much of the original building was maintained and that native woods, like cypress, have been used in restoring the space to its original luster.

Through the decades, Billy has written over 700 outdoor articles that he later published into two books. Anytime he interviewed someone, he would make copies of their photos, sometimes up to fifty photos, even though he only planned on using one or two for that week's newspaper article. Over time, his collection grew to take over a bedroom in his home. Billy recalls getting ready to leave for a hunting trip to Montana when his wife, Cindy, told him, "Sometimes when you're gone, I go in there and look at all these pictures. I don't hunt, but I do fish a little bit, and if this stuff is interesting to me, it's got to be interesting to other people and you need to think of something to do with it all while you're gone."

Billy took off on his hunting trip to Montana. The interstate across North Dakota was frozen, so he had to detour through South Dakota. His dad suggested he stop by Wall Drug Store (in Wall, South Dakota). Not knowing what to expect, he found a small downtown block with multiple museums that captured the history of the area. When he walked through the front doors,



Billy Johnson, President of MWHF

he took a deep breath, "and it was like an acorn fell and hit me right on the top of my head, telling me what I needed to do with all those photos back home," said Billy.

In 2012, soon after his revelation during his hunting trip, Billy began reaching out to some like-minded residents in the Leland area, and they formed the Mississippi Wildlife Heritage Foundation. Several years later, he noted that everything came into focus when the 100-year-old hardware store was donated to the Foundation. In 2014 while visiting the Wyoming Outdoor Hall of Fame, Billy had a second revelation and realized Mississippi needed an Outdoor Hall of Fame as well - and so he set forth to create one within the walls of the recently formed Mississippi Wildlife Heritage Museum.

"God blessed Mississippi with vast outdoor resources, and just like the Native Americans that lived here long before us, every river has its history of hunting and fishing legends, and that's what is portrayed in the Outdoor Hall of Fame," said Billy. "One big influencing factor in getting the Hall of Fame started was so many of these well-known Mississippi outdoorsmen like Preston Pittman and Paul Elias have been honored nationally, but not here in their own home state." Billy recalls one of the most touching moments from establishing this project when he went to visit Billy Joe Cross, who was among the first group of inductees in 2014. "He donated and signed some things for the Museum, and when I got ready to leave, he looked at me with tears in his eyes and



the day when someone would do this for us in Mississippi. I never thought it would happen."

For our readers not familiar with him, Billy Joe Cross is a former Executive Director of the Mississippi Game and Fish Commission. A past President of The Southeast Executive Wildlife Directors Association. He is a past President of the Mississippi Flyways Council, which encompasses 14 states and three Canadian provinces as well as former Southeast Director of Ducks Unlimited, that covered 17 states. A lifelong hunter and fisherman, Mr. Cross is a nationally known wild

game chef, having produced 15 cooking shows for national TV. He also authored 17 wild game cookbooks. His Billy Joe Cross Wild Game Dinners has raised more than \$1 million for schools, athletic departments and various organizations.

Along with Cross, the Mississippi Outdoor Hall of Fame features historical and legendary sportsmen and conservationists such as Holt Collier, Fannye Cook, Preston Pittman, Melvin Tingle and Will Primos. But this Hall of Fame and Museum isn't just for entertainment; it's an educational tool for future generations. "When kids hear and see and read about what these outdoorsmen and women have done and are doing with their passion for our natural resources, it inspires something in them," continues Billy. "There's a lot of positive influence in here for our kids. A guy by the name of Herb Parsons, a world champion duck caller and a Winchester representative in Mississippi, was well known for his saying, 'If you hunt with your children, you won't have to hunt for them later,' and in today's world that is so true on many levels."

As our casual conversation flowed on while nestled in the couches near the entry of the Museum, seated between a Black Bear, a Rocky Mountain Goat and an alligator, just to name a few species,



◀ Henry Milner Exhibit in the MS Wildlife Outdoor Hall of Fame

Billy spoke a lot about the history of Mississippi's wild game, restoration efforts, the evolution of crappie fishing and reminisced about the olden days when all you needed was a cane pole and a ball of frozen crawfish tails to fish off a dock in Lake Ferguson when it used to be quiet and still and fishermen drank coffee out of a thermos while smoking non-filtered cigarettes.

Behind every turkey beard, every fishing lure, every antler, photograph, trolling motor, arrowhead and shoelace, is a line of stories, and I would be remiss if I didn't include one.

"E.O. Mitchell's mostly white turkey, just on the other side of us, is a great place to start," began Billy. "He and his friend Henry Milner were telegraph operators for the railroad; one lived in Vaiden, and one lived in Winona. They started tinkering with turkey calls back in the 1950s, and when the phone companies took the 100-year-old cedar telegraph poles down and put telephone lines up, these two made thousands of turkey calls out of the old posts. He sold calls to a store in Starkville, and there were some old men sitting around chewing tobacco, drinking coffee and playing checkers, and they told him about this turkey that couldn't be killed," continued Billy. As the story goes, Mitchell





E.O. Mitchell's turkey

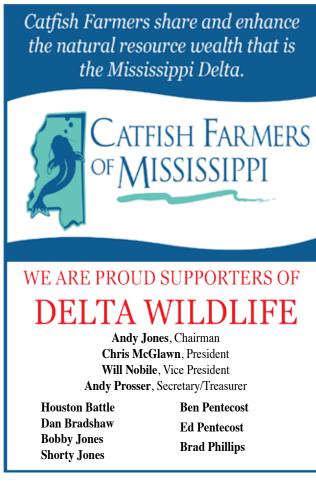
gets permission to hunt the turkey. The next morning, he sets up in a bottom and hears the turkey gobbling on the ridge. "When it was fly-down time, he took his cap off and did this," Billy takes his cap off, shakes it around in the air for a few seconds and plops it down hard on his lap, imitating the sound of a hen flying down from the roost to the ground "then took a stick and did this," Billy imitates scratching a stick around in the leaves. "The gobbler came straight to him. Turns out, he was call-shy." By the time E.O. had him loaded up and headed into town was about the same time the old men gathered at the store. He walked in and told the men he had the turkey that couldn't be killed. One of the old men took one look at him and said, "I'll give you \$100 right now for the call you used to call him in." The turkey call salesman took his cap off and handed it to the man.

"You never know what God has in store for you down the road," said Billy. "I was standing right here when he told me that story 50 years ago, and now here we are, telling the same story with the turkey here, too."

The Museum is a treasure trove of all things hunting, fishing and outdoors and is constantly evolving, growing and archiving history as we make it. "When you open a museum, that's just the start of it; there is no end to it," said Billy. To become a member of the museum, visit the website listed below or go in for a visit and fill out a membership form

A visit to the Mississippi Wildlife Heritage Museum is a perfect outing for you as well as your family. The space is also available for private rentals. The Museum is open Monday through Saturday, 10 am until 5 pm, and closed on Sundays. For more information, follow them on Facebook or visit www.msoutdoorhalloffame.com.







18 Delta Wildlife | SUMMER 2023 | Delta Wildlife | SUMMER 2023

Delta Sportsman

Delta Sportsman



## Mississippi's Boating Rules and Regulations

ummer has officially arrived, and one of many Deltan's favorite ways to cool down is in the water. While we all enjoy a weekend boat ride and dip in our favorite body of water, make sure you're doing it legally and safely. Here is a list of reminders, rules and regulations for Mississippi boaters, as well as boater education courses in the

- Register your boat with MDWFP or face up to \$250 in fines.
- Floatation devices for each passenger (under 12 must wear at all times)
- Fire extinguisher (for boats with enclosed gas compartments)
- ▶ Boater Education Safety course certification (if born after 1980)
- ▶ Never drink and drive!

#### **General Boating Rules & Regulations**

A Federal regulation went into effect May 1, 1995, that requires operators of all boats to have at least one wearable life jacket or personal flotation device for each person aboard. Under this regulation, a throwable PFD (Type 4) will no longer qualify as a life jacket on boats less than 16 feet. PFD requirements remain unchanged on boats 16 feet and over.

Section 59-21-31 of the Mississippi Code prohibits the removal or alteration of awarded numbers or identification numbers affixed to vessels, boats, outboard motors and trailers has been amended. Additional language added to this section provides that no person may buy, sell or possess a vessel, boat, outboard motor or trailer on which any awarded number or identification number has been removed or altered.

#### **Boater Education Courses:**

#### Cleveland, MS

Where: Bolivar County Extension Office When: June 17, 2023 - 8 a.m. to 5 p.m. Details: Online registration is required before attending. All supplies will be provided for class. Class will break for lunch around noon. Please bring lunch or have transportation to get lunch as none will be provided. If you have any questions, please contact the North Region office at (662) 563-6222.

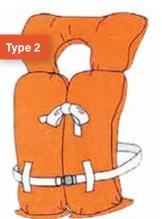
#### Yazoo City, MS

Where: Panther Swamp Headquarters When: July 22, 2023 - 8 a.m. to 6 p.m. Details: Online registration is required.

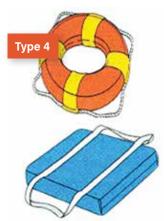
#### Hernando, MS

Where: Arkabutla Lake Field Office When: Aug. 5, 2023 - 8 a.m. to 3:30 p.m. Details: Bring a sack lunch or be prepared to leave to get lunch.









Due to an increase in marine theft, a closer look is being given to applications for a boat registration when received. Applications for boat registration with required information missing or information that appears to be incorrect will be sent back to the applicant along with a boat inspection form to be completed by a conservation officer. The application should be resubmitted along with the completed boat inspection form. All homemade boats will be inspected prior to registration.

The Alcohol Boating Safety Act makes it unlawful to operate a watercraft on public waters of the State of Mississippi while under the influence of intoxicating liquor or any other substance that has impaired the person's ability to operate a watercraft.

- As a condition of operating a watercraft on the public waters of this state, the person operating the watercraft is deemed to have given consent to testing for the purpose of determining the alcoholic content of their blood.
- Watercraft" is defined as any motorized vessel with a motor of 25 horsepower or greater used for transportation on public waters, and any personal watercraft (jet skis).
- >> "Public waters" is defined as all public waters over which the State of Mississippi has jurisdiction.
- Penalties for conviction under this law are:
  - a). First conviction: Fine no less than \$250 nor more than \$1,000, or imprisonment in jail for not more than 24 hours or both. Violator must complete a boating safety course.
  - b). Second conviction (within a five-year period): Fine no less than \$600 nor more than \$1,000; and imprisonment not less than 48 consecutive hours nor more than one year or community service work for not less than 10 days nor more than one year. Court shall order violator not to operate a watercraft for one year.
- c). Third conviction (within a five-year period): Fine no less than \$800 nor more than \$1,000; and imprisonment not less than 30 days nor more than one year. Court shall order violator not to operate a watercraft for two years.
- d). Conviction of a fourth or subsequent violation (within a five-year period) is a FELONY OFFENSE. Fine no less than \$2,000 nor more than \$5,000; and imprisonment in the state penitentiary for not less than 90 days nor more than five years. Court shall order violator not to operate a watercraft for three years.

Effective July 1, 1997, any person born after June 30, 1980, must complete a Boating Safety Course to operate a boat. Persons under 12 years of age must be accompanied by a person 21 or older on board the boat in order to operate the boat.

For persons who wish to learn more about Mississippi Boating

Basics and the legal and safe practices for boat operators, a six-hour instructor taught course is available for groups. The Mississippi Boating Basics home-study course is available for persons who are unable to attend an instructor-taught course. Most insurance companies honor these courses by offering reductions in insurance premiums on completion.

Effective July 1, 1998, Mississippi will offer the option for titling boats and motors. This is not a mandatory requirement; however, a more complete record will be obtained for boat owners. A \$10 fee will be charged for original applications, duplicates or transfers.

For more information related to BOATING and Boating Safety Classes, call (601)-432-2178 or write to: BOATING ENFORCE-MENT, P.O. Box 451, Jackson, MS 39205-0451.

#### **Boating Registration**

Mississippi law requires all sailboats and every undocumented vessel equipped with propulsion machinery, whether or not such machinery is the principal source of propulsion, using the territorial and navigable waters of the State of Mississippi to be registered and numbered for identification. No person may operate or give permission for the operation of any boat powered by machinery unless it is registered and numbered in accordance with the law. The owner of any vessel required to be numbered has ten (10) days from the date for acquisition to register the boat.



#### A Few Quick Tips for Boating with Pups:

- Invest in a canine life jacket
- Do not encourage your pup to drink lake water
- Consider dog-formulated sunscreen
- Have a potty plan

20 Delta Wildlife | SUMMER 2023 | Delta Wildlife 21

#### DeltaWildlife What can we do for you? Comprehensive Wildlife Management Plans Comprehensive Habitat Management Plans Comprehensive Food Plot Plans GIS/Mapping Fisheries Management Plans Waterfowl Habitat Management Plans Wetland Restoration Plans and Assistanc Wetland Hydrology Restoration Quail Habitat Restoration Plans and Ass Native Warm Season Grass and Legur **Bottomland Hardwood Reforestation Conservation Easements** Discount Food Plot Seed Sales Wood Duck Nesting Boxes Bluebird Nesting Boxes Turkey Habitat Management Assistance White-tailed Deer Management and Assistance **Urban Forestry** Wildlife Forestry Management Plans Backyard Habitat Conservation in the Classroom USDA Conservation Program Assistance **USDA Conservation Program Implementation** CRP **WRE** WHIP **EOIP** Waterfowl Surveys Research Assistance Non-Consumptive Wildlife Habitat Enhancement Watershed Restoration

#### Pre-Season Deer Prep

BY PARKER FREW

Delta Wildlife Staff

hen you think about summertime in the Mississippi Delta, one's mind instinctively goes to hot sticky days outside, followed by relaxing weekends on the water. Figuring out how to stay cool and avoid the jumbo-sized mosquitoes is at the top of everyone's to-do list throughout the season. It can be a ruthless time of year that never seems to end, but as fast as it comes, it will slowly go. As the days get shorter and the nights cooler, whitetail deer hunters will begin to get that look in their eyes. The burning passion to start hanging stands and get food plots ready will begin taking over. Like wild ones, they will hit the woods with a fiery passion for doing everything possible to prepare for the deer season in just a few weeks. Imagine skipping this chaos and being prepared well before the season.

#### Scouting

Any good deer hunter knows that to have the best success, you have to be in the best-prepared areas. If you've hunted on the same property for a while and know it like the back of your hand, chances are you probably have this topic all figured out. If not, this can be the most crucial of all to help you get that chance at a buck of a lifetime. It's no secret that scouting during the middle of the summer can be extremely tough between the heat, bugs and snakes. While it is the most difficult time of year to scout, it is typically the least invasive and most successful, especially when considering early season success. If you wait until late summer or early fall, when the conditions are more favorable, you

run a much higher risk of disturbing the trophy buck you are after. The woods are full of food and water during the summer and do not require deer to move great distances. In fact, a whitetail deer can theoretically live on a single acre for most of the summer if the habitat provides all that it needs. Simple things such as identifying trees that will provide a food source or finding multiple ways to access an area can speed the scouting process up for the entire year.

#### **Preparing Deer Stands**

Something every hunter should place high prioritization on this time of year is the preparation of their deer stands. Whether that

is establishing new ones or checking the condition of existing ones to ensure they are safe for the coming season. When hunters begin prepping stands, they typically make the mistake of doing it too late. When one waits until the week before the season, they run an inanimate risk of disturbing their prime area. Why dream about a spot all year long and then mess it up weeks before the season solely because of procrastination? Whitetail deer are much more susceptible to being disturbed later in the year than during the early summer months. They will begin to move in early fall as the weather and conditions become more favorable. Entering the woods under the cover of summer foliage can be the ultimate way to ease in and out of an undetected area. Doing this allows an area to rest before the season begins.

#### **Fall Food Plots**

Traditionally, everyone in the mid-south begins planting fall food plots in late September to early October. It's like an old family tradition to dig the tractor out and try to spray, mow, till and plant everything at once. Nine times out of 10, this leads directly to frustration and disappointment. Whether it's a mechanical breakdown or Mother Nature, waiting this long and expecting success in a short period is unrealistic. What if you planned ahead and had everything ready, where in just a matter of hours, everything could be seeded and ready for the rain? Mississippi receives an average of 55 inches of precipitation per year. When broken down month by month, August and September receive less rainfall than any other months of the year. Trying to do every bit of food plot prep within just a few short days during these months is a recipe for disaster. Instead of starting behind the eight ball, try planning it out over a few months and starting earlier in the year to avoid the hustle and bustle of planting before the perfect rain. Simple things such as spraying in late July or disking in early August can help alleviate the pain of timing. If you finish your preparation early, it is more practical to sow your seed into a well-prepared seed bed just before a rain event rather than tackle the entire process all at once.

Being the best hunter you can be while striving to be the most successful takes a lot of work and commitment. Abraham Lincoln once said, "Give me six hours to cut down a tree, and I will spend the first four sharpening my axe." Start sharpening your axe by getting in the woods and staying ahead of the one you are chasing. Sharpen your skills and increase your book of knowledge to gain that advantage you have always sought. Don't get spun out doing six months' worth of work in three weeks before the season just to be tired and worn out when opening day finally gets here.

For more information, contact Parker Frew at parker@deltawildlife.org.

SUMMER 2023 | Delta Wildlife 23

Delta Sportsman

Delta Sportsman

## Shooting Away the Summertime Blues

BY JODY ACOSTA

Delta Wildlife Staff

ucks and geese are either fond memories of great hunts from this past season or perhaps optimism that this next season will be where things start trending upward for you and your hunting buddies. Maybe you had the ducks and geese, but your shooting left a little to be desired, with perfectly logical excuses, of course. Maybe you are just like me and enjoy the smell of freshly burned gunpowder. Regardless of your motivation, now is the time to put in some "off-season" work to prepare for the next season of shot gunning the quarry of your choice.

For many outdoorsmen and outdoorswomen, summertime is a weird mix of post-hunting season depression and a healthy motivation to get things dialed in for the upcoming seasons. That preparation comes in many forms: planting food plots, maintaining roads, building blinds and so on. While I 100% believe in and recommend spending some time on the rifle range before deer season and getting an early start on practicing with your bow, this article is going to focus on shooting a shotgun.

I want to preface all of this by saying: PLEASE PRACTICE SAFELY. Refer to the rules of gun safety if you need a refresher. Even if you are practicing mounting a shotgun inside or you are on the range, any time you have a shotgun in your hands, you should be mindful of the safety aspects of handling a firearm.

Maybe you need some practice, or maybe you have a child just getting to the age where they can comfortably shoot a shotgun at moving targets. While there are varying levels of difficulty one can focus on during concerted practice, the takeaway is practice, and to take it one step further, practice on the very fundamentals of shooting a shotgun helps everyone from beginners to experts in not only learning a skill but keeping the skill honed and sharp. This means taking it back to square one before you ever hit the range.

Speaking of hitting the range, cases of clay targets are cheap, and light game loads for the shotgun of your choice are also relatively inexpensive. A great investment for any shotgun enthusiast is a mechanical target thrower, but if you don't want to go that route, a handheld thrower can be found easily and very reasonably priced. But we aren't quite ready for that yet. Baby steps...

For practice to be proficient, the first thing to consider is proper fit of the gun. Many people buy a shotgun and go hunting or shooting with little regard for "dialing in" their equipment. In turn, performance can suffer, and even punishment to your shoulder can be caused by an ill-fitting gun.

this topic, I came across a great article from the NRA that goes into detail on the importance of a proper fit for your shotgun. The author states the basic fit dimensions for your shotgun are:

- **▶ Length of pull:** The distance between center of buttpad and trigger face.
- **Pitch**: The angle of the buttstock versus that of the barrel(s).
- **>> Drop**: The distance between the line of the barrel (or rib) to the various points on the stock (comb, heel, etc.).
- **▶** Cast: The angle or bend of the stock (right or left) of the rib or barrels.
- **>> Barrel length:** Though not ordinarily included in gun fit dimensions, barrel length is an extremely important element for smaller-statured shooters. It affects balance, ability to swing the shotgun,

aimed, which means the way they're handled needs to be natural and smooth. The first step in achieving a proper mount or ensuring the fitting process was done correctly should be to ensure the gun's comb is not too low or too high. The comb is the top curve of the stock, the place where your cheek should touch the gun. If the comb is too low, your eye won't be able to see down the line of the gun. If it's too high, you'll be able to see, but the barrel can't consistently be made to point where you're looking.

Balance and swing are extremely important in proficient practice. The better you hone in on a proper mount and swing with your feet firmly planted on even ground, the better your muscle memory will be when you find yourself in soft Delta mud or perhaps balancing yourself on the base of your favorite tree in the timber. "Swing" of the

gun simply means your tracking of the target through the air and is something a lot of people overlook when shooting a shotgun.

For a right-handed shooter shooting on level ground during practice, the left foot should point about 45 degrees away from the right, and a line running through the left big toe, left heel and right heel should point approximately where they expect to shoot. This way you're balanced, and that swing isn't going to be affected by the lower half of your body being contorted into a knot. Using the stronger leg muscles to swing creates a smoother motion, keeping the hand-eye-gun relationship the same.

We have covered properly fitting your gun and establishing a good mount, balance and swing. NOW, it's time to get out to the range for the fun part!

#### **Practice**

Since we have gone back to the basics, that theme shall continue by starting out standing close behind the mechanical thrower so the targets fly straight away from you (or your new shooter). By shooting targets at this angle, you can get the feel for mounting the gun and using a proper stance without worrying about leading the target. If you need an excuse to spend more time on the range, break your sessions up over multiple trips. Most of us have limited time so we will get a case of targets and a case of shells and strike out. While this is a fun way to spend an afternoon, you may be starting off strong then actually getting "bad practice" in when fatigue hits. How often in your daily life, other than shooting a shotgun, are those specific muscles used to present a shotgun properly? Like any other sort of muscle memory, the more reps, the better, BUT only when you are getting

good reps in. Keep in mind that presentation, mount and swing can be practiced safely at home on days you can't make it to the range.

When you do get range time, start out practicing shooting just targets flying straight away from you as mentioned above, then as you get to where it's almost impossible to miss, move a few feet to the left and begin practicing a little bit of lead. Gradually move out to where the angles become more challenging and focus on your swing and following through the target. Once you have gotten comfortable shooting targets going left to right or vice versa, switch it up and start practicing the opposite angles.

Do this for a month or two, then find a sporting clays course or get some buddies together for a range day, and I believe you will be surprised at the results!



#### **Appropriate Fit**

Up until fairly recently, the "standard" fit for a shotgun was geared toward a male shooter roughly 5'10" in height and around 185 lbs. in weight. Fortunately for those who do not fit that mold, many shotgun manufacturers have begun to offer different size guns geared towards shooters of all body types.

What all goes into a proper fit? Well, that could be another article and is a fairly complicated formula. If this is all Greek to you, my recommendation would be to reach out to whomever you purchase your shotguns from and see if they have any suggestions on someone who is well-versed in properly fitting a shotgun for assistance as it is truly an art, oftentimes taking years to perfect, especially when it comes to properly fitting a shotgun for wing shooting. While researching

and sighting the firearm. It's often neglected, especially as it's more difficult to shorten a barrel than a stock, but it affects the shooter's ability to manipulate the shotgun more than most people know.

Again, if you need help with this, I strongly recommend reaching out to someone who has perfected that process and ultimately someone who can save you a lot of time ensuring you get it right!

So, you've taken the steps to ensure the gun is properly fitted to you, now what?

#### **Proper Moun**

The basic skills required of shooters of any experience level are all grounded in the same beginnings, the core of which is correctly mounting the gun. Shotguns are designed to be pointed rather than

Management

#### Oxbow Lakes

BY WILL PREVOST

Delta Wildlife Staff

s the temperatures rise and summer begins to set in, Mississippians flock to their nearest lake to participate in activities such as fishing, frog grabbing, recreational boating and swimming. The Mississippi Delta is unique and fortunate in that we have a plethora of public bodies of water for residents to enjoy, thanks to our rivers and oxbow lakes. The lower Mississippi River Alluvial Valley contains hundreds of oxbow lakes formed as a result of river channel meandering and natural or human-influenced river channel abandonment.

Eagle, Chotard, Albemarle, Washington and Ferguson are a few of the larger, more well-known lakes, but there are numerous other oxbow lakes across the Delta. In addition to recreational opportunities, the River and its oxbows have profoundly impacted Delta commerce, cities and the landscape as we know it today.

#### **Anatomy of an Oxbow**

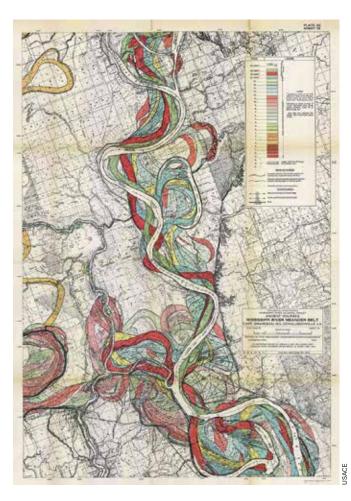
An oxbow lake begins as a curve, or meander, in a river. As the river flows around a bend, the current moves faster on the outer flank of the curve, eroding away at the bank (called a cutbank). In tandem with bank erosion on the outside of the bend is the development of a point bar on the inside of the curve, where the current is slower, and more sediment drops out of suspension. Through many years of erosion, the river current can cut through enough land to connect with the river on the other side of the meander bend, creating a new, shorter river channel known as a meander cutoff. As the river flows through its new channel, sediment deposition seals off the entrances to the former meander bend, and a still-water oxbow lake is formed from the old river channel.

Beginning in the 1800s, when river traffic became more prevalent, attempts were made to shorten the river and improve navigability by excavating and dynamiting man-made meander cutoffs. Most of the man-made cutoffs were successful, but some nearly had disastrous consequences. For instance, in 1831, Captain Henry Shreve (namesake of Shreveport) created a cutoff that nearly caused the Mississippi River to divert into the Atchafalaya Basin. Altering and controlling the natural processes of such a large river is a massive and dangerous undertaking that engineers continuously deal with today. Nonetheless, many oxbow lakes were also created by these man-made cutoffs.

Oxbow lakes provide ideal habitats for fish, waterfowl and many other wetland creatures. Many oxbow lakes across the Delta are known for their excellent fishing opportunities for bass, crappie and catfish. In addition to ecological benefits, several oxbow lakes have become vacation destinations and even have communities built around them.

#### **Oxbow Lakes in the Delta**

When Greenville was founded, it was situated directly adjacent to the Mississippi River. In 1933, the city lost the River when a natural cutoff was opened at Leland Neck south of town. The oxbow created by Leland cutoff was named Lake Ferguson. The Corps of Engineers decided to construct the man-made Tarpley and Ashbrook cutoffs in 1935 to bring the river channel into better alignment and prevent further undesirable changes. When the Greenville Harbor



Project created a port at Lake Ferguson in 1963, Greenville's status as a river town was restored. Evidence of these cutoffs is still clearly seen in aerial imagery today.

One of the oldest and most beautiful oxbows is Lake Washington. Geological evidence suggests that this lake may be around 700 years old. The lake covers several thousand acres and was once widely known for its abundant fish and waterfowl population. Before the Civil War, several impressive mansions were built on the banks of the lake, some of which still stand today.

During the flood of 1913, the Mississippi suddenly abandoned its old bed in Albemarle Bend and carved a new channel through Newman Cutoff. This created a 14-mile-long abandoned bend, now known as Albemarle Lake. By 1934, it became apparent that the river was creating a troublesome new bend at Newman Cutoff. To remedy this, the Corps created an artificial cutoff at Willow Point. After several years of the River refusing to cooperate with the Corps' plan, it finally accepted Willow Cutoff as its new channel, creating Lake Chotard. Albemarle and Chotard are now popular hunting and fishing destinations. Since these lakes are on the river side of the levee, they



The winding Mississippi River historically has been used to define many state lines in the United States. This photo, taken by an astronaut onboard the International Space Station, has been annotated to show the current state boundary (yellow line) between Arkansas and Mississippi.

have not suffered as much from pesticide and fertilizer pollution as landside oxbow lakes. In addition, the lakes are periodically restocked when the River rises high enough to flow into its old channels.

In 1863, Admiral David D. Porter sent a party of soldiers to Terrapin Neck at Eagle Bend with orders to try to create a cutoff. The falling river halted the efforts of the Union soldiers, but they succeeded in digging a ditch across the neck that began causing problems by flooding in fields at Terrapin Neck. In 1866, the River finally cut across Terrapin Neck and created a new channel. Eagle Bend soon silted up at both ends and became the oxbow known as Eagle Lake. The lake is now known as one of the finest fishing destinations in the South and also has a community of nearly 300 people living on its banks. Eagle Lake is located on the land side of the levee system, so it is not directly affected by the Mississippi. However, it is affected by the Yazoo-Mississippi Basin backwater through Steele Bayou and the Muddy Bayou control structure.

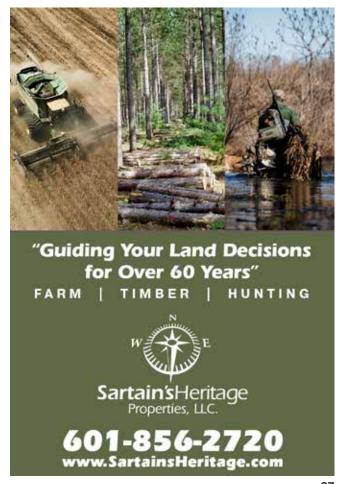
In 1863, General Grant was ordered by President Lincoln to dig a cutoff across Youngs Point in an effort to make the Mississippi bypass Vicksburg. At the time, the River made a long bend that went along several miles of Vicksburg's River frontage. Union vessels that attempted to pass the city were exposed to the merciless bombardment of rebel guns. The Youngs Point canal was almost completed when the River breached their dam at the upper end of the canal, and the work had to be halted. Though Grant was unsuccessful in diverting the Missis-

The Mississippi River has forged as many as six different courses or meander belts through the Delta in the past 10,000 years.

sippi River, the Mississippi made its own cutoff at Vicksburg in 1876, leaving the city of Vicksburg without a waterfront. The cutoff created Lake Centennial and De Soto Island. In 1903, the Corps created a diversion canal that diverted the Yazoo River into the Mississippi's old channel in front of Vicksburg and restored the town's riverfront.

#### Silting In

As time goes on, batture side oxbow lakes will naturally silt in as spring floods deposit large amounts of sediment. The Mississippi River has forged as many as six different courses or meander belts through the Delta in the past 10,000 years. Many of the small rivers, streams, sloughs and wetlands we see across the Delta today are abandoned, silted in river channels. Many oxbow lakes and former river channels have completely silted in, dried up and are now used for farming and housing. The process of an oxbow lake silting in can take anywhere from a few years to centuries. Some oxbow lakes have been artificially sealed off from the River's influence through levees and will likely exist as a lake for hundreds of years. In current times, the Corps of Engineers has a large influence on the meandering of the river, and natural cutoffs are no longer very common. With current batture side oxbows slowly silting in and new cutoffs limited, the long-term future of oxbow lakes is uncertain.



SUMMER 2023 | Delta Wildlife | SUMMER 2023

Delta Flora

## Use Native Plants for Pollinators, Environment

BY MS. SUSAN M. COLLINS-SMITH

MSU Extension Service

ative plants have garnered a lot of attention, especially because of their relationship with pollinators, but these plants are valuable for many other reasons.

In addition to pollen, they provide food and shelter for birds and other wildlife, as well as create biodiversity in the ecosystem.

"Native plants are critical to enhancing biodiversity in the landscape," said Bob Brzuszek, an Extension professor of landscape architecture at Mississippi State University. "Studies have shown even small backyards can be important habitats for pollinator insects, birds and animal life."

While non-native plants do provide nectar and food sources for butterflies and birds, native plants play an important part in providing food and shelter to wildlife. In fact, some native plants have special relationships with certain insects. For example, some native bees can feed only on the plants with which they evolved.

Brzuszek notes that native plants are particularly important in urban and metropolitan areas. "Having native plants is especially important in growing urban areas near Memphis, Jackson and the Gulf Coast where wildlife habitat is dwindling," Brzuszek said.

So, what makes native plants different from other plants?

Eddie Smith, Extension agent and county coordinator in Pearl River County, explains that native plants occur naturally in a particular region, ecosystem and habitat, either on land or in water, and have evolved to thrive in that area. These plants include trees, shrubs, grasses and wildflowers.

#### Why are native plants beneficial?

Native plants are generally low-maintenance, easy to grow and less expensive to maintain because they have evolved to tolerate their environment. "When you plant native plants, you'll reduce pollution and use less energy and resources by reducing mowing and trimming," Smith said. "You won't have to use as much water or pesticides, either."

Native plants are also important in food production. They support the insects, birds and other animals that pollinate all types of food plants, including fruit trees and garden plants, Smith said.

These plants can also enhance aesthetics and add value to your property. They can be used in the same ways as other landscape plants, such as privacy fences, windbreaks and shade. No matter what garden style one wants to achieve, there is a native plant that will work.

"The great thing about native plants is that they can fit any home style — from the most formal gardens to country estates," said Brzuszek. "Cherry laurel makes an elegant privacy hedge, and even wax myrtles can be trimmed into various shapes. Perennial herbaceous plants such as yellow coneflower, salvias, or our own state wildflower — Coreopsis — can be tucked into existing flower beds."

#### Where do native plants grow?

Native plants can grow throughout Mississippi, but gardeners should know that they have water, light and soil-type preferences.









"There are coastal plants such as Sabal palmetto that can't take the freezes in the north, or more northern plants, such as white trout lily, that simply won't tolerate the heat of the Gulf Coast," Brzuszek said.

In addition to the Extension service, local, state and national parks offer programs or information on native plants that are most common in a particular area, Brzuszek added. Conservation organizations, such as the MSU Crosby Arboretum, are also great resources.

#### Where can native plants be purchased?

Many local plant nurseries sell native plants. Local conservation groups or organizations also sell them. Many Master Gardener groups sell native plants during fundraising sales. Contact the local Extension office for more information about where to purchase native plants.

#### **Tips for using native plants**

Some native plant gardens can be viewed as unkempt. If homeowners want to include minimally managed wildlife zones or native plant gardens in areas open to public view, Brzuszek recommends these tips:

- >> Create a well-managed edge, such as a mow zone or an edging of bricks or timbers to show that the landscape is being taken care of and not neglected.
- >> Include some architectural features, such as a bird bath or bench, in the planting area. These items add a human element that people can understand.
- ▶ Put a sign in a pollinator garden that helps convey the purpose to neighbors and passersby.

"Better yet, invite the neighbors over for a cup of coffee and tell them what you are trying to do. Education is the best way to prevent misunderstandings," Brzuszek said.

#### Incorporate native plants in your garden

Native plants are trending up in Mississippi gardens. They are incredibly hardy, low maintenance, drought tolerant and can provide color and blooms year-round. Most varieties are perennial, with a few annual exceptions, meaning you can look forward to their blooms for years to come. Besides their natural beauty, low cost and easy care, they are also a necessity for our pollinator insects in the Delta. Habitat loss, disease, parasites and environmental contaminants have all contributed to the decline of many species of pollinators. Without native plants, pollinators such as bees, bats, butterflies and other insects will continue to decline in health and numbers. With the decline of these pollinators comes the decline of pollination, which results in a decline in plant reproduction.

Try incorporating some of these native plants into your landscaping this year:

#### **Perennial Flowers**

Summer

Georgia Savory: Light Lavender blooms
July-September

**Hairy Sunflower**: Yellow blooms June-September

Fall

**Eastern Swamp Milkweed**: Pink blooms in September-October

**Blazing-Star:** Pinky Lavender blooms August -October

Winter

**Sweet Goldenrod**: Yellow blooms beginning in July

**Grass-leaved Golden-aster**: Yellow blooms beginning in September

Spring

Walter's Violet: Blue blooms March-May Blue Wild Indigo: Blue blooms April-May

Trees/Shrubs

Redbud: Pink blooms March-May Umbrella Magnolia: Cream blooms April-May Swamp Rose: Pink blooms June-July Oak Leaf Hydrangea: White blooms May-July

Vine

Passion Flower: Blue blooms from May-July Coral Honeysuckle: Red blooms March-July

#### Where to purchase Delta native pollinator plants:

- The Garden Market Leland, MS
- Camp Creek Native Plants New Albany, MS
- Mississippi Woodland Nursery Ridgeland, MS
- The Crosby Arboretum

Picayune, MS

The Crosby Arboretum is a native plant conservatory owned by Mississippi State University. It holds native plant sales quarterly each year on Arbor Day, in March, July and October.

#### Where to purchase Delta native pollinator plant seeds:

- Eden Brothers
   www.edenbrothers.com
- Roundstone Native Seed
   www.roundstoneseed.com
- American Meadows
   www.americanmeadows.com

Opposite page, flowers clockwise from top left: Eastern Swamp Milkweed, Passion Flower, Coral Honeysuckle, Blue Wild Indigo



Delta Sportsman

Delta Sportsman

#### Q&A with Crappie Fisherman Stephen Sullivan

BY STEELE HENDERSON

Delta Wildlife Staff

rowing up 20 minutes from the "crappie capital of the world," Grenada Lake, you would think I would have a better understanding of crappie fishing. However, this is not the case. I often found myself doing everything outdoors except crappie fishing. With the intention of furthering my limited knowledge of the sport and for informative reasons of this article for our readers, I reached out to crappie fisherman Stephen Sullivan, ready to learn. After speaking with him, I must say I've got a much better idea of where to start on my future crappie endeavors.

#### Q: Stephen, tell us a little bit about yourself and your background in the crappie fishing world.

A: I'm from Batesville, and like many of you, I started fishing as a child with my grandad and dad. We would go down to Eagle Lake, where my grandad lived, in the springtime to turkey hunt. While we were there, my grandad would take me out on the lake to crappie fish old school using a cane pole, cork and minnows around the cypress trees. In the summertime, my dad would take me out to Enid Lake, and we would pull crankbaits. Both methods were very fun and effective. I was hooked at an early age!

As I became a teenager capable of running a boat and fishing on my own, my father bought a pontoon boat. I had a neighbor across the road from my house that helped me set it up with rod holders on the front and back of the boat. I got a set of B'n'M 16ft fiberglass poles that would allow me to spider rig and push minnows and jigs off the front of the boat while pulling crankbaits off the back. This again proved to be a very effective way to fish in the summertime!

After I got married, and my two boys came along, I would take them out on the pontoon and let them reel the fish into the boat. We had a grill on the boat, and we would fish for hours while cooking and enjoying time together, and at the same time, catch limits of crappie.

#### Q: What equipment would you suggest to begin crappie fishing?

A: Crappie fishing is like a lot of things. It can be as simple and inexpensive or as complex and much more expensive as you could want! My grandad would take me out on Eagle Lake in a 12 ft aluminum john boat with a cane pole. I now have a Ranger bass boat with a 250hp motor and Garmin trolling motor, and live scope. Either setup, as well as my pontoon, can work well. The Ranger setup was primarily designed for crappie tournament fishing, which I started doing in 2016.

#### Q: What are some techniques you use to target summertime crappie?

A: I typically spend the most time fishing what is commonly known as the big four. Arkabutla, Sardis, Enid and Grenada lakes. In the summertime, the crappie tend to move out to the deeper water close to the channels. I look for longer ledges and contours adjacent to the channels but also close to shallower water. The deeper water might be



15 to 25 ft, and the shallower water might be 8 to 12 ft. Always look for shad on your graphics. The crappie eat shad as their primary food source. The crappie like the deeper, cooler water but will run the shad into the close-by, shallower water where they're easier to catch. Also, pay attention to your sonar graphs for thermoclines. In the heat of the summer, thermoclines will set up near the bottom, which will look like a thick line of fuzz on your graph, maybe extending up 3 to 10 ft off the bottom. The crappie tend to sit right at the top of the thermocline, so you want to position your baits right up above the thermocline. Crappie typically feed up. Their eyes are positioned more toward the top of their heads, so they are always looking and feeding up!

Spider rigging is also a very effective year-round tactic. This is where you position multiple poles off the front of your boat, with usually two baits and a weight on the end. The name "Spider Rigging" comes from the fact that the multiple poles tend to look like spider legs around the boat. There are two very popular ways to spider rig. One is to move slower, around .5 to .8 mph, and push minnow rigs. Capps and Coleman pre-made rigs can be purchased from many retailers and work great! You usually will have a 1/2 oz to 1 oz weight with two hooks. Aberdeen #1 hooks work great. You hook

a live minnow through the bottom lip onto the hook. Again, pay attention to the depth you see the majority of the fish and set your baits where they run just above that depth. Work contours and over structures where crappie are holding.

#### Q: Where do you typically find crappie in the summertime?

A: If you are on one of the Delta lakes or a lake that is known for black crappie as well as white crappie, such as Ross Barnett Reservoir, then target structures for the black crappie. They love trees, stumps and brush piles. They also will school suspended in open water like the white crappie, but not as much. Black crappie love structure. I like to use a B'n'M jig pole with a jig. I usually use a 1/16 to 1/8 oz jig head depending on how deep the crappie are positioned and on how picky or aggressive they bite. If you find they are positioned deeper, 12 ft or more, then start with 1/8 oz. If they are not biting hard and you are getting a lot of short strikes or misses, then try downsizing to 1/16 oz and a smaller jig body. I like Crappie Magnet jigs and Garlic Scented Muddy Water baits. I use a Mississippi-based company Grenada Lake Tackle jig heads. Black/Chartreuse with an orange jig head is always hard to beat! I vertical jig the structure. B'n'M is a Mississippi company out of West Point, that makes crappie poles for any need. All of these great companies' supplies are sold at many of your local retailers, or you can find them online. You simply find trees or underwater structures on your graph in the summertime in 12 to 25 ft of water and lower your jig around the structure. Don't jig your pole up and down much. Drop the bait down and hold it still. Maybe start by dropping partially down 6 to 8 ft. If there are no bites in a few seconds, drop it down a few more feet and hold it still. The crappie will see it if it gets close and come get it!

#### Q: Are there any particular color patterns you lean toward during summer?

A: In the summertime, no matter what fishing tactic you're using, tend to stick with brighter-colored baits on sunny days and dark or natural shad color baits on cloudy days. If you're pulling crankbaits, then Bandit Lure 300 series are hard to beat! Pull them anywhere from 75 to 125 ft behind the boat. White, black, pink or mistake colors are hard to beat! I like to go around 1.8 mph when I pull cranks. You can also pull jigs behind the boat in the summertime. Tie one jig up your line on a loop knot about 3 to 5 ft and another at the end of the line. In the summertime, two 1/8 oz jig heads with a curly or action tail jig work great! I usually pull them around 1.2 mph. Crappie Magnet company makes a great pulling jig called "Slab Curly," and Bobby Garland makes a great one called "Stroller R."

#### Q: What makes Mississippi reservoirs such good crappie fisheries?

A: As Mississippians, we are blessed with the greatest crappie fishing lakes in the country! It probably has one of the biggest, if not the biggest effect on our tourism dollars as any industry in our state. I'm not a biologist by any means, so my personal opinion is that the long months of warm weather and growing season coupled with rich soils and adequate rainfall is what makes our shad and crappie produce and grow extremely well. I think our state biologists have done an outstanding job of managing our resources through testing and properly governing size and catch limits.

The moral to this story is that if you haven't gone out and crappie fished in Mississippi, then you're missing out! Go out and try one of these summertime techniques, and I believe you will enjoy it. A great way to start if you don't want to jump out and buy a boat is to hire a guide. If you're in the North Mississippi area, contact Reel Deal Guide Service, JH Guide Service, Patrick Stone Fishing or Carlos

Willis Fishing. If you're in the central Mississippi area, contact Brad Chappel or Hayden Jeffries Fishing. You can find any of these services on Facebook.

#### Q: What are some technological changes you've seen in crappie fishing over the years?

A: The Garmin Marine division set the crappie fishing world on fire in 2018 when they released their Garmin Livescope forward facing sonar technology! This is where you have a transducer that shoots real-time sonar that allows you to be able to see fish and your baits in real time. The transducer is usually mounted on your trolling motor shaft or on a hand-controlled pole system where you can look for fish and keep it aimed at them. It allows your sonar unit to detect size, depth and the distance the fish is from the boat in tremendous detail. It also allows you to detect fish on structures. Once you find the fish, you can lower or cast your bait to the fish and actually watch them react to it!

Now, there is a learning curve to becoming proficient at using this technology, but once you master the curve, it becomes a very effective method. It has taken over not only the crappie fishing tournament world but the crappie fishing world in general. Other companies such as Hummingbird and Lowrance have also come out with their versions of forward-facing sonar technology. Since its launch, Garmin has already released sonar units with bigger, faster processors that produce clearer, brighter screens. They also have improved the transducer to produce better sonar. It's hard to imagine how it can get much better, but I'm sure, as with most technology, over the next 10 years, it will be improved to become easier to learn and even more detailed.

#### Q: What are some basic tips you would give to a beginner on setting up livescope?

A: I actually have a segment that you can find on YouTube on B'n'M/Crappie Magnet company's "Fish Eat Live" series where I go through how to set up your livescope sonar unit. The "Fish Eat Live" series on YouTube is an excellent resource to learn about any of the aforementioned techniques from some of the best crappie pros on the planet. Crappie Fishing legends like Ronnie Capps, Kent Driscoll, John Harrison and Jeremy Aldridge as well as many others, offer tips on how to catch crappie using any technique!

#### Q: If you could go back in time, what would you tell yourself as a beginner crappie fisherman?

**A:** If I could go back and change one thing about my crappie fishing life, it would be that I would have gone out earlier in life and talked to every person I could in the industry to learn techniques and how to fish better quicker! To say that I have a passion for crappie fishing is an understatement. It has become one of my greatest joys to get away from the everyday hustle and bustle of life and enjoy time in the outdoors.

If you're interested in getting into crappie tournament fishing, then go online or on Facebook and try out the Magnolia Crappie Club. The Magnolia Crappie Club is one of the oldest and biggest crappie club organizations in the United States. They fish one-day club tournaments all over the state and are a fantastic organization. They allow guests to fish for free in their first tournament. This is where I got my start in tournament fishing.

Stephen Sullivan is glad to answer any questions Delta Wildlife readers might have. Contact him on Facebook or email ssullivandds94@gmail.com.

Management Delta Fauna

## The Great Reset BY SAM FRANKLIN Delta Wildlife Staff

ultiple times a year, Delta Wildlife staff get questions about Moist Soil Management (MSM). These questions range from tweaking a few small details to how I do get started and what do I do with what's here and more questions in between. These questions come from a wide array of landowners and managers from all different backgrounds. The responses vary according to the site, but the conversation ends the same — let's go look and see what's there!

Moist Soil Management is more of an art than a science. The bigger picture is what's in the soil bank: what was the soil temperature versus vegetative competition versus when the water will come off the intended impoundment. Soil temperature and the lack of water are the most important factors.

When Delta Wildlife staff get called to a property, the most common scenario we see is no management. There's a whole host of reasons for no management. Maybe the landowner didn't have the equipment or the know-how, but most often, the person just acquired a property, and they are somewhat familiar with MSM.

Let's take a dive into that scenario. An individual just bought a property, and the impoundments are a solid (monotopic) stand of cocklebur from one end to the other. The first thing we advise the landowner to do is to take the land down to the bare ground and start over. This can be done chemically, mechanically (bush hog or disk or both), or if it's dry, with fire (highly unusual for a wetland to be dry enough in the growing season to burn, but there are some).

Management regime plan 1: Moist soil plants are early successional plants by nature. Succession (the natural progression of the vegetative process) has to be set back, and that has to be done with a disk generally. Depending on when the wetland was disked dictates what is done next. You should always be thinking 2-3 months ahead. If you were fortunate and got your major reset (disking) done early there are a lot more options. Let's assume you got your disking completed in April on a property that hasn't been managed in years. Now you're in wait-and-watch mode and it's a weekly monitoring event. You're looking for what plant species were stimulated to germinate by resetting. Every rain event can generate the plant species you want and some you don't. Inspection is recommended 3-7 days after every rain (sometimes this just isn't possible) until you get a stand of the grasses you wanted. If you start to see plants that you don't want, then spraying is needed. I recommend 2-4-D, but be cognizant of your neighbors. That formula stays in place until the growing season has concluded or you get a quality stand of the plants you want.

Management regime plan 1B: A supplement to that plan is to do the same practices of disking and spraying, but supplement a little millet (pick from varieties Japanese or Brown top) when the disking is done. This has two purposes. It gives a little assurance that there will be some seed-bearing plants there in the fall. The second is that Japanese millet will for sure cross-pollinate with the Barnyard Grass and make even more seed-bearing plants. What's the timeline for all this? To get a property that's never been managed whipped into shape is a 2–3-year process if everything goes right.

#### **Another Scenario**

Now let's contrast that regime with another common scenario. There is a low hole that just won't dry up until October due to drainage. Your management outlook is slightly different. There won't be enough of the growing season left after you get it reset (disked), so your focus is on getting the reset done for the spring management

Fast forward to April of the following year, and you need to know what to do! Assuming it was a dry winter, you can get the water off your low hole this year. Do you? Or do you leave it? The answer is, what is your plan for the growing season? If you pull the water off now, it is likely that coffee weed and other non-desirable weeds will appear, and your spring is going to be spent spraying.

Remember earlier, we learned that what germinates is directly linked to soil temperature and when the water gets off, right? So, with a hole that won't consistently drain, a landowner may be better off holding water until late June or July. This is when the soil temperatures are relatively high, and if you lack the infrastructure to pull the water slowly, a fast withdrawal may stimulate a monotypic stand of Barnyard grass or Sprangle top plus additional desired plants. That would be the perfect time to spread your choice of millet on the exposed clean mudflats. There may be one or two applications of chemicals that need to be applied depending on what plant species germinate.

There are several options as to when and how to manage moist soil plants, and every property is a little different. Delta Wildlife staff spend a lot of time running to and from properties assisting landowners by advising them as to what to do according to what plant species came up after they pulled the water off. If you need assistance making a plan of action, implementing a plan, or tweaking a pre-existing plan mid-growing season, call the office and schedule a site visit. Remember, Delta Wildlife was founded by Delta landowners for Delta landowners, and we're always here to assist.

#### The Hidden Killer

BY RILEY RYBURN Delta Wildlife Staff

ungi are all around us, below our feet as a network of mycelium, in the air we breathe as spores and in the delicious form of mushrooms. Fungi come in many different forms, but can it grow inside the animals that live among us? Unlike its symbiotic relationship with trees and other plants, animals like amphibians, bats and snakes aren't so lucky. There are over 6 million species of fungi in the world, which are constantly evolving with our forever-changing world. We will focus on three fungi that seem to be leading the race in evolution: Pseudogymnoascus destructans, Batrachochytrium dendrobatidis and Ophidiomyces ophiodiicola.

#### **White-Nose Syndrome**

White-nose syndrome (WNS) in bats is a fungal disease caused by the fungus Pseudogymnoascus destructans (Pd). It is an exotic fungus believed to come from Europe. It started in New York in 2006 and, by 2016, spread to more than half of the U.S. Like most fungi, it grows in the cold and infects bats during hibernation, while the bats reduce their metabolic rate and lower their body temperatures to save energy over winter. Those affected by WNS tend to wake up more frequently during hibernation, causing their fat reserves to be used up, resulting in possible starvation and death before spring. Additional causes of mortality from the WNS disease include wing damage, inability to regulate body temperatures, breathing disruptions and dehydration.

WNS was confirmed last year in Mississippi on a tricolored bat in a culvert in Montgomery County. Scientists predict some regional extinction of bat species, including the little brown bat (Myotis lucifugus) and federally listed Indian bat (Myotis sodalis), and northern long-eared bat (Myotis septentrionalis), which are all found in Mississippi, specifically the Delta.

The disease is estimated to have killed millions of bats in Eastern North America since 2006 and can kill up to 100% of bats in a colony during hibernation, according to the Washington Department of Fish and Wildlife. The fungus grows on infected hibernating bats' noses, wings and ears, and it gives a fuzzy white appearance. Once the bats wake from hibernation, the fuzzy white appearance disappears, and the fungus invades deep skin tissues and causes extensive damage.

The fungus is believed to be primarily transferred by bat-to-bat or bat-to-environment contact, but humans can also inadvertently spread it. People can carry fungal spores on clothes, shoes or recreation equipment that comes into contact with the fungus. Properly decontaminating shoes, clothes and equipment used in areas where bats live is critical to reducing the risk of spreading.

So, why should we care if these creepy night fliers contract a fungus and die? Bats are valuable members of ecosystems worldwide, saving farmers in the United States alone over \$3 billion each year in pest control services. One bat colony can consume tons of insects that would otherwise eat valuable crops or threaten human health and well-being. Some bat species eat moths or beetles, which are harmful forest pests. They also act as pollinators, dispersing seeds.

In order to save our bat colonies, the spread of WNS needs to be reduced, if not eliminated. To do so, scientists must keep studying the relationship between Pseudogymnoascus destructans and bats.



What can you do? Report any signs or symptoms of WNS, and if you come in contact with a bat colony, be sure to decontaminate your shoes and clothing properly. Also, helping spread awareness on White-nose syndrome in bats can be extremely beneficial.

#### Chytridiomycosis

Bats aren't the only prey of the fungi predator. Amphibians are also affected by the chytrid fungus; Batrachochytrium dendrobatidis (Bd), which causes Chytridiomycosis (amphibian chytrid fungus disease). This infectious disease affects amphibians worldwide and can severally impact amphibian populations and completely take out others. In the United States, the disease has been confirmed in 46 states. Chytridiomycosis infectious disease is a concern for the Mississippi Delta, which is covered with water sources and amphibians that call it home. It primarily affects amphibian species associated with permanent water, such as streams, moist bogs and ponds. Research has shown that Bd grows best in waters between 62-77 degrees F.

Since its discovery in 1993 in Australia after a massive mortality event involving several species of frogs, the disease has caused the decline or complete extinction of over 200 species of frogs and other amphibians, according to Cornell University Wildlife Health Lab. Like many fungal diseases, the origin and actual impact on species populations are unclear. Chytrid disease is believed to be responsible for one of the most significant biodiversity losses from disease in recorded history. So far, it is known to affect over 350 species of amphibians, with frogs being impacted most severely. Some frogs, like the American bullfrog and the American clawed frog, are resistant to the disease but may be carriers.

Like fungi that cause White-nose syndrome, Bd infects the keratin layer of the skin, where it multiplies by producing zoospores, which are eventually shed into the environment. It is a waterborne fungus that disperses into the environment to search for a new host via water sources. These zoospores can survive for weeks in water, depending on the temperature. Like most fungal diseases, it is mitigated by increased temperatures; therefore, outbreaks have been observed to occur seasonally. Chytrid fungi can also live in soil; some are plant and insect

Delta Fauna Management

parasites. Only the amphibian chytrid fungus is known to infect vertebrate species. It is believed that transmission occurs when frogs come into contact with other infected frogs or water-containing spores. Once the host is infected with Bd, chytridiomycosis may develop.

The amphibian-chytridiomycosis system is complex, and the species response varies depending on many variables that are not well understood. Therefore, the impact the fungus has is varied, but the earliest signs are believed to be anorexia and lethargy. Even more, most frogs experience excessive shedding of skin, which appears opaque, tan or



gray-white. Excessive shedding may be a survival tactic to shed the fungi, but one that hasn't been proven to be effective. Other common signs include red skin, convulsions, lack of righting reflex, abnormal feeding behavior and

discoloration near the mouth, which is seen in all three types of fungal disease. The fungus invades the surface layers of the frog's skin, causing damage to the outer keratin layer. It is extremely detrimental to amphibians due to their unique skin because it is physiologically active, meaning it regulates respiration, water and electrolytes.

Really though, much is unknown about the fungus and the disease, including causes of death, how the fungus survives in the absence of amphibian populations and how it spreads. It is thought that the fungus may cause mortality through disrupting the normal function of the amphibian skin resulting in electrolyte depletion and osmotic imbalance. The relationship between the fungus and environmental factors could be significant. Is environmental stress causing fungi to adapt and evolve or reducing amphibian's resistance to infection?

Understanding patterns and mechanisms of amphibian responses to chytrids is crucial for conservation and management. The next step for researchers is to estimate populations to identify species at risk, prioritize taxa for protection, design management strategies and to develop effective measures to reduce chytrid's impact on amphibians.

Amphibians that are known to be susceptible to chytrid in Mississippi include: the American toad, leopard frog, green frog, cricket frog and spotted salamander. Keep your eye out for these symptoms and report any suspicion to your local environmental agency.

#### **Snake Fungal Disease**

The last fungus we will discuss is *Ophidiomyces ophiodiicola*, which causes Snake Fungal Disease (SFD) and is the latest discovered fungal disease. There have been sporadic history reports of skin infections in snakes with unknown origins, and those cases have increased substantially since 2006, when first discovered. Since August 2017, the fungus has been detected in much of the eastern half of the United States and is suspected to be more widely distributed than documented cases suggest. The research and information on SFD are much more limited than other fungal diseases, mainly due to little effort to monitor the health of snake populations.

Since its discovery in 2006, it has been found that the fungus has a broad host range among snakes and is the predominant cause of skin infection in wild snakes. SFD hasn't been a priority, but it is spreading fast and can have real consequences on snake populations. Thus far, it has been detected in at least 23 states. Several snake populations are already in decline due to habitat loss and dwindling prey populations. The rapid emergence of SFD may cause cata-

strophic decline causing certain species to disappear entirely from areas. Many snake species found in Mississippi have been reported as having SFD, including the family Colubridae; Coluber (racer), Farancia (mudsnake), Lampropeltis (kingsnakes and milksnakes), Nerodia (watersnakes), Pantherophis (foxsnakes and ratsnakes), Regina (crayfish snakes), Thamnophis (gatersnakes and ribbonsnakes) and Virginia (earthsnakes), as well as family Viperidae; Agkistrodon (copperheads and cottonmouth)

Symptoms of SFD include localized thickening or crusting of the skin, ulcerated skin, nodules under the skin, abnormal molting, white opaque cloudiness of the eyes and facial disfiguration with ranging severity, mostly leading to emaciation and death. Snakes with SFD experience abnormal molting, and the upper layer of skin may be shed repeatedly in a last attempt to eliminate the infected skin layer, similar to frogs with Chytridiomycosis. Even more, affected snakes are usually emaciated, possibly due to their decreased ability to capture prey. It's also been observed that they rest in open, unprotected areas, exposing themselves to adverse weather and predators.

It is unclear, similarly to other mentioned fungal diseases, when or why Ophiodiicola emerged as a fungal pathogen that harms snakes. It's hypothesized that it is likely linked to environmental changes, such as habitat destruction and fragmentation, increasing average temperatures and cooler, wetter springs may contribute to the disease's rapid spread. Field biologists have sporadically detected skin lesions in wild snakes for decades, most often after the snake emerges from hibernation. The fungi can survive in a relatively wide range of pH and temperature conditions. However, the growth of this fungus is inhibited by high air temperatures of more than 100 degrees Fahrenheit and moderately cold temperatures of less than 50 degrees Fahrenheit. It is believed to be transmitted by snake-to-snake contact and can persist in the environment without a host.

Snakes are vital in natural food webs as prey and predator. Besides being an essential food item for many mammals and bird species, snakes consume a variety of prey. A primary prey source being rodents, which can damage agricultural crops and carry diseases that affect people and other animals. For example, snakes can reduce Lyme disease by consuming rodents and other small mammals that are infested with ticks that transmit it to humans. So even though snakes are not a commonly beloved animal, they still play a vital role in our ecosystem and must be protected.

Overall, the public can help with all fungal disease outbreaks on bats, amphibians and snakes by monitoring and reporting signs and symptoms to local or state wildlife agencies. However, the general public should avoid disturbing or coming into contact with any cases they believe to be fungal diseases. If they do, properly decontaminate shoes and clothing to prevent the fungus from spreading.



#### Shipland Wildlife Management Area

#### BY MATTHEW DZIAMNISKI

Delta Wildlife Staff

cross the state, the Mississippi Department of Wildlife, Fisheries and Parks (MDWFP) manages many tracts of land for public use called Wildlife Management Areas (WMAs). In the Delta, there are a total of 14 WMAs, and all offer great hunting, fishing and recreational opportunities. One WMA that offers great hunting and fishing opportunities is Shipland Wildlife Management Area, located in Issaquena County just south of Mayersville. This WMA, which was purchased in 1982 from the Nature Conservancy, is 3,642 acres and is located between the Mississippi River and the main levee. This area is called the Mississippi batture lands, and Shipland WMA is one of only two WMAs within this area.

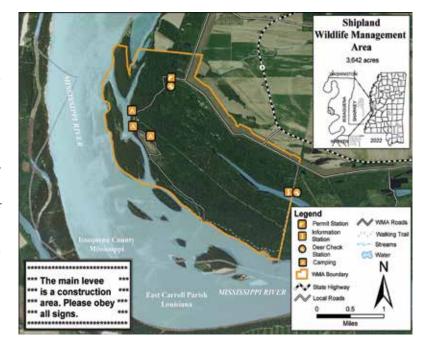
The habitat at Shipland WMA varies with bottomland hardwoods filled with oaks and hickories. It has very sandy soils comprised of grasslands, bottoms filled with buttonbush, and when the river is low, there are sandbars along the bank. Along with the native habitat, MDWFP plants summer and winter food plots to increase forage for all wildlife species. This diverse habitat gives way to plentiful hunting opportunities for all.

#### **Hunting and Fishing**

Hunting opportunities for deer, squirrel and waterfowl are the most popular, and there is no draw or special permit needed for deer or waterfowl hunting. Deer hunting is limited to archery and primitive weapon, but the managers do allow for a youth gun season. Antler restrictions on bucks are similar to other South Delta WMAs requiring a 15-inch inside spread or one main beam of 18 inches. These antler restrictions are a great management tool as they give bucks time to mature, and it gives hunters a better chance at bagging a big buck.

Waterfowl hunting typically is best on the Mississippi River, but there are low areas that may hold a variety of puddle duck species. Squirrel hunting is coveted throughout the Delta for the black phase fox squirrel, which is plentiful at Shipland. Later in the season, when the leaves have fallen, squirrel hunting with dogs is popular, and a limit of eight squirrels can be easily achieved.

Fishing opportunities at Shipland are not as plentiful as other WMAs, but the opportunity is there. Located on the southern end of the property is a small lake that provides fishing for a variety of species. Along with that, a small boat could be put in the Mississippi River, dependent upon the river level. Creel limits and other fishing regulations can be found on the MDWFP website.



#### **Birdwatching and Camping**

Along with the hunting and fishing opportunities, Shipland's location along the river provides a great place to bird watch for many shorebirds and is considered an Important Bird and Biodiversity Area (IBA) by the Audubon Society. Being labeled as an IBA means that the habitat is essential for the breeding, wintering and migration of multiple bird species. Due to the destruction of wetlands, areas categorized as IBAs are more important than ever for our migratory birds. Shipland is one of the very few places that provides public access to the Mississippi River, which is great for visitors to be able to see such vital and diverse habitats. One bird in particular that is commonly seen and nests here is the Interior Least Tern. This bird is a colony nester along the shoreline and feeds primarily on fish. This species and 13 other shorebird species have been/can be seen at Shipland, making this a great place for birders to visit.

If all these recreational opportunities weren't enough, they also allow primitive camping which makes Shipland an all-around great place to get out in the woods for the weekend with the whole family. Three areas are designated for camping, and all that is required is Wildlife Management Area User Permit that only costs \$15.

Hunting season never ends, and the fish are always biting, so make sure to take full advantage of local public land that is for all to enjoy!

For more on Shipland WMA, visit the MDWFP website. There you will find area maps and more on the specific rules and regulations of this



Scan to view location of Shipland WMA Headquarters



Scan to view maps and data about Shipland WMA

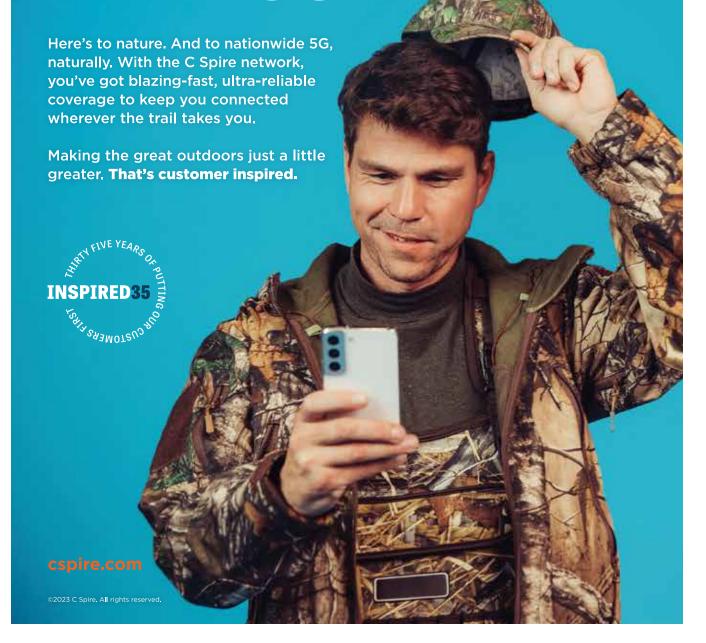
34 Delta Wildlife | SUMMER 2023 | Delta Wildlife | SUMMER 2023

#### we believe in giving you choices, not limitations When you talk to Syngenta, the conversation is about you: your fields, your plans, your challenges, your business. Can we help you get better stands, fight weeds and pests, and break through yield barriers? With our industry-leading portfolio and traits, the answer is usually yes. But important as great products are, we know that what really matters is helping you succeed. So we believe in giving you choices, not limitations. Tools, not barriers. Collaboration, Let's work together – toward your success. Bringing plant potential to life.





## ANSWERTHE CALLOF THE WILD. AND YOUR MON.







BankPlus was founded as a true community bank. And we've been serving our communities for over 100 years. To us, this means much more than banking. We're committed to improving quality of life and making a positive difference for our customers and neighbors. BankPlus. It's more than a name. It's a promise. Learn more at bankplus.net.









WADEINC.COM

# THE SEED THAT MAKES THE SOUTH CONTINUATION OF THE SEED OF THE SOUTH CONTINUATION OF THE SOUTH CONTINUATION OF THE SOUTH CONTINUATION OF THE SEED OF THE SOUTH CONTINUATION OF

Exclusive genetics with innovative traits, technology and agronomic support—for **PROVEN PERFORMANCE**, **SEASON AFTER SEASON**.



**GrowTheSouth.com** 

Monsanto Company is a member of Excellence Through Stewardship<sup>®</sup> (ETS). Monsanto products are commercialized in accordance with ETS Product Launch Stewardship Guidance, and in compliance with Monsanto's Policy for Commercialization of Biotechnology-Derived Plant Products in Commodity Crops This product has been approved for import into key export markets with functioning regulatory system Any crop or material produced from this product can only be exported to, or used, processed or sold i countries where all necessary regulatory approvals have been granted. It is a violation of national an international law to move material containing biotech traits across boundaries into nations where import in ontpermitted. Growers should talk to their grain handler or product purchaser to confirm their buyin position for this product.

ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. It is a violation of federal and state law to use any pesticide product other than in accordance with its labeling. NOT ALL formulations of dicamba or glyphosate are approved for in-crop use with Roundup Ready 2 Xtend® soybeans or cotton with XtendFlex® technology. ONLY USE FORMULATIONS THAT ARE SPECIFICALLY LABELED FOR SUCH USES AND APPROVED FOR

Roundup Ready 2 Xtend® soybeans contain genes that confer tolerance to glyphosate and dicamba.

Cotton with XtendFlex® technology contains genes that confer tolerance to glyphosate, dicamb, and glufosinate. Glyphosate will kill crops that are not tolerant to glyphosate. Dicamba will kill crops that are not tolerant to dicamba. Glufosinate will kill crops that are not tolerant to glufosinate. Contact you Bayer dealer or refer to the Technology Use Guide for recommended weed control programs.

**B.t. products** may not yet be registered in all states. Check with your seed brand representative for the registration status in your state.

Performance may vary from location to location and from year to year, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on the grower's fields.

LibertyLink® and the Water Droplet Design® is a trademark of BASF Corporation. Respect the Refuge and Corn Design® and Respect the Refuge® are registered trademarks of National Corn Growers Association. Acceleron®, Asgrow and the A Design®, Asgrow®, Bayer, Bayer Cross Design, DEKALB and Design®, DEKALB®, Deltapin®, Respect the Refuge and Cotton Design®, Roundup Ready®, Roundup Ready 2 Xtend® and VT Double Pro® are trademarks of Bayer Group. All other trademarks are the property of their respective owners. ©2019 Bayer Group. All rights reserved. DP-19058-DW-BC-TRI



before opening a bag of seed, be sure to read, understand and accept the sewardship requirements, including applicable refuge requirements for insect resistance management, for the biotechnology traits expressed in the seed as set forth in the Monsanto Technology/Stewardship Agreement that you sign. By opening and using a bag of seed, you are reaffirming your obligtion to comply with the most recent stewardship requirements.







