

*Bryan Endowment for*

# **BOBWHITE RESTORATION**

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*James C. Kennedy Endowed Chair in*

## **UPLAND GAMEBIRD ECOLOGY**

*2021-2022*



**MISSISSIPPI STATE UNIVERSITY™**  
FOREST AND WILDLIFE RESEARCH CENTER



## About

In 2018, Jimmy Bryan, established the Bryan Endowment for Bobwhite Habitat Restoration at MSU with the mission to "...advance restoration of bobwhite quail populations and southeastern native grasslands as a component of working agricultural landscapes through research, conservation and education."

Soon after, James C. Kennedy established the James C. Kennedy Endowed Chair in Upland Bird Ecology at MSU. Kennedy, who funded an endowed chair in waterfowl ecology at MSU over a decade ago, is an avid waterfowl hunter and conservationist.

The combined commitments to science-driven conservation by Bryan and Kennedy provide new passion, energy, and resources to train students and conduct cutting-edge research restoring bobwhite quail and upland bird populations throughout the Midsouth.



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# Greetings

I am honored to currently oversee both the Bryan Endowment for Bobwhite Habitat Restoration and the James C. Kennedy Endowed Chair in Upland Gamebird Ecology in the College of Forest Resources and Forest and Wildlife Research Center at Mississippi State University. The gifts provided by Jimmy Bryan and James Kennedy allows Mississippi State University to conduct vital conservation research, education, and outreach across the state and region. Jake and Harriet McFadden are also financial supporters of the Bryan Endowment for Bobwhite Habitat Restoration and have allowed our team to conduct research on their 1,800 acre property in Como, Mississippi called Birdlands Plantation. The McFadden's are funding research to incorporate bobwhite management into working farms. Likewise, the partnership with Jimmy Bryan on his West Point property, Prairie Wildlife, allows our team to conduct research on a working farm and demonstrate successful real world conservation practices.

These endowments help fund the training of future natural resources professionals. Three master's students have completed their degrees and moved on to advanced degrees or jobs in the conservation field. Because of the generosity of our conservation stewards, the research team continues to grow in number and capacity. As of the start of 2022, nine graduate students, two undergraduate research scholars, three post-docs, and one research associate, are advancing research on upland game bird habitat and ecology. These highly motivated individuals will be conducting research on everything from northern bobwhite ecology, eastern wild turkey population dynamics, precision agriculture, private landowner motivations, habitat management, and fire ecology.

In addition to the Bryan and Kennedy endowments, science is being advanced through a myriad of partners. These partners include the Mississippi Department of Wildlife, Fisheries, and Parks; United States Fish and Wildlife Service; The Jones Center at Ichauway; National Fish and Wildlife Foundation; United States Department of Agriculture; Natural Resources Conservation Service's Working Lands for Wildlife program; as well as funding from Mississippi State's Forest and Wildlife Research Center and the Mississippi Agricultural and Forestry Experiment Station.

These gifts, endowments, and support helped pave the way for an additional four million in external funding to further bobwhite habitat restoration and upland gamebird ecology. The science generated through these gifts and extramural funding has resulted in 19 research presentations at national, regional, and state conferences; and seven peer-reviewed articles.

Together, with our partners across the region, talented graduate students, and the dedicated faculty and staff in the Department of Wildlife, Fisheries and Aquaculture, bobwhite and upland gamebird ecology research continues to soar.



**Mark D. McConnell**

*Assistant Professor of Upland Birds*

Department of Wildlife,  
Fisheries and Aquaculture  
Mississippi State University

RESEARCH

# Meet the Lab



**CURRENT  
STUDENTS:**

Trey Wall  
Frank Juma O'gondo  
Olivia Lappin  
Jeff Grayum  
Caleb Blake  
Michael Warren  
Kyle Watkins  
Jenny Sublett  
Chloe Bell

**UNDERGRADUATE  
RESEARCHERS:**

Jessica Tomassi  
Carson Dewberry

**POST-DOCTORAL  
ASSOCIATE:**

Zoe Nhleko

**RESEARCH  
ASSOCIATE:**

Ryan Mann



# THE LAB

**TREY WALL**  
Ph.D. student

**Dissertation Title:**  
Assessing the ecological and economic impacts of *sericia lespedeza* removal on northern bobwhite foraging habits

**Originally From:**  
Georgia

**Anticipated Graduation Date:** 2023



**OLIVIA LAPPIN**  
M.S. student

**Thesis Title:**  
Northern bobwhite breeding season behavior and roost site selection in agricultural landscape in Clay County, Mississippi

**Originally From:**  
Maine

**Anticipated Graduation Date:** 2022



**FRANK JUMA O'GONDO**  
Ph.D. student

**Dissertation Title:**  
Investigating the scale of effect of northern bobwhite populations across multiple landscapes using MDWFP Wildlife Management Areas as a model

**Originally From:**  
Kenya

**Anticipated Graduation Date:** 2025



**JEFF GRAYUM**  
M.S. student

**Thesis Title:**  
Northern bobwhite movement response to fire in a longleaf pine forest

**Originally From:**  
Missouri

**Anticipated Graduation Date:** 2023



# THE LAB

**CALEB BLAKE**  
M.S. student

**Thesis Title:**  
Motivations for habitat management of private lands in the Southeastern United States: Implications for at-risk species

**Originally From:**  
Alabama

**Anticipated Graduation Date:** 2022



**KYLE WATKINS**  
M.S. student

**Thesis Title:**  
Quantifying the economic impact of conservation policy utilizing precision agriculture tools

**Originally From:**  
North Carolina

**Anticipated Graduation Date:** 2022



**MICHAEL WARREN**  
M.S. student

**Thesis Title:**  
Effects of growing season fire on Bachman's sparrows in the longleaf pine forests of Southern Mississippi

**Originally From:**  
Wisconsin

**Anticipated Graduation Date:** 2022



**JENNY SUBLETT**  
M.S. student

**Thesis Title:**  
Leveraging small plot research to improve on-farm decision making

**Originally From:**  
Florida

**Anticipated Graduation Date:** 2023



# THE LAB

**CHLOE BELL**  
M.S. student

**Thesis Title:**  
Demonstration of silvicultural systems, forest monitoring, and wildlife assessment protocol for restoring bottomland hardwood communities

**Originally From:**  
Arkansas

**Anticipated Graduation Date:** 2024



**CARSON DEWBERRY**  
Undergraduate Research Scholar

**Undergraduate Research Project:**  
Evaluating predatory raptor response to periodic pulses in prey abundance

**Originally From:**  
Mississippi

**Anticipated Graduation Date:** 2022

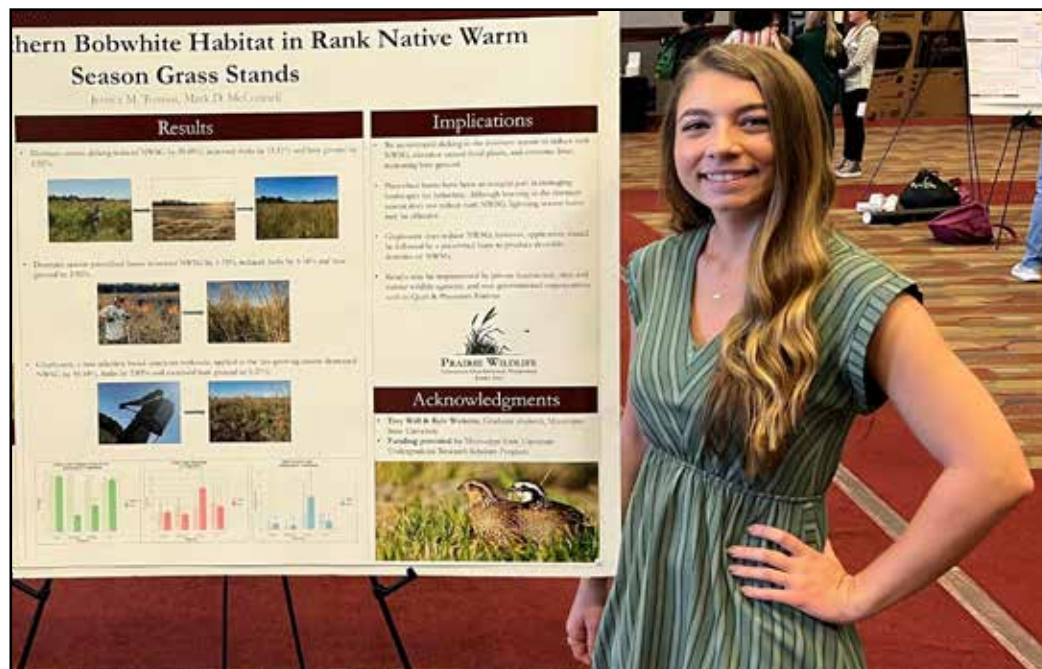


**JESSICA TOMASSI**  
Undergraduate Research Scholar

**Undergraduate Research Project:**  
Restoring northern bobwhite habitat in rank native warm season grass stands

**Originally From:**  
Mississippi

**Anticipated Graduation Date:** 2022



Ms. Olivia Lappin and Ms. Jessica Tomassi flushing a bobwhite brood at three weeks of age to count the number of chicks at Prairie Wildlife in West Point, Mississippi.



## DR. ZOE NHLEKO

**POST-DOCTORAL ASSOCIATE**

**Project Title:**

Eastern wild turkey population analysis to inform Mississippi's harvest framework: A structured decision making approach

**Originally From:**

South Africa

Dr. Nhleko is working to evaluate how turkey populations will respond to changes in various harvest frameworks.



## RYAN MANN

**RESEARCH ASSOCIATE**

**Project Title:**

Detection rates of northern bobwhite coveys using a small unmanned aerial system-mounted thermal camera

**Originally From:**

Mississippi

Ryan is working to provide technical assistance to farmers in the Black Belt Prairie of Mississippi using precision agriculture software developed at MSU to identify overlap between conservation and economic opportunities. Ryan works closely with Quail Forever's Senior Farm Bill Biologist and MSU alumnus, John Mark Curtis.



RESEARCH

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# Alumni



PAST  
STUDENTS:

Emily Bedwell  
Makayla Brister  
Megan Martin





# ALUMNI

## EMILY BEDWELL

**Thesis Title:**  
Impact of economically targeted conservation delivery on agricultural revenue across a range of commodity prices

**Originally From:**  
Mississippi

**Graduation Date:**  
Fall 2021

**Current Employment:**  
Ph.D. student,  
University of Georgia



## MEGAN MARTIN

**Thesis Title:**  
Detection rates of northern bobwhite coveys using a small unmanned aerial system-mounted thermal camera

**Originally From:**  
Kentucky

**Graduation Date:**  
Spring 2020

**Current Employment:**  
Conservation Specialist II,  
Ducks Unlimited Inc.



## MAKAYLA BRISTER

**Thesis Title:**  
Using precision agriculture technology to identify overlap in conservation and economic opportunities in agricultural landscapes

**Originally From:**  
Mississippi

**Graduation Date:**  
Summer 2021

**Current Employment:**  
Federal Relations  
Manager, National Fish  
and Wildlife Foundation



Photo by Buzz Hayes



RESEARCH

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# Lab Activities



## LAB ACTIVITIES

As part of a robust research program, lab activities are not confined to space in a building but to the outdoors, where forests and fields are learning laboratories. Faculty, staff, and students conduct research on individual projects and also assist each other on projects. Activities include covey counts, prescribed burns, conferences, workshops, and time in the field.



# LAB ACTIVITIES



## CONFERENCE

Graduate students attended the National Bobwhite Technical Committee annual meeting in Bentonville, Arkansas. This annual meeting brings together managers and researchers from across the bobwhite range to chart a path for the future of bobwhite conservation. Students also use this opportunity to network with state agencies, NGO's and other research units in the bobwhite world.

## WORKSHOPS

Mr. Ryan Mann, Research Associate, conducted two workshops at Prairie Wildlife on creating bobwhite habitat via precision agriculture technology. These workshops were done in conjunction with Mississippi Department of Wildlife, Fisheries, and Parks; Wildlife Mississippi; Natural Resources Conservation Service; and Quail Forever. Mann also presented research results at the Mississippi State University Row Crop Short Course with 700+ farmers from across the state.



## PRESCRIBED FIRE

Prescribed fire is an essential tool for bobwhite management. Every student in this program is trained to safely and effectively conduct prescribed fires. Burns like this at Prairie Wildlife present unique opportunities for students to get real world training in 'boots on the ground' bobwhite management. This burn was conducted for an Environmental Quality Incentives Program pollinator practice.

## COVEY COUNTS

The team conducted quail covey counts at numerous private properties across Mississippi. Below the group celebrates finishing counts at Birdlands Plantation in Como, Mississippi. Annual monitoring of these properties is essential to train incoming students and better understand the effect of our management efforts.



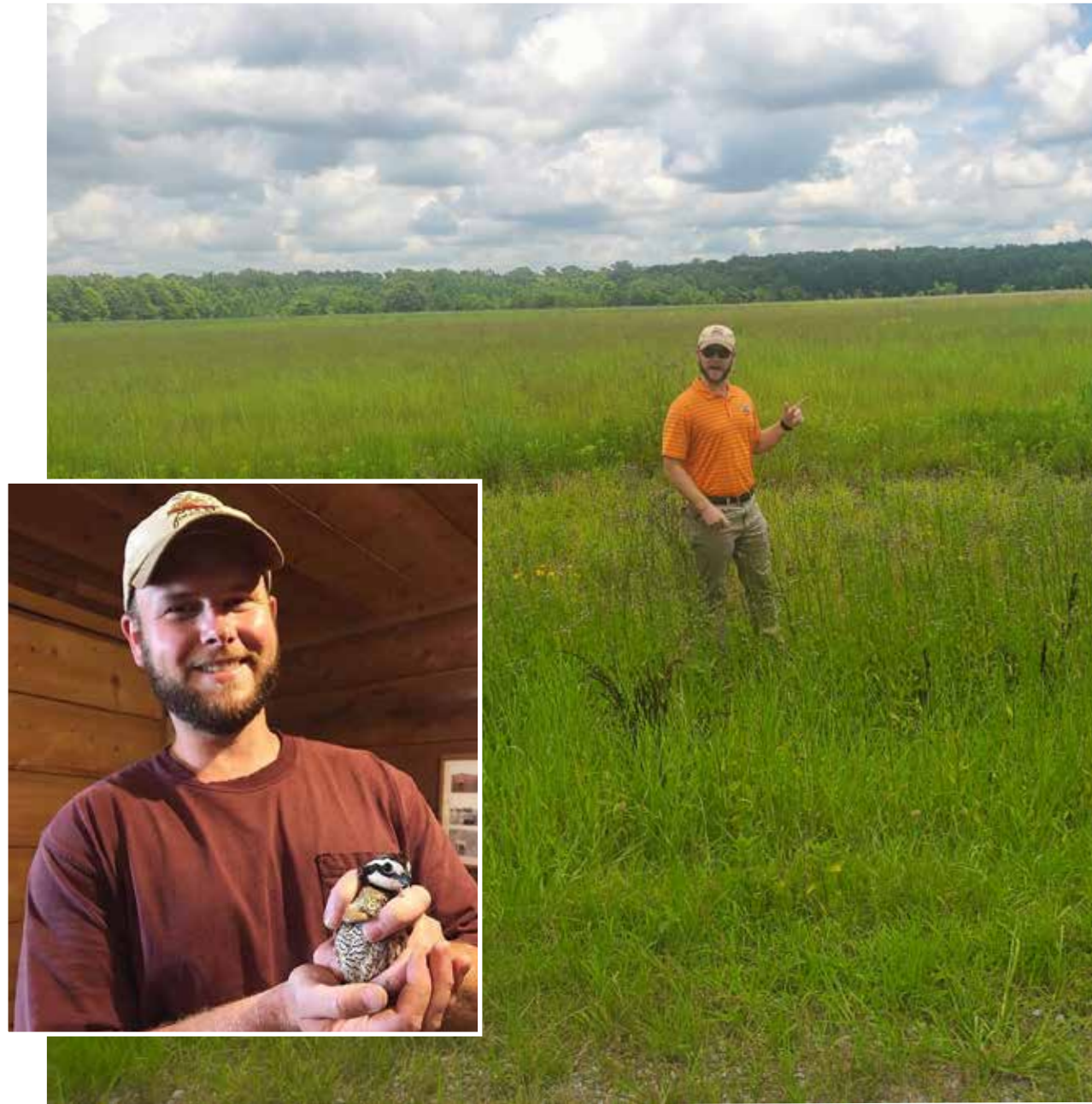
The team conducted multiple prescribed fires at Birdlands Plantation in Como, Mississippi. These burns were part of Trey Wall's dissertation research evaluating multiple techniques to reduce an exotic, invasive plant on a property where bobwhite is the primary focus. Students' prescribed fire skills were put to the test for this project as burning conditions were very challenging.

## FIELD DAYS

Lab meetings are an essential part of building synergy in a research lab. Sometimes, it is nice to get out and bond as team members while shooting clay pigeons. Additionally, not all students have been exposed to proper gun safety and handling when they arrive. These opportunities allow students to learn the principles of responsible firearms use.



# LAB ACTIVITIES



Mr. John Mark Curtis, Senior Farm Bill Biologist with Quail Forever, provides technical expertise on establishing pollinator habitat and helps with bobwhite trapping at Prairie Wildlife in West Point, Mississippi.

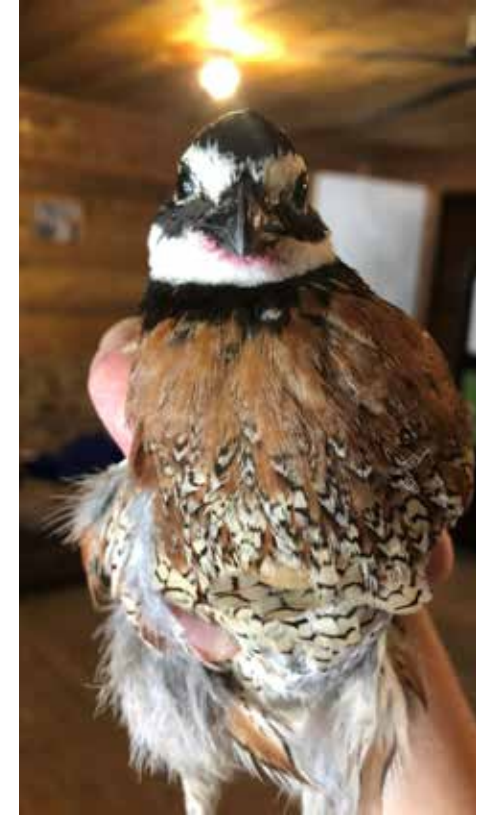
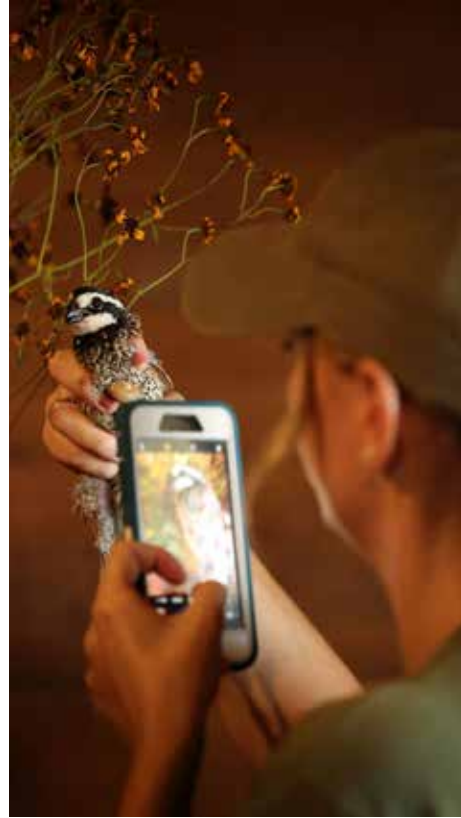


Kyle Watkins (left) and John Mark Curtis (right) extracting a male bobwhite from a mist net at Prairie Wildlife in West Point, Mississippi.



# LAB ACTIVITIES

Olivia Lappin's bobwhite research at Prairie Wildlife involves listening for singing males each morning, capturing them in a mist net, attaching a radio transmitter and then releasing them back into the wild. Photos by Buzz Hayes.



RESEARCH

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# Partners



PARTNERS  
INCLUDE:

Mr. Jimmy Bryan  
Mr. James Kennedy  
Mr. Jake and Mrs. Harriet McFadden

The Jones Center at Ichauway  
Mississippi Department of Wildlife, Fisheries and Parks  
National Fish and Wildlife Foundation  
Natural Resources Conservation Service  
Quail Forever  
U.S. Department of Agriculture  
U.S. Fish and Wildlife Service  
Wildlife Mississippi



# PARTNERS



Mr. Jimmy Bryan



Mr. James Kennedy



Mr. Jake and  
Mrs. Harriet McFadden



Ryan Mann (left), research associate in the MSU Forest and Wildlife Research Center, demonstrates the MSU Precision Conservation Tool to John Mark Curtis, Quail Forever farm bill biologist, on a farm in north Mississippi. The tool is a decision-making software that identifies precise locations where conservation practices are most economically beneficial to farmers on specific tracts of land. (Photo by David Ammon)



# SUMMARY

## By The Numbers

**\$4.3M**  
in external funding

**19**  
research presentations

**7**  
peer-reviewed articles

**9**  
graduate students

**2**  
undergraduate research scholars

**3**  
post-docs

**1**  
research associate

**3**  
master's students graduated



Photo by Buzz Hayes

# MEDIA



Guest on Pheasant Forever/Quail Forever's On the Wing podcast:  
[https://quailforever.org/BlogLanding/Blogs/Quail-Forever/Podcast-Ep-148-Bobwhite-Quail-Science-with-Mississippi-State-University%E2%80%99s-Dr-Mark-McConnell.aspx?fbclid=IwAR2xk3K-t3CQ8\\_mWGZMTbo85WCo3CfZJv4KN647MjZJxAbxd7sRh0JR09DA](https://quailforever.org/BlogLanding/Blogs/Quail-Forever/Podcast-Ep-148-Bobwhite-Quail-Science-with-Mississippi-State-University%E2%80%99s-Dr-Mark-McConnell.aspx?fbclid=IwAR2xk3K-t3CQ8_mWGZMTbo85WCo3CfZJv4KN647MjZJxAbxd7sRh0JR09DA)



Interviewed, along with colleague Dr. James Martin, for the Fire University podcast to discuss prescribed fire and bobwhite management:  
<https://fireuniversity.libsyn.com/managing-quail-habitat-with-prescribed-fire>



Partnered with Quail Forever, the Natural Resource Conservation Service, and the Warnell School of Forestry and Natural Resources at the University of Georgia to host the first ever Bobwhite Boot Camp at Prairie Wildlife for early career Quail Forever biologist from twelve different states. This event was featured in Covey Rise Magazine:  
<https://coveyrisemagazine.com/bobwhite-boot-camp-quail-forever/>



Featured research at Prairie Wildlife included in Shooting Sportsman magazine:  
<https://shooting sportsman.com/bobs-in-the-black-belt/>



Featured research included in National Rifle Association's American Hunter magazine:  
<https://www.americanhunter.org/articles/2020/5/6/in-search-of-the-lonesome-whistle>



The Quail Classroom | Upland Habitat Research | Prairie Wildlife Experience featured on Realtree365.com:  
<https://www.realtree365.com/prairie-wildlife-experience/season:1/videos/the-classroom-quail-habitat-research-prairie-wildlife-experience>







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